# TFIN22

## Management Accounting II - Part 2

**INSTRUCTOR HANDBOOK**
**INSTRUCTOR-LED TRAINING**

Course Version: 10
Course Duration: 5 Day(s)
Material Number: 50117718

# SAP Copyrights and Trademarks

All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

# About This Handbook

This handbook is intended to complement the instructor-led presentation of this course, and serve as a source of reference. It is not suitable for self-study.

**Typographic Conventions**

American English is the standard used in this handbook.

The following typographic conventions are also used.

| | |
|---|---|
| This information is displayed in the instructor's presentation |  |
| Demonstration |  |
| Procedure |  |
| Warning or Caution |  |
| Hint |  |
| Related or Additional Information |  |
| Facilitated Discussion |  |
| User interface control | *Example text* |
| Window title | *Example text* |

# Contents

# Course Overview

**TARGET AUDIENCE**
This course is intended for the following audiences:

- Application Consultant

# UNIT 1 Introduction to Report Painter and Report Writer



**UNIT OBJECTIVES**

- List the reporting tools available in the SAP system
- Explain the uses of the Report Painter
- List the Report Writer components and the relationship between them
- Configure the Report Writer components

Unit 1
Lesson 1

# 2 Introducing the Report Painter and Report Writer

**LESSON OVERVIEW**
This lesson provides an overview of the Report Painter and Report Writer. It discusses the reporting tools available in an SAP system.

Use the demonstration How to Configure Report Writer Libraries and Directories, to explain the concept of the Report Writer libraries and directories.

**Business Example**

You work as a financial consultant. Your organization wants you to create the Cost Center Accounting reports. For this reason, you require the following knowledge:

- An understanding of the reporting tools available in the SAP system
- An understanding of the uses of the Report Painter

**LESSON OBJECTIVES**
After completing this lesson, you will be able to:

- List the reporting tools available in the SAP system
- Explain the uses of the Report Painter

## Report Painter and Report Writer Overview

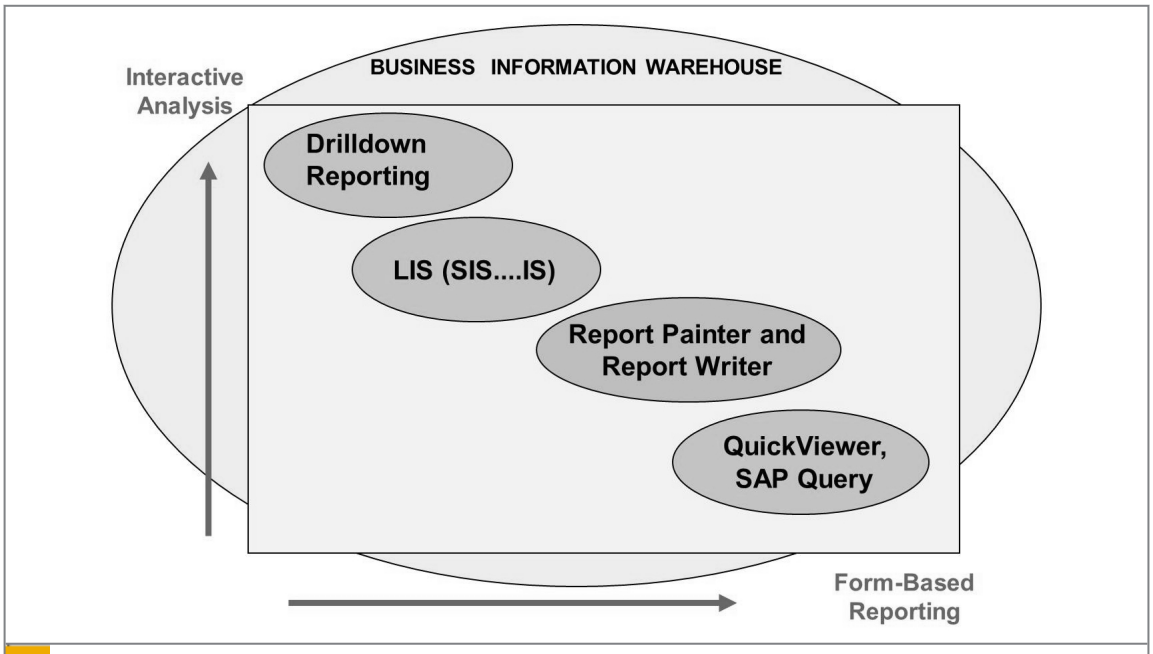



Figure 1: Overview of the Reporting Tools in the SAP System

Provide a brief description of the reporting tools currently available in the SAP system, as well as the tools that have developed historically. Explain the position of the Report Painter and Report Writer reporting tools.

You may refer to SAP Netweaver Business Warehouse (SAP Netweaver BW).

**The SAP system includes the following reporting tools:**

- QuickViewer and SAP Query

  QuickViewer and SAP Query are menu-driven tools that help a user compile lists. SAP Query offers an extensive suite of functions that enable a user to define and compile reports, such as basic lists, statistics, and ranked lists. The user can choose the data for the list from any SAP system table.

- The Report Painter

  Report Painter allows users to report on data from a broad range of applications. The form layout tool enables users to view the report in the form that appears after the data is output.

- Report Writer

  Report Writer uses sets exclusively to map the row and column structures, thereby supporting more complex reports.

- Drilldown reporting

  Drilldown reporting is an online information system featuring user-friendly functions that help you navigate through data. Use the drilldown reporting tool to evaluate data on the basis of all the characteristics contained in the drilldown data. This tool enables you to drilldown to the detail of any key figure.

- Logistics Information System (LIS)

  LIS allows users to analyze data using both standard and flexible analyses. Standard analyses are based on statistics files, or information structures in LIS, in which important key figures are updated directly from the relevant application. Flexible analysis can be used to evaluate the SAP data structures, and forms the basis for ad-hoc analyses.

**Overview of the Report Painter and Report Writer Applications**

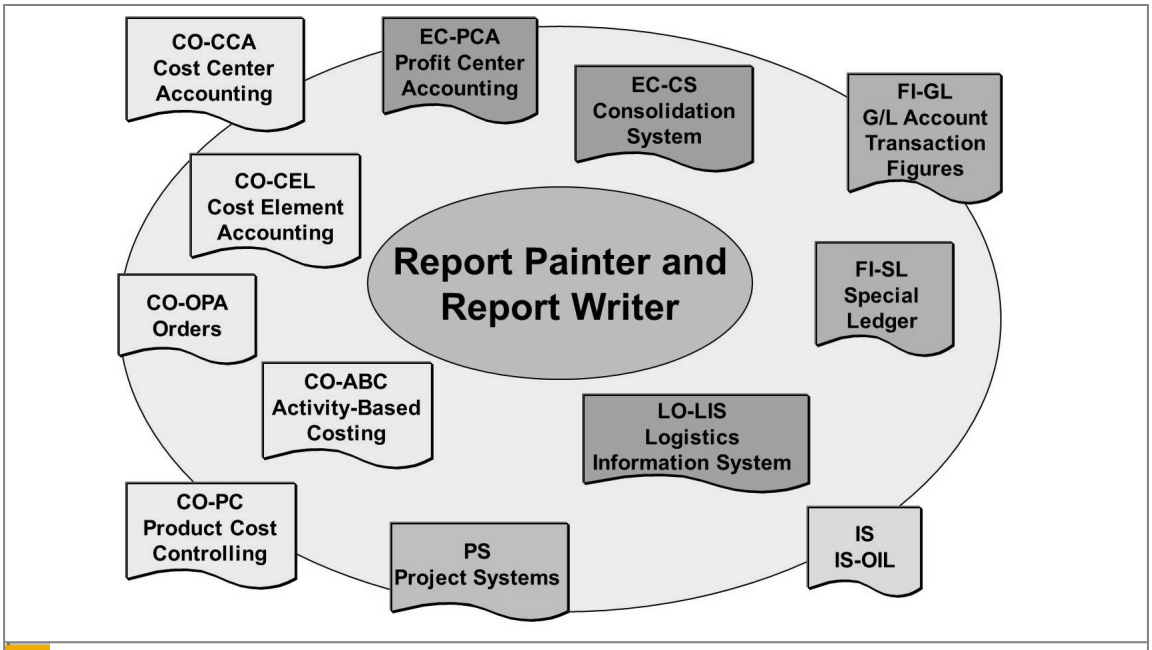



Figure 2: Overview of the Report Painter and Report Writer Applications

The figure provides an overview of the applications that work with the Report Painter and Report Writer.

Tell the participants that the Report Painter can be used to compile drilldown reports and define planning layouts. However, in this course, it is only used to define Report Writer reports. Discuss the advantages of the Report Painter over the Report Writer graphical user interface. Provide an overview of the applications that work with the Report Painter and Report Writer.

### Utility of the Report Painter

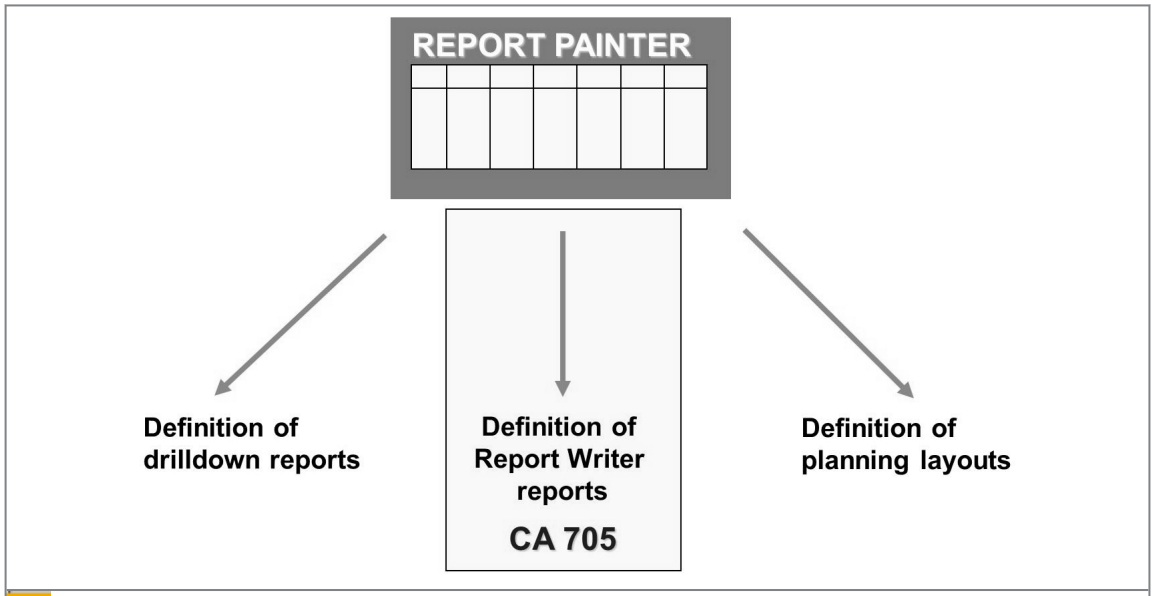



Figure 3: Utility of the Report Painter

**The graphical user interface (GUI) of the Report Painter can be used for various purposes:**

- Defining planning layouts
- Defining drilldown reports
- Defining Report Writer reports

Note:
This course discusses how to compile Report Writer reports using the Report Painter.

### Report Painter as a User Interface

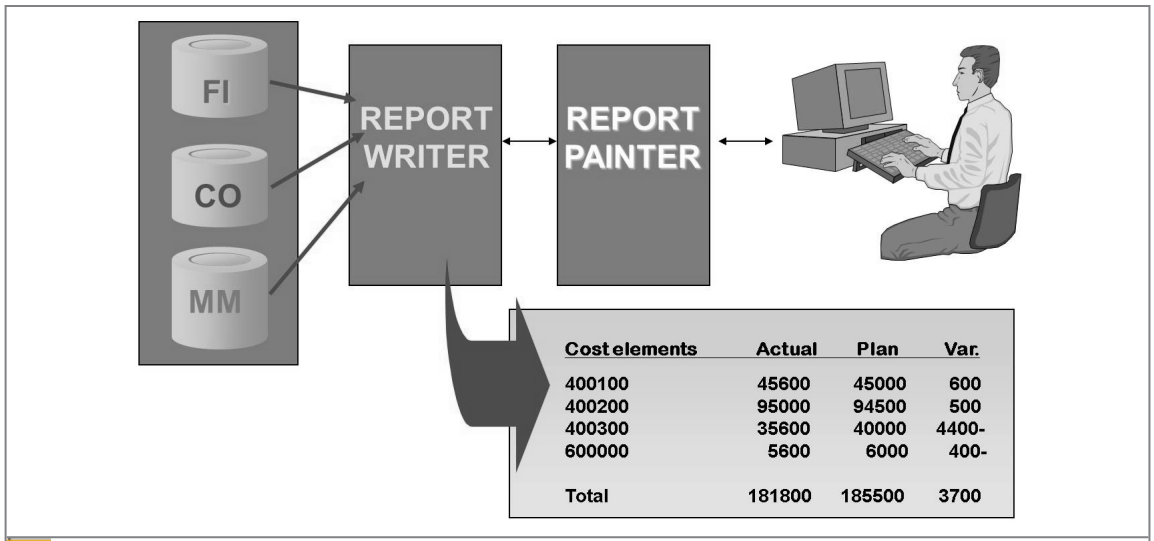



Figure 4: Report Painter as a User Interface

Report Painter performs a similar function but is easier to use than Report Writer. Creating reports with the Report Painter does not require familiarity with the set concept of Report Writer.

The Report Painter is based on the What You See Is What You Get (WYSIWYG) principle. It uses a graphical report structure that forms the basis of the report definition and displays the rows and columns of the report as they appear when the report is compiled. The Report Painter represents the interface between the user and Report Writer. Reports created in Report Painter are converted and executed by the system in Report Writer.

**LESSON SUMMARY**

You should now be able to:

- List the reporting tools available in the SAP system
- Explain the uses of the Report Painter

# Understanding the Report Writer Components

6

**LESSON OVERVIEW**

This lesson explains the relationship between the Report Writer components.

**Business Example**

You work as a financial consultant for an organization. Your organization needs you to create the Cost Center Accounting reports using Report Painter. For this reason, you require the following knowledge:

- An understanding of the Report Writer components

**LESSON OBJECTIVES**

After completing this lesson, you will be able to:

- List the Report Writer components and the relationship between them

## Report Writer Components

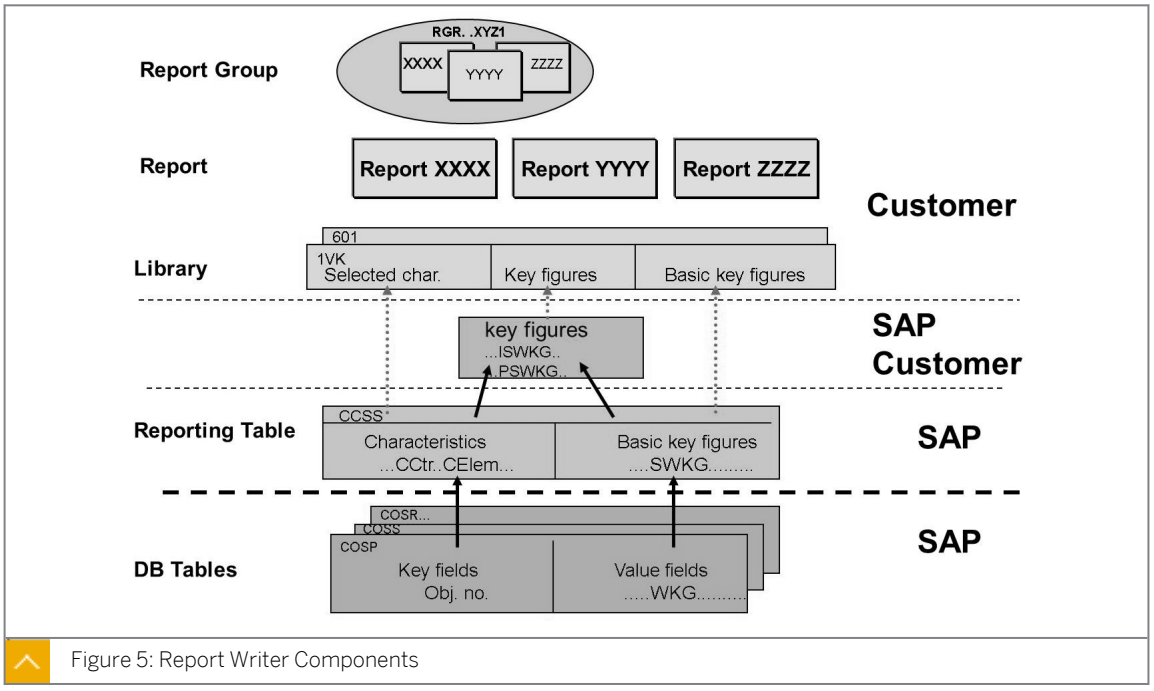



Figure 5: Report Writer Components

Provide an overview of the relationships between the individual Report Writer components. Explain the components using the CCSS table as an example.

**The components of Report Writer are as follows:**

- Reporting table

  A reporting table contains all of the fields that can be used to compile a report. Each report in a Report Writer is based on a reporting table. The Overhead Cost Controlling reports use the CCSS table. The logical reporting table includes one or more physical database tables.

  Characteristics are non-numeric fields. Characteristics include accounts, cost centers, and business areas. Basic key figures are numeric value fields, such as local currency, total cost, and activity quantity. A key figure consists of a basic key figure and one or more characteristics. Use key figures to define standard columns, which can be reused in reports. Key figures include actual costs in the current fiscal year and planned costs in the closed fiscal year.

- Library

  A library is a collection of characteristics, basic key figures, and key figures that are selected from the entries in a Report Writer table. SAP ships a wide variety of standard libraries. You can also create libraries to satisfy your own reporting requirements.

- Report

  A new report must be created against a library. Before a report is run, it must be included in a report group.

- Report group

  A report group contains one or more reports. When a report group is generated, executable ABAP programs are created to select and format the data.

**Hierarchy of the Report Writer Components**

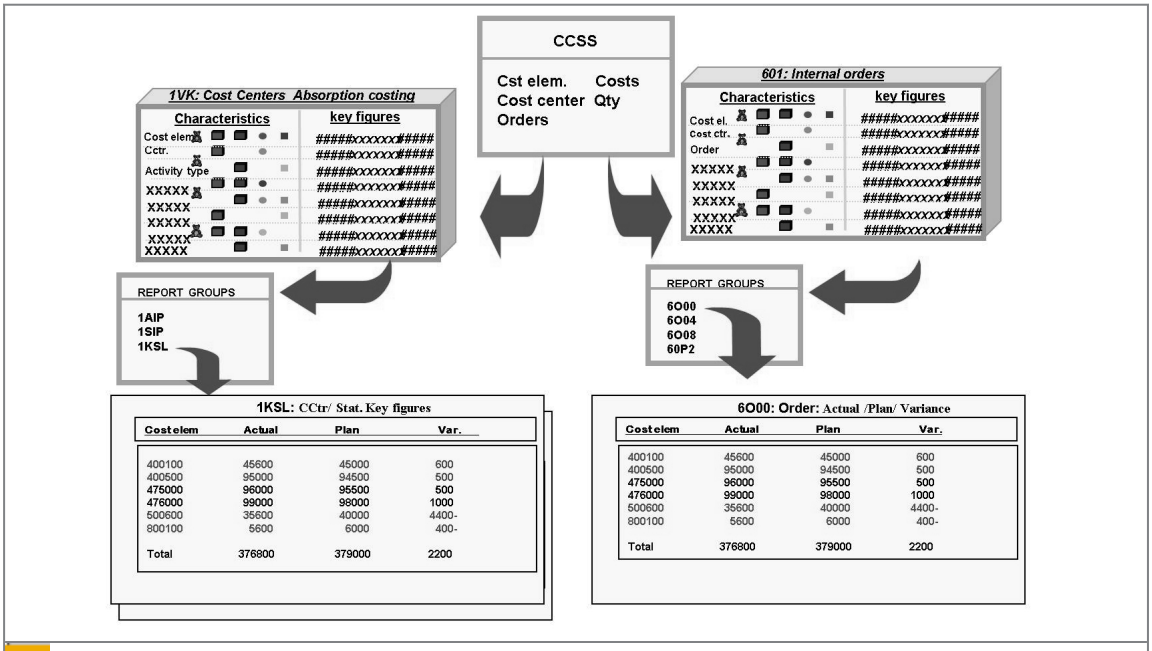



Figure 6: Hierarchy of the Report Writer Components

The CCSS reporting table is shipped for Overhead Cost Controlling reports. The standard libraries include the 1VK - cost center – absorption costing and 601 - internal orders libraries.

Note:
For more examples, refer to appendix.

### Library

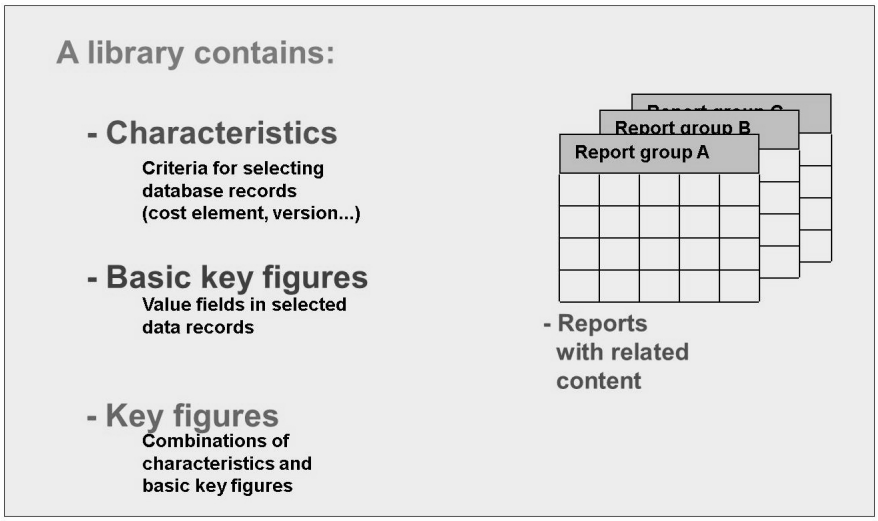



Figure 7: Library

Every report is assigned to a library. You can also create libraries to fulfill your own reporting requirements. SAP ships a wide variety of standard libraries.

**A library includes the following elements:**

- Characteristics

  A characteristic is a non-numeric field. Examples of characteristics include accounts, cost centers, and business areas.

- Basic key figures

  A basic key figure is a numeric value field. Examples of basic key figures include local currency, total cost, and activity quantity.

- Key figures

  A key figure comprises a basic key figure and one or more characteristics. Use key figures to define standard columns, which you can reuse in your reports. Examples of key figures include actual costs in the current fiscal year and planned costs in the closed fiscal year.

Unit 1
Exercise 1

# Explain the Components of a Report

9

**Business Example**

To create a report using the Report Painter, you need to understand what each components is used for.

Define the key terms associated with the Report Painter.

1. What is a characteristic?
2. What is a basic key figure?
3. What is a key figure?

Unit 1
Solution 1

# Explain the Components of a Report

10

**Business Example**

To create a report using the Report Painter, you need to understand what each components is used for.

Define the key terms associated with the Report Painter.

1. What is a characteristic?
   a) A characteristic, also called a "field" or "dimension" in previous versions, is a non-numeric field. Examples of characteristics include accounts, cost centers, and business areas. When these characteristics are combined they form a unique key that identifies data records for database retrieval. The organizational elements can be regarded as characteristics.
2. What is a basic key figure?
   a) A basic key figure is a value field, such as posted amounts or quantities. Basic key figures are used to determine the value fields that should be displayed in a report, such as transaction currency, group currency, and quantities.
3. What is a key figure?
   a) A key figure contains a basic key figure  combined with restricting characteristics. These characteristics, such as the value type actual and plan are used as additions to the basic key figure. Key figures are predefined columns that are used to quickly define reports for the data fields that are frequently represented in reports.

11

# Understand the Relationship Between the Report Components

**Business Example**

There are many reporting tables available to choose from, and the Report Painter is used in a variety of applications. Using the CCSS table, you need to create reports in the Report Painter to address the internal reporting needs in Management Accounting.

Task 1

Explain the relationship between the reporting table, library, report group, and report.

1. What is the purpose of a reporting table?
2. Name some reporting tables in SAP ERP and the applications for which these reporting tables are created.

| Reporting Table | Description |
|---|---|
| | |
| | |
| | |

3. What is the purpose of a library?
4. For one of the reporting tables in SAP ERP that you previously listed, locate the libraries associated with that table.

| Reporting Table | Library |
|---|---|
| | |
| | |
| | |

5. What is the purpose of a report group?

Task 2

1. Complete the following table for the *1SIP-001* report shipped with SAP ERP.

| Requirement | Values |
|---|---|
| Report | *1SIP-001* |
| Reporting table | |
| Library | |
| Report group | |

Unit 1
Solution 2

13

# Understand the Relationship Between the Report Components

**Business Example**

There are many reporting tables available to choose from, and the Report Painter is used in a variety of applications. Using the CCSS table, you need to create reports in the Report Painter to address the internal reporting needs in Management Accounting.

Task 1

Explain the relationship between the reporting table, library, report group, and report.

1. What is the purpose of a reporting table?

   a) A reporting table contains a list of characteristics, basic key figures, and key figures that can be used to create a report library. These characteristics and basic key figures are the data fields accumulated for your application area.

2. Name some reporting tables in SAP ERP and the applications for which these reporting tables are created.

| Reporting Table | Description |
|---|---|
| | |
| | |
| | |

   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Utilities* → *Catalog* → *Reports* or run the `GR3L` transaction.

   b) On the *Directory: Report* screen, from the input help of the *Table* field, point out the following entries:

| Reporting Table | Description |
|---|---|
| *CCSS* | Report Table for Overhead Cost Controlling |
| *GLPCT* | EC-PCA: Totals Table |
| *KKBC* | Report Table for Cost Object Controlling CO Object |
| *S001* | SIS: Customer Statistics |

3. What is the purpose of a library?

   a) A library is a subset of the fields in a reporting table. It can be used to create a precise list of characteristics, basic key figures, and key figures for which you are reporting.

Users are authorized to use libraries. Therefore, libraries can be used to restrict user access to certain data.

In addition, libraries can also be used to organize reports by their content.

4. For one of the reporting tables in SAP ERP that you previously listed, locate the libraries associated with that table.

| Reporting Table | Library |
|---|---|
| | |
| | |
| | |

a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Utilities* → *Catalog* → *Reports* or run the `GR3L` transaction.

b) On the *Directory: Report* screen, from the input help of the *Library* field, point out the following entries:

| Reporting Table | Library |
|---|---|
| *CCSS* | *1VK, 1AB* |
| *GLPCT* | *8A0, 8A1, 8A2* |
| *KKBC* | *7K0, 7KC, 7KE* |

5. What is the purpose of a report group?

a) A report group helps a user to group similar reports in order to enhance performance. When reports contain the same characteristics and share the same data, the data is selected faster and processing time is shorter. This is because the report data is selected only once for all reports in the group, as compared to individual selection for each report.

### Task 2

1. Complete the following table for the *1SIP-001* report shipped with SAP ERP.

| Requirement | Values |
|---|---|
| Report | *1SIP-001* |
| Reporting table | |
| Library | |
| Report group | |

a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Utilities* → *Catalog* → *Reports* or run the `GR3L` transaction.

b) On the *Directory: Report* screen, enter **`1SIP-001`** in the *Report* field.

c) Choose (*Execute*) or choose *Program* → *Execute*.

d) Choose (*Execute*) again.

e) On the *Cost Centers: Actual/Plan/Variance: Selection* screen, choose *Environment* → *Technical Information* to read the technical information.

f) In the *Technical Information for Report Group 1SIP* dialog box, choose *Continue*.

g) The report *1SIP-001* has the following requirements and values:

| Requirement | Values |
|---|---|
| Report | *1SIP-001* |
| Reporting table | *CCSS* |
| Library | *1VK* |

## LESSON SUMMARY

You should now be able to:

- List the Report Writer components and the relationship between them

# 17 Configuring the Report Writer Components

## LESSON OVERVIEW

This lesson explains how to configure and edit the Report Writer components.

### Business Example

You work as a financial consultant. Your organization needs you to create the Cost Center Accounting reports using Report Writer. For this reason, you require the following knowledge:

- An understanding of library maintenance

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Configure the Report Writer components

## Library Maintenance

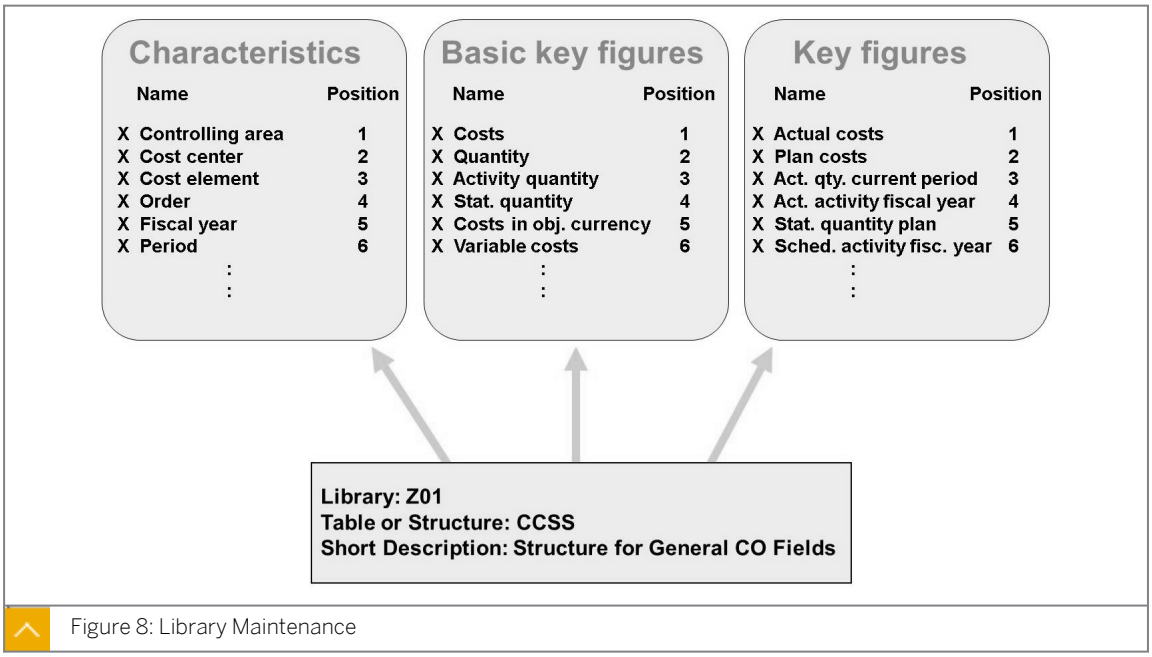



Figure 8: Library Maintenance

When a library is maintained, the position you assign to the characteristics, basic key figures, and key figures determines the order in which they appear on the report.

### How to Configure the Report Writer Libraries and Directories

1. Create a library.

a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report Writer* → *Library* → *Create.*

b) Enter **ZRP** in the *Library* field.

c) Enter **CCSS** in the *Table* field.

d) On the *Create Library: Initial* screen, choose the *Characteristics* pushbutton.

e) On the *Create Library: Characteristics* screen, perform the following tasks:

   a) Select the following characteristics:

      - *KOSTL*
      - *KSTAR*
      - *PERBL*
      - *STAGR*

   b) Choose the *Basic key figures* pushbutton.

f) On the *Create Library: Basic Key Figures* screen, perform the following tasks:

   a) Select the following key figures:

      - *SWKG*
      - *SMEG*
      - *SSME*

   b) Choose the *Key figures* pushbutton.

   c) Select the following key figures:

      - *ISWKG*
      - *ISMEG*
      - *ISSME*
      - *PSWKG*
      - *PSMEG*
      - *PSSME*

g) Save the library.

Note:
The *VALUTYP* characteristic is set automatically.

# Unit 1
# Exercise 3

## Create a Library

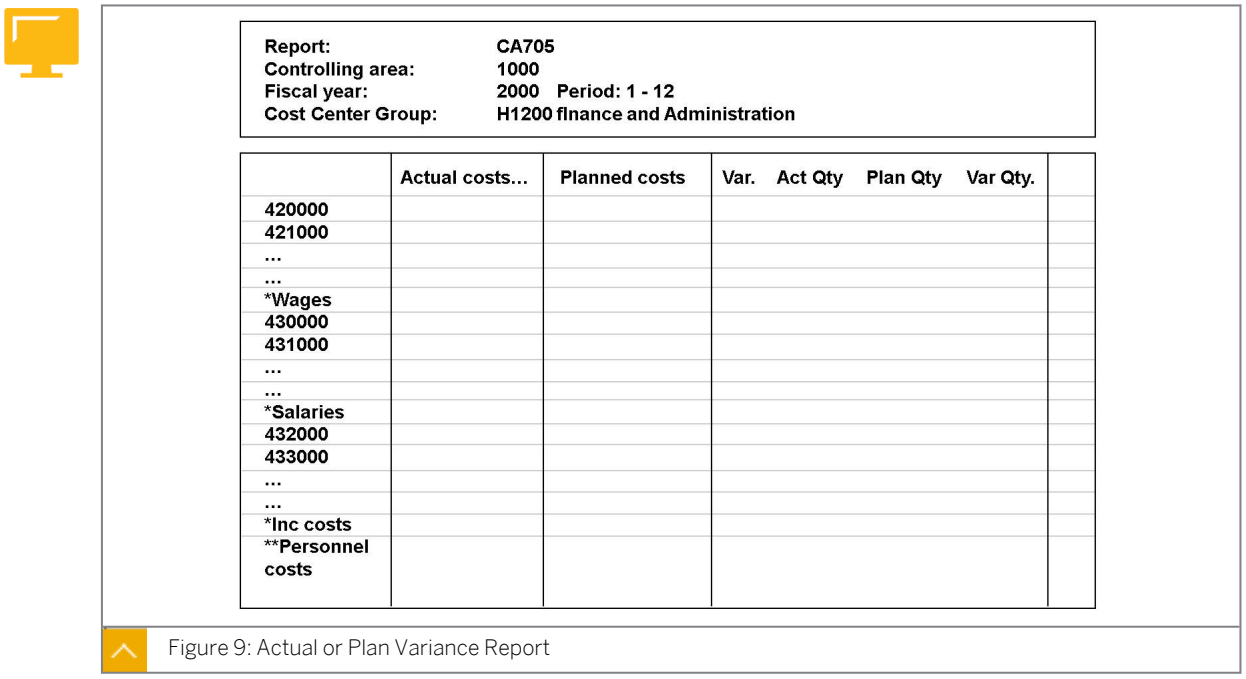
19

### Business Example

Using the CCSS table, you need to create the Report Painter reports to address the internal reporting needs in Management Accounting.

Configure the Report Writer components.

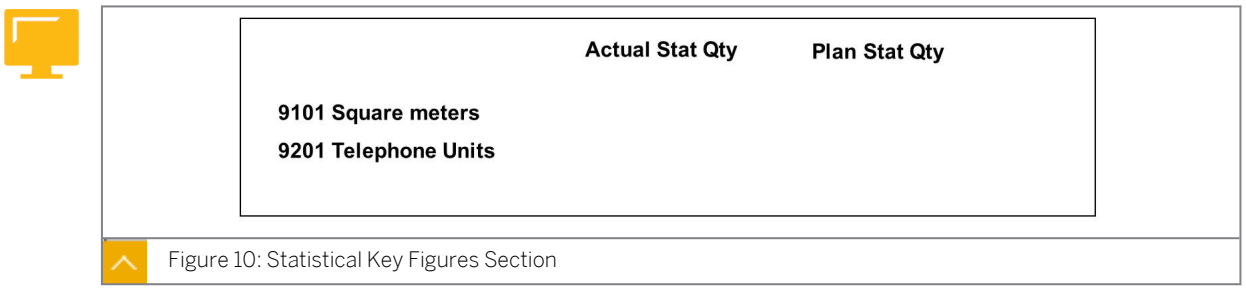
1. Create library **Z## (##** is your two-digit group number) with description **CA705 group ##**. As a template, use library **1VK**. Delete the selections for all the key figures and for all of the basic key figures. Note the characteristics, basic key figures, and key figures of the following report:



**Report:** CA705
**Controlling area:** 1000
**Fiscal year:** 2000 Period: 1 - 12
**Cost Center Group:** H1200 finance and Administration

| | Actual costs... | Planned costs | Var. | Act Qty | Plan Qty | Var Qty. | |
|---|---|---|---|---|---|---|---|
| 420000 | | | | | | | |
| 421000 | | | | | | | |
| ... | | | | | | | |
| ... | | | | | | | |
| *Wages | | | | | | | |
| 430000 | | | | | | | |
| 431000 | | | | | | | |
| ... | | | | | | | |
| ... | | | | | | | |
| *Salaries | | | | | | | |
| 432000 | | | | | | | |
| 433000 | | | | | | | |
| ... | | | | | | | |
| ... | | | | | | | |
| *Inc costs | | | | | | | |
| **Personnel costs | | | | | | | |

Figure 9: Actual or Plan Variance Report



| | Actual Stat Qty | Plan Stat Qty |
|---|---|---|
| 9101 Square meters | | |
| 9201 Telephone Units | | |

Figure 10: Statistical Key Figures Section

Position the characteristics, basic key figures, and key figures in the order assigned.

# Create a Library

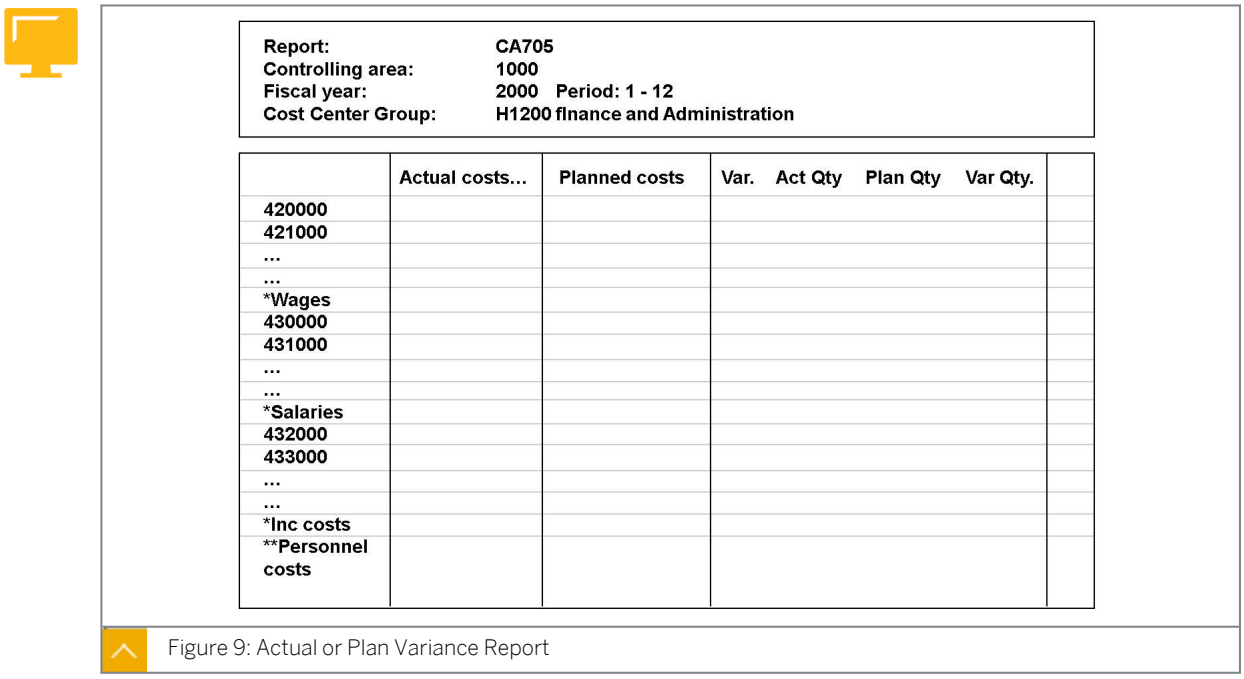
20

### Business Example

Using the CCSS table, you need to create the Report Painter reports to address the internal reporting needs in Management Accounting.

Configure the Report Writer components.

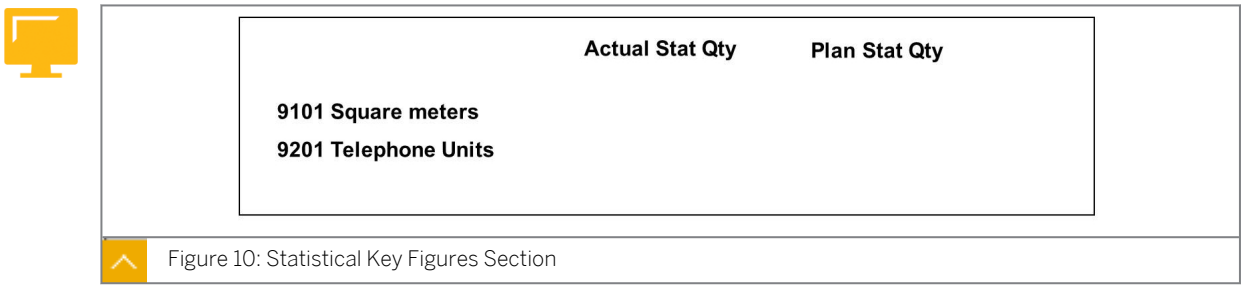
1. Create library **Z## (##** is your two-digit group number) with description **CA705 group ##**. As a template, use library **1VK**. Delete the selections for all the key figures and for all of the basic key figures. Note the characteristics, basic key figures, and key figures of the following report:



| | |
|---|---|
| Report: | CA705 |
| Controlling area: | 1000 |
| Fiscal year: | 2000 Period: 1 - 12 |
| Cost Center Group: | H1200 finance and Administration |

| | Actual costs... | Planned costs | Var. | Act Qty | Plan Qty | Var Qty. | |
|---|---|---|---|---|---|---|---|
| 420000 | | | | | | | |
| 421000 | | | | | | | |
| ... | | | | | | | |
| ... | | | | | | | |
| *Wages | | | | | | | |
| 430000 | | | | | | | |
| 431000 | | | | | | | |
| ... | | | | | | | |
| ... | | | | | | | |
| *Salaries | | | | | | | |
| 432000 | | | | | | | |
| 433000 | | | | | | | |
| ... | | | | | | | |
| ... | | | | | | | |
| *Inc costs | | | | | | | |
| **Personnel costs | | | | | | | |

Figure 9: Actual or Plan Variance Report



| | Actual Stat Qty | Plan Stat Qty |
|---|---|---|
| 9101 Square meters | | |
| 9201 Telephone Units | | |

Figure 10: Statistical Key Figures Section

Position the characteristics, basic key figures, and key figures in the order assigned.

a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report Writer* → *Library* → *Create* or run the `GR21` transaction.

b) On the *Create Library: Initial* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |
| *Table* | <Leave it blank> |

c) On the *Copy from* pane, enter **1VK** in the *Library* field.

d) Choose *Continue* or press ENTER.

e) On the *Create Library: Header* screen, perform the following tasks:

a) Enter **CA705 Group ##** in the *Description* field.

b) Choose the *Key figures* pushbutton.

f) On the *Create Library: Key Figures* screen, perform the following tasks:

a) Choose *Edit* → *Deselect all* or choose  (*Deselect all*) to deselect all the key figures.

b) Choose the *Basic key figures* pushbutton.

g) On the *Create Library: Basic Key Figures* screen, perform the following tasks:

a) Choose *Edit* → *Deselect all* or choose  (*Deselect all*) to deselect all the basic key figures.

b) Choose the *Characteristics* pushbutton.

h) On the *Create Library: Characteristics* screen, choose *Edit* → *Deselect all* or choose  (*Deselect all*) to deselect all the characteristics.

i) Select the *Controlling area (KOKRS)*, *Cost center (KOSTL)*, *Cost elements (KSTAR)*, *Fiscal year (GJAHR)*, *Period (PERBL)*, *Value type (WRTTP)*, *Version (VERSN)*, *Statistical key figures (STAGR)*, and *Valuation (VALUTYP)* characteristics.

j) Arrange these characteristics in an order by giving them position numbers 1-9.

k) On the *Create Library: Characteristics* screen, choose the *Basic key figures* pushbutton.

l) Select the *Costs (SWKG)*, *Quantities (SMEG)*, and *Stat qty (SSME)* basic key figures.

m) Arrange these basic key figures in an order by giving them position numbers 1-3.

n) On the *Create Library: Basic Key Figures* screen, choose the *Key figures* pushbutton.

o) Select the *Actual costs (ISWKG)*, *Actual qty (ISMEG)*, *Actual stat qty (ISSME)*, *Plan costs (PSWKG)*, *Plan qty (PSMEG)*, and *Plan stat qty (PSSME)* key figures.

p) Arrange these key figures in the order in which they are listed in the table by giving them position numbers 1-6.

q) Save the library.

## LESSON SUMMARY

You should now be able to:

- Configure the Report Writer components

# Learning Assessment

23

1. _____ and _____ are menu-driven tools that help a user compile lists.

   *Choose the correct answers.*

   - ☐ **A** The Report Painter
   - ☐ **B** QuickViewer
   - ☐ **C** Report Writer
   - ☐ **D** SAP Query

2. Creating reports with the Report Painter requires a familiarity with the set concept of Report Writer.

   *Determine whether this statement is true or false.*

   - ☐ True
   - ☐ False

3. The _____provided by SAP ERP is an online information system featuring user-friendly functions that help navigate data.

   *Choose the correct answer.*

   - ☐ **A** Report Painter
   - ☐ **B** Drilldown reporting facility
   - ☐ **C** Report Writer
   - ☐ **D** Logistics Information System (LIS)

4. What are the three main uses of the graphical user interface (GUI) of the Report Painter?

   _____

   _____

   _____

5. The data in Logistics Information System (LIS) is analyzed using standard and flexible analyses.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

6. Report Writer represents the interface between a user and the Report Painter.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

7. A Report Writer library is a collection of characteristics, basic key figures, and key figures that are selected from the entries in a Report Painter table.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

8. A characteristic is a numeric field.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

9. The _____ contains all of the fields that can be used to compile a report.

   *Choose the correct answer.*

   ☐ A library

   ☐ B reporting table

   ☐ C characteristic

   ☐ D key figure

10. A basic key figure is a numeric field.

    *Determine whether this statement is true or false.*

    ☐ True

    ☐ False

11. When a library is maintained, the position you assign to the characteristics, basic key figures, and key figures determines the order in which they appear on the report.

    *Determine whether this statement is true or false.*

    ☐ True

    ☐ False

12. The description for the _____ table is report table for Overhead Cost Controlling.

    *Choose the correct answer.*

    ☐ **A** GLPCT

    ☐ **B** KKBC

    ☐ **C** S001

    ☐ **D** CCSS

# Learning Assessment - Answers

26

1. _____ and _____ are menu-driven tools that help a user compile lists.

   *Choose the correct answers.*

   - [ ] A The Report Painter
   - [x] B QuickViewer
   - [ ] C Report Writer
   - [x] D SAP Query

2. Creating reports with the Report Painter requires a familiarity with the set concept of Report Writer.

   *Determine whether this statement is true or false.*

   - [ ] True
   - [x] False

3. The _____provided by SAP ERP is an online information system featuring user-friendly functions that help navigate data.

   *Choose the correct answer.*

   - [ ] A Report Painter
   - [x] B Drilldown reporting facility
   - [ ] C Report Writer
   - [ ] D Logistics Information System (LIS)

4. What are the three main uses of the graphical user interface (GUI) of the Report Painter?

   The graphical user interface of the Report Painter can be used to define planning layouts, drilldown reports, and Report Writer reports.

5. The data in Logistics Information System (LIS) is analyzed using standard and flexible analyses.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

6. Report Writer represents the interface between a user and the Report Painter.

   *Determine whether this statement is true or false.*

   - [ ] True
   - [X] False

7. A Report Writer library is a collection of characteristics, basic key figures, and key figures that are selected from the entries in a Report Painter table.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

8. A characteristic is a numeric field.

   *Determine whether this statement is true or false.*

   - [ ] True
   - [X] False

9. The _____ contains all of the fields that can be used to compile a report.

   *Choose the correct answer.*

   - [ ] A library
   - [X] B reporting table
   - [ ] C characteristic
   - [ ] D key figure

10. A basic key figure is a numeric field.

    *Determine whether this statement is true or false.*

    - [X] True
    - [ ] False

11. When a library is maintained, the position you assign to the characteristics, basic key figures, and key figures determines the order in which they appear on the report.

    *Determine whether this statement is true or false.*

    - [X] True
    - [ ] False

12. The description for the _____ table is report table for Overhead Cost Controlling.

    *Choose the correct answer.*

    - [ ] A GLPCT
    - [ ] B KKBC
    - [ ] C S001
    - [X] D CCSS

# UNIT 2 Creating Reports Using Report Painter



**UNIT OBJECTIVES**

- Define the structure of a Report Painter report including rows, columns, and general data selections
- Generate and execute a report
- Use hierarchies to subtotal reports
- Use hierarchies to sort reports
- Use variables for report definition
- Enter text in reports

Unit 2
Lesson 1

# Creating Basic Report Painter Reports

30

## LESSON OVERVIEW

This lesson describes the structure of a Report Painter report and explains how to structure a Report Painter report. The lesson also explains how to define rows, columns, and general data in a Report Painter.

Demonstrate how to create a basic report when you explain how to define rows, columns, and general data selections.

### Business Example

You work as a financial consultant for an organization. You are a member of a project team and are responsible for creating reports using Report Painter and Report Writer. The management of your organization wants to know how much each cost center spends toward each account. To present the details of each cost center to your management, you need to create a report using Report Painter. For this reason, you require the following knowledge:

- An understanding of how to define the structure of a Report Painter report
- An understanding of how to define rows and columns in a Report Painter report
- An understanding of how to define general data selections in a Report Painter report

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Define the structure of a Report Painter report including rows, columns, and general data selections

## Basic Report Structures

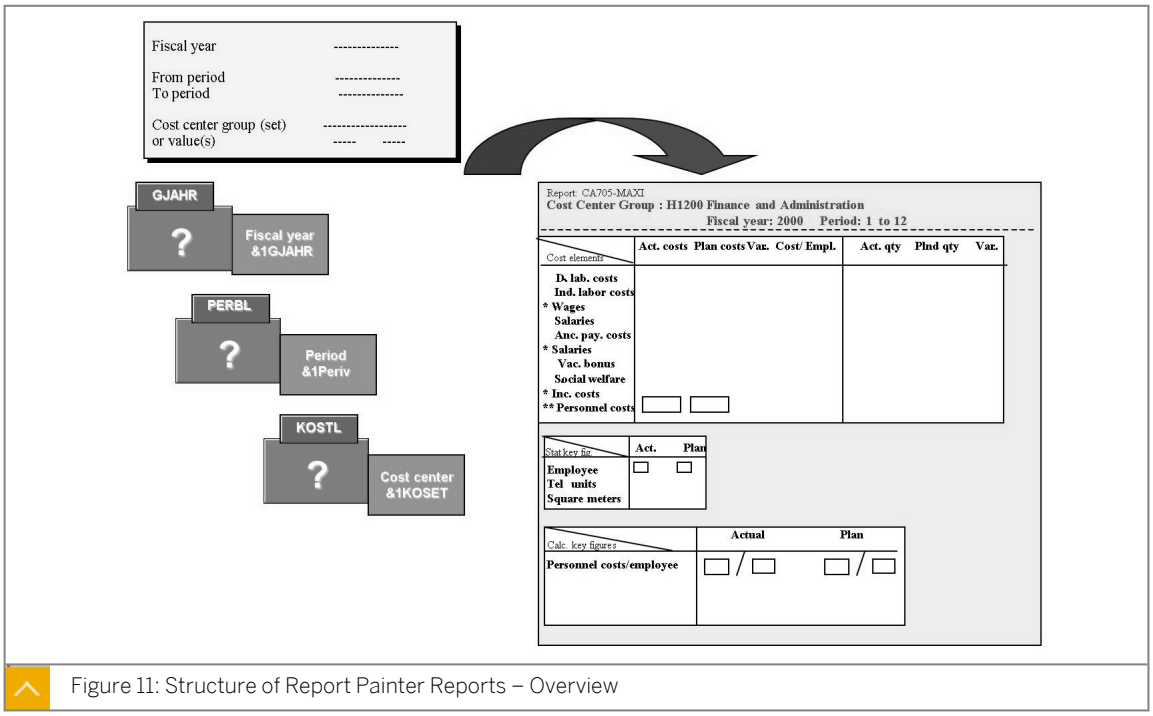



Figure 11: Structure of Report Painter Reports – Overview

The figure shows an overview of the structure of a Report Painter report.

### Report Structure

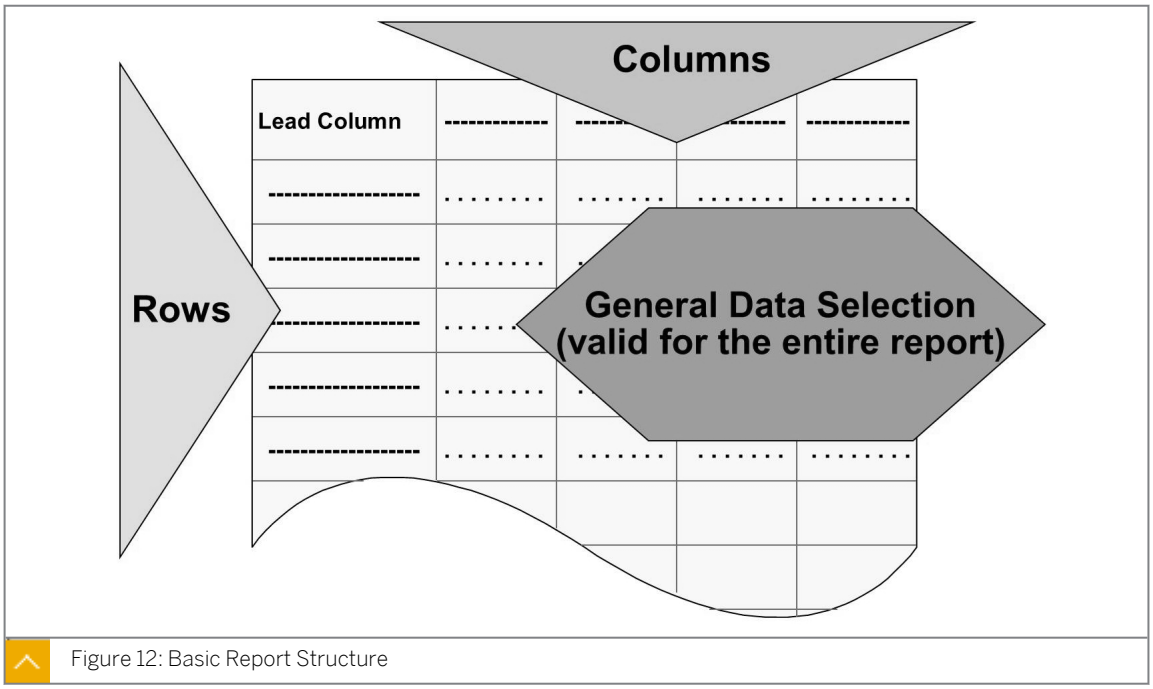



Figure 12: Basic Report Structure

To define a report, you must determine the row and column structure and the general data selection criteria.

## Report Painter Report Structures

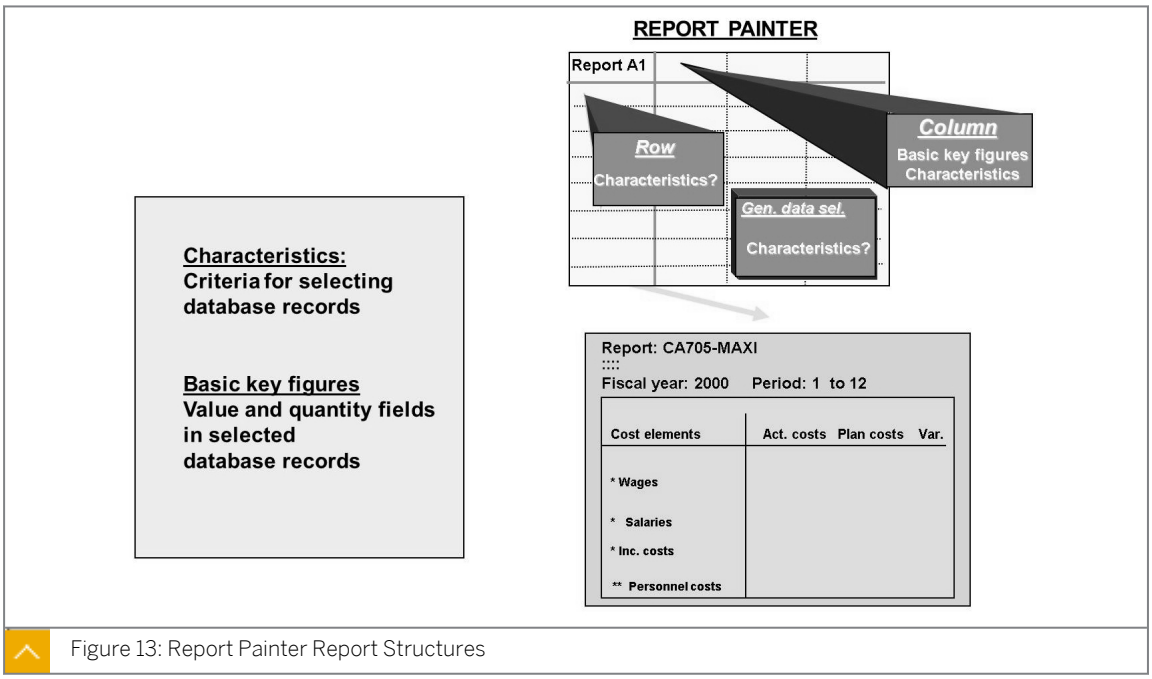



Figure 13: Report Painter Report Structures

Discuss the concepts of "characteristics" and "basic key figures" in detail because these concepts are essential for understanding the report definition.

Using the Report Painter, you can enter rows, columns, and general selection criteria.

The rows contain characteristic values or groups of values.

The columns contain basic key figures, such as costs or quantities, you also can enter characteristic values for key figures, which are combinations of basic key figures and characteristic values such as planned costs or actual quantities.

You define general data selections by entering characteristic values that are valid throughout the report.

### Row and Column Definition

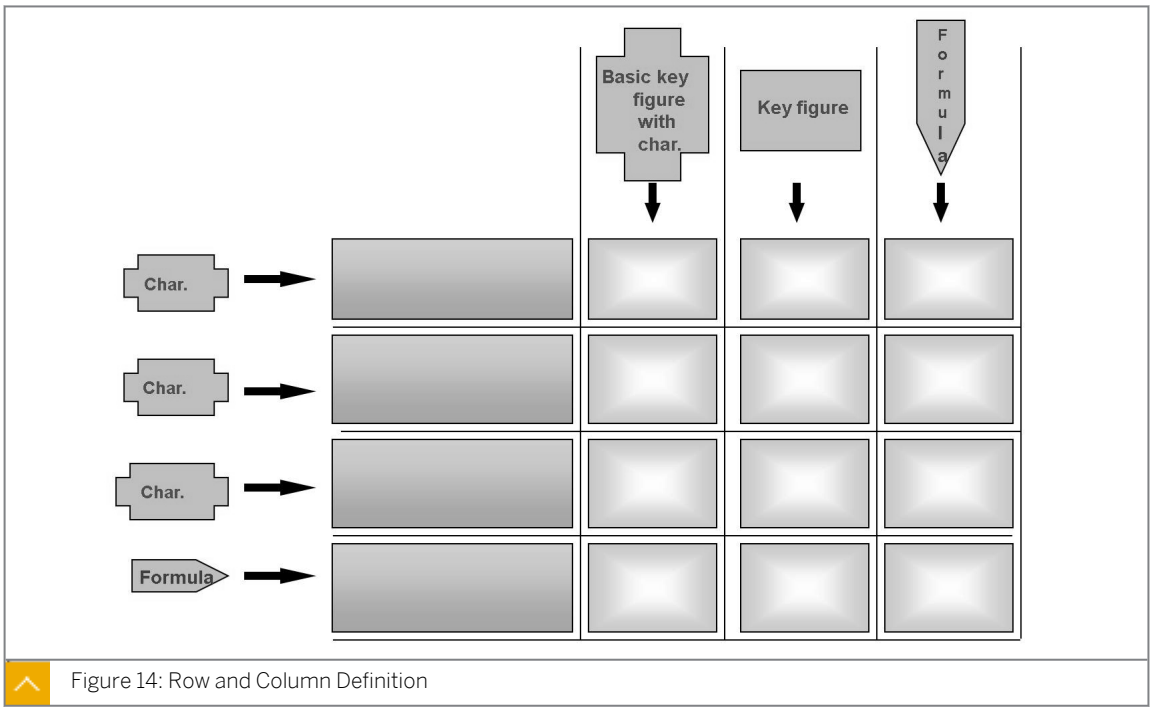



Figure 14: Row and Column Definition

Explain how rows and columns are defined, using the example shown in the figure as a reference.

To define a row, you can use either a combination of characteristic values or a formula.

Columns contain a combination of a key figure and optional restricting characteristic values. You can also use predefined columns to display business-relevant combinations of key figures and characteristics, such as actual costs in the current period and planned activity.

### Row Definition

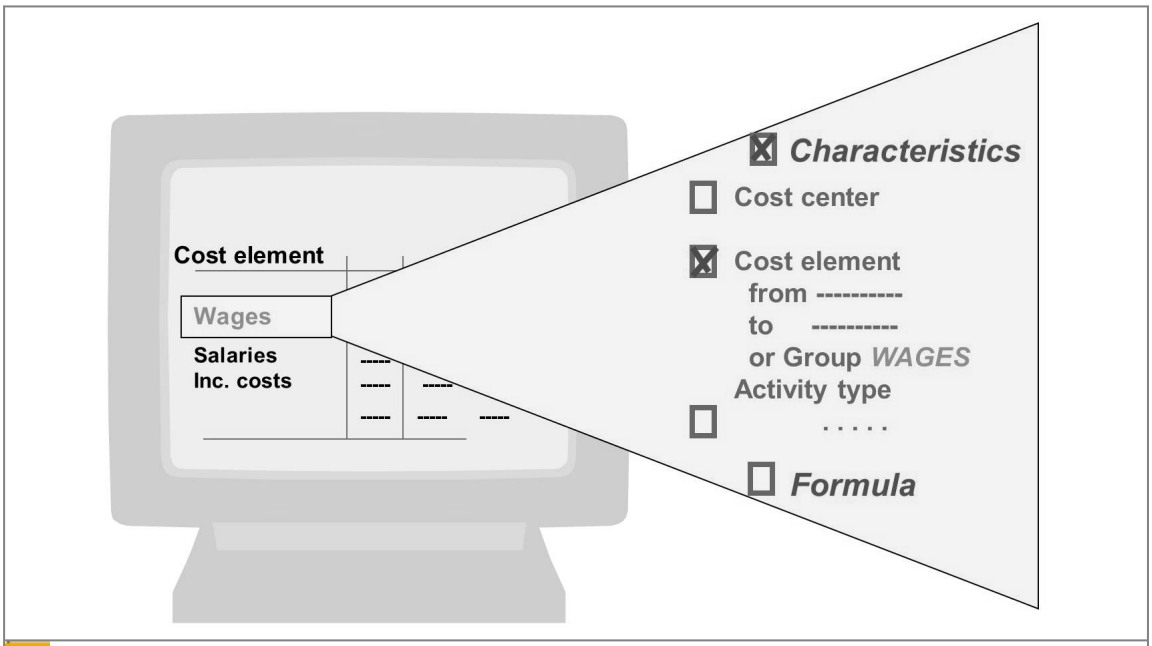



Figure 15: Row Definition

To define rows, select the characteristics you want to display in the rows and enter the appropriate values. You can enter specific values, intervals of values, or a group created in the master data maintenance.

### Formula Rows

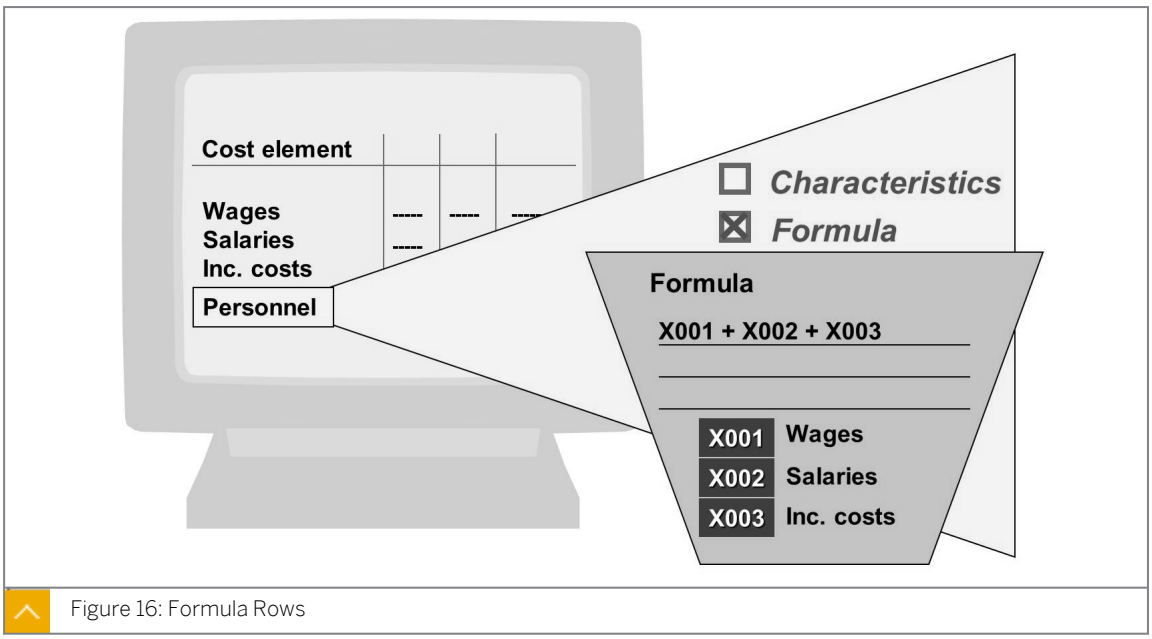



Figure 16: Formula Rows

Yu use the formula editor to define formula rows. The formulas refer to other rows in the same section, and to cells you have selected in the report.

### Use of Key Figures

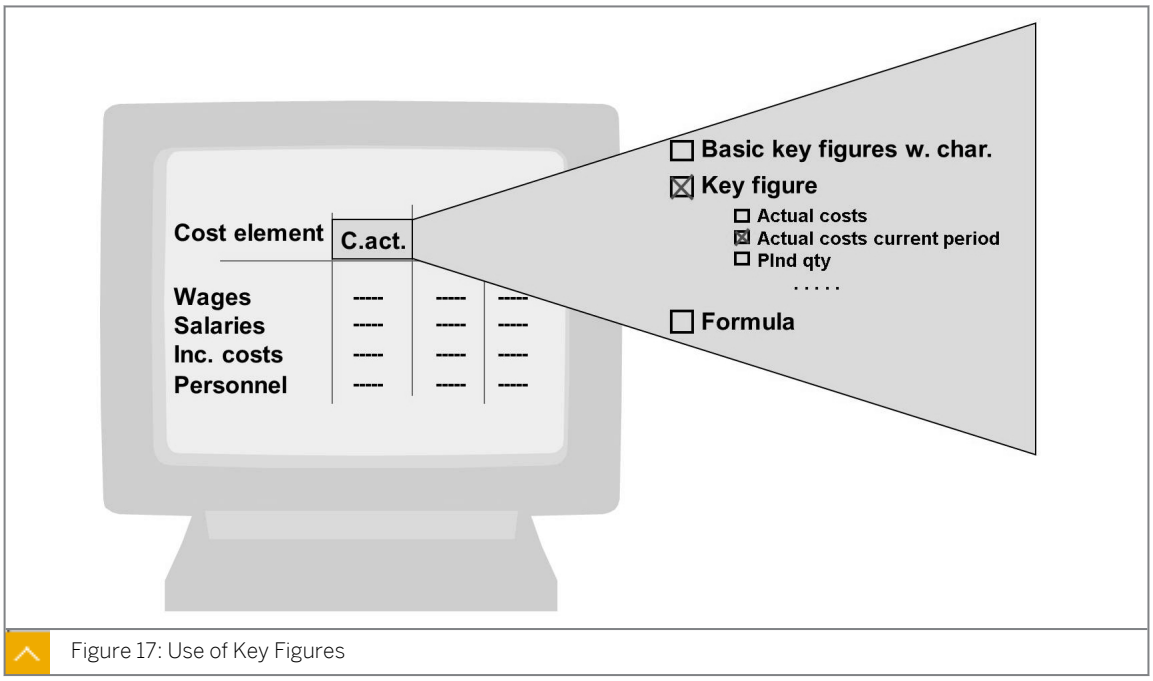



Figure 17: Use of Key Figures

SAP delivers various predefined columns for libraries in Overhead Cost Management. You can copy these predefined columns directly into your reports and then modify them as necessary.

### Single Column

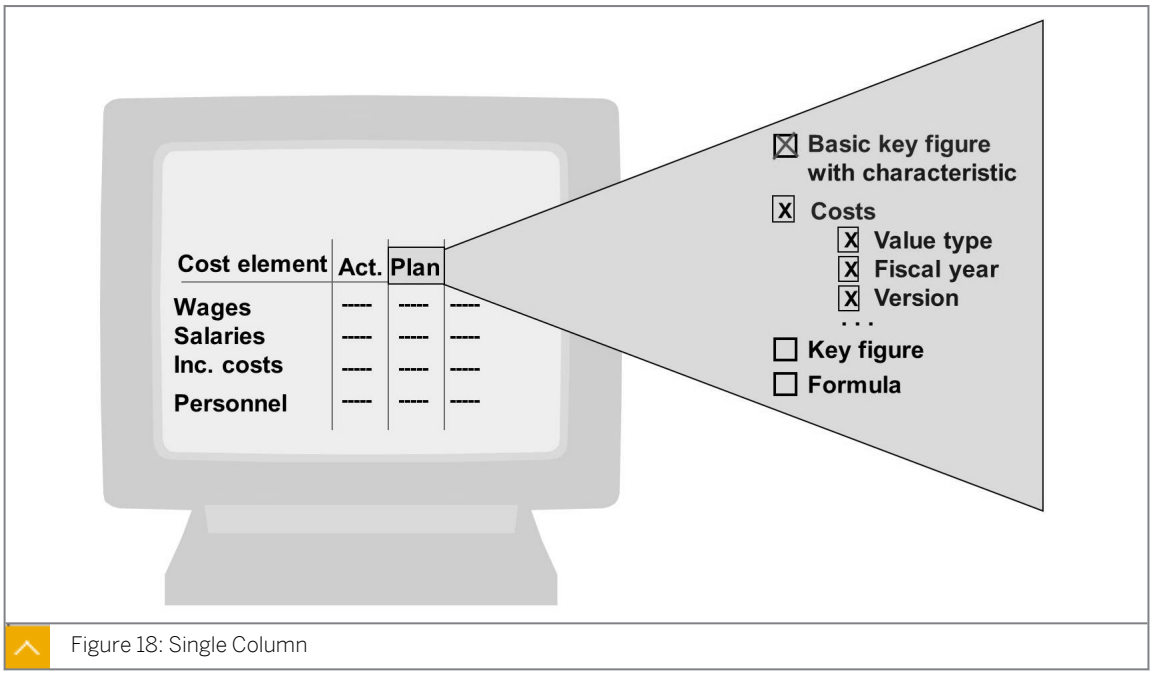



Figure 18: Single Column

To define a column, you combine a single key figure with characteristics.

To restrict the characteristics, you enter signle values, intervals, or groups, as in report rows.

### Formula Columns

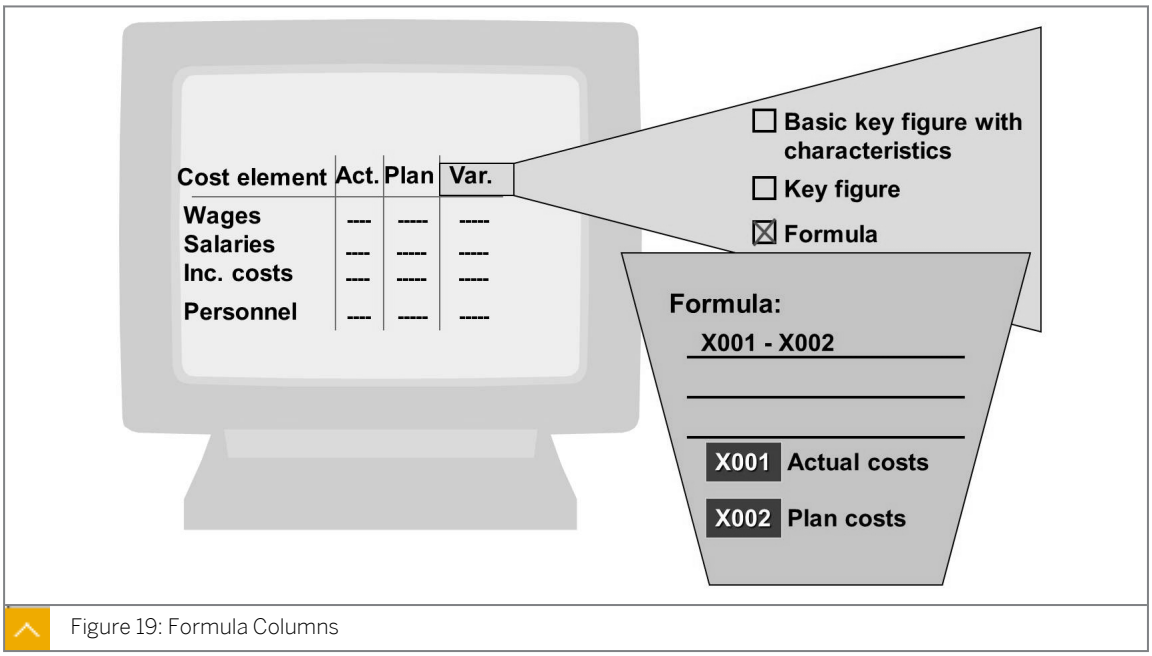



Figure 19: Formula Columns

Using the formula editor, you can calculate additional columns in a section. The formulas used refer to other columns in the same section or to cells you have selected in the report.

### Data Restriction in Reports

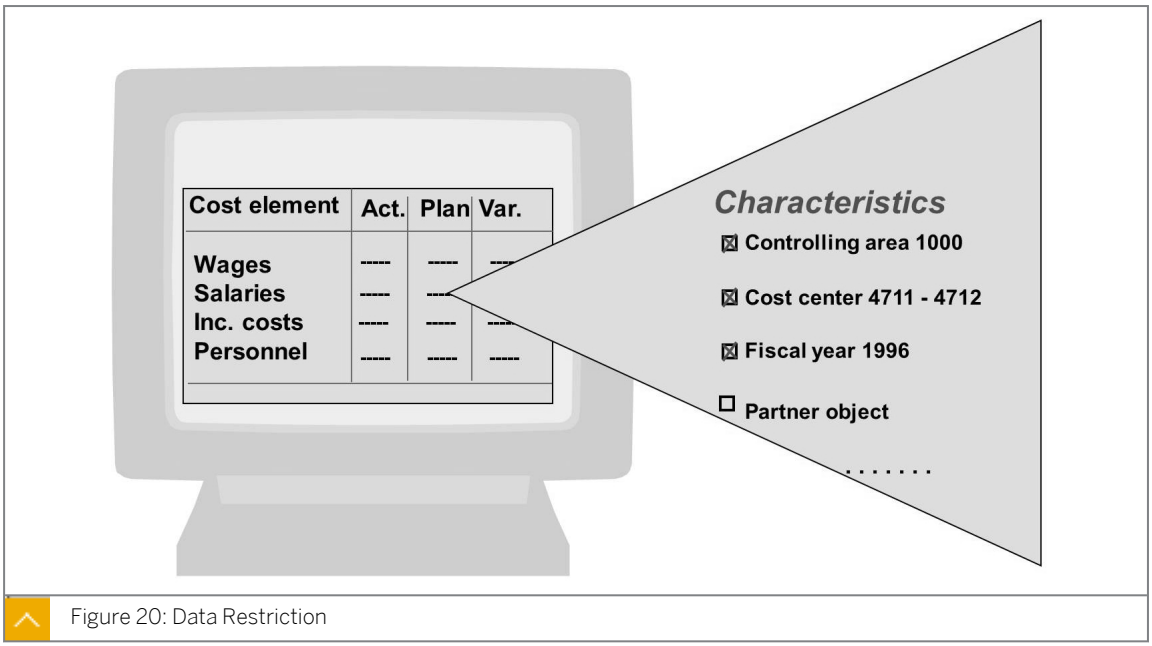



Figure 20: Data Restriction

In the general data selection you enter characteristics the values of which restrict the data processed in the entire report. For example you can define that the report outputs values for a specific range of cost centers or a specific plan version. You can also define that entries are variable so the user executing the report will enter the valid value in the report selection screen. For example setting the fiscal year charateristic as variable will allow the user to select the fiscal year when executing the report.

**How to Create and Execute a Basic Report Painter Report**

Demonstrate the steps listed in the Build a Report with a Total Row exercise.

# 37 Build a Report with a Total Row

### Business Example

The management wants you to create a report that shows how actual cost center costs compare to planned costs, and the resulting variances for the current year. To create the report, you need to use Report.

### Task

Create a report that contains the information shown in the following figure:

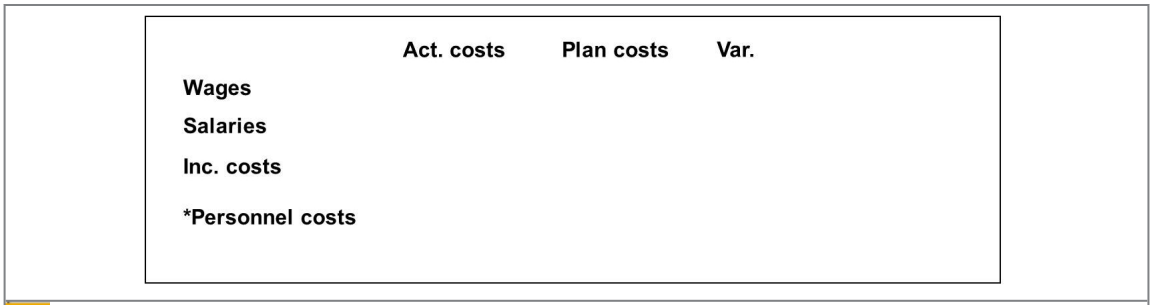



Figure 21: Report Layout

The general selection criteria throughout the report are the controlling area **1000**, the cost center group **H1010**, the current fiscal year, and the periods **1-12**.

1. Use the Report Painter to build the report. Name the report **Z1##-001**. Give a description - "Report with totals lines" and assign it to the **Z1##** report group. Create your report for your own library **Z##**.

   Note:
   Define column 1 using *Predefined key figure*. Define column 2 using *Key figure with characteristics*.

   Use the following cost element groups:

| Cost Element Group | Description |
|---|---|
| **OAS_WAGES** | *Wages* |
| **OAS_SALAR** | *Salaries* |
| **OAS_P_IMP** | *Inc. costs* |

2. Define rows.
3. Define row 4 – Formula (Total).

4. Define column 1 – Actual Costs.
5. Define column 2 – Plan Costs.
6. Define *column 3 – Formula* (**`Variance`**).
7. Define general data selections.
8. Check and save the report.

# 39 Build a Report with a Total Row

### Business Example

The management wants you to create a report that shows how actual cost center costs compare to planned costs, and the resulting variances for the current year. To create the report, you need to use Report.

### Task

Create a report that contains the information shown in the following figure:

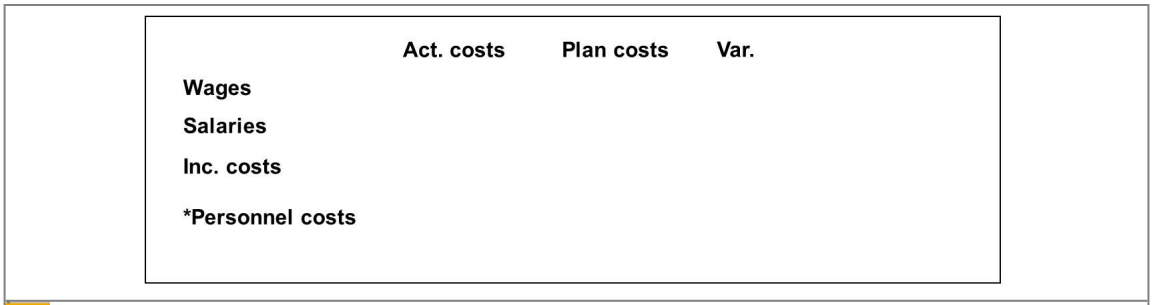



Figure 21: Report Layout

The general selection criteria throughout the report are the controlling area **1000**, the cost center group **H1010**, the current fiscal year, and the periods **1-12**.

1. Use the Report Painter to build the report. Name the report **Z1##-001**. Give a description - "Report with totals lines" and assign it to the **Z1##** report group. Create your report for your own library **Z##**.

> Note:
> Define column 1 using *Predefined key figure*. Define column 2 using *Key figure with characteristics*.

Use the following cost element groups:

| Cost Element Group | Description |
|---|---|
| **OAS_WAGES** | *Wages* |
| **OAS_SALAR** | *Salaries* |
| **OAS_P_IMP** | *Inc. costs* |

a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Create* or run the GRR1 transaction.

b) On the *Report Painter: Create Report* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |
| *Report* | **Z1##-001** |
| Description | **Rep. w. totals lines** |

c) Choose the *Create* pushbutton to access the report definition interface.

2. Define rows.

a) On the *Report Painter: Create Report* screen, double-click *Row 1*.

b) On the *Available characteristics* pane, choose *Cost Element*.

c) Choose  (*Move selected to left*).

d) On the *Selected characteristics* pane, select the *SET or Hierarchy node ON/OFF* checkbox.

e) Enter **OAS_WAGES** in the *From* field.

f) Choose *Enter*.

g) In the *Selection of set 2 Entries* dialog box, select the cost element group *OAS_WAGES* and choose *Enter*.

h) On the *Element definition: Row 1* screen, choose the *Confirm* pushbutton.

Note:
You have now defined *Row 1*. Define *Row 2* and *Row 3* in a similar way. Choose the element type *Characteristics* and the cost element groups *OAS_SALAR* and *OAS_P_IMP,* respectively.

3. Define row 4 – Formula (Total).

a) On the *Report Painter: Create Report* screen, double-click *Row 4*.

b) In the *Select element type* dialog box, select the *Formula* radio button.

c) Choose ✔ (*Confirm*) or press **ENTER**.

d) In the *Enter Formula* dialog box, define the *Total* row as *Y001 + Y002 + Y003*.

e) Choose ✔ (*Confirm*) or press **ENTER**.

f) In the *Text maintenance* dialog box, enter **Total** in the *Short* field.

g) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.

h) Choose ✔ (*Confirm*) or press **ENTER**.

4. Define column 1 – Actual Costs.

a) On the *Report Painter: Create Report* screen, double-click *Column 1*.

b) In the *Select element type* dialog box, select the *Predefined key figure* radio button.

c) Choose ✔ (*Confirm*) or press **ENTER**.

d) In the *Choose predefined column* dialog box, select the *Actual costs* radio button.

e) Choose ✔ (*Confirm*) or press **ENTER**.

f) In the *Element definition: Actual costs* screen, choose the *Confirm* pushbutton.

5. Define column 2 – Plan Costs.

a) On the *Report Painter: Create Report* screen, double-click *Column 2*.

b) In the *Select element type* dialog box, select the *Key figure with characteristics* radio button.

c) Choose ✔ (*Confirm*) or press **ENTER**.

d) On the *Element definition: Column 2* screen, enter **Costs** in the *Basic key figure* field.

e) In the *Selected characteristics* pane, enter the following data:

| Name | From |
|---|---|
| *Value Type* | **01** |
| *Version* | **0** |
| *Valuation* | **0** |

f) Choose (*Change Texts*).

g) In the *Text maintenance* dialog box, enter **Plan** in the *Short* field.

h) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.

i) Choose ✔ (*Confirm*) or press **ENTER**.

j) On the *Element definition: Plan* screen, choose the *Confirm* pushbutton.

6. Define *column 3 – Formula* (**Variance**).

a) On the *Report Painter: Create Report* screen, double-click *Column 3*.

b) In the *Select element type* dialog box, select the *Formula* radio button.

c) Choose ✔ (*Confirm*) or press **ENTER**.

d) In the *Enter Formula* dialog box, define the *Variance* column as *X001 - X002*.

e) Choose ✔ (*Confirm*) or press **ENTER**.

f) In the *Text maintenance* dialog box, enter **Variance** in the *Short* field.

g) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.

h) Choose ✔ (*Confirm*) or press **ENTER**.

7. Define general data selections.

a) On the *Report Painter: Create Report* screen, choose *Edit* → *Gen. data selection*.

b) On the *Element definition: General data selection* screen, move *CO Area*, *Fiscal Year*, *Period*, and *Cost Center* characteristics from the *Available characteristics* pane to the *Selected characteristics* pane.

c) On the *Selected characteristics* pane, enter the following data:

| Name | From | To |
|---|---|---|
| *CO Area* | **1000** | <Leave it blank> |
| *Fiscal Year* | Current fiscal year | <Leave it blank> |
| *Period* | **1** | **12** |
| *Cost Center* | **H1010** | <Leave it blank> |

d) Select the *SET or Hierarchy node ON/OFF* checkbox for *Cost Center*.

e) Choose the *Confirm* pushbutton.

8. Check and save the report.

a) To check the report for any errors, or missing characteristics, choose  (*Check*) or choose *Report* → *Check* You can also press **F6**.

b) Save the report.

## LESSON SUMMARY

You should now be able to:

- Define the structure of a Report Painter report including rows, columns, and general data selections

# Using Report Groups

44

**LESSON OVERVIEW**

This lesson explains how to generate and execute reports using report groups. The lesson also describes how to use variables for report definition.

**Business Example**

The management of the organization wants you to create a report that includes details of how much each cost center spends toward each account. You create this report using the Report Painter. The management wants you to group this report to a report group. To improve processing times, reports that read the same data are grouped together in report groups. The management wants you to assign the cost center spending report to a report group and generate and execute the report group. For this reason, you require the following knowledge:

- An understanding of how to use report groups to generate and execute reports
- An understanding of using variables for report definition

**LESSON OBJECTIVES**

After completing this lesson, you will be able to:

- Generate and execute a report

## Report Groups

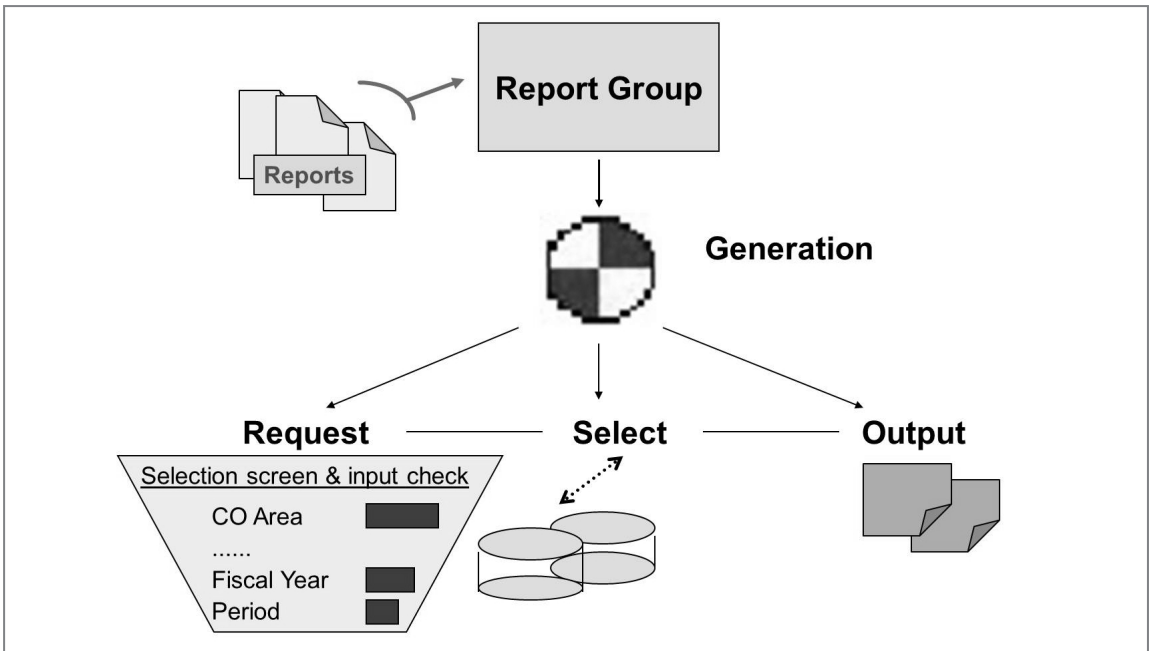



Figure 22: Report Generation and Execution

Briefly summarize the purpose and benefits of the concept of the report group.

A report must be included in a report group for the report to be output.

A report group is a collection of reports that is stored in a library and executed in one run. Combining several reports in a report group is useful when the reports evaluate the same dataset because the data is read once and then displayed in different reports.

It is not possible to process reports from different libraries in the same report group.

**How to Create and Execute a Report Group**

Demonstrate the steps based on the exercise Add a Report to a Report Group and Execute the Report.

Unit 2
Exercise 5

47

# Add a Report to a Report Group and Execute the Report

**Business Example**

The management wants you to create a report that displays cost center actual costs in comparison with planned costs and the resulting variances for the current year. You must use the Report Painter to create this report.

Assign the report to a report group and execute the report.

1. Assign the report to a report group.
2. Execute the report.
3. List the difference between a key figure and a basic key figure with characteristics.
4. What is the difference between generating and executing a report group?

# 48 Add a Report to a Report Group and Execute the Report

**Business Example**

The management wants you to create a report that displays cost center actual costs in comparison with planned costs and the resulting variances for the current year. You must use the Report Painter to create this report.

Assign the report to a report group and execute the report.

1. Assign the report to a report group.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change* .
   b) On the *Report Painter: Change Report* screen, select the *Z1##-001* report.
   c) Choose *Environment* → *Assign report group*.
   d) In the *Insert Report in Report Group* dialog box, enter **`Z1##`** in the *Report Group* field and choose ✔ (*Confirm*).
   e) In the *Create report group* dialog box, choose the *Yes* button to create the report group that is assigned to the Z## library.
   f) Save the report.
2. Execute the report.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Display*.
   b) On the *Report Painter: Display Report* screen, double-click *Z1##-001*.
   c) On the *Report Painter: Display Report* screen, choose the *Execute* pushbutton or choose *Report* → *Execute*.
   d) On the :*Selection* screen, choose the *Execute* pushbutton again.
3. List the difference between a key figure and a basic key figure with characteristics.
   a) A key figure has already been defined in SAP ERP by SAP or by another member of your reporting team. A basic key figure column with restricting characteristics is a column in which you define the column information dynamically.
4. What is the difference between generating and executing a report group?
   a) Generating a report group creates the ABAP code for the report. Executing the report group executes the ABAP code.

**LESSON SUMMARY**

You should now be able to:

- Generate and execute a report

# 50 Using Row Explosion

## LESSON OVERVIEW

This lesson explains how to explode report rows.

### Business Example

You work as a financial consultant for an organization. The management of your organization wants to know how much each cost center is spending toward each account. You have created this report using Report Painter. When defining these reports, you need to use hierarchy functions to subtotal the reports. For this reason, you require the following knowledge:

- An understanding of how to explode report rows

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use hierarchies to subtotal reports

## Row Explosion

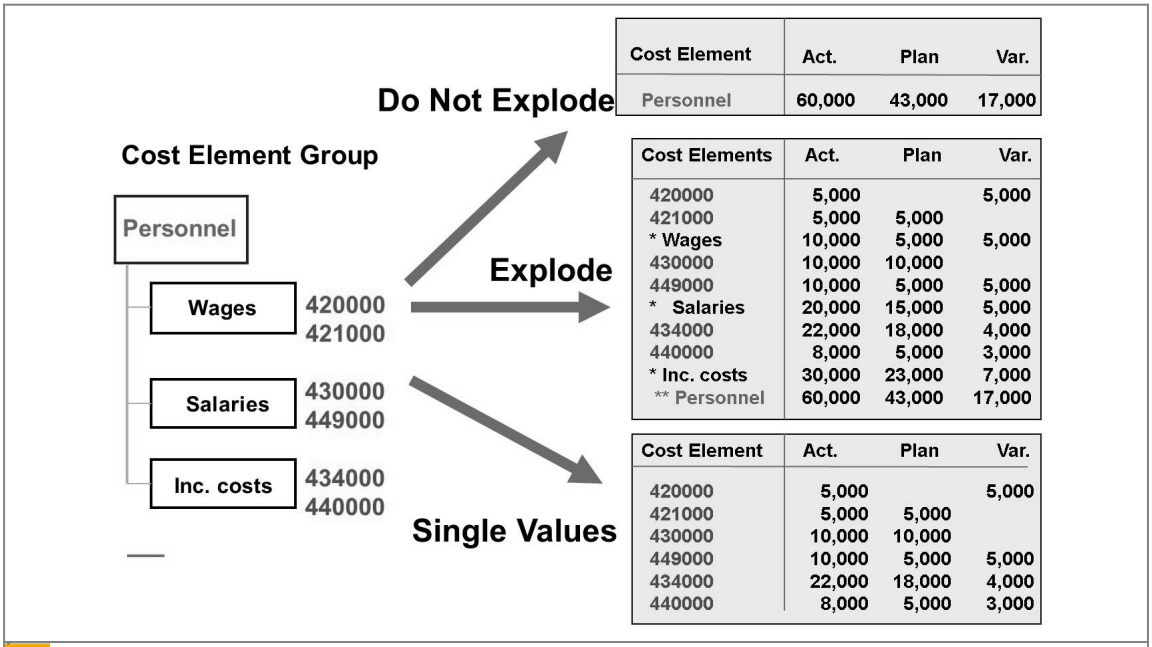



Figure 23: Report Rows Explosion

When selecting groups, ranges or several single values to define rows, you choose whether only a totals row is displayed, or if the complete group hierarchy with subtotals is exploded, or if each value is displayed in a seperate row. The system by default only displays those rows for which corresponding data exists.

**How to Explode Rows**

Demonstrate task 2 of exercise Use the Explode Row Function in a Report.

# Use the Explode Row Function in a Report

51

**Business Example**

The management wants you to create a report using hierarchy showing various criteria, such as period, cost elements, cost centers, and so on.

Analyze an existing hierarchy and use different explode options for your report.

## Task 1

Refer to the figure and answer the following questions:

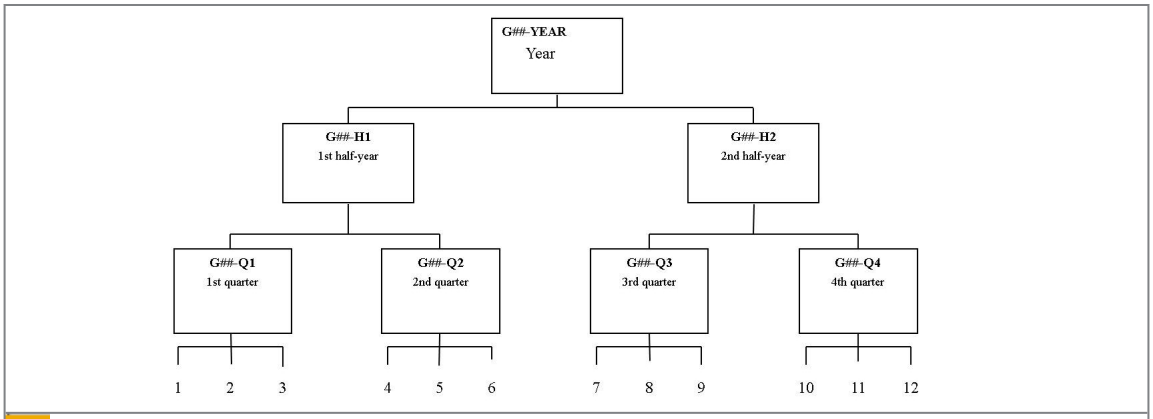



Figure 24: Period Hierarchy

1. When the hierarchy is used as a report, how does the report results screen appear when the explode level is set to Explode?
2. When the hierarchy is used as a report, how does the report results screen appear when the explode level is set to "do not explode"?
3. When the hierarchy is used as a report, how does the report results screen appear when the explode level is set to single values?

## Task 2

Create another report **`Z2##-001`** with the following structure:

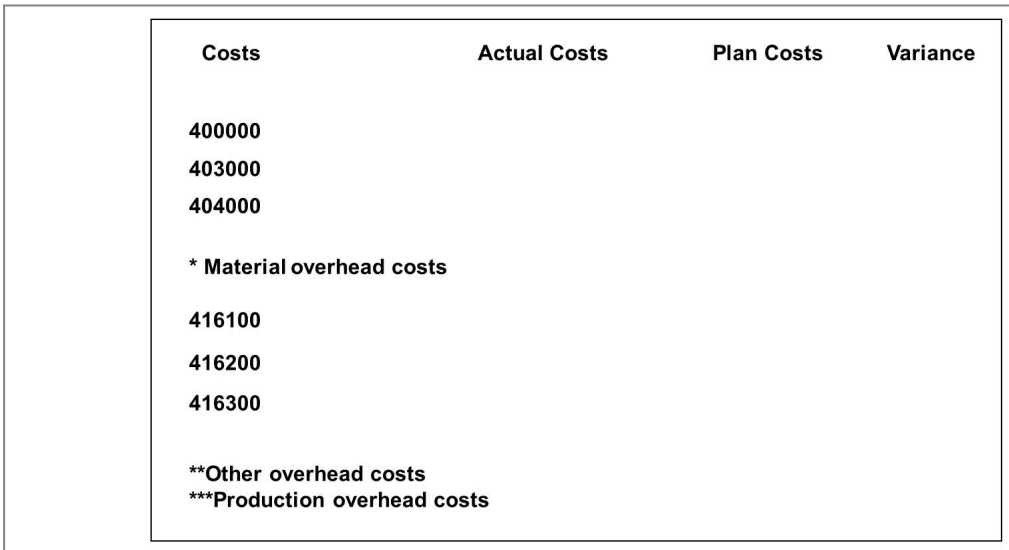



Figure 25: Overhead Cost Hierarchy

The general selection criteria throughout the entire report are controlling area **1000**, cost center group **H1010**, the current fiscal year, and periods **1**– **12**.

The cost element group **CA705_COST** contains all accounts, including the subtotals listed in this report. The report can contain automatic subtotals because cost element groups are used instead of row formulas. Use the appropriate explode level to obtain this row structure.

Name the report **Z2##-001** and assign it to report group **Z2##**. Use library **Z##**.

To define report Z2##-001, proceed as follows:

1. Define a report and name it as **Z2##-001**.
2. Define row.
3. Define column 1 – Actual Costs.
4. Define column 3 – Formula (Variance).
5. Define general data selections.
6. Check and save the report.
7. Assign the report to a report group.
8. Execute the report.
9. Modify your report to test the explode options and observe the changes in your report results.

# 53 Use the Explode Row Function in a Report

**Business Example**

The management wants you to create a report using hierarchy showing various criteria, such as period, cost elements, cost centers, and so on.

Analyze an existing hierarchy and use different explode options for your report.

**Task 1**

Refer to the figure and answer the following questions:

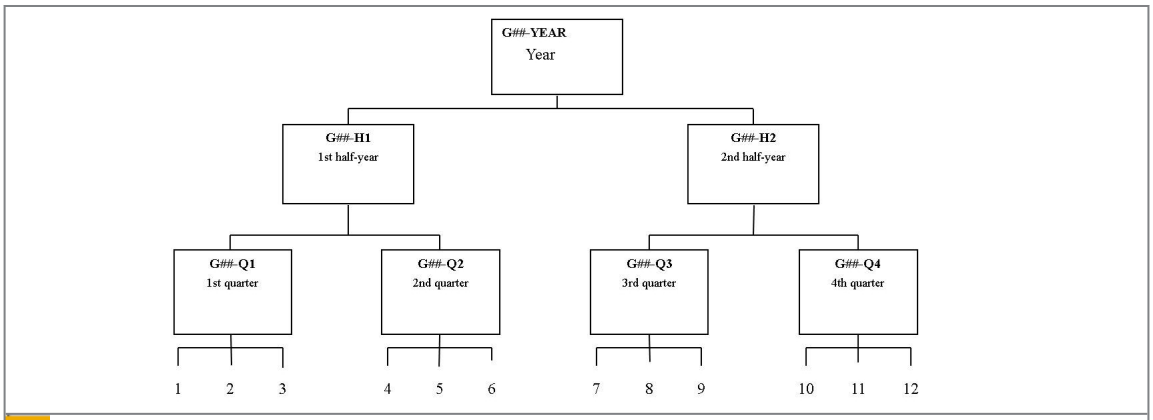



Figure 24: Period Hierarchy

1. When the hierarchy is used as a report, how does the report results screen appear when the explode level is set to Explode?

   a) 1
   2
   3
   *Q1
   4
   5
   6
   *Q2
   **First six months
   7
   8
   9
   *Q3
   10

11
12
*Q4
**Second six months
***Year

2. When the hierarchy is used as a report, how does the report results screen appear when the explode level is set to "do not explode"?
   a) Year
3. When the hierarchy is used as a report, how does the report results screen appear when the explode level is set to single values?
   a) 1
      2
      3
      ...
      10
      11
      12

### Task 2

Create another report **Z2##-001** with the following structure:

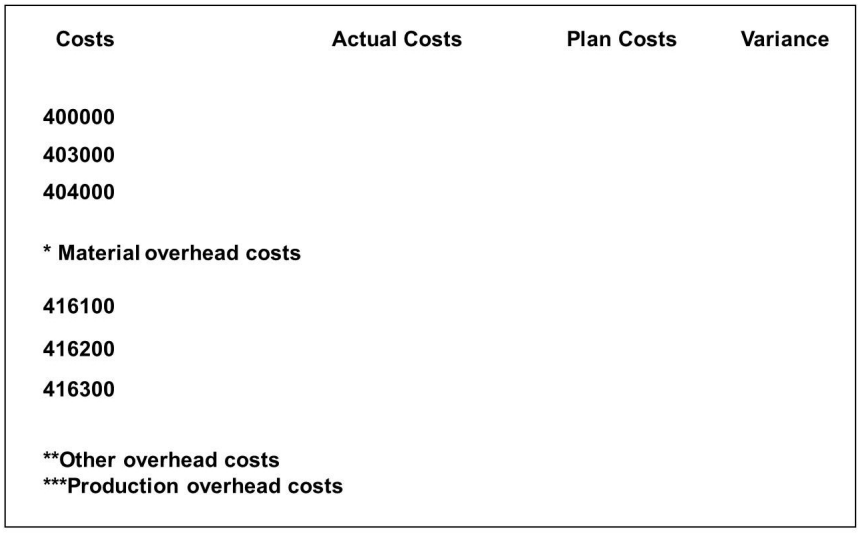



Figure 25: Overhead Cost Hierarchy

The general selection criteria throughout the entire report are controlling area **1000**, cost center group **H1010**, the current fiscal year, and periods **1** – **12**.

The cost element group **CA705_COST** contains all accounts, including the subtotals listed in this report. The report can contain automatic subtotals because cost element groups are used instead of row formulas. Use the appropriate explode level to obtain this row structure.

Name the report **Z2##-001** and assign it to report group **Z2##**. Use library **Z##**.

To define report Z2##-001, proceed as follows:

1. Define a report and name it as **Z2##-001**.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Create* or run the GRR1 transaction.
   b) On the *Report Painter: Create Report* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |
| *Report* | **Z2##-001** |
| Description | **Cost element group** |

   c) Choose the *Create* pushbutton to access the report definition interface.
2. Define row.
   a) On the *Report Painter: Create Report* screen, double-click *Row 1*.
   b) In the *Available characteristics* pane, choose *Cost Element*.
   c) Choose ◀ (*Move selected to left*).
   d) In the *Selected characteristics* pane, select the *SET or Hierarchy node ON/OFF* checkbox.
   e) Enter **CA705_COST** in the *From* field.
   f) Choose *Change Texts*.
   g) In the *Text maintenance* screen, enter **Costs** in the *Short* field.
   h) Choose the *Copy short text* button to copy the text to the *Medium* and *Long* fields and choose ✔ (*Confirm*) or press ENTER.
   i) Choose the *Confirm* button.
   j) Position the cursor on first row and enter **cost element group**.
   k) Choose *Edit* → *Rows* → *Explode*.
   l) In the *Explode characteristics* dialog box, select the *Expand* radio button for the *Cost Element*.
   m) Choose ✔ (*Confirm*) or press ENTER.
3. Define column 1 – Actual Costs.
   a) On the *Report Painter: Create Report* screen, double-click *Column 1*.
   b) In the *Select element type* dialog box, choose the *Predefined key figure* radio button.
   c) Choose ✔ (*Confirm*) or press ENTER.
   d) In the *Choose predefined column* dialog box, select the *Actual costs* radio button.
   e) Choose ✔ (*Confirm*) or press ENTER.

f) On the *Selected characteristics* pane, deselect the *Variable ON/OFF* checkbox and enter **0** in the *From* field for the *Valuation* entry.

> Note:
> "Create Report" screens show how the key figure is defined. These screens display the key figures and characteristics and their values used to define the key figure.

g) Choose the *Confirm* pushbutton.

> Note:
> You have now defined the first column. Define the second column in a similar way and name it as "Plan costs". Use the element type as *Predefined key figure* or define the column dynamically (*Version* **0**, *Valuation* **0**, *Value Type* **1**).

4. Define column 3 – Formula (Variance).
   a) On the *Report Painter: Create Report* screen, double-click *Column 3*.
   b) In the *Select element type* dialog box, select the *Formula* radio button and choose ✔ (*Confirm*) or press ENTER.
   c) In the *Enter Formula* dialog box, define the *Variance* column as *X001 - X002*.
   d) Choose ✔ (*Confirm*) or press ENTER.
   e) On the *Text maintenance* screen, enter *Variance* in the *Short* field.
   f) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.
   g) Choose ✔ (*Confirm*) or press ENTER.
5. Define general data selections.
   a) On the *Report Painter: Create Report* screen, choose *Edit* → *Gen. data selection*.
   b) In the *Element definition: General data selection* dialog box, move *CO Area*, *Fiscal Year*, *Period*, and *Cost Center* characteristics from the *Available characteristics* pane to the *Selected characteristics* pane.
   c) Choose ◀ (*Move selected to left*).
   d) On the *Selected characteristics* pane, enter the following data:

| Name | From | To |
|---|---|---|
| *CO Area* | **1000** | **1000** |
| *Fiscal year* | Current fiscal year | <Leave it blank> |
| *Period* | **1** | **12** |
| *Cost Center* | **H1010** | <Leave it blank> |

e) Select the *SET or Hierarchy node ON/OFF* checkbox for *Cost Center*.

f) Choose the *Confirm* pushbutton.
You have now defined the general data selections.

6. Check and save the report.
   a) To check the report for any errors or missing characteristics, choose (*Check*) or *Report* → *Check* or press F6.
   b) Save the report.
7. Assign the report to a report group.
   a) On the *Report Painter: Create Report* screen, choose *Environment* → *Assign report group*.
   b) Enter **z2##** in the *Report group* field.
   c) Choose (*Continue*).
   d) Choose the *Yes* pushbutton to create the report group.
8. Execute the report.
   a) Choose (*Execute*) or choose *Report* → *Execute*.
   b) Choose the *Yes* pushbutton to save and execute the report.
   c) Choose (*Execute*) again.

> Note:
> If there is no actual data in the current year, run the report for 2006.

9. Modify your report to test the explode options and observe the changes in your report results.
   a) Go back to report structure.
   b) Select the *Costs* row.
   c) Choose *Edit* → *Rows* → *Explode*.
   d) Select the *SingleVals* radio button and choose (*Confirm*).
   e) Execute the report again.
   f) Reset *Explode characteristics* to expand for the *Costs* row.

**LESSON SUMMARY**

You should now be able to:

- Use hierarchies to subtotal reports

# Using Hierarchies in Reports

59

## LESSON OVERVIEW

This lesson explains how to use master data groups in reports.

### Business Example

You work as a financial consultant for an organization. The management wants to know the details of how much each cost center spends towards each cost element. Create a report that shows a detailed cost breakdown for each cost center, with focus on cost elements. For this reason, you require the following knowledge:

- An understanding of how to use hierarchies as part of the row structure
- An understanding of how to sort data after it has been executed

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use hierarchies to sort reports

## Hierarchy Sort Function

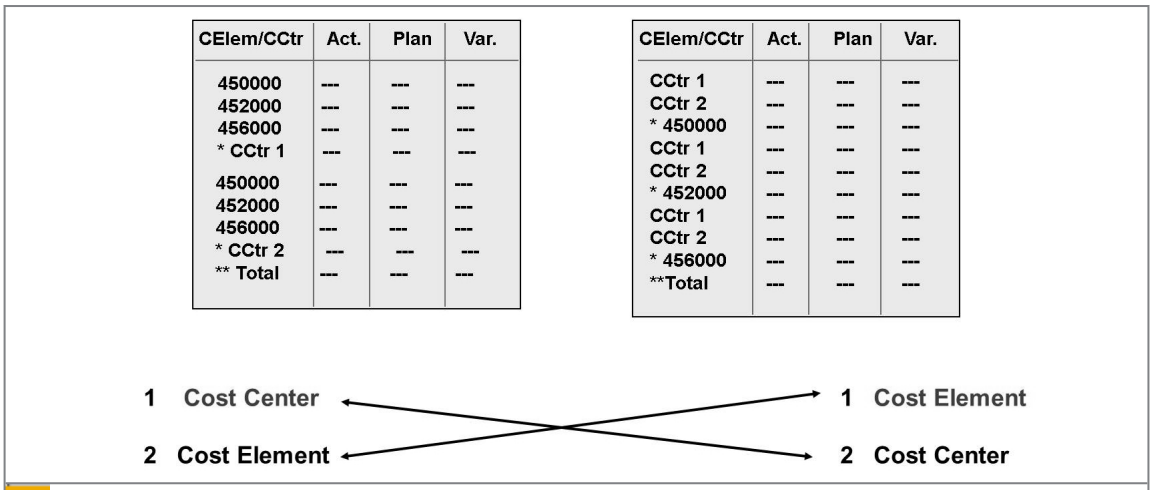



Figure 26: Sorting Hierarchies

Explain the difference between the two reports shown in the figure.

When you use a combination of several characteristics in a row block and the row block is exploded, you can choose the hierarchical sequence in which the characteristics are displayed.

**How to Use Sort Function When Working with Reports**

Change the report used in the previous demonstration. In addition to the cost element characteristic, include the cost center characteristic from the general data selections in the row structure. Demonstrate the sort function and display the report, using hierarchy sequences.

1. Sort and display the *Z1##-001* report, using hierarchy sequences.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change*.
   b) Double-click the *Z1##-001* report.
   c) On the *Report Painter: Change Report* screen, choose (*Execute*) or choose *Report* → *Execute*.
   d) On the*: Selectio*n screen, choose (*Execute*) again.
   e) On the *Rep. w. totals lines* screen, select the lead column and choose *Edit* → *Sorting* → *Sort ascending*.

Note:
You can choose to sort in ascending or descending order.

# 61 Use Hierarchies: Sequence (Sort)

### Business Example

The management of your organization wants to know how much each cost center spends toward each account.

Create a report that shows a detailed cost breakdown for each cost center, and then create another report that focuses on cost elements.

### Task 1

You have been asked to write another report but must show a detailed cost breakdown for each cost center. The report should have the following appearance:

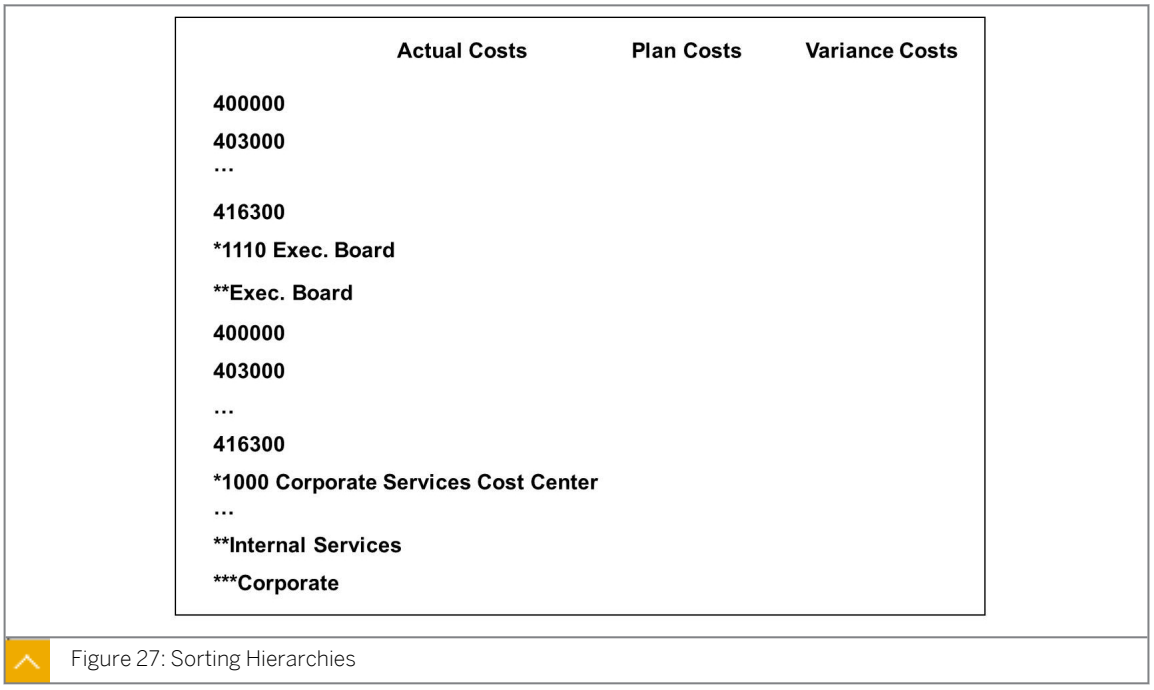



Figure 27: Sorting Hierarchies

The report can provide information for the cost centers listed in group **H1010** and the cost elements in **CA705_COST**. General selection criteria throughout the report are controlling area **1000**, the current fiscal year, and periods **1**– **12**.

Name the report **Z3##-001** and assign it to the report group **Z3##**. Use the library **Z##** again.

Following are the instructions for defining the **Z3##-001** report:

1. Define the **Z3##-001** report.
2. Define a row.
3. Define column 1 – Actual Costs.

4. Define column 3 – Formula (Variance).
5. Define general data selections.
6. Check and save the report.
7. Assign the report to a report group.
8. Execute the report.
9. Modify your report a few times to vary the explode levels for the cost centers and cost elements. Did the report results appear as you expected?

### Task 2

Some employees want to see the report with emphasis on the cost centers, and other employees want to see the report with emphasis on the cost elements. Create a new report that focuses on the cost elements. The report should have the following structure:

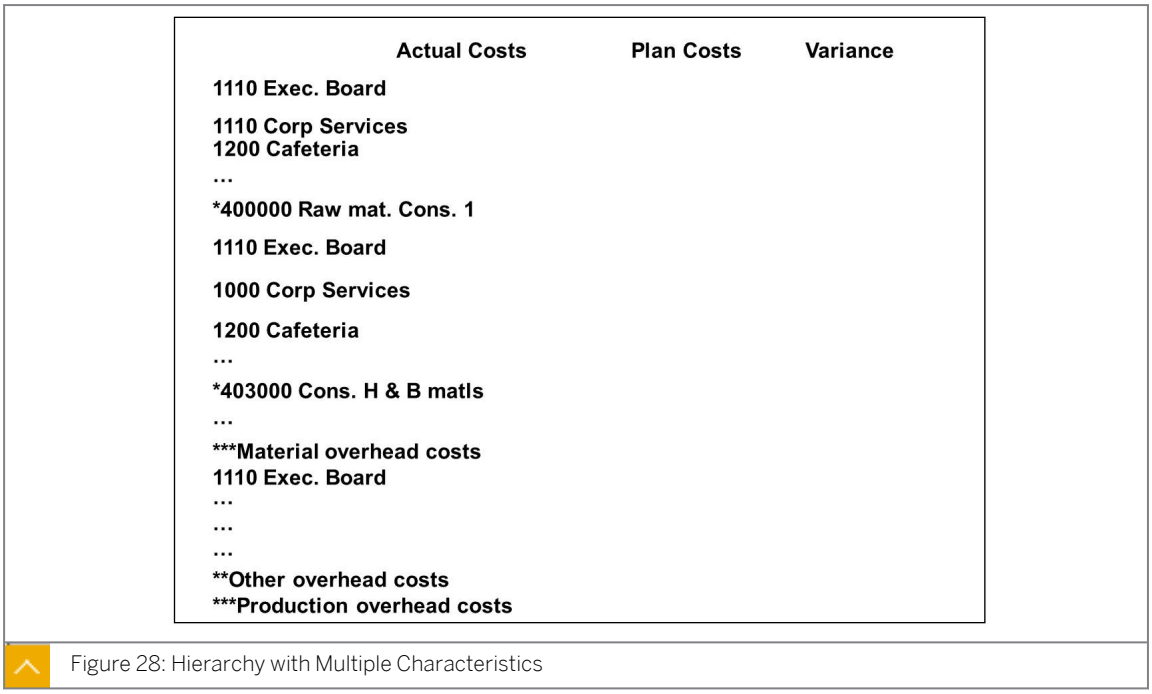



Figure 28: Hierarchy with Multiple Characteristics

1. Name the report **`Z3##-002`** and assign the report to one of the report groups you have created.
2. Change the sort sequence for the row characteristics.
3. In which report group will you place the report *Z3##-002?* Why?
4. In the report output, switch between reports in the report group.

# 63 Use Hierarchies: Sequence (Sort)

### Business Example

The management of your organization wants to know how much each cost center spends toward each account.

Create a report that shows a detailed cost breakdown for each cost center, and then create another report that focuses on cost elements.

### Task 1

You have been asked to write another report but must show a detailed cost breakdown for each cost center. The report should have the following appearance:

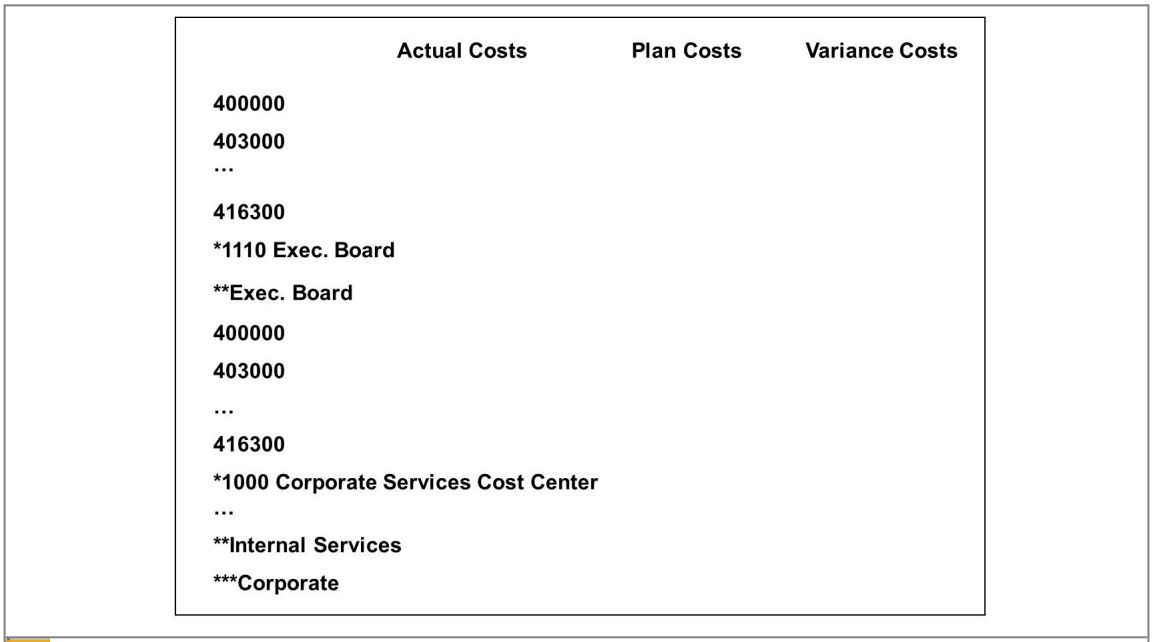



Figure 27: Sorting Hierarchies

The report can provide information for the cost centers listed in group **H1010** and the cost elements in **CA705_COST**. General selection criteria throughout the report are controlling area **1000**, the current fiscal year, and periods **1**– **12**.

Name the report **Z3##-001** and assign it to the report group **Z3##**. Use the library **Z##** again.

Following are the instructions for defining the **Z3##-001** report:

1. Define the **Z3##-001** report.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Create* or run the GRR1 transaction.

b) On the *Report Painter: Create Report* screen, enter the following values:

| Field | Value |
|---|---|
| *Library* | **Z##** |
| *Report* | **Z3##-001** |
| Description | **Cost ctr./Cstel** |

c) Choose the *Create* pushbutton to access the report definition interface.

2. Define a row.

a) On the *Report Painter: Create Report* screen, double-click *Row 1*.

b) On the *Available characteristics* pane, choose *Cost Element* and *Cost Center*.

c) Choose (*Move selected to left*).

d) On the *Selected characteristics* pane, select the *ET or Hierarchy node ON/OFF* checkbox for both characteristics and enter the following data:

| Name | From |
|---|---|
| *Cost Element* | **CA705_COST** |
| *Cost Center* | **H1010** |

e) Choose (*Change Texts*).

f) In the *Text maintenance* dialog box, enter **Total** in the *Short* field.

> Note:
> The **Total** text appears in the overall total row.

g) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields and choose (*Confirm*) or press ENTER.

h) Choose the *Confirm* pushbutton.

i) Position the cursor on first row and enter **Total**.

j) Choose *Edit* → *Rows* → *Explode*.

k) Select the *Expand* radio button for *Cost Center* and select the *SingleVals* radio button for *Cost Element*.

l) Choose (Confirm) or press ENTER.

You have defined the row.

3. Define column 1 – Actual Costs.

a) On the *Report Painter: Create Report* screen, double-click *Column 1*.

b) In the *Select element type* dialog box, select the *Predefined key figure* radio button.

c) Choose (Confirm) or press ENTER.

d) In the *Choose predefined column* dialog box, select the *Actual costs* radio button.

e) Choose ✔ (*Confirm*) or press ENTER.

f) On the *Selected characteristics* pane, deselect the *Variable ON/OFF* checkbox and enter **0** in the *From* field for the *Valuation* entry.

> Note:
> The *Report Painter: Create Report-Element Definition* screen shows how the key figure is defined. This screen displays the key figures and characteristics and the values that have been used to define the key figure.

g) Choose the *Confirm* pushbutton.

> Note:
> You have defined the first column. Similarly, define the second column and name it as "Plan costs" by using a *Predefined key figure* or define the column dynamically (*Version* 0, *Valuation* 0, *Value Type* 1). Choose the *Confirm* pushbutton.

4. Define column 3 – Formula (Variance).

a) On the *Report Painter: Create Report* screen, double-click *Column 3*.

b) In the *Select element type* dialog box, select the *Formula* radio button and choose ✔ (*Confirm*) or press ENTER.

c) In the *Enter Formula* dialog box, define the *Variance* column as *X001 - X002*.

d) Choose ✔ (*Confirm*) or press ENTER.

e) In the *Text maintenance* dialog box, enter **`Variance`** in the *Short* field.

> Note:
> The **`Variance`** text appears in the Variance column.

f) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.

g) Choose ✔ (*Confirm*) or press ENTER.

5. Define general data selections.

a) On the *Report Painter: Create Report* screen, choose *Edit → Gen. data selection*.

b) On the *Element definition: General data selection* screen, move *CO Area*, *Fiscal Year*, *and Period* characteristics from the *Available characteristics* pane to the *Selected characteristics* pane.

c) Choose ◀ (*Move selected to left*).

d) On the *Selected characteristics* pane, enter the following data:

| Name | From | To |
|---|---|---|
| *CO Area* | **1000** | <Leave it blank> |
| *Fiscal Year* | <Current fiscal year> | <Leave it blank> |
| *Period* | **1** | **12** |

e) Choose the *Confirm* pushbutton.

You have now defined the general data selections.

6. Check and save the report.

a) To check the report for errors or missing characteristics, choose (*Check*) or *Report* → *Check*. You can also press F6.

b) Save the report.

7. Assign the report to a report group.

a) On the *Report Painter: Create Report* screen, choose *Environment* → *Assign report group*.

b) Enter **Z3##** in the *Report Group* field.

c) Choose (Confirm).

d) Choose the *Yes* pushbutton to create the report group.

8. Execute the report.

a) On the *Report Painter: Create Report* screen, choose (*Execute*) or choose *Report* → *Execute*.

b) Choose the *Yes* pushbutton to save and execute the report. The *Cost ctr./Cstel* screen appears.

c) Exit the report.

9. Modify your report a few times to vary the explode levels for the cost centers and cost elements. Did the report results appear as you expected?

a) Go back to the *Report Painter: Create Report* screen.

b) Position the cursor on the *Total* row and choose *Edit* → *Rows* → *Explode*.

c) Change the settings for the explode characteristics and execute the report again.

d) Reset the explode levels to expand for *Cost Center* and *SingleVals* for *Cost Element*.

### Task 2

Some employees want to see the report with emphasis on the cost centers, and other employees want to see the report with emphasis on the cost elements. Create a new report that focuses on the cost elements. The report should have the following structure:

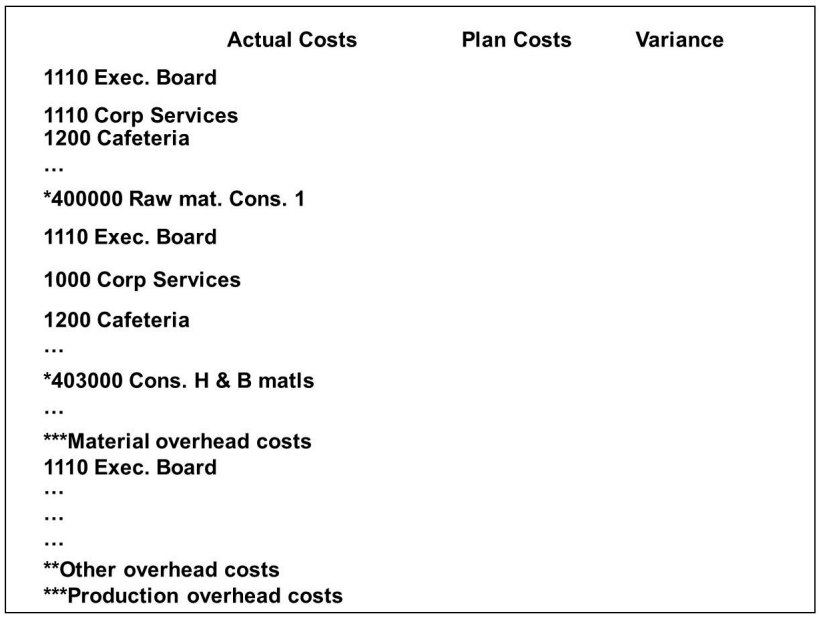



Figure 28: Hierarchy with Multiple Characteristics

1. Name the report **Z3##-002** and assign the report to one of the report groups you have created.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Create* or run the GRR1 transaction.
   b) On the *Report Painter: Create Report* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |
| *Report* | **Z3##-002** |
| *Description* | **Celem w/CCtr detail** |
| *Report* | **Z3##-001** |

   c) Choose the *Create* pushbutton to access the report definition interface.
2. Change the sort sequence for the row characteristics.
   a) On the *Report Painter: Create Report* screen, choose *Edit* → *Rows* → *Explode*.
   b) In the *Explode characteristics* dialog box, set the numbering for *Cost Element* to 1 and *Cost Center* to 2.
   c) Select the *Expand* radio button for the *Cost Element* and select the *SingleVals* radio button for the *Cost Center*.
3. In which report group will you place the report *Z3##-002?* Why?
   a) Report *Z3##-002* will be assigned to report group *Z3##* because it extracts the same data as report *Z3##-001*.
   b) On the *Report Painter: Create Report* screen, choose *Environment* → *Assign report group*.

c) Enter **z3##** in the *Report Group* field and choose ✔ (*Continue*).

d) Save the report.

e) Choose *Report* → *Execute*.

f) Choose the *Yes* pushbutton to save and execute the report.

g) Choose *program* → *Execute*.

4. In the report output, switch between reports in the report group.

a) On the *Report output* screen, choose *Goto* → *Other report* or double-click the *Celem w/CCtr detail* report.

b) Select the report you want to view.

c) Choose ✔ (*Confirm*).

## LESSON SUMMARY

You should now be able to:

- Use hierarchies to sort reports

70

# Using Variables and Text in Report Painter Reports

## LESSON OVERVIEW

This lesson shows how to create reusable reports using variables and text.

### Business Example

You work as a financial consultant for an organization. The management of the organization wants a reusable report with the details about how much each cost center is spending towards each account. You have created this report using the Report Painter. Your reports must read the varied data to enhance the flexibility of the report. For this reason, you require the following knowledge:

- An understanding of how to use variables in the Report Painter reports
- An understanding of how to use texts in the Report Painter reports

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use variables for report definition
- Enter text in reports

## Variables

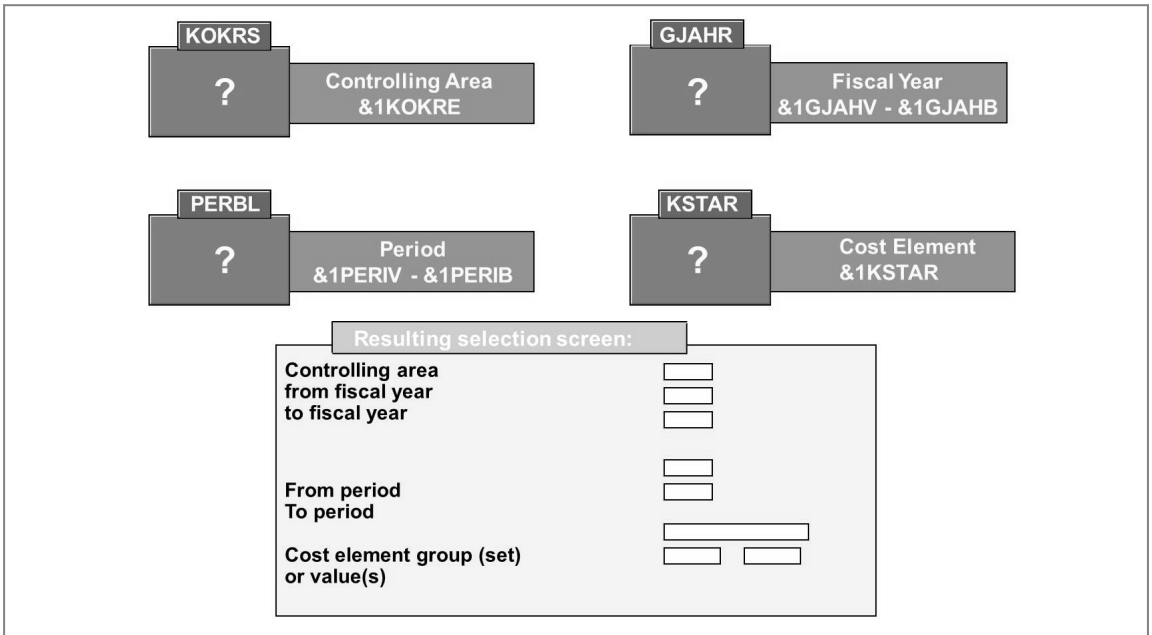



Figure 29: Flexible Reports with Variables

Instead of using fixed values in the report definition, you can use variables. When you execute a report group, an input field appears on the report selection screen for each variable used.

**Variables are of the following types:**

- Value variable
- Variables for groups (set variables)
- Formula variables

### How to Use Variable Values in the General Data Selection

1. In the change report transaction for report Z100_001 you created, use the following variable values in the general data selections:

| Example | Variable |
|---|---|
| *Cost Center* | `1KOSET` |
| *Fiscal Year* | `1GJAHR` |
| *Period From* | `1PERIV` |
| *Period To* | `1PERIB` |

## Text

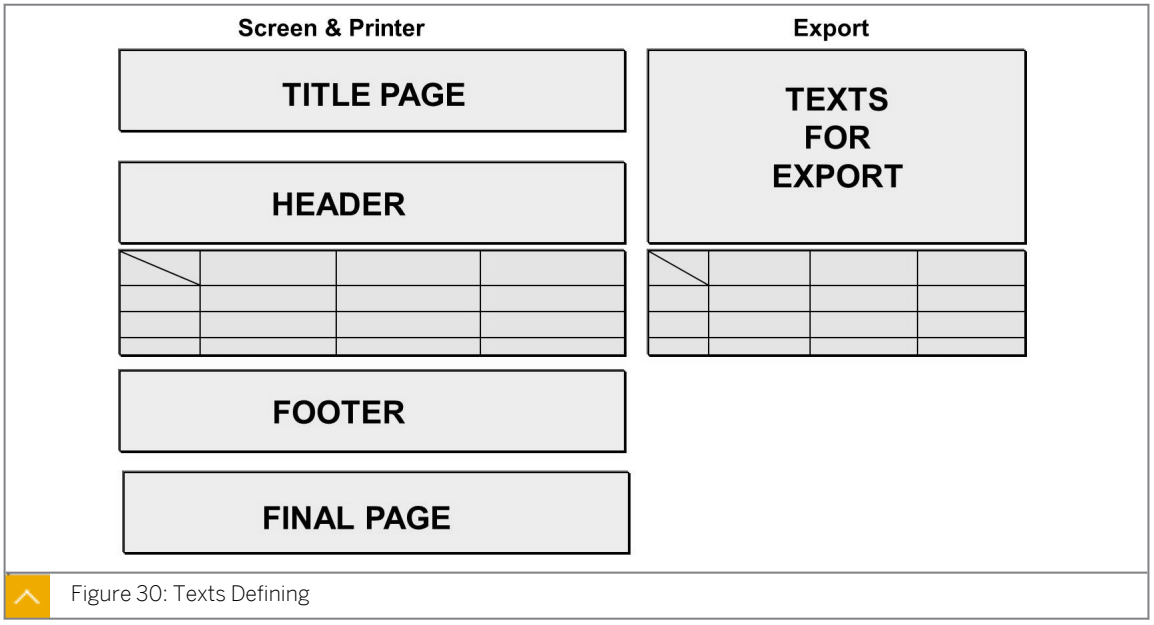



Figure 30: Texts Defining

With latest version of SAP ERP, you can also use text variables in the column headings and lead column.

**In a report, you can define text at the following points:**

- Title page

- Header
- Footer
- Final page

When the report is exported, for example, to Microsoft Excel, the worksheet header is taken from the exported text. The header and footer in the report are intended for lists; therefore, they do not appear in the worksheet. The same also applies to the title page and the final page.

**Entering Text**

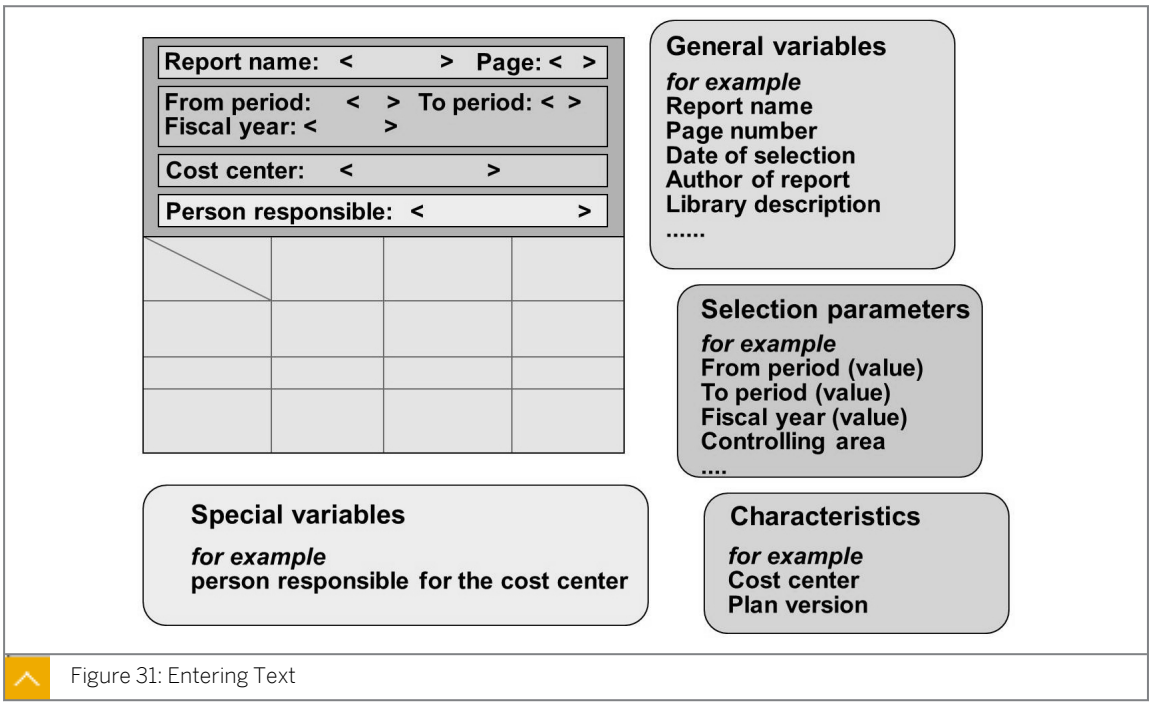



Figure 31: Entering Text

You can directly enter text for the title page, header, footer, and final page.

**You can also use the following types of text variables:**

- General variables
- Selection parameters
- Characteristics
- Special variables

**How to Enter Text in Reports**

1. Create a title page with different headers, for example, fiscal year, from or to period, and cost center (groups).
   a) On the *SAP Easy Access* screen, choose *SAP Menu* → *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change*.
   b) Choose *Extras* → *Report texts* → *Title page*. You can also enter text in lead columns or in column headings.

Unit 2
Exercise 8

# Use Variables in a Report Painter Report

73

**Business Example**

The management wants a flexible report so that they can reuse the same report with varied values.

Define the report for greater flexibility by using variables and texts.

For greater flexibility when defining your reports, you use variables for the cost center group, the current fiscal year, the from and to period, and the controlling area.

1. How do you make reports flexible?
2. Where are you able to use variables in a Report Painter report?

Modify the *Z3##-001* report to add certain texts. Use the table below as a guideline for the information you can display.

| Title Page | Header |
|---|---|
| *Author of report* | - |
| *Date of output* | *Controlling area* |
| *Report name* | *Fiscal year* |
| *Library* | *Period from, Period to* |
| *Report group* | <None> |

1. Enter text on a title page using general variables.
2. Enter text in a header using characteristic-related text variables (features).

# 74 Use Variables in a Report Painter Report

**Business Example**

The management wants a flexible report so that they can reuse the same report with varied values.

Define the report for greater flexibility by using variables and texts.

For greater flexibility when defining your reports, you use variables for the cost center group, the current fiscal year, the from and to period, and the controlling area.

1. How do you make reports flexible?
   a) Variables can be used to prompt inputs from the user at runtime. Variables can be used in general data selection.
   b) On the *SAP Easy Access* screen, choose *SAP Menu → Information Systems → Ad Hoc Reports → Report Painter → Report → Change.*
   c) Select *Z##* library, then double-click the *Z3##-001* report.
   d) Choose *Edit → Gen. data selection.*
   e) On the *Element definition: General data selection* screen, select the *Variable ON/OFF* checkbox for *Fiscal Year*, *From Period* and *To Period*.
   f) On the *Selected characteristics* pane, enter the following data:

| Name | From | To |
|---|---|---|
| *Fiscal Year* | **1GJAHR** | None |
| *Period* | **1PERIV** | **1PERIB** |

   g) Choose the *Confirm* pushbutton.
   h) Save the report.
   i) Choose (*Execute*).
   j) Choose the *Yes* pushbutton to save and execute the report.
   k) On the*: Selection* screen, enter the following data:

| Field | Value |
|---|---|
| *Fiscal Year* | <Current year> |
| *From Period* | 1 |

| Field | Value |
|---|---|
| *To Period* | 12 |

l) Execute the report again by choosing (*Execute*).

2. Where are you able to use variables in a Report Painter report?
   a) Variables can be used for characteristics in rows, general data selections, or for characteristics used to define key figure columns.

Modify the *Z3##-001* report to add certain texts. Use the table below as a guideline for the information you can display.

| Title Page | Header |
|---|---|
| *Author of report* | - |
| *Date of output* | *Controlling area* |
| *Report name* | *Fiscal year* |
| *Library* | *Period from, Period to* |
| *Report group* | <None> |

1. Enter text on a title page using general variables.
   a) On the *SAP Easy Access* screen, choose *SAP Menu* → *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change*.
   b) Select *Z##* libraries, then double-click the *Z3##-001* report.
   c) Choose *Extras* → *Report texts* → *Title page*.
   d) Position your cursor where the text needs to be displayed on the title page.
   e) Choose the *Gen. variables* pushbutton or choose *Insert* → *Standard variables*.
   f) In the *Insert/Change Text Variable* dialog box, select *Author of Report*.
   g) Choose *Continue*.

Note:
This variable is marked on the title page with a <> symbol.

   h) Similarly, choose all the variables given in the following table to define texts for title page:

| Title Page |
|---|
| *Author of report* |
| *Date of output* |
| *Report name* |

| Title Page |
| --- |
| *Library* |
| *Report group* |

Note:
To make a description appear before a standard variable, type the text directly on the page.

i) Choose *Continue*.

j) Go back to the report and choose *Yes* to save the changed text.

2. Enter text in a header using characteristic-related text variables (features).

a) On the *SAP Easy Access* screen, choose *SAP Menu* → *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change*.

b) Select *Z##* libraries, then double-click the *Z3##-001* report.

c) Choose *Extras* → *Report texts* → *Headers*.

d) Position your cursor to where the selection information must appear on the header page.

e) Choose the *Characteristics* pushbutton or choose *Insert* → *Characteristics*.

f) In the *Insert/Change Text Variable* dialog box, choose *Controlling Area* in the *Characteristic* dropdown list.

g) Choose *Continue*.

h) Choose all the headers given in the following table to define header texts:

| Header |
| --- |
| *Controlling Area* |
| *Fiscal Year* |
| *Period from, Period to* |

i) Choose *Continue*.

j) Save the report.

Note:
The *Text type* value gives the key and other text types descriptions. For example, the controlling area value can return 1000, while the text returns CO Europe. Repeat the procedure to define more header texts.

k) Go back to the *Report Painter: Change Report* screen and choose (*Execute*).

l) Choose the *Yes* pushbutton to save and execute the report.

m) Execute the report again by choosing  (*Execute*).

**LESSON SUMMARY**

You should now be able to:

- Use variables for report definition
- Enter text in reports

# Learning Assessment

79

1. The general data selections defined for a report restrict the data processed in that report.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

2. You can use the _____ to define formula rows.

   *Choose the correct answer.*

   ☐ **A** formula editor

   ☐ **B** basic key figure

   ☐ **C** key figure

   ☐ **D** general data

3. What are the components of a Report Painter report?

   *Choose the correct answers.*

   ☐ **A** Rows

   ☐ **B** Columns

   ☐ **C** General data selections

4. To restrict the characteristics in a column, you enter intervals or groups.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

5. Organizational elements can be regarded as _____.

   *Choose the correct answer.*

   - ☐ A characteristics
   - ☐ B basic key figure
   - ☐ C key figure

6. Reports from different libraries can be processed in the same report group.

   *Determine whether this statement is true or false.*

   - ☐ True
   - ☐ False

7. Identify the feature(s) of a report group.

   *Choose the correct answer.*

   - ☐ A Improves the processing time.
   - ☐ B Improve the processing time if multiple reports are intended to evaluate the same dataset.
   - ☐ C Is created using different reports from different libraries.
   - ☐ D Is created using same reports from different libraries.

8. List all the explode levels available for a report.

   _____

   _____

   _____

9. When using groups, you can define whether to display only a totals row or the complete group hierarchy with subtotals.

   *Determine whether this statement is true or false.*

   - ☐ True
   - ☐ False

10. When you use a combination of several characteristics in a row block and the row block is exploded, you can choose the hierarchical sequence in which the characteristics are displayed.

    *Determine whether this statement is true or false.*

    ☐ True

    ☐ False

11. List the points in a report where text can be defined.

    _____

    _____

    _____

12. When you execute a report group that has reports defined with variables, _____ appears on the report selection screen for each variable used.

    *Choose the correct answer.*

    ☐ A an input field

    ☐ B an output field

    ☐ C a general field

    ☐ D a variable field

# Learning Assessment - Answers

82

1. The general data selections defined for a report restrict the data processed in that report.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

2. You can use the _____ to define formula rows.

   *Choose the correct answer.*

   - [X] A formula editor
   - [ ] B basic key figure
   - [ ] C key figure
   - [ ] D general data

3. What are the components of a Report Painter report?

   *Choose the correct answers.*

   - [X] A Rows
   - [X] B Columns
   - [X] C General data selections

4. To restrict the characteristics in a column, you enter intervals or groups.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

5. Organizational elements can be regarded as _____.

   *Choose the correct answer.*

   - [X] A characteristics
   - [ ] B basic key figure
   - [ ] C key figure

6. Reports from different libraries can be processed in the same report group.

   *Determine whether this statement is true or false.*

   - [ ] True
   - [X] False

7. Identify the feature(s) of a report group.

   *Choose the correct answer.*

   - [ ] A Improves the processing time.
   - [X] B Improve the processing time if multiple reports are intended to evaluate the same dataset.
   - [ ] C Is created using different reports from different libraries.
   - [ ] D Is created using same reports from different libraries.

8. List all the explode levels available for a report.

   Expand, Do not expand, and Single Values.

9. When using groups, you can define whether to display only a totals row or the complete group hierarchy with subtotals.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

10. When you use a combination of several characteristics in a row block and the row block is exploded, you can choose the hierarchical sequence in which the characteristics are displayed.

    *Determine whether this statement is true or false.*

    [X] True

    [ ] False

11. List the points in a report where text can be defined.

    Text can be defined at the title page, header, footer, and final page in a report.

12. When you execute a report group that has reports defined with variables, _____ appears on the report selection screen for each variable used.

    *Choose the correct answer.*

    [X] A an input field

    [ ] B an output field

    [ ] C a general field

    [ ] D a variable field

# UNIT 3 Row and Column Models

**Lesson 1**



**UNIT OBJECTIVES**

- Create row and column models

# Using Row and Column Models

86

**LESSON OVERVIEW**

This lesson explains how to create row and column models in reports, helping you define reports in less time.

Explain that models are based on libraries. Models can only be used in a report that refers to a different library. The library must contain the required characteristics, basic key figures, and key figures.

### Business Example

You work as a financial consultant for an organization. The organization needs Cost Center Accounting reports using Report Writer. You realize that many reports that you have created have the same row and column characteristics. For this reason, you require the following knowledge:

- How to create row and column models

**LESSON OBJECTIVES**

After completing this lesson, you will be able to:

- Create row and column models

## Row and Column Models

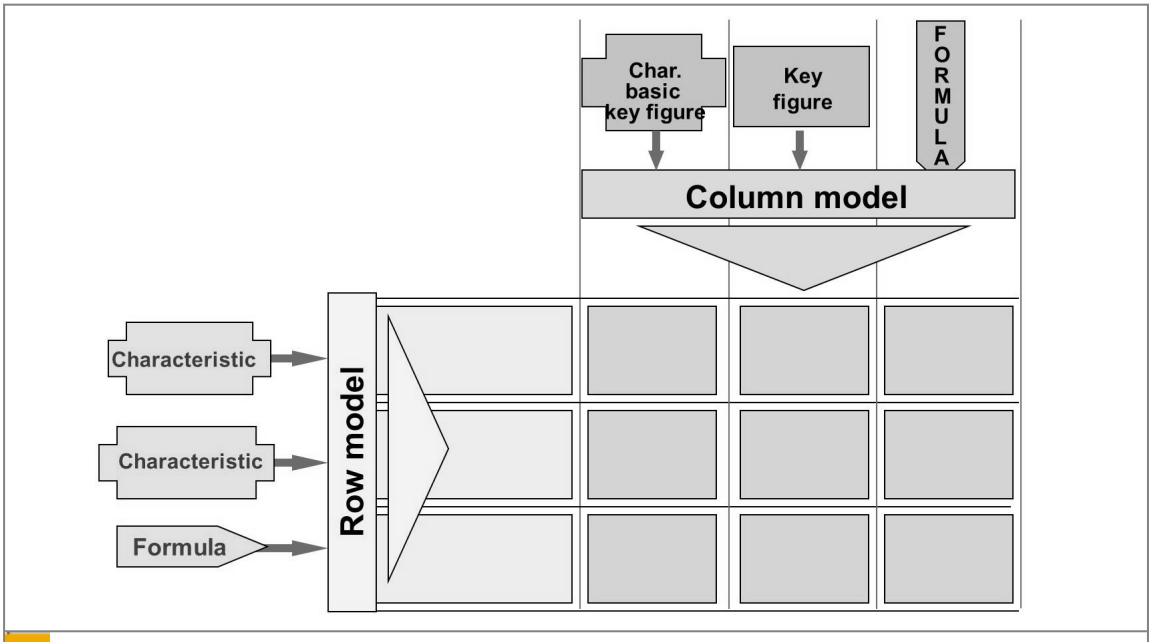



Figure 32: Definition of Reports Using Row and Column Models

You can store frequently used row and column structures in row and column models. You can then copy row models and column models into a report. This is the quickest way to define a report.

### Row and Column Models for Libraries

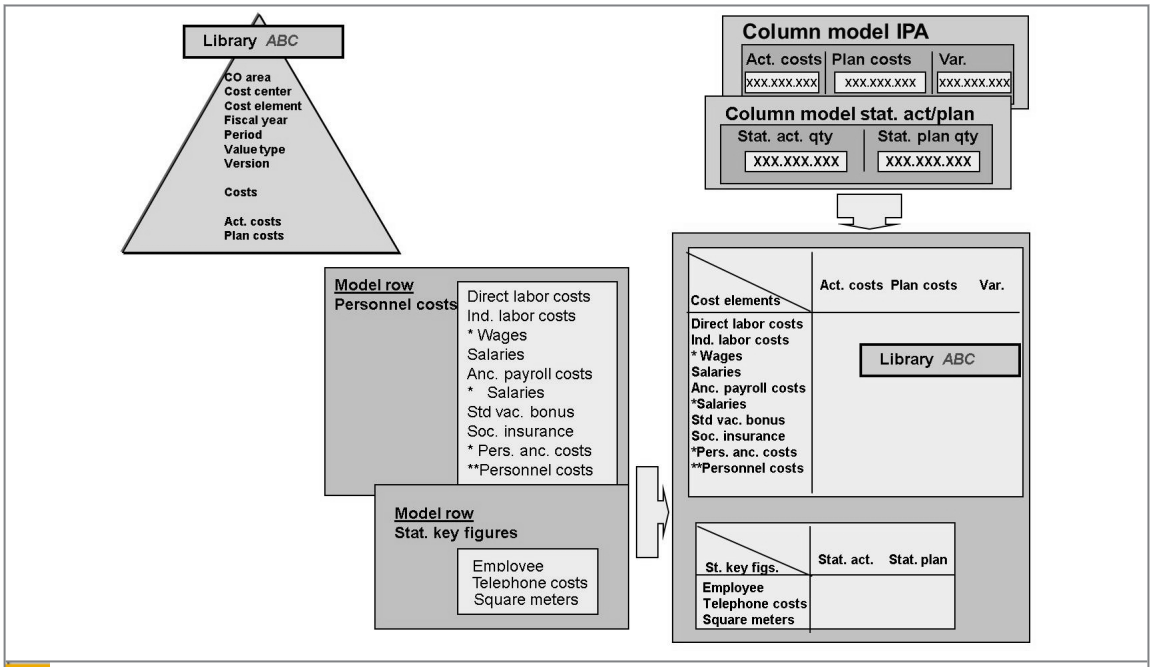



Figure 33: Row and Column Models for Libraries

Row and column models must be created for libraries. These models can only be used in reports in the same library. If you want to use the same models in different libraries, you have to copy those models.

> Note:
> You can only copy models from one library to another if the target library has the required fields.

### How to Create Row and Column Models

Demonstrate the steps of the Create Row and Column Models and use them in a Report exercise.

89

# Create Row and Column Models and Use them in a Report

**Business Example**

You realize that most of your reports have similar row or column structures. Therefore, you must know how to create row and column models, integrate these models into your reports, and make your reports quickly.

Create row and column models and integrate these models into reports.

Task 1

As many of your reports compare actual costs, planned costs, and variances, create a column model to help you create your reports quickly.

1. Create column model **Z##-APV**. Use the **Z##** library. Include the *Actual*, *Plan*, and *Variance* columns.
2. Many of your reports itemize the cost elements in the **OAS_PRIM** cost element group. Build a row model based on **OAS_PRIM**. Name the row model **Z##-ELEMENT**.
3. What menu path will you use to integrate your models into your report?

Task 2

Build a new report **Z4##-001** using your new model. This report will detail the actual, plan, and variance in costs for the cost element accounts in **OAS_PRIM**. This report will itemize the accounts in **OAS_PRIM**. Assign this report to the report group **Z4##**.

The general selection criteria that will apply throughout the report are **H1010** in the *Cost Center Group* field, the current year in the *Fiscal year* field, **1**– **12** in the *Period* field, and the constant value **1000** in the *Controlling Area* field. As these general selections are to be variable, use the same variants as given in the exercise – *Using Hierarchies: Sequence (Sort)*. For the characteristic *Cost Center*, use set variable **1KOSET**.

Create a report group **Z4##** with Report Writer and insert your report.

Generate and execute your report group.

1. Define the **Z4##-001** report.
2. Define rows.
3. Define columns.
4. Define general data selections.
5. Verify and save the report.
6. Assign a report to a report group.

7. Execute the report.

# 91 Create Row and Column Models and Use them in a Report

**Business Example**

You realize that most of your reports have similar row or column structures. Therefore, you must know how to create row and column models, integrate these models into your reports, and make your reports quickly.

Create row and column models and integrate these models into reports.

Task 1

As many of your reports compare actual costs, planned costs, and variances, create a column model to help you create your reports quickly.

1. Create column model **`Z##-APV`**. Use the **`Z##`** library. Include the *Actual*, *Plan*, and *Variance* columns.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Model* → *Create* or run the `GRR4` transaction.
   b) On the *Report Painter: Create Model* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **`Z##`** |
| *Model* | **`Z##-APV`** |
| Description | **`APV Col Model`** |

   c) Select the *Column model* radio button.
   d) Choose the *Create* pushbutton to proceed to the *Report Painter: Create Model* screen.
   e) Double-click each column to define it as a *Predefined key figure* column, a *Key figure with characteristic* column, or a *Formula* column.
      a) Double-click the *Element 1* column.
      b) In the *Select element type* dialog box, select *Predefined key figure* and choose *Confirm*.
      c) In the *Choose predefined column* dialog box, select *Actual costs* and choose *Confirm*.
      d) In the *Element definition: Actual costs* dialog box, deselect the (*SET or Hierarchy node ON/OFF*) checkbox.

e) In the *From* field of *Valuation*, *Value Type* and *Version*, enter **0**, **4** and **0** respectively.

f) Choose the *Confirm* pushbutton.

g) Similarly, for the *Element 2* column, repeat the above steps and in the *Select element type* dialog box, select *Predefined key figure* and choose *Plan Costs*. In the *From* field of *Valuation*, *Value Type* and *Version*, enter **0**, **1** and **0** respectively.

h) For the *Element 3* column, in the *Select element type* dialog box, select *Formula* and in the *Enter Formula* dialog box, define formula as X001 - X002. Choose the *Confirm* pushbutton.

i) On the *Text maintenance* screen, enter **Variance** in the *Short* field and choose the *Copy short text* pushbutton to copy the data to the *Medium* and *Long* fields.

j) Choose the *Confirm* pushbutton.

k) Save the data.

l) Go back to the *SAP Easy Access* screen.

2. Many of your reports itemize the cost elements in the **OAS_PRIM** cost element group. Build a row model based on **OAS_PRIM**. Name the row model **Z##-ELEMENT**.

a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Model* → *Create* or run the GRR4 transaction.

b) On the *Report Painter: Create Model* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |
| *Model* | **Z##-Element** |
| Description | **Celem row model** |

c) Select the *Row model* radio button.

d) Choose the *Create* pushbutton to proceed to the *Report Painter: Create Model* screen.

e) On the *Report Painter: Create Model* screen, double-click *Element 1*.

f) In the *Available characteristics* pane, select *Cost Element*.

g) Choose (*Move selected to left*).

h) In the *Selected characteristics* pane, select the (*SET or Hierarchy node ON/OFF*) checkbox and enter **OAS_PRIM** in the *From* field.

i) Choose the *Confirm* pushbutton. The *Selection of set 2 Entries* dialog box appears.

j) In the *Selection of set 2 Entries* dialog box, select *OAS_PRIM* and choose the *Copy* pushbutton.

k) Choose *Edit* → *Rows* → *Explode*.

l) In the *Explode characteristics* dialog box, select the *SingleVals* radio button and then choose ✔ (*Confirm*).

m) Save the model.

n) Go back to the *SAP Easy Access* screen.

3. What menu path will you use to integrate your models into your report?
   a) From the report definition, the following menu paths can be used:
      - Choose *Edit* → *Column* → *Get column model*.
      - Choose *Edit* → *Row* → *Get row model*.

### Task 2

Build a new report **Z4##-001** using your new model. This report will detail the actual, plan, and variance in costs for the cost element accounts in **OAS_PRIM**. This report will itemize the accounts in **OAS_PRIM**. Assign this report to the report group **Z4##**.

The general selection criteria that will apply throughout the report are **H1010** in the *Cost Center Group* field, the current year in the *Fiscal year* field, **1**– **12** in the *Period* field, and the constant value **1000** in the *Controlling Area* field. As these general selections are to be variable, use the same variants as given in the exercise – *Using Hierarchies: Sequence (Sort)*. For the characteristic *Cost Center*, use set variable **1KOSET**.

Create a report group **Z4##** with Report Writer and insert your report.

Generate and execute your report group.

1. Define the **Z4##-001** report.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Create* or run the GRR1 transaction.
   b) On the *Report Painter: Create Report* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |
| *Report* | **Z4##-001** |
| Description | **Models** |

   c) Choose the *Create* pushbutton to access the report definition environment.
2. Define rows.
   a) On the *Report Painter: Create Report* screen, choose *Edit* → *Rows* → *Get row model*.
   b) Select the **Z##-ELEMENT** row model.
3. Define columns.
   a) On the *Report Painter: Create Report* screen, choose *Edit* → *Columns* → *Get column model*.
   b) Choose the **Z##-APV** column model.

> Hint:
> If there is only one model, the system selects it automatically.

4. Define general data selections.
   a) On the *Report Painter: Create Report* screen, choose *Edit* → *Gen. data selection*.
   b) On the *Element definition: General data selection* screen, move *CO Area*, *Fiscal Year*, *Period*, and *Cost Center* characteristics from the *Available characteristics* pane to the *Selected characteristics* pane.
   c) Choose (*Move selected to left*).
   d) In the *Selected characteristic* pane, instead of entering permanent values for each characteristic, select the (*Variable ON/OFF*) checkbox for *Fiscal Year* and *Period* to activate the variables. Then, select a variable to hold the user values.
   e) Select the (*SET or Hierarchy node ON/OFF*) checkbox for the *Cost Center* characteristic, prior to selecting the (*Variable ON/OFF*) checkbox.
   f) Use the following table for the characteristic and its associated variables:

| Characteristic | From | To |
|---|---|---|
| *CO Area* | **1000** | <Leave it blank> |
| *Fiscal Year* | **1GJAHR** | <Leave it blank> |
| *Period* | **1PERIV** | **1PERIB** |
| *Cost Center* | **1KOSET** | <Leave it blank> |

   g) Choose the *Confirm* pushbutton. You have now defined the general data selections.
5. Verify and save the report.
   a) Choose *Report* → *Check* or choose (*Check*). You can also press F6 to check the report for any errors or missing characteristics.
   b) Save the report.
   c) Go back to the *SAP Easy Access* screen.
6. Assign a report to a report group.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report Writer* → *Report Group* → *Create* or run the `GR51` transaction.
   b) On the *Create Report Group: Initial* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |

| Field | Value |
|---|---|
| *Report Group* | **Z4##** |

c) Choose (*Header*).

d) On the *Create Report Group: Header* screen, enter **Report Group Z4##** in the *Description* field.

e) Choose the *Reports* pushbutton.

f) On the *Create Report Group: Reports* screen, enter **Z4##-001** in the *Report* field.

g) Save the report group.

7. Execute the report.

a) On the *Create Report Group: Initial Screen*, choose (*Generate*).

b) Choose the (*Execute*) pushbutton.

c) On the *Execute Report Group: Initial Screen*, choose (*Execute*).

d) On the *Z4##-001: Selection* screen, enter the following data:

| Field | Value |
|---|---|
| *Fiscal Year* | <Current year> |
| *From Period* | **1** |
| *To Period* | **12** |
| *Cost Center Group* | **H1010** |

Note:
If necessary, enter **0** in the *Version* field and the *Valuation* field.

e) Choose (*Execute*).

**LESSON SUMMARY**

You should now be able to:

- Create row and column models

# Learning Assessment

97

1. You can only copy models from one library to another if the target library has the required fields.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

2. The quickest way to define a report is to copy _____ and _____ to a report.

   *Choose the correct answers.*

   ☐ **A** row models

   ☐ **B** key figures

   ☐ **C** column models

   ☐ **D** characteristics

3. You can store frequently used row and column models in row and column structures.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

# Learning Assessment - Answers

98

1. You can only copy models from one library to another if the target library has the required fields.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

2. The quickest way to define a report is to copy _____ and _____ to a report.

   *Choose the correct answers.*

   - [X] A row models
   - [ ] B key figures
   - [X] C column models
   - [ ] D characteristics

3. You can store frequently used row and column models in row and column structures.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

# UNIT 4 Section and Horizontal Pages



**UNIT OBJECTIVES**

- Use horizontal pages in a report
- Create independent sections
- Use cells in formula
- Define sections with calculated key figures

Unit 4
Lesson 1

# Using Horizontal Pages

100

**LESSON OVERVIEW**

This lesson provides an overview of sections and horizontal pages in a report. It explains the division of a report into sections and the division of sections into horizontal pages. This lesson also discusses how to use cells in formulas to perform mathematical operations in your reports and how to define sections with calculated key figures.

**Business Example**

You work as a financial consultant for an organization. You are a member of the project team responsible for creating reports using Report Painter and Report Writer. The organization needs Cost Center Accounting (CCA) reports. You create these reports using Report Writer. Most of the reports that you have to create are comprised of different groups of key figures related to business content, for example, costs and quantities. To divide your reports into several pages you use the horizontal pages function. For this reason, you require the following knowledge:

- An understanding of the concept of sections
- An understanding of how to use cells in formulas
- An understanding of how to define sections with calculated key figures

**LESSON OBJECTIVES**

After completing this lesson, you will be able to:

- Use horizontal pages in a report

## Horizontal Pages

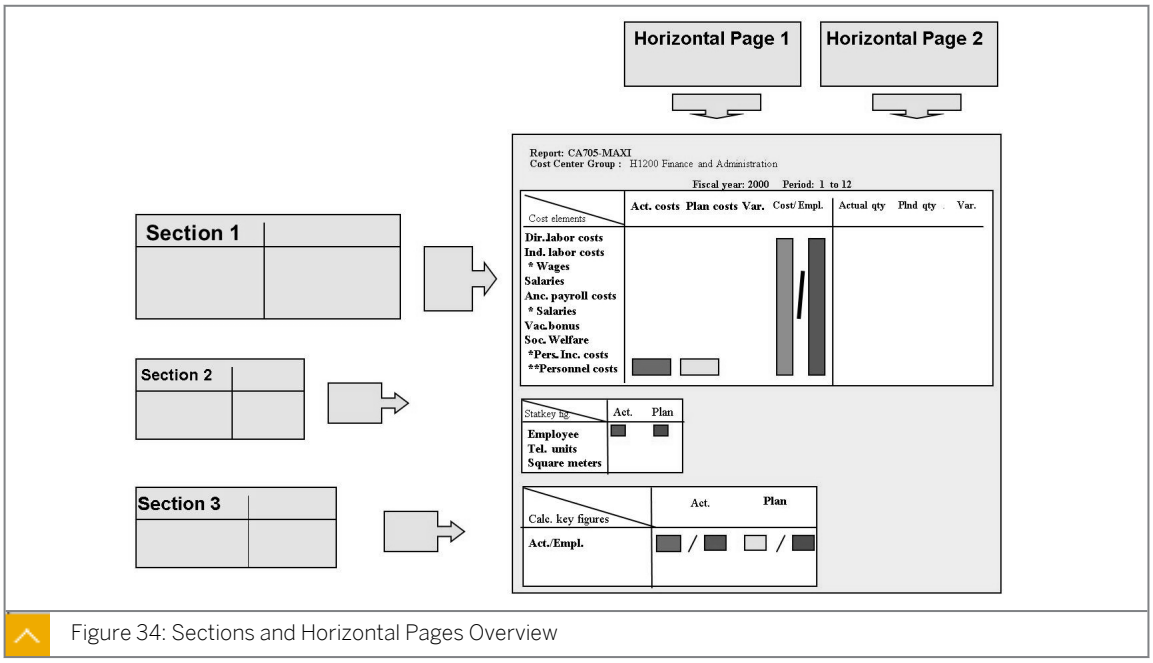



Figure 34: Sections and Horizontal Pages Overview

The figure displays examples of sections and horizontal pages.

Explain that the general data selections apply to all the sections in the report.

### Sections

A separate layout can be defined for each section.

### Sections with calculated key figures

You must select cells before you use them for calculations in formulas.

### Suppressed rows and columns

You can suppress individual values, ranges of values, or total set values within a report. Setting the suppression indicator on a multi-dimension, single-dimension, or basic set screen tells the Report Writer to ignore individual amounts and totals at lower levels of set hierarchies.

### Report Structure

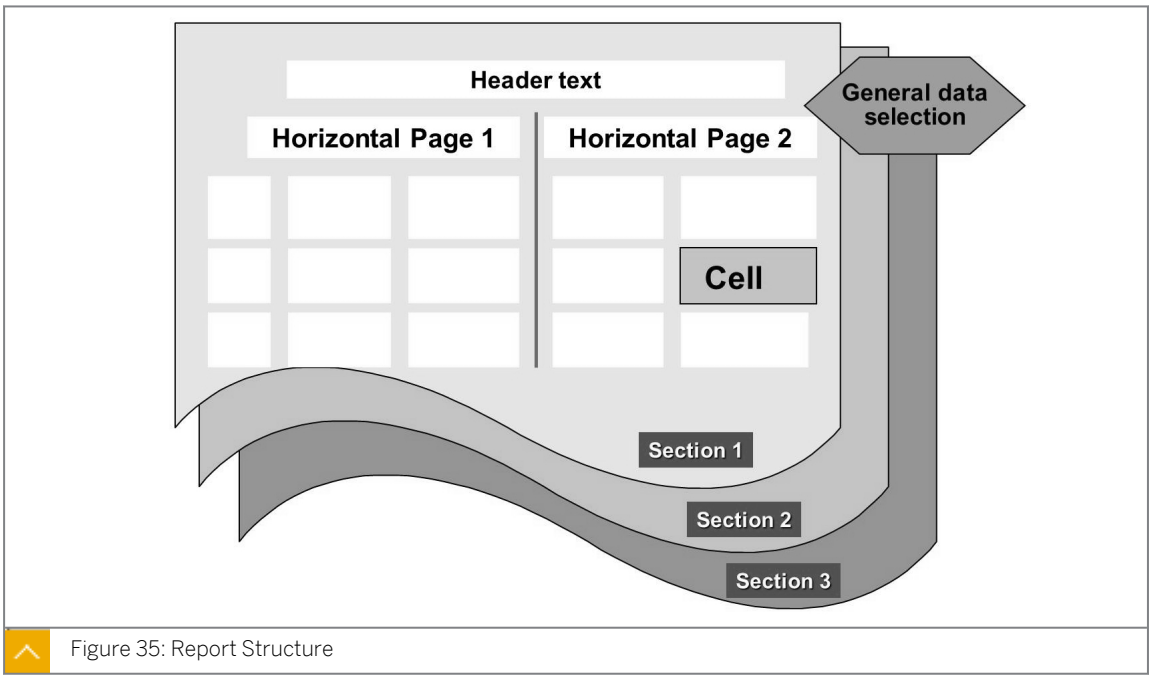



Figure 35: Report Structure

A report consists of several sections. Each section may contain one or more horizontal pages that have a common row structure.

### Horizontal Pages – Row Structure

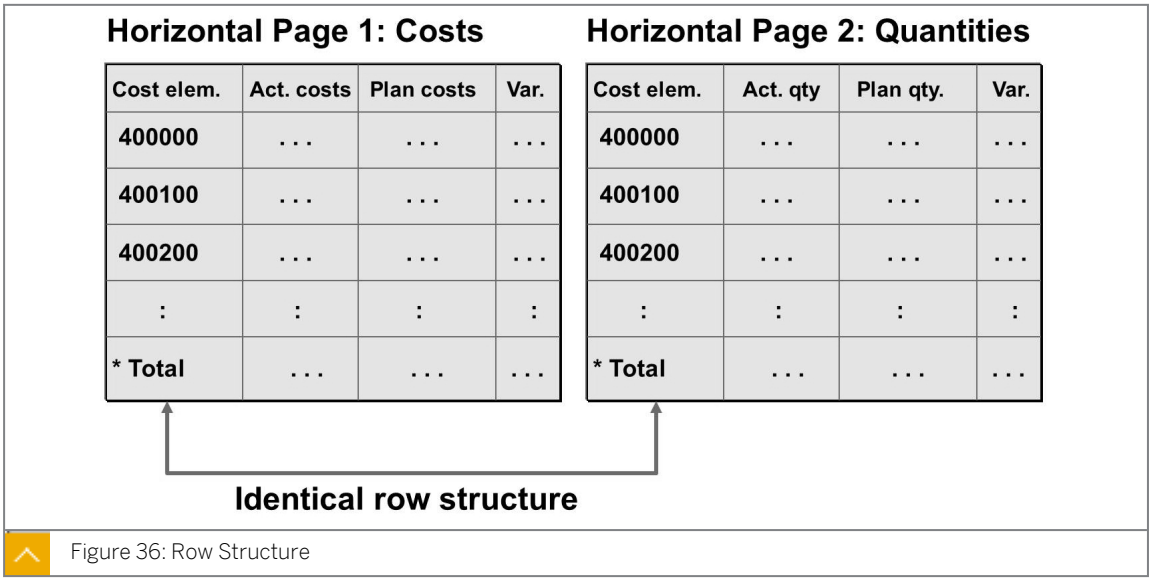



Figure 36: Row Structure

Formula columns can refer to columns from all of the horizontal pages in the same section.

**How to Create a Model Report**

Demonstrate the steps listed in the Define Horizontal Pages Within a Report exercise.

Unit 4
Exercise 10

# Define Horizontal Pages Within a Report

103

**Business Example**

Most of the reports you want to build are comprised of different groups of key figures, such as costs and quantities, related to business content. You want to mirror the different groups of key figure by dividing your reports into several pages.

Create a report using horizontal pages.

You need to prepare a report that prints with a page break between the breaks in the groups of columns.

Create the **`Z5##-001`** report by copying the **`Z4##-001`** report. Make the relevant changes in your new report. Assign the **`Z5##-001`** report to the **`Z5##`** report group. Use the **`Z##`** library for this purpose.

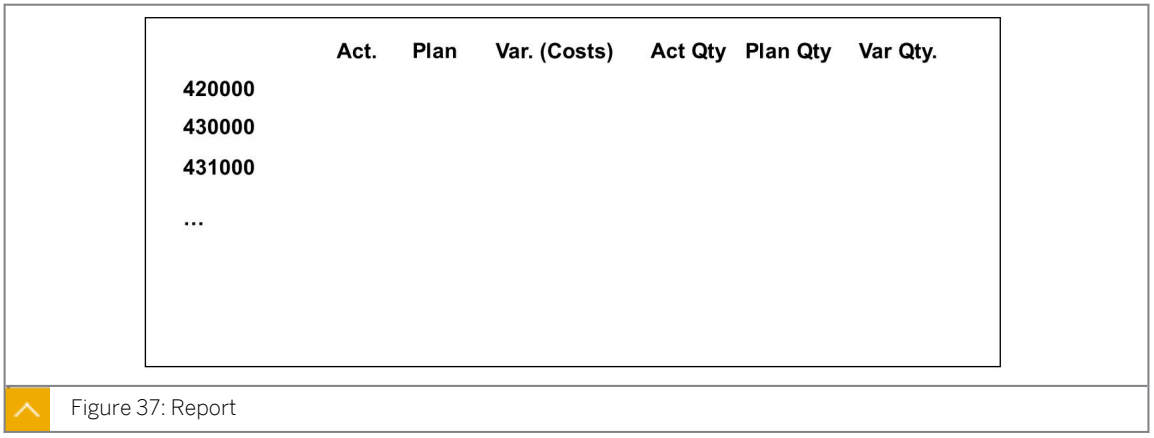



Figure 37: Report

1. Create the **`Z5##-001`** report by copying the **`Z4##-001`** report.
2. Define a new horizontal page.
3. Define columns.
4. Define the *Variance* (*Formula*) column.
5. Check and save the report.
6. Assign the report to a report group.
7. Execute the report.

# 104 Define Horizontal Pages Within a Report

**Business Example**

Most of the reports you want to build are comprised of different groups of key figures, such as costs and quantities, related to business content. You want to mirror the different groups of key figure by dividing your reports into several pages.

Create a report using horizontal pages.

You need to prepare a report that prints with a page break between the breaks in the groups of columns.

Create the **Z5##-001** report by copying the **Z4##-001** report. Make the relevant changes in your new report. Assign the **Z5##-001** report to the **Z5##** report group. Use the **Z##** library for this purpose.

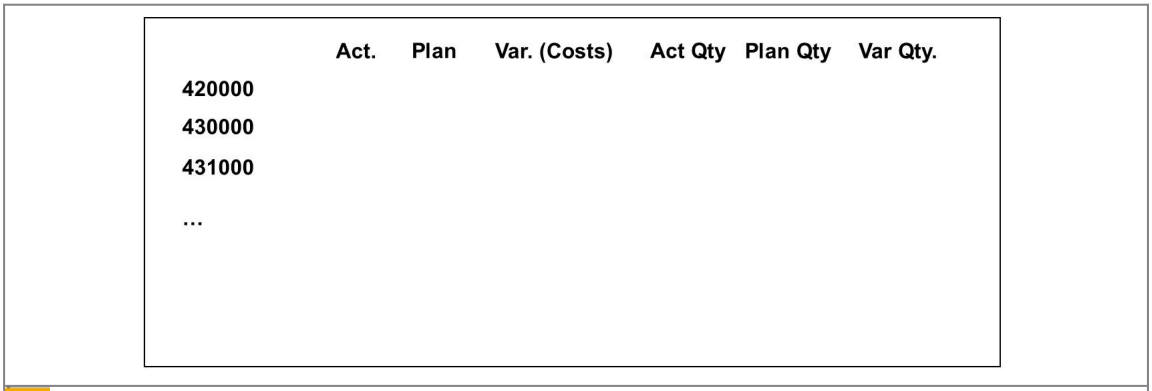



Figure 37: Report

1. Create the **Z5##-001** report by copying the **Z4##-001** report.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Create* or run the GRR4 transaction.
   b) On the *Report Painter: Create Report* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |
| *Report* | **Z5##-001** |
| Description | **Horizontal Pages** |

   c) In the Copy from pane, in the *Report* field, enter **Z4##-001**.
   d) Choose the *Create* pushbutton.
2. Define a new horizontal page.

a) On the *Report Painter: Create Report* screen, choose *Edit* → *Horizontal page* → *New horizontal page*.

3. Define columns.
   a) On the *Report Painter: Create Report* screen, double-click the next available column.
   b) In the *Select element type* dialog box, select the *Predefined key figure* radio button.
   c) Choose ✔ (*Confirm*) or press ENTER.
   d) In the *Choose predefined column* dialog box, select the *Actual quantity* radio button.
   e) Choose ✔ (*Confirm*) or press ENTER.
   f) In the *Element definition: Actual quantity* dialog box, deselect the (*Variable ON/OFF*) checkbox for the *Valuation* characteristic.
   g) Enter **0** in the *From* field.
   h) Choose the *Confirm* pushbutton. The screen shows how the key figure has been defined. It displays the basic key figures and characteristics and the values that have been used to define the predefined column.
   i) You have completed the *Act. qty* column definition. Proceed to define the *Planned Qty* column using the key figures or define the column dynamically (*Version 0*, *Value Type 1*, *Valuation 0*).
4. Define the *Variance* (*Formula*) column.
   a) On the *Report Painter: Create Report* screen, double-click the next available column.
   b) In the *Select element type* dialog box, select the *Formula* radio button.
   c) Choose ✔ (*Confirm*) or press ENTER.
   d) In the *Enter Formula* dialog box, define the *Variance* column as *X004 - X005*, where *X001* represents the *Act. Qty* and *X005* represents the *Planned Qty*.
   e) Choose ✔ (*Confirm*) or press ENTER.
   f) In the *Text maintenance* dialog box, enter *Variance* in the *Short* field.
   g) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.
   h) Choose ✔ (*Confirm*) or press ENTER.
5. Check and save the report.
   a) On the *Report Painter: Create Report* screen, choose *Report* → *Check* or choose *Check*. You can also press F6 to check the report for any errors or missing characteristics.
   b) Save the report.
6. Assign the report to a report group.
   a) On the *Report Painter: Create Report* screen, choose *Environment* → *Assign report group.*
   b) In the *Insert Report in Report Group* dialog box, in the *Report Group* field, enter **Z5##**.

c) Choose (*Confirm*) or press ENTER.

7. Execute the report.

a) Choose *Report* → *Execute* or choose (*Execute*).

b) In the *Report Painter: Create Report* dialog box, choose the *Yes* pushbutton.

c) On the *Selection* screen, enter the following data:

| Field | Value |
|---|---|
| *Cost Center Group* | **H1010** |
| *Fiscal Year* | <Current year> |
| *From Period* | 1 |
| *To Period* | 12 |

d) Choose (*Execute*).

e) On the *Horizontal Pages* screen, navigate through the horizontal pages by using (*Page right*) and (*Page left*) arrows.

## LESSON SUMMARY

You should now be able to:

- Use horizontal pages in a report

# Working with Sections

108

LESSON OVERVIEW

This lesson explains how to create reports that have multiple sections containing different types of data.

**Business Example**

You work as a financial consultant for an organization. You are a member of the project team responsible for creating reports using Report Painter and Report Writer. The organization needs Cost Center Accounting (CCA) reports. You want the reports to contain independent sections. For this reason, you require the following knowledge:

- An understanding of sections

LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Create independent sections

## Sections in Reports

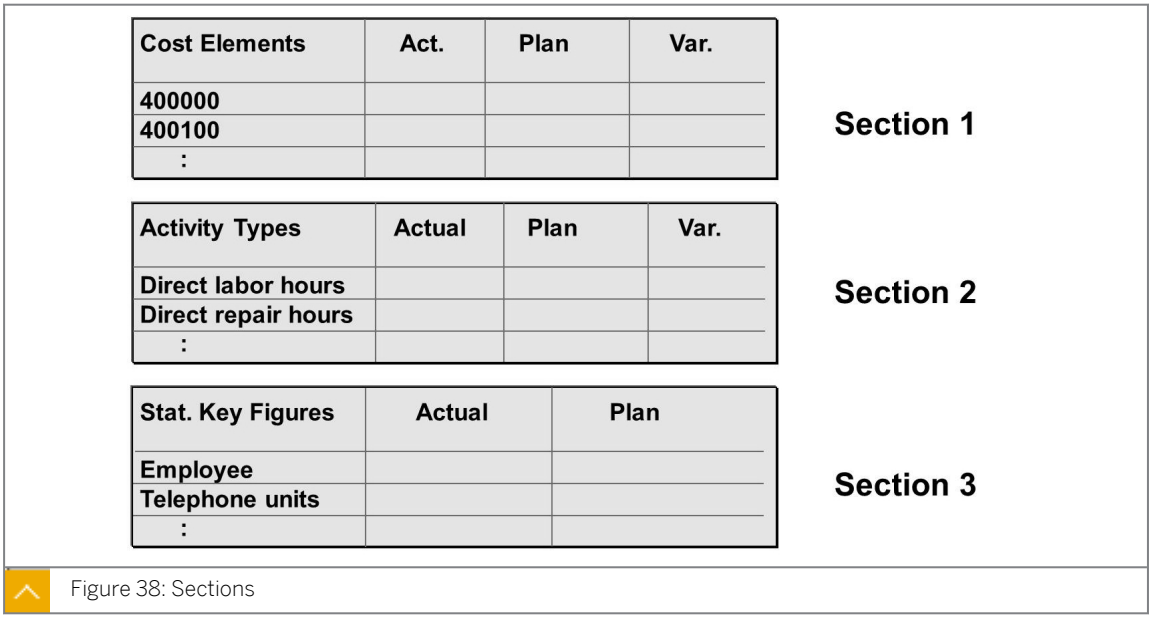



Figure 38: Sections

A report can be broken down into several sections.

**The types of sections are as follows:**

- Sections with characteristics and key figures
- Sections with calculated key figures

The majority of sections contain characteristics and key figures. Sections with calculated key figures are used to calculate individual key figures from other data displayed in the report. Each section has its own specific row structure.

**How to Create Sections in a Report**

Demonstrate the steps listed in the Create a report with independent sections exercise.

# Unit 4
# Exercise 11

111

## Create a Report with Independent Sections

### Business Example

Most of the reports that you have to prepare consist of different groups of key figures, such as costs and quantities, related to business content. For this reason, you need to create two sections; the first for costs and the second for statistical key figures.

Extend your report by creating a new section with characteristics and key figures.

Create a report that contains the information shown in the following figure.

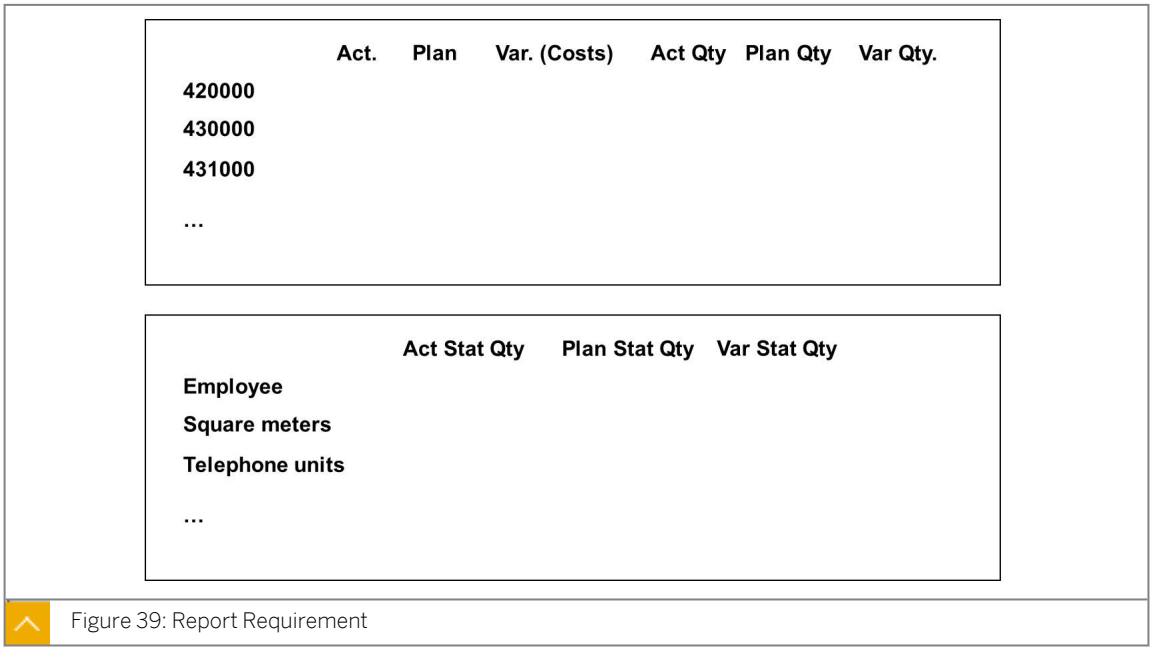



Figure 39: Report Requirement

Name the report **Z6##-001** and assign it to the **Z6##** report group. Use the **Z##** library for this purpose.

Hint:
If there is no actual data for the current year, run the report for the previous year.

1. Create the **Z6##-001** report.
2. Define a new section.
3. Name the new section.
4. Define rows.

5. Define columns.
6. Define the *Variance (Formula)* column.
7. Check and save the report.
8. Assign the report to a report group.
9. Execute the report.

# Create a Report with Independent Sections

113

### Business Example

Most of the reports that you have to prepare consist of different groups of key figures, such as costs and quantities, related to business content. For this reason, you need to create two sections; the first for costs and the second for statistical key figures.

Extend your report by creating a new section with characteristics and key figures.

Create a report that contains the information shown in the following figure.

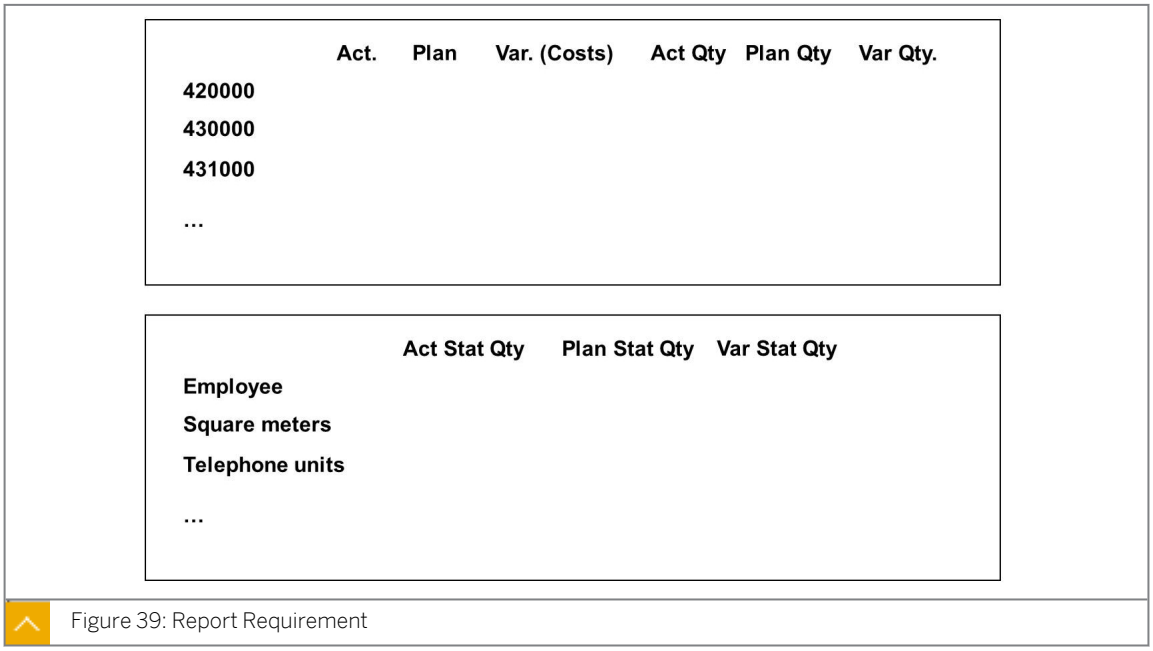



Figure 39: Report Requirement

Name the report **Z6##-001** and assign it to the **Z6##** report group. Use the **Z##** library for this purpose.

Hint:
If there is no actual data for the current year, run the report for the previous year.

1. Create the **Z6##-001** report.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Create*. You can also run the `GRR1` transaction.
   b) On the *Report Painter: Create Report* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |
| *Report* | **Z6##-001** |
| Description | **New Section** |

c) On the *Copy from* pane, enter **Z5##-001** in the *Report* field.

d) Choose the *Create* pushbutton.

2. Define a new section.

a) On the *Report Painter: Create Report* screen, choose *Edit → Sections → New section.*

b) In the *New report section* prompt, select the *Section with characteristics and key fig* radio button.

c) Choose ✔ (*Confirm*). This displays the new section.

3. Name the new section.

a) On the *Report Painter: Create Report* screen, enter a text description in the new *Section* field to describe the new section.

4. Define rows.

a) On the *Report Painter: Create Report* screen, double-click the first available row.

b) In the *Select element type* dialog box, select the *Characteristics* radio button and choose ✔ (*Confirm*).

c) In the *Selected characteristics* pane, select *Cost Element* and choose ▶ (*Move selected to right*).

d) In the *Available characteristics* pane, select *Stat. key fig*. and choose ◀ (*Move selected to left*).

e) On the *Selected characteristics* pane, enter the following data for the report row:

| Rows | From |
|---|---|
| *Employees* | **9100** |

f) Choose (*Change Texts*).

g) In the *Text maintenance* dialog box, enter **Employees** and choose the *Copy short text* pushbutton to copy this text to the *Medium* and *Long* fields.

h) Choose ✔ (*Confirm*) or press ENTER. You have completed the definition for the *Employee* row.

In the same way, define the remaining two statistical key figure rows: *Square Meters* **9101** and *Telephone Units* **9201**.

5. Define columns.

a) On the *Report Painter: Create Report* screen, double-click the first available column.

b) In the *Select element type* dialog box, select the *Predefined key figure* radio button.

c) Choose ✔ (*Confirm*) or press ENTER.

d) In the *Choose predefined column* dialog box, select the *Actual statistical key figures* radio button.

e) Choose ✔ (*Confirm*) or press ENTER.

f) Deselect the (*Variable ON/OFF*) checkbox for the *Valuation* characteristic and enter `0` in the *From* field.

g) Choose the *Confirm* pushbutton to accept the screen. This screen shows how the key figures are defined. It displays the basic key figures, characteristics, and the values that have been used to define the key figures. You have defined the *Actual Stat. key figures* column.

h) Proceed to define the *Statistical key figures*, Plan columns using a predefined column, or define the column dynamically.

6. Define the *Variance (Formula)* column.

a) On the *Report Painter: Create Report* screen, double-click the next available column.

b) In the *Select Element Type* dialog box, select the *Formula* radio button.

c) Choose ✔ (*Confirm*) or press ENTER.

d) In the *Enter Formula* dialog box, define the *Variance* column as *X001–X002*, where *X001* represents *Actual* and *X002* represents *Plan*.

e) Choose ✔ (*Confirm*) or press ENTER.

f) In the *Text maintenance* dialog box, define texts for the *Variance* column. Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.

g) Choose ✔ (*Confirm*) or press ENTER.

7. Check and save the report.

a) Choose *Report* → *Check* or choose (*Check*). You can also press F6 to check the report for any errors or missing characteristics.

b) Save the report.

c) Go back to the *SAP Easy Access* screen.

8. Assign the report to a report group.

a) On the *SAP Easy Access screen*, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report Writer* → *Report Group* → *Create* or run the `GR51` transaction.

b) On the *Create Report Group: Initial Screen*, enter the following data:

| Field | Value |
|---|---|
| *Report Group* | **z6##** |

| Field | Value |
|---|---|
| *Library* | **Z##** |

c) Choose (*Header*) or press ENTER.

d) Enter a description for the report group in the *Description* field.

e) Choose the *Reports* pushbutton.

f) On the *Create Report Group: Reports* screen, enter **Z6##-001** in the *Report* field.

g) Save the report group.

9. Execute the report.

a) On the *Create Report Group: Initial Screen*, choose (*Generate*).

b) Choose (*Execute*).

c) On the *Execute Report Group: Initial Screen*, choose (*Execute*).

d) On the *Report Group z6##: Selection* screen, enter the following data:

| Field | Value |
|---|---|
| *Fiscal Year* | <Current year> |
| *From Period* | **1** |
| *To Period* | **12** |
| *Cost Center Group* | **H1010** |

Note:
If necessary, enter **0** in the *Plan version* and in the *Actual valuation* fields.

e) Choose (*Execute*).

**LESSON SUMMARY**

You should now be able to:

- Create independent sections

# Using Cells in Formula Columns

118

LESSON OVERVIEW

This lesson explains how to use a cell reference in a column formula.

**Business Example**

You are a member of a project team responsible for creating reports using the Report Painter and Report Writer. The organization needs the Cost Center Accounting reports using Report Writer. You want to refer to a single value, such as number of employees, to normalize costs. To fulfil the needs of the organization, you use a cell in a column formula. For this reason, you require the following knowledge:

- An understanding of cells in a column formula

LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use cells in formula

## Cells in Formula Columns

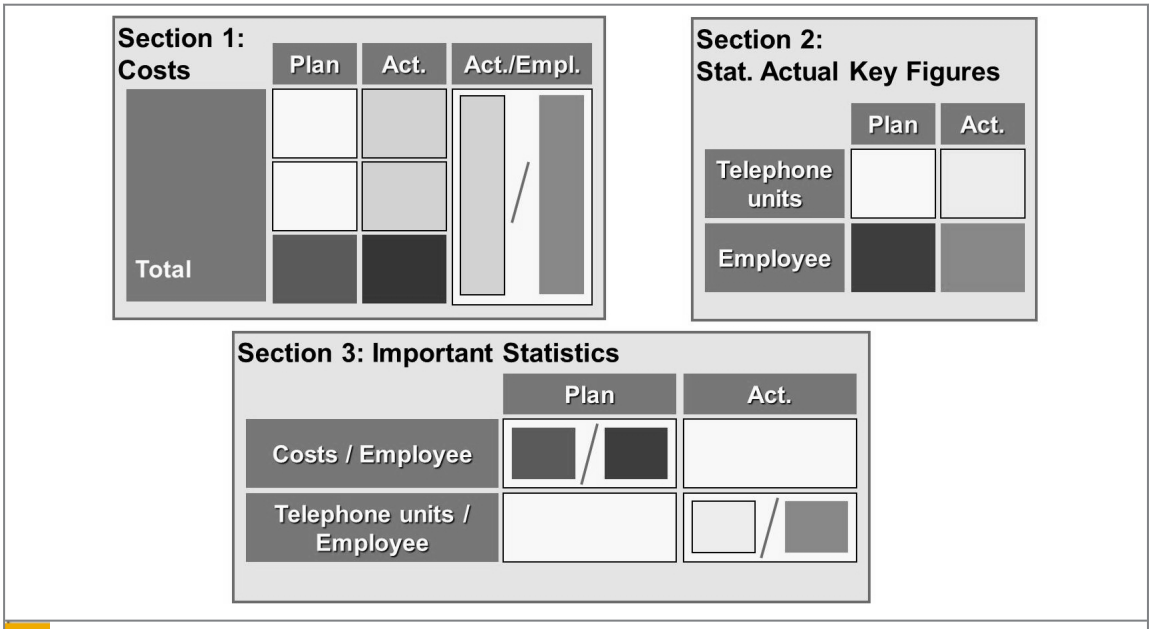



Figure 40: Calculations Using Cells

You can use cells in formulas in order to process mathematical operations in your reports. A cell defines a specific location or interval in the row and column matrix of a report.

In the figure you can see the cells that must be selected to perform the calculations in the first section, in the *Actual/Employee* column formula, and in the third section, *Costs/Employee* and *Telephone Units/Employee*.

**Cells in Formula Columns – Calculation**

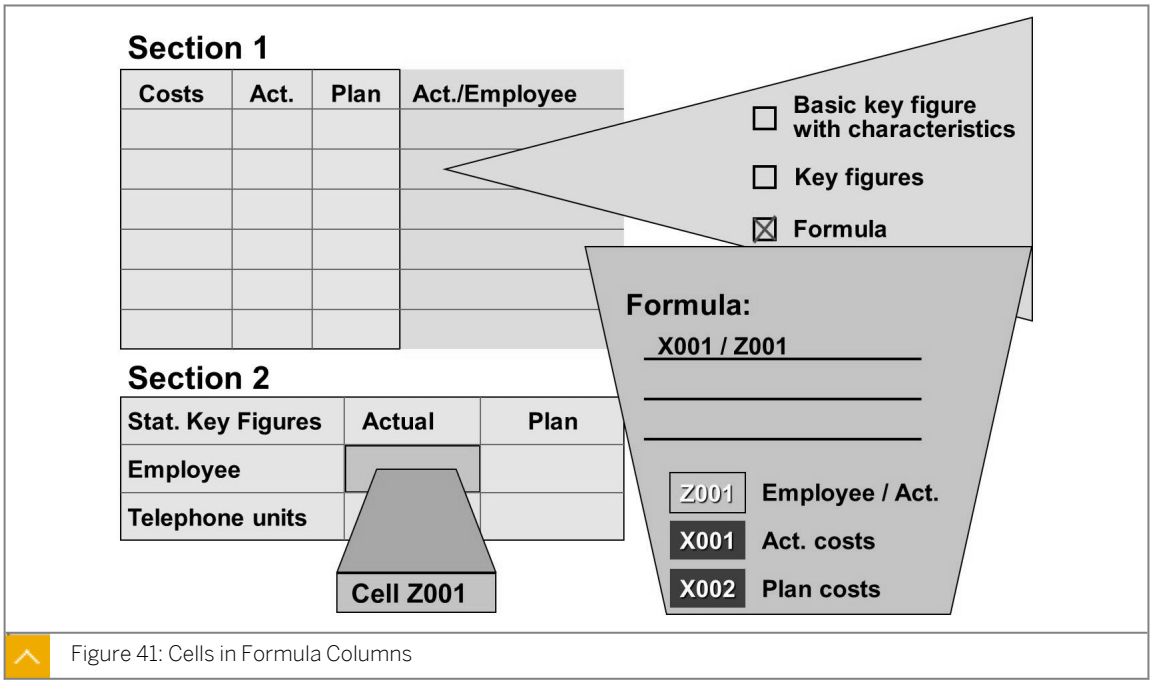



Figure 41: Cells in Formula Columns

You can use the cells selected in the report to calculate formula columns in the same way as you calculate standard columns.

**How to Use a Cell Reference in a Column Formula**

Demonstrate the steps listed in the “Add a Column Formula to a Report that Includes a Cell Reference” exercise.

121

# Add a Column Formula to a Report that Includes a Cell Reference

### Business Example

You want to reference a single value, such as number of employees, to normalize costs. To perform the task, use a cell in a column formula.

Define cells to use in column formulas.

Create the report as shown in the figure and call it **`Z6##-002`** (base it on **`Z6##-001`**).

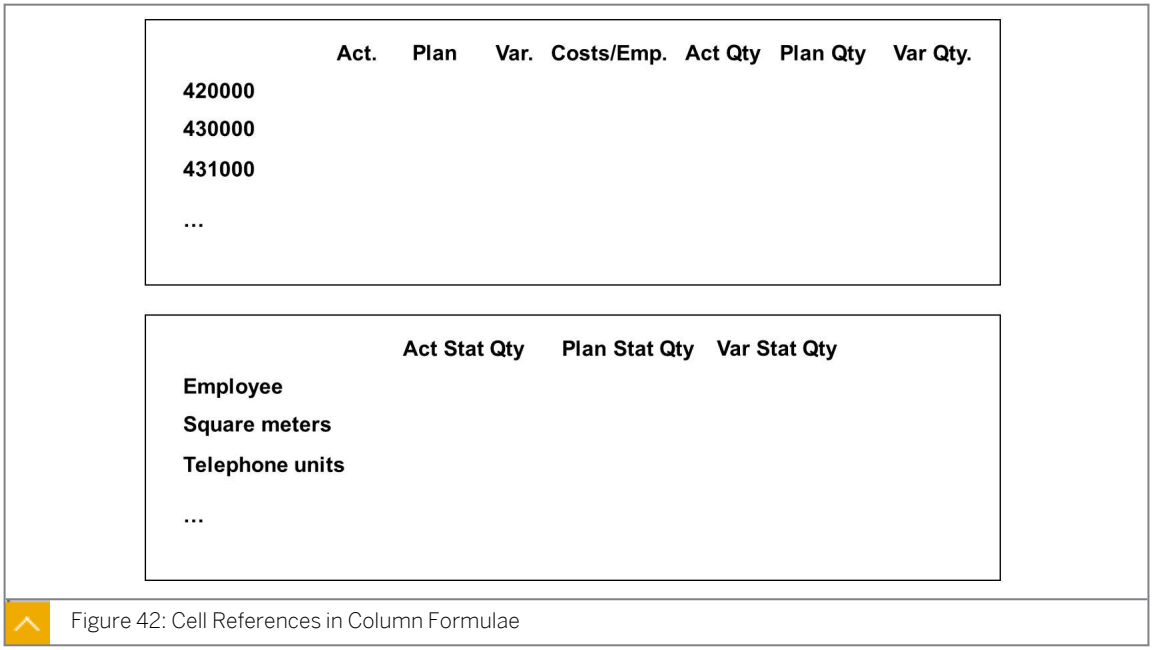



Figure 42: Cell References in Column Formulae

Hint:
If there is no actual data in the current year, use 2006.

1. Create the **`Z6##-002`** report.
2. Select the cell needed for calculation.
3. Add a new formula column.
4. Check and save the report.
5. Assign the report to a report group.
6. Execute the report.

122

# Add a Column Formula to a Report that Includes a Cell Reference

### Business Example

You want to reference a single value, such as number of employees, to normalize costs. To perform the task, use a cell in a column formula.

Define cells to use in column formulas.

Create the report as shown in the figure and call it **z6##-002** (base it on **z6##-001**).

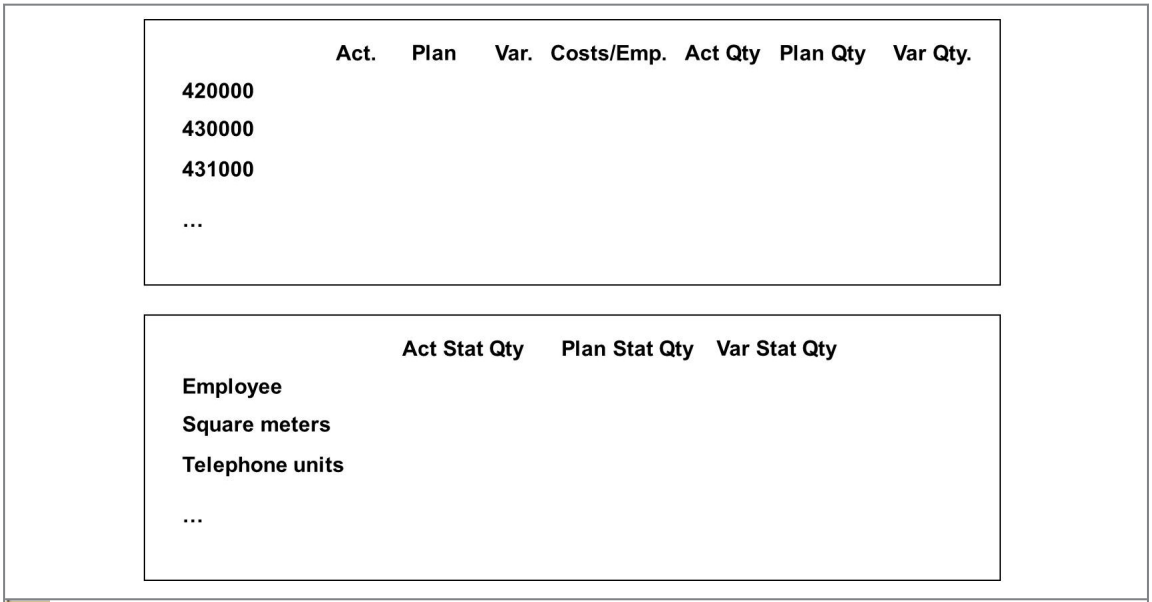



Figure 42: Cell References in Column Formulae

Hint:
If there is no actual data in the current year, use 2006.

1. Create the **z6##-002** report.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Create* or you can run the `GRR1` transaction.
   b) On the *Report Painter: Create Report* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **z##** |

| Field | Value |
|---|---|
| *Report* | **Z6##-002** |
| Description | **Cell in form. Col.** |

c) In the *Copy from* pane, enter **Z6##-001** in the *Report* field.

d) Choose the *Create* pushbutton.

2. Select the cell needed for calculation.

a) On the *Report Painter: Create Report* screen, choose *Goto* → *Section* → *Next section* or choose (*Next Section*).

b) Double-click the cell defined by the intersection of *Employees* and *Actual Stat Qty*.

c) Double-click the cell defined by the intersection of *Employees* and *Plan Stat Qty*.

d) Choose *Goto* → *Section* → *Previous section* or choose (*Previous section*).

3. Add a new formula column.

a) Add a new formula column to the right of the *Variance* column. Ensure that you are currently on horizontal page 1.

b) Double-click the next available column.

c) In the *Select element type* dialog box, select the *Formula* radio button.

d) Choose (*Confirm*).

e) In the *Enter Formula* dialog box, define the *Variance* column as *X001 / Z001*, where *X001* represents the *Actual* column and *Z001* represents the *Employees/Actual Stat Qty* column.

f) Choose (*Confirm*).

g) In the *Text maintenance* dialog box, enter **Costs/Emp**.

h) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.

i) Choose (*Confirm*).

j) Repeat the steps to create a *Plan Costs/Employee* column.

4. Check and save the report.

a) On the *Report Painter Create Report* screen, choose *Report* → *Check* or choose (*Check*) or press F6 to check the report for errors or missing characteristics.

b) Save the report.

5. Assign the report to a report group.

a) On the *Report Painter: Create Report* screen, choose *Environment* → *Assign report group.*

b) Enter **Z6##** in the *Report Group* field.

c) In the *Insert Report in Report Group* dialog box, choose (*Confirm*).

d) Choose (*Confirm*) or press ENTER.

6. Execute the report.

a) Choose *Report → Execute*. If prompted, choose the *Yes* pushbutton to save and execute the report.

b) On the *Report Group Z6##: Selection* screen, enter the following data:

| Field Name | Value |
|---|---|
| *Fiscal Year* | <Current year> |
| *From Period* | **1** |
| *To Period* | **12** |
| *Cost Center Group* | **H1010** |

c) Choose (*Execute*).

d) In the *Reports* pane, double-click the *Cell in form. Col.* report.

**LESSON SUMMARY**

You should now be able to:

- Use cells in formula

# Using Cells in Calculations

126

LESSON OVERVIEW

This lesson explains how to create a calculated key figure section in a report.

**Business Example**

The management of your organization wants you to create the Cost Accounting reports. Most of the reports to be created consist of different groups of key figures related to business content, for example, costs and quantities. You want to perform some mathematical operations in your report. For this reason, you require the following knowledge:

- An understanding of sections with calculated key figures

LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Define sections with calculated key figures

## Sections with Calculated Key Figures

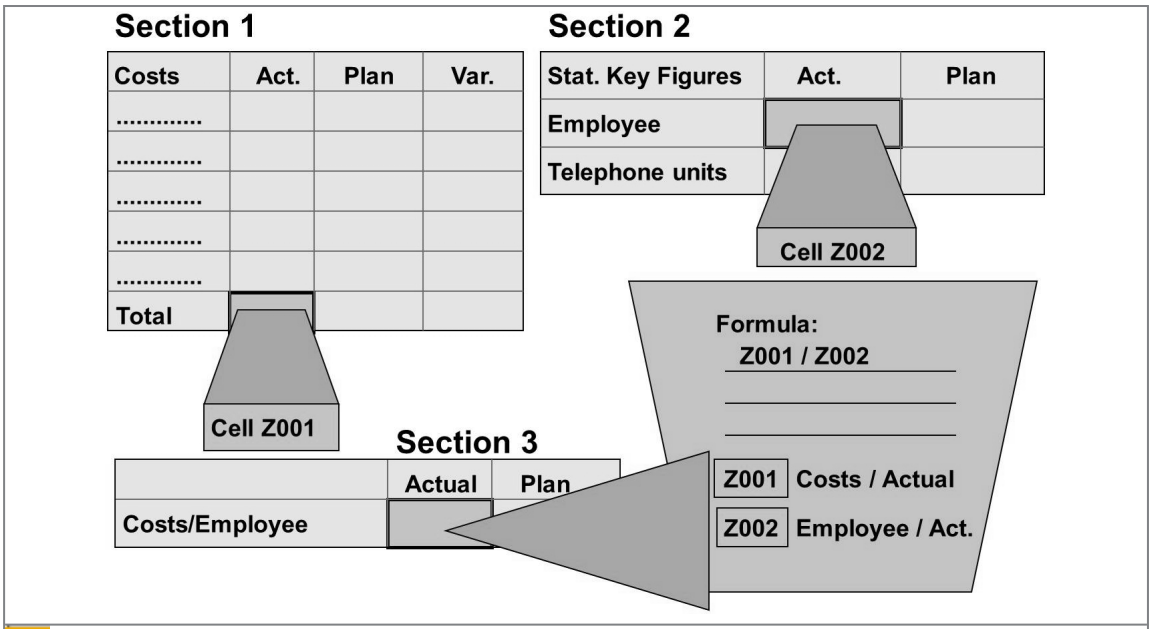



Figure 43: Sections with Calculated Key Figures

In sections with calculated key figures, use the cells selected in the report to define new key figures.

To define a section with calculated key figures, you define text for the rows and columns in the section. Then, define each cell using the formula editor.

### Sections with Calculated Key Figures – Example

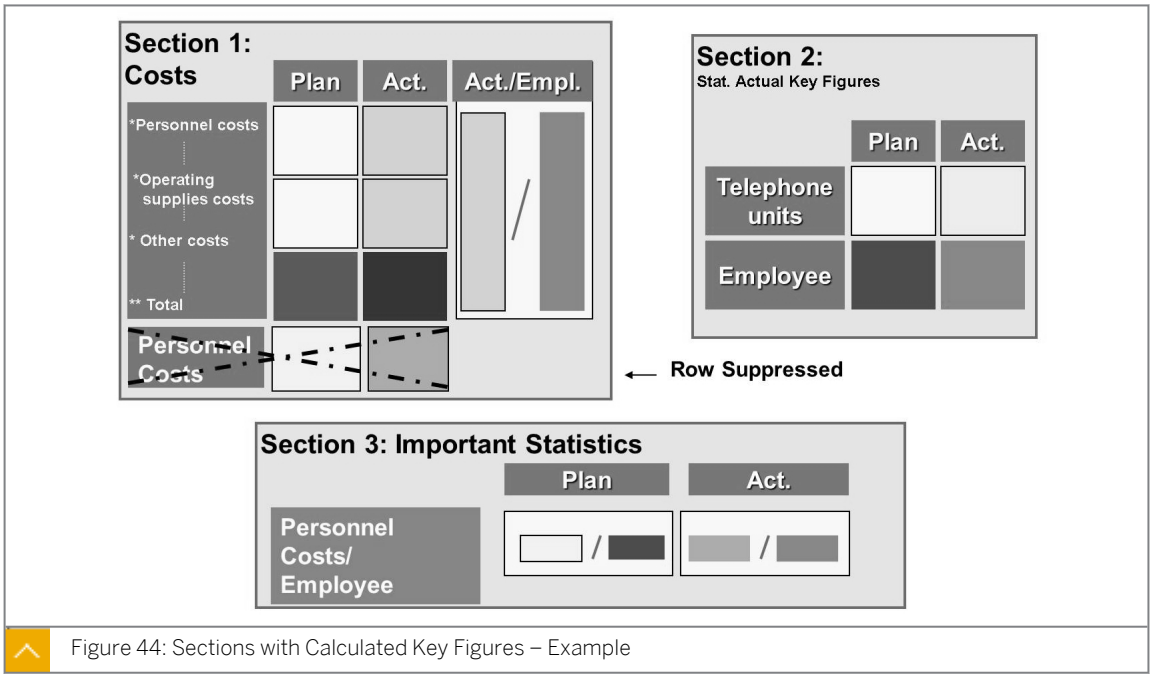



Figure 44: Sections with Calculated Key Figures – Example

It is impossible to select cells in exploded rows. The reference value in the row for a cell is the maximum total of the respective hierarchy.

**To choose cells for a subgroup, perform the following steps:**

1. Define an additional report row for the subgroup.
2. Choose the required cell.
3. Hide the report row.

### Suppressed Rows and Columns

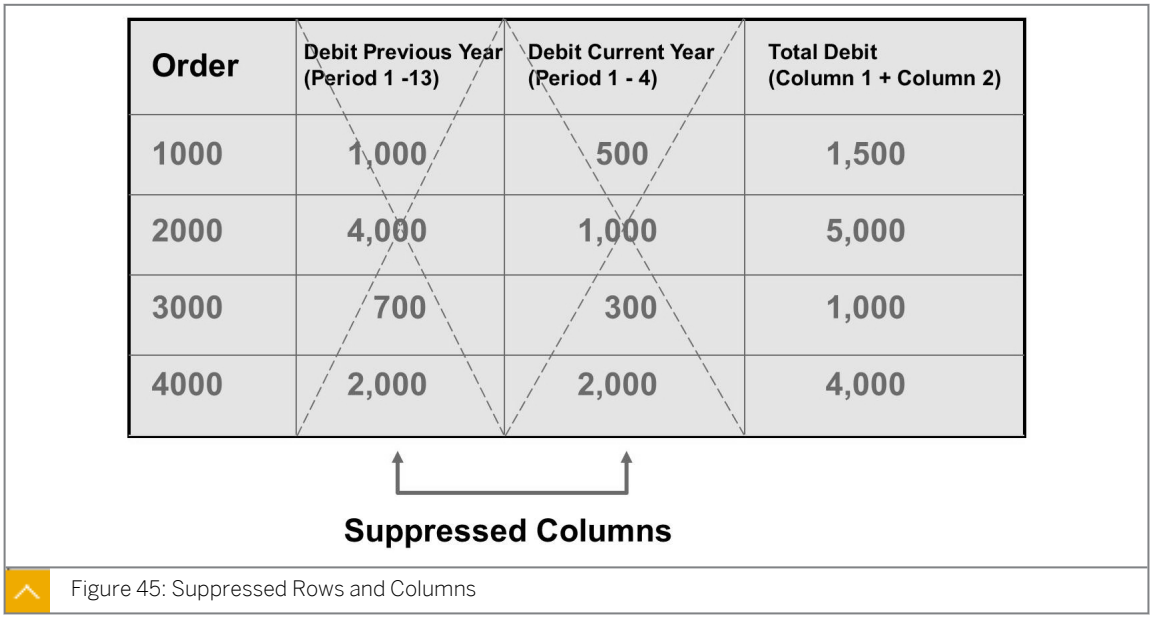



Figure 45: Suppressed Rows and Columns

You can suppress or hide individual rows and columns in a report. You use the hidden rows and columns to calculate formula rows or formula columns or to define sections with calculated key figures.

**How to Create a Calculated Key Figure Section in a Report**

Demonstrate the steps listed in the “Create a Report with a Calculated Key Figure Section” exercise.

129

# Create a Report with a Calculated Key Figure Section

### Business Example

The reporting table shown in the figure does not directly offer some of the key figures relevant to your business. However, these key figures can be calculated from the data. You can access data cells from previous sections of the report to calculate your own key figures.

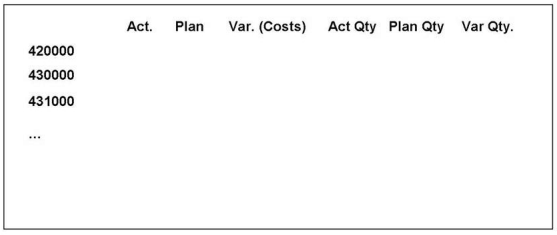



Figure 46: Plan / Actual and Variance Report

Extend reports to calculate your own key figures by referencing data from previous sections of the report, such as a calculated key figure block.

The report continues to build where it now calculates personnel costs/employee in addition to displaying the information account by account. Create the **Z6##-003** report (base it on **Z6##-002**). Mark the cells where you need to perform the calculation in the new sections.

Note:
Use the **OAS_PERS** set for the personnel costs.

Hint:
To toggle between reports in the same report group, choose *Goto* → *Other Report* or choose (*Other Report*). If there is no actual data in the current year, run the report for 2006.

1. Create the **Z6##-003** report.
2. Define an additional row for personnel costs (**OAS_PERS**).

Note:
To use the personnel costs as part of the formula, you have to enter the **OAS_PERS** set in a separate line to access the top total levels. Ensure that the row is either in the *Expand* or the *Do not expand* setting. This is required to access the grand total line of the costs. After the explode setting is correctly set, proceed to select the cells.

3. Select the cells (Personnel Costs: Actual and Plan).
4. Hide the personnel costs row.
5. Select the cells (*Employees*: *Actual* and *Plan*).
6. Create a calculated key figure section.
7. Name the section.
8. Define the row text.
9. Define the column text.
10. Define the formula cells.
11. Check and save the report.
12. Assign the report to the **Z6##** report group.
13. Execute the report.
14. Why do you need to set the explode level on the cost elements to *Explode* or *Do Not Explode*?
15. What is meant by dependent section?

131

# Create a Report with a Calculated Key Figure Section

**Business Example**

The reporting table shown in the figure does not directly offer some of the key figures relevant to your business. However, these key figures can be calculated from the data. You can access data cells from previous sections of the report to calculate your own key figures.

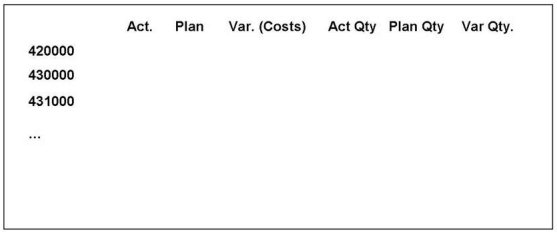



Figure 46: Plan / Actual and Variance Report

Extend reports to calculate your own key figures by referencing data from previous sections of the report, such as a calculated key figure block.

The report continues to build where it now calculates personnel costs/employee in addition to displaying the information account by account. Create the **Z6##-003** report (base it on **Z6##-002**). Mark the cells where you need to perform the calculation in the new sections.

Note:
Use the **OAS_PERS** set for the personnel costs.

Hint:
To toggle between reports in the same report group, choose *Goto* → *Other Report* or choose (*Other Report*). If there is no actual data in the current year, run the report for 2006.

1. Create the **Z6##-003** report.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Create*. You can also run the GRR1 transaction.
   b) On the *Report Painter: Create Report* screen, enter the following data:

| Field | Value |
|---|---|
| *Library* | **Z##** |

| Field | Value |
|---|---|
| *Report* | **Z6##-003** |
| Description | **Calculated key figures** |

c) In the *Copy from* pane, enter **Z6##-002** in the *Report* field.

d) Choose the *Create* pushbutton.

2. Define an additional row for personnel costs (**OAS_PERS**).

> Note:
> To use the personnel costs as part of the formula, you have to enter the **OAS_PERS** set in a separate line to access the top total levels. Ensure that the row is either in the *Expand* or the *Do not expand* setting. This is required to access the grand total line of the costs. After the explode setting is correctly set, proceed to select the cells.

a) On the *Report Painter: Create Report* screen, double-click the next available row.

b) In the *Select element type* dialog box, select the *Characteristics* radio button and choose (*Confirm*).

c) In the *Available characteristics* pane, select *Cost Element* and choose (*Move selected to left*).

d) Select the (*SET or Hierarchy node ON/OFF*) checkbox and enter **OAS_PERS** in the *From* field.

e) Choose the *Confirm* pushbutton.

f) In the *Selection of set (1)* dialog box, double-click *OAS_PERS*.

g) Choose (*Confirm*).

h) Choose *Edit* → *Rows* → *Explode* to check the explode level. Ensure that this is not set to *SingleVals*.

i) Choose (*Confirm*).

3. Select the cells (Personnel Costs: Actual and Plan).

a) Double-click the cell defined by the intersection of *Personnel Cost Element* and *Actual*.

b) Double-click the cell defined by the intersection of *Personnel Cost Element* and *Quantity*.

4. Hide the personnel costs row.

a) Select the personnel costs row and choose *Edit* → *Rows* → *Hide*.

5. Select the cells (*Employees*: *Actual* and *Plan*).

a) Choose *Goto* → *Section* → *Next section*.

b) Double-click the cell defined by the intersection of *Employees* and *Actual*.

c) Double-click the cell defined by the intersection of *Employees* and *Plan*.

Hint:
If you have copied the previous report, these cells may already be selected.

6. Create a calculated key figure section.
   a) Choose *Edit* → *Sections* → *New section*.
   b) In response to the *New report section* dialog box, select the *Section with calculated key figures* radio button.
   c) Choose ✔ (*Confirm*).
7. Name the section.
   a) On the *Report Painter: Create Report* screen, enter a text description in the *Section* field to describe this new section.
8. Define the row text.
   a) Double-click row 1.
   b) In the *Text maintenance* dialog box, enter the text for the row (for example, **`Personnel Costs/Emp`**).
   c) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.
   d) Choose ✔ (*Confirm*).
9. Define the column text.
   a) Double-click column 1 to define text. Enter *Actual* as the text for the column.
   b) Choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields. Repeat the steps for column 2 (*Plan*).
10. Define the formula cells.
    a) Double-click the cell defined by the intersection of *Personnel Costs/Emp* and *Actual*.
    b) In the *Pl.Cst/Emp: Enter Formula* dialog box, define the *Actual* column as *Z003 / Z001*, where *Z003* represents *Personnel / Quantity* and *Z001* represents *Employee / Actual*.
    c) Choose ✔ (*Confirm*).
    d) In the *Text maintenance* dialog box, enter **`Pl.Cst/Emp`** in the *Short* field and then choose the *Copy short text* pushbutton to copy the text to the *Medium* and *Long* fields.
    e) Choose the *Confirm* pushbutton.
    f) Double-click the cell defined by the intersection of *Personnel Costs/Emp* and *Plan*.
    g) In the *Enter Formula* dialog box, define the *Plan* column as *Z004 / Z002*, where *Z004* represents the *Personnel / Quantity* and *Z002* represents the *Employees / Plan*.
    h) Choose ✔ (*Confirm*).
11. Check and save the report.

a) On the *Report Painter: Create Report* screen, choose *Report* → *Check* or choose (*Check*) or press F6 to check the report for errors or missing characteristics.

b) Save the report.

12. Assign the report to the **Z6##** report group.

a) On the *Report Painter: Create Report* screen, choose *Environment* → *Assign report group*.

b) Enter **Z6##** in the *Report Group* field.

c) In the *Insert Report in Report Group* dialog box, choose (*Confirm*).

d) Choose (*Confirm*).

e) Save the report group.

13. Execute the report.

a) Choose *Report* → *Execute*.

b) On the *Report Group Z6##: Selection* screen, enter the following data:

| Field | Value |
|---|---|
| *Fiscal Year* | <Current year> |
| *From Period* | **1** |
| *To Period* | **12** |
| *Cost Center Group* | **H1010** |

c) Choose (*Execute*).

d) In the *Reports* pane, double-click the *Calculated Key Figur* report.

> Hint:
> If there is no actual data for the current year, run the report for 2006.

14. Why do you need to set the explode level on the cost elements to *Explode* or *Do Not Explode*?

a) This is because you need to have access to the grand total of the hierarchy. If the OAS_PRIM set is defined as *SingleVals*, you do not have access to the grand total.

15. What is meant by dependent section?

a) A dependent section is a section of the report where no new data is extracted from the summary tables. Only the existing data from other sections of the report are referenced and used in calculations.

**LESSON SUMMARY**

You should now be able to:

- Define sections with calculated key figures

# Learning Assessment

137

1. A report can consist of several sections.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

2. Each section in a report can comprise several horizontal pages.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

3. Formula columns can refer to columns from all of the horizontal pages in the same section.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

4. The horizontal pages in a section can have different row structures.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

5. Every report can be broken down into several sections.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

6. The majority of sections contain _____ and _____.

   *Choose the correct answers.*

   - [ ] A characteristics
   - [ ] B basic key figures
   - [ ] C calculated key figures
   - [ ] D key figures

7. Name the two types of sections in a report.

   *Choose the correct answers.*

   - [ ] A Sections with characteristics
   - [ ] B Sections with characteristics and key figures
   - [ ] C Sections with predefined key figures
   - [ ] D Sections with calculated key figures

8. You can use the cells selected in the report to calculate formula columns in the same way that you calculate standard columns.

   *Determine whether this statement is true or false.*

   - [ ] True
   - [ ] False

9. A _____ defines a specific location or interval in the row and column matrix of a report.

   *Choose the correct answer.*

   - [ ] A section
   - [ ] B horizontal page
   - [ ] C cell
   - [ ] D formula

10. You can use cells to carry out _____ operations in your reports.

*Choose the correct answer.*

- ☐ **A** logical
- ☐ **B** mathematical
- ☐ **C** statistical
- ☐ **D** analytical

11. When defining a section with a calculated key figure, what are the steps you must follow to use a subtotal in the calculation?

*Choose the correct answers.*

- ☐ **A** Define an additional report row for the subgroup.
- ☐ **B** Choose the required cell.
- ☐ **C** Select cells in exploded rows.
- ☐ **D** Hide the report row.

12. Individual rows and columns can be suppressed or hidden in a report.

*Determine whether this statement is true or false.*

- ☐ True
- ☐ False

# Learning Assessment - Answers

140

1. A report can consist of several sections.

   *Determine whether this statement is true or false.*

   [X] True

   [ ] False

2. Each section in a report can comprise several horizontal pages.

   *Determine whether this statement is true or false.*

   [X] True

   [ ] False

3. Formula columns can refer to columns from all of the horizontal pages in the same section.

   *Determine whether this statement is true or false.*

   [X] True

   [ ] False

4. The horizontal pages in a section can have different row structures.

   *Determine whether this statement is true or false.*

   [ ] True

   [X] False

5. Every report can be broken down into several sections.

   *Determine whether this statement is true or false.*

   [X] True

   [ ] False

6. The majority of sections contain _____ and _____.

   *Choose the correct answers.*

   - [X] A characteristics
   - [ ] B basic key figures
   - [ ] C calculated key figures
   - [X] D key figures

7. Name the two types of sections in a report.

   *Choose the correct answers.*

   - [ ] A Sections with characteristics
   - [X] B Sections with characteristics and key figures
   - [ ] C Sections with predefined key figures
   - [X] D Sections with calculated key figures

8. You can use the cells selected in the report to calculate formula columns in the same way that you calculate standard columns.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

9. A _____ defines a specific location or interval in the row and column matrix of a report.

   *Choose the correct answer.*

   - [ ] A section
   - [ ] B horizontal page
   - [X] C cell
   - [ ] D formula

10. You can use cells to carry out _____ operations in your reports.

    *Choose the correct answer.*

    - [ ] A logical
    - [x] B mathematical
    - [ ] C statistical
    - [ ] D analytical

11. When defining a section with a calculated key figure, what are the steps you must follow to use a subtotal in the calculation?

    *Choose the correct answers.*

    - [x] A Define an additional report row for the subgroup.
    - [x] B Choose the required cell.
    - [ ] C Select cells in exploded rows.
    - [x] D Hide the report row.

12. Individual rows and columns can be suppressed or hidden in a report.

    *Determine whether this statement is true or false.*

    - [x] True
    - [ ] False

# UNIT 5 Report Formatting



**UNIT OBJECTIVES**

- Create a standard layout
- Use the formatting options in sections and use the section layout
- Use format groups to format columns

# Formatting Reports Using Standard Layouts

144

## LESSON OVERVIEW

This lesson explains how to create and use standard layouts.

Explain the layout options. Point out that the standard layout can also be changed during output. Explain that the layout is assigned in the report header.

### Business Example

You work as a financial consultant of an organization. The management wants you to create a report of how much each cost center spends toward each account. In addition, the management wants you to divide the report layout into "actual as compared with plan costs" and "statistical key figure" sections. They also want you to add different attributes for each section of the report. To fulfil the requirements of the management, you need to use the section layout and functions of attributes. For this reason, you require the following knowledge:

- An understanding of how to use standard layouts

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Create a standard layout

## Standard Layouts

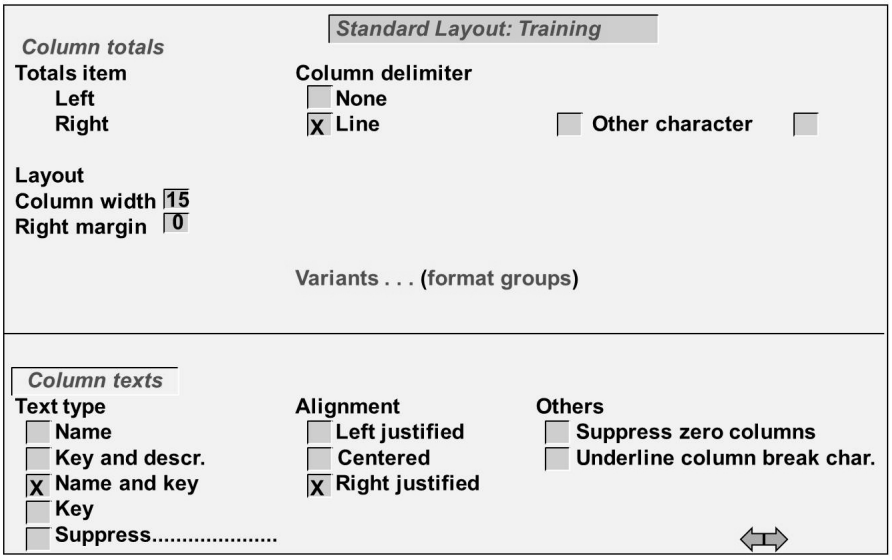



Figure 47: Standard Layout

The  standard layout defines the format of your report.

**In a standard layout, you define parameters that control the following settings:**

- Rows
- Lead column
- Columns
- Column headings
- Representation
- Language-specific parameters
- Graphics

**Standard Layout for Defining Reports**

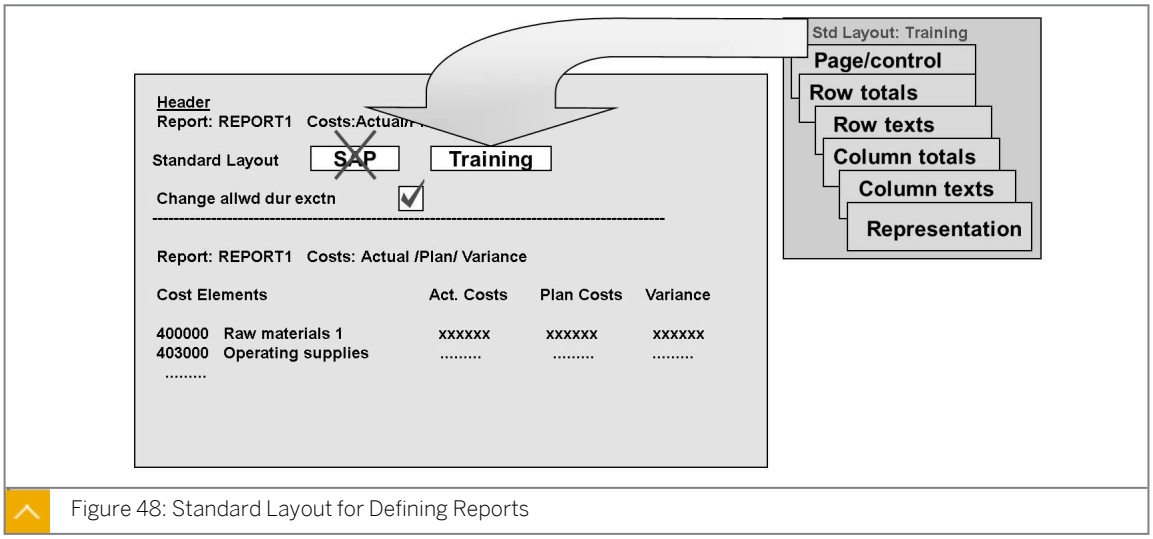



Figure 48: Standard Layout for Defining Reports

When you first define a report, the standard layout is initially assigned. The standard layout SAP appears in the *Standard Layout* field at the top of each report layout dialog box, in the report header.

When you define your report, you can define a layout specifically for the report or you can make changes to the report layout even if the standard layout is assigned.

### Layout Changes during Output

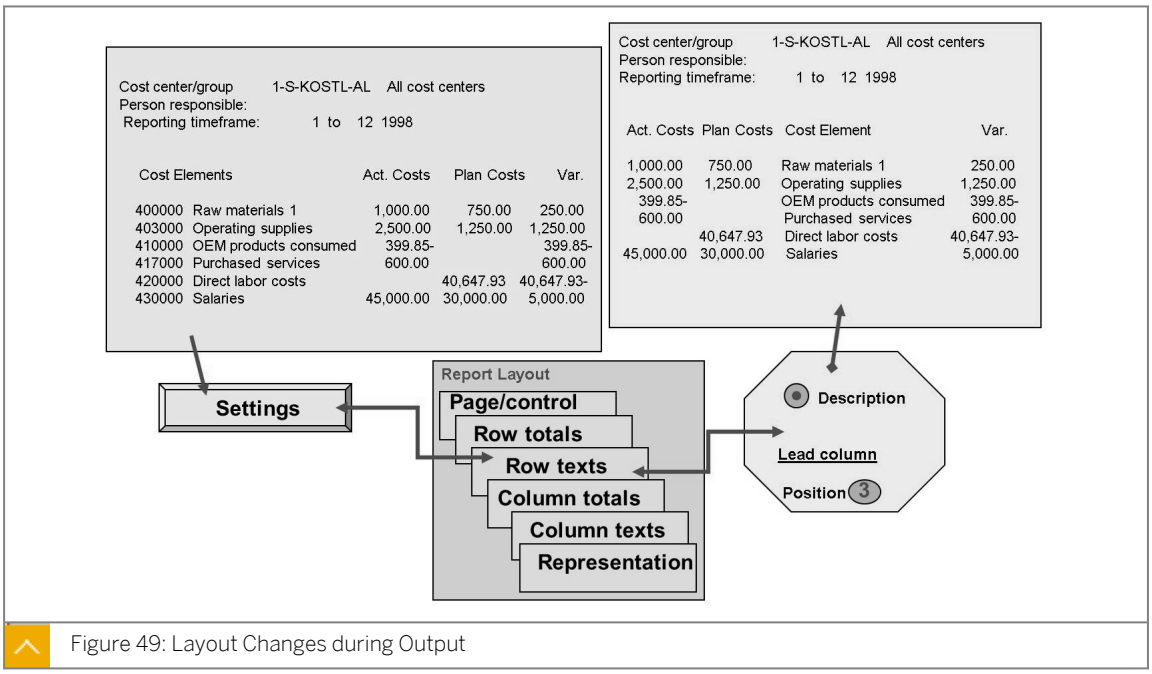



Figure 49: Layout Changes during Output

You can modify this report layout permanently when the Change allwd dur exctn checkbox is selected in the layout. This flag determines whether modifications to the layout parameters can be saved.

To define the report layout, you can change and save the layout parameters of reports that are under development. To prevent other users from constantly changing the report layout, the system prevents you from saving the parameters on line after the report has left the development phase

### How to Create and Use Standard Layouts

Demonstrate the function of the standard layout and link it to the Report Painter report.

Modify the *Z6##-003* report so that you can use standard layout settings.

1. Create a separate standard layout **`Z##-NEW`**.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report Writer* → *Standard layout* → *Create*. You can also run the `GR11` transaction.
   b) On the *Create Standard Layout: Initial* screen, enter **`Z##-New`** in the *Standard layout* field.
   c) Enter **`SAP`** in the *Copy from* field.
   d) Choose *Continue*.
   e) On the *Create Standard Layout* screen, enter **`Z##-New Layout`** in the *Description* field.
   f) On the *Page control* tab page, enter **`70`** in the *Length* field and **`135`** in the *Width* field.

Note:
You can change any settings on the layout to test the layout.

g) Save the layout.

h) Go back to the *SAP Easy Access* screen.

2. Assign the *Z6##-003* report to the new *Z##-NEW* layout.

a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change* or run the `GRR2` transaction.

b) On the *Report Painter: Change Report* screen, double-click the *Z6##-003* report.

c) Choose *Edit* → *Report header* or double-click the name of the standard layout linked to the report. The layout name is located in the header row of the Report Painter report definition interface.

d) In the *Report Painter: Maintain Report Header* dialog box, enter **`Z##-New`** in the *Standard layout* field.

e) Choose ✔ *Confirm*.

f) In the *Report Painter: Change Report* dialog box, choose the *Yes* pushbutton to change the current format.

**LESSON SUMMARY**
You should now be able to:

- Create a standard layout

# Formatting Sections

147

## LESSON OVERVIEW

This lesson explains how to adapt reports to meet business formatting standards.

Explain that section layout and attributes are new report formatting features. These new formatting features enable you to define the layout functions for individual sections.

### Business Example

You work as a financial consultant for an organization. The management wants you to create a report of how much each cost center is spending towards each cost element, such as wages, salaries, and so on. For this reason, you require the following knowledge:

- An understanding of section layout and attributes

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use the formatting options in sections and use the section layout

## Section Layout and Attributes

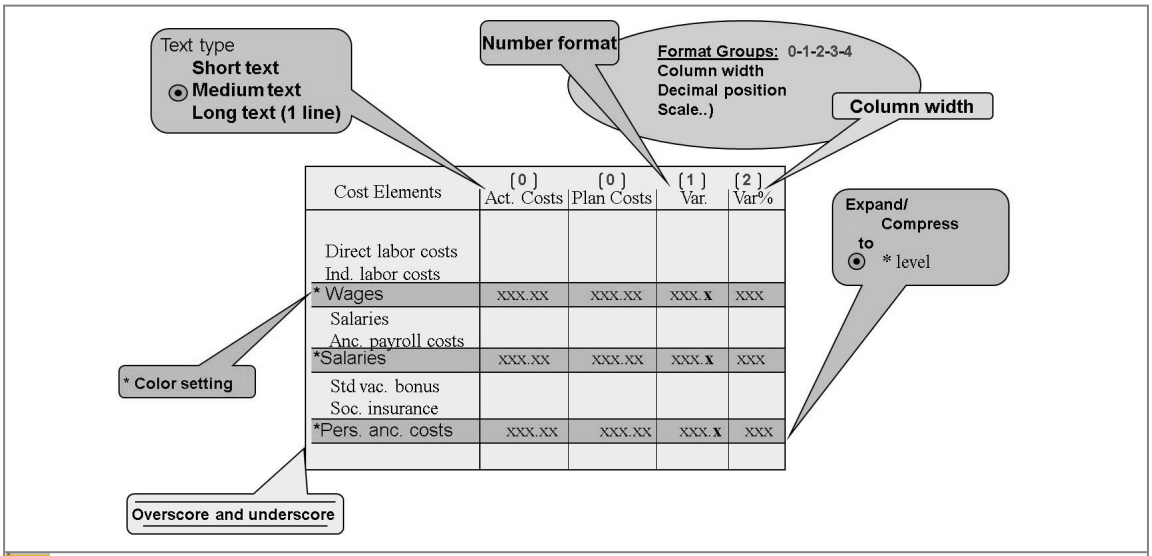



Figure 50: Formatting Sections

**Use the following formatting options in the layout section of a report definition:**

- Selecting a short text, medium text, or a single-line long text for all columns
- Defining color, overscore, and underscore options to emphasize a summarization (*) level

- Expanding or compressing the summarization levels
- Choosing format groups for the columns to optimize the number format and column width

**Section Layout**

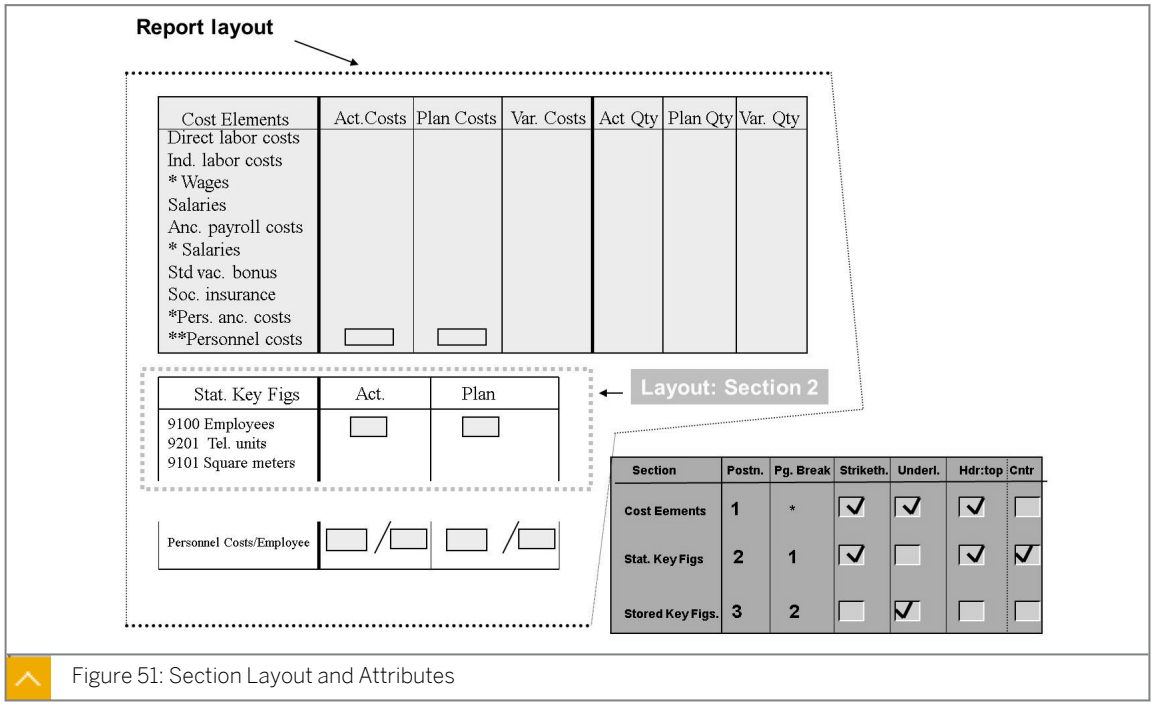



Figure 51: Section Layout and Attributes

A Report Writer report comprises one or more sections. These sections are output in the order defined by their sequence number. You can specify a separate text and page break for each section.

You can also decide whether the section can be output on a new page or whether the column heading can be printed, when the section starts in the middle of a page.

When you insert a layout in a report header, the layout applies globally to all of the sections in the report. In the example shown in the figure, any changes made to the layout of the report automatically affect the sections.

You can also specify layout parameters for specific sections in the report definition. Layout parameters for specific sections in the report definition take precedence over global layout settings.

**The section layout contains control information for the following components:**

- Row totals
- Row texts
- Column texts

The section settings can also be modified in the report output.

**How to Format Sections**

Demonstrate the steps listed in the Create a New Standard Layout and attach it to a Report and Change Section Attributes exercise.

Unit 5
Exercise 14

149

# Create a New Standard Layout and Attach it to a Report and Change Section Attributes

**Business Example**

The management requires different attributes for each section of the report that you create. You need to create a standard layout and assign this layout to an existing report.

1. Modify the *Z6##-003* report to use different layout settings. Create a separate **`Z##-NEW`** standard layout.
2. Assign the *Z6##-003* report to the new *Z##-NEW* layout.
3. Determine how to change the section attributes.
4. Determine how to link your report to a different section layout.
5. Save and execute the report.

# 150 Create a New Standard Layout and Attach it to a Report and Change Section Attributes

**Business Example**

The management requires different attributes for each section of the report that you create. You need to create a standard layout and assign this layout to an existing report.

1. Modify the *Z6##-003* report to use different layout settings. Create a separate **Z##-NEW** standard layout.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report Writer* → *Standard Layout* → *Create*. You can also run the GR11 transaction.
   b) On the *Create Standard Layout: Initial Screen*, enter **Z##-NEW** in the *Standard layout* field.
   c) In the *Copy from* screen area, in the *Standard layout* field, enter **SAP**.
   d) Choose *Continue*.
   e) On the *Create Standard Layout* screen, enter a description for the new layout in the *Description* field.
   f) Change some of the settings in the layout so to test the layout.
   g) Save the new layout.
   h) Go back to the *SAP Easy Access* screen.
2. Assign the *Z6##-003* report to the new *Z##-NEW* layout.
   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change* or run the GRR2 transaction.
   b) On the *Report Painter: Change Report* screen, double-click the *Z6##-003* report.
   c) Choose *Edit* → *Report header* or double-click the name of the standard layout linked to the report. The layout name is located in the header row of the Report Painter report definition interface.
   d) In the *Report Painter: Maintain Report Header* dialog box, enter **Z##-New** in the *Standard layout* field.
   e) Choose ✔ *Continue*.
   f) In the *Report Painter: Change Report* dialog box, choose the *Yes* pushbutton to change the current format.
   g) Go back to the *SAP Easy Access* screen.
3. Determine how to change the section attributes.

a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change*. You can also run the `GRR2` transaction.

On the *Report Painter: Change Report* screen, double-click the *Z6##-003* report.

b) On the *Report Painter: Change Report* screen, choose *Formatting* → *Section overview*.

> Note:
> You can change the attributes for each section in the report by choosing *Settings* → *Section attributes*.

4. Determine how to link your report to a different section layout.

a) In the *Section Overview* dialog box, select the layout you want to edit and choose *Layout*.

b) On the *Report Painter: Change Report* screen, choose *Formatting* → *Section layout*.

> Note:
> You can also choose *Settings* → *Section layout* in the executed report.

c) Choose the *Use report layout* pushbutton and then choose the *Cancel* pushbutton.

d) In the *Section Overview* dialog box, select the layout you want to edit and choose *Layout*.

e) Choose the *Define section layout* pushbutton.

f) Choose the *Cancel* pushbutton.

g) In the *Section Overview* dialog box, choose the *Cancel* pushbutton.

h) Choose *Formatting* → *Section* layout.

i) Choose *Continue*.

5. Save and execute the report.

a) Save the report.

b) On the *Report Painter: Change Report* screen, choose *Report* → *Execute*.

c) On the *Report Group Z6##: Selection* screen, enter the following data:

| Field | Value |
|---|---|
| *Fiscal Year* | <Current year> |
| *From Period* | **1** |
| *To Period* | **12** |
| *Plan Version* | **0** |
| *Actual Valuation* | **0** |

| Field | Value |
| --- | --- |
| *Cost Center Group* | **H1010** |

d) Choose *Execute*.

e) On the *Reports* pane, double-click the *Calculated Key Figur* report. You can now see the results of your new layout.

**LESSON SUMMARY**

You should now be able to:

- Use the formatting options in sections and use the section layout

Unit 5
Lesson 3

# Formatting Reports Using Format Groups

154

**LESSON OVERVIEW**

This lesson explains how to use format groups to format columns.

Explain that there are a total of six format groups (numbered 0-5), formally known as print classes. You use the format groups to control formatting options for a column. Show how the format groups can be stored at different points, such as report definition, standard layout, and section layout.

> Note:
> In Release 4.6, it is impossible to display the format groups in the report output.

**Business Example**

You work as a financial consultant for an organization. The management wants you to create a report of how much each cost center is spending towards each account. After creating the report, you need to modify the report to highlight various levels of rows, by using over scores and underscores as well local summarization level. For this reason, you require the following knowledge:

- An understanding of how to use format groups

**LESSON OBJECTIVES**

After completing this lesson, you will be able to:

- Use format groups to format columns

## Format Groups

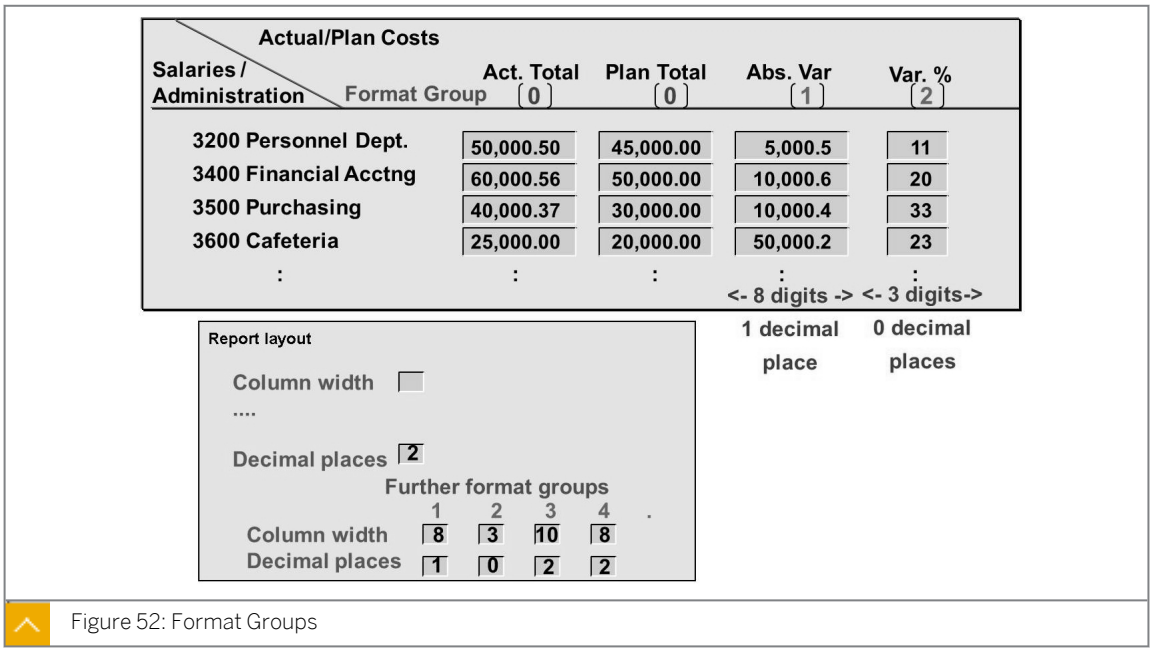



Figure 52: Format Groups

A format group represents a version of layout parameters for a report.

The format groups refer to certain parameters that are displayed on the *Create Report: Layout* or *Create Standard Layout* screens. Each of the fields listed is made up of six input fields; each of these six input fields stands for one of the six format group 0 through 5. The *Report Writer* selects the corresponding format information according to the value you entered for the format group.

**On the Create Report: Column Totals screen, the format group applies to the following parameter fields affecting column format:**

- Column width
- Right margin

**On the Create Report: Layout: Representation screen, the format group applies to the following parameter fields affecting numeric format:**

- Decimal places
- Scaling
- Change +/- sign
- Print unit

### How to Use Format Groups

Demonstrate the steps listed in the Format Groups and Other Formatting Issues exercise.

# Format Groups and Other Formatting Issues

157

### Business Example

You need to modify the layout of an existing report to highlight various levels of rows. To modify the layout, you use overscores, underscores, and local summarization levels.

Format the columns in your reports using format groups.

1. Modify the *Z5##-001* report to test the use of format groups shown in the figure.

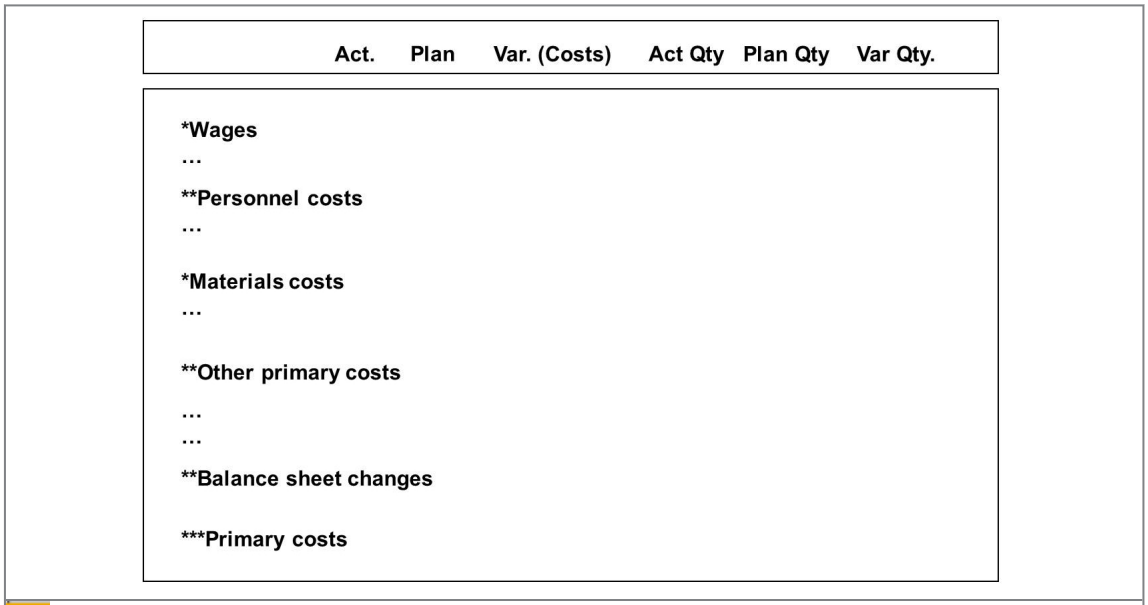



Figure 53: Report Using Format Groups

2. Explode the rows. Expand the entire line (drill down).
3. Assign the format group.
   Select the *Variance* column and choose *Formatting* → *Columns*.
4. Update the *Format group 1* information.
5. Update the *Format group 0* information.
6. Emphasize subtotal rows with lines.
7. Determine how the report identifies the format group you are currently modifying.
   Based on the current position of your cursor in a column, the report identifies the format group. When your cursor is positioned on a column that belongs to format group 2, you are modifying column width format group 2.
8. Check and save the report.
9. Execute the report from the report definition interface.

10. Show a report that displays the grand totals and the next level subtotals as shown in the figure.

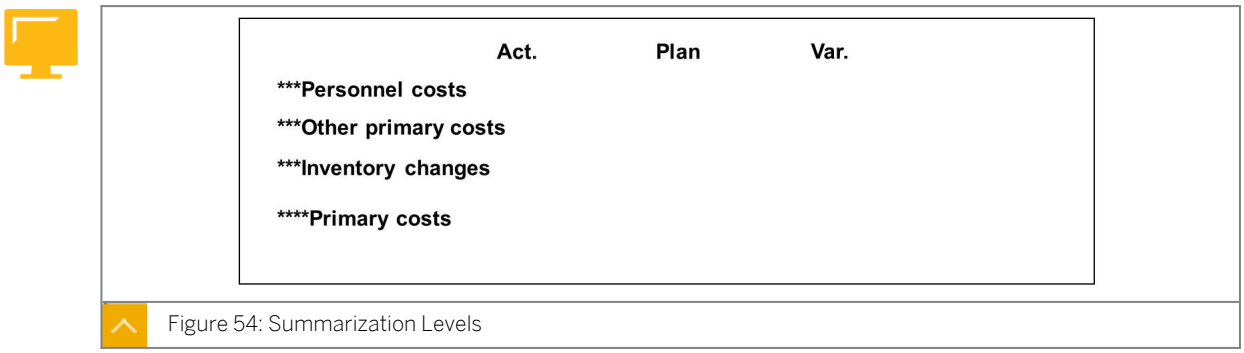



Figure 54: Summarization Levels

Make the appropriate change to the *Z5##-001* report.

11. Check and save the report.
12. Execute the report from the report definition interface.

# 159 Format Groups and Other Formatting Issues

### Business Example

You need to modify the layout of an existing report to highlight various levels of rows. To modify the layout, you use overscores, underscores, and local summarization levels.

Format the columns in your reports using format groups.

1. Modify the *Z5##-001* report to test the use of format groups shown in the figure.

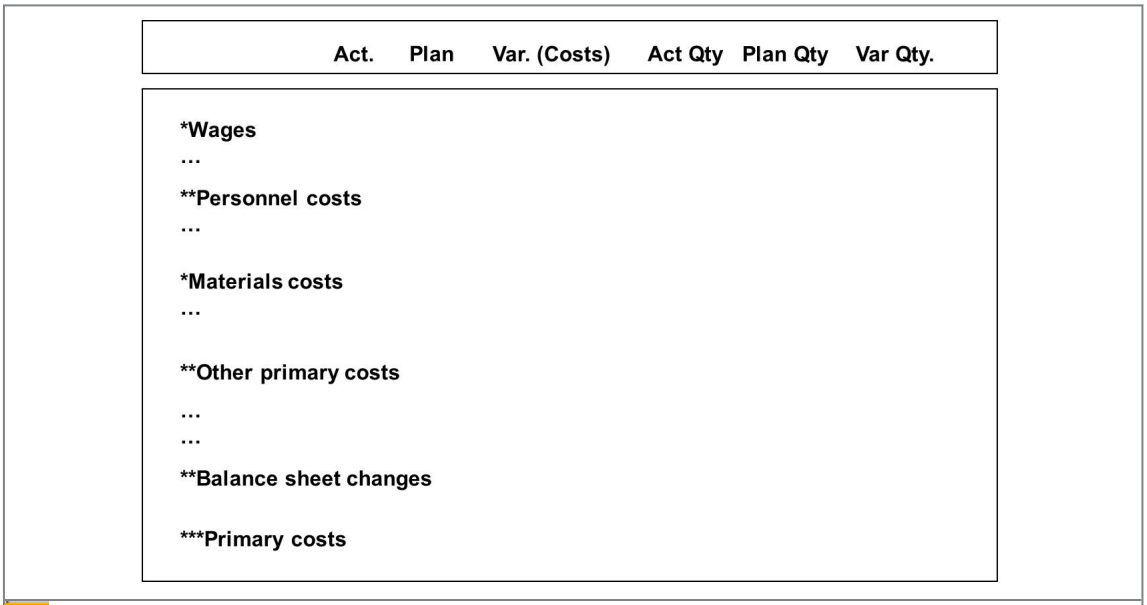



Figure 53: Report Using Format Groups

   a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change*. You can also run the `GRR2` transaction.

   b) On the *Report Painter: Change Report* screen, double-click the *Z5##-001* report.

2. Explode the rows. Expand the entire line (drill down).

   a) On the *Report Painter: Change Report* screen, position the cursor on the first row and choose *Edit* → *Rows* → *Explode*.

   b) In the *Explode characteristics* dialog box, select the *Expand* radio button.

   c) Choose ✔ *Confirm*.

3. Assign the format group.

   Select the *Variance* column and choose *Formatting* → *Columns*.

a) In the *Maintain Format Groups* dialog box, select the *Format group 1* radio button. Set the remaining format groups to 0.

b) Choose ✔ *Confirm*.

4. Update the *Format group 1* information.

a) On the *Report Painter: Change Report* screen, position the cursor on the *Variance* column and choose *Formatting* → *Columns*.

b) In the *Maintain Format Groups* dialog box, enter the following values:

| Field | Value |
|---|---|
| *Column Width* | `8` |
| *Decimal Places* | `0.00` |

c) Choose ✔ *Continue*.

5. Update the *Format group 0* information.

a) On the *Report Painter: Change Report* screen, position your cursor on the *Actual* or *Plan* column and choose *Formatting* → *Columns*.

b) In the *Maintain Format Groups* dialog box, select the *Format group 0* radio button and enter the following values:

| Field | Value |
|---|---|
| *Column Width* | `18` |
| *Decimal Places* | `0.00` |

c) Choose ✔ *Continue*.

6. Emphasize subtotal rows with lines.

a) On the *Report Painter: Change Report* screen, position your cursor on the *Primary Cost Element* subtotal row and choose *Formatting* → *Row*.

b) In the *Row Formatting* dialog box, select both the *Overscore* and *Underscore* checkboxes.

c) Choose ✔ *Continue*.

7. Determine how the report identifies the format group you are currently modifying.

Based on the current position of your cursor in a column, the report identifies the format group. When your cursor is positioned on a column that belongs to format group 2, you are modifying column width format group 2.

8. Check and save the report.

a) Choose *Report* → *Check* or choose *Check*. You can also press Shift + F6 to check the report for errors or missing characteristics.

b) Save the report.

9. Execute the report from the report definition interface.

a) Choose *Execute* or choose *Report* → *Execute*.

b) In the *Report Painter: Change Report* dialog box, choose the *Yes* pushbutton.

c) On the *: Selection* screen, enter the following data:

| Field | Value |
|---|---|
| *Fiscal Year* | <Current year> |
| *From Period* | **1** |
| *To Period* | **12** |
| *Cost Center Group* | **H1010** |

d) Choose *Execute*.

e) Go back to the *SAP Easy Access* screen.

> Hint:
> If there is no data for the current year, rerun the report for 2006.

10. Show a report that displays the grand totals and the next level subtotals as shown in the figure.

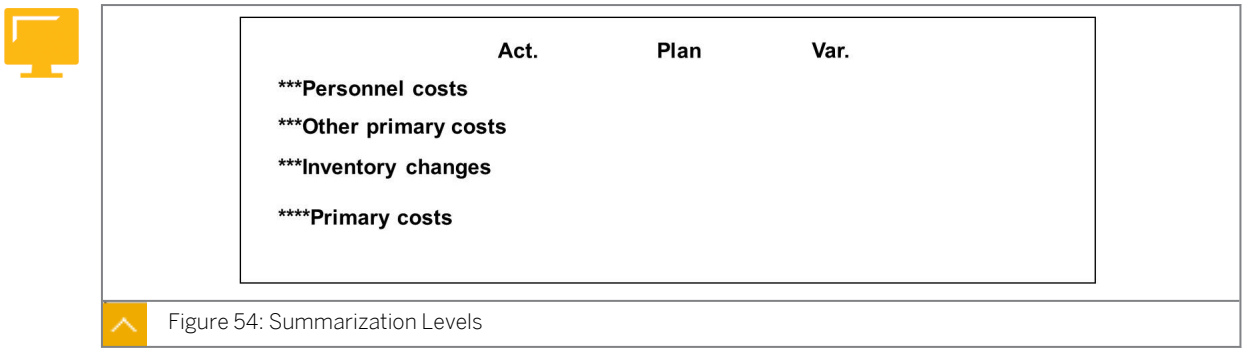



Figure 54: Summarization Levels

Make the appropriate change to the *Z5##-001* report.

a) On the *SAP Easy Access* screen, choose *Information Systems* → *Ad Hoc Reports* → *Report Painter* → *Report* → *Change* or you can run the GRR2 transaction.

b) On the *Report Painter: Change Report* screen, double-click the *Z5##-001* report.

c) Position your cursor on the *Primary Cost Element* subtotal row and choose *Formatting* → *Collapse to*.

d) In the *Collapse to* dialog box, select the *02-Asterisk level* radio button.

e) Choose *Confirm*. The report displays only the two and three asterisk levels.

11. Check and save the report.

a) Choose *Report* → *Check* or choose *Check*. You can also press Shift + F6 to check the report for any errors or missing characteristics.

b) Save the report.

12. Execute the report from the report definition interface.

a) Choose *Report* → *Execute* or choose *Execute* and then, in the *Report Painter: Change Report* dialog box, select the *Yes* pushbutton.

b) On the *: Selection* screen, enter the following data:

| Field | Value |
|---|---|
| *Fiscal Year* | <Current year> |
| *From Period* | **1** |
| *To Period* | **12** |
| *Cost Center Group* | **H1010** |

c) Choose *Execute*.

The report only shows the two and three asterisk levels. To drill down to further levels, choose *Expand*.

**LESSON SUMMARY**

You should now be able to:

- Use format groups to format columns

# Learning Assessment

165

1. You can modify a report layout permanently when the change allowed during execution flag is set in the layout.

   *Determine whether this statement is true or false.*

   - ☐ True
   - ☐ False

2. In a report definition, a standard layout can be assigned in the _____ of a report.

   *Choose the correct answers.*

   - ☐ A report header
   - ☐ B report title
   - ☐ C column headings
   - ☐ D row headings

3. It is possible to expand or compress the summarization levels using the formatting options in the section of a report definition.

   *Determine whether this statement is true or false.*

   - ☐ True
   - ☐ False

4. The section layout contains control information on _____, _____, and _____.

   *Choose the correct answers.*

   - ☐ A row totals
   - ☐ B row texts
   - ☐ C column totals
   - ☐ D column texts

5. You can specify a separate text and page break for each section.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

6. When you insert a layout in a _____, the layout applies globally to all sections within the report.

   *Choose the correct answer.*

   ☐ A report group

   ☐ B report table

   ☐ C report header

   ☐ D library

7. Format group numbers are entered below the columns in a section.

   *Determine whether this statement is true or false.*

   ☐ True

   ☐ False

8. You can define different formats for values in different _____.

   *Choose the correct answer.*

   ☐ A rows

   ☐ B columns

   ☐ C sections

   ☐ D pages

# Learning Assessment - Answers

167

1. You can modify a report layout permanently when the change allowed during execution flag is set in the layout.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

2. In a report definition, a standard layout can be assigned in the _____ of a report.

   *Choose the correct answers.*

   - [X] A report header
   - [ ] B report title
   - [ ] C column headings
   - [ ] D row headings

3. It is possible to expand or compress the summarization levels using the formatting options in the section of a report definition.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

4. The section layout contains control information on _____, _____, and _____.

   *Choose the correct answers.*

   - [X] A row totals
   - [X] B row texts
   - [ ] C column totals
   - [X] D column texts

5. You can specify a separate text and page break for each section.

   *Determine whether this statement is true or false.*

   - [X] True
   - [ ] False

6. When you insert a layout in a _____, the layout applies globally to all sections within the report.

   *Choose the correct answer.*

   - [ ] A report group
   - [ ] B report table
   - [X] C report header
   - [ ] D library

7. Format group numbers are entered below the columns in a section.

   *Determine whether this statement is true or false.*

   - [ ] True
   - [X] False

8. You can define different formats for values in different _____.

   *Choose the correct answer.*

   - [ ] A rows
   - [X] B columns
   - [ ] C sections
   - [ ] D pages

# UNIT 6 Information Systems



**UNIT OBJECTIVES**

- Execute CO-PA reports
- Describe how to create basic reports
- Create a form report
- Create line items and account-based reports
- Evaluate SAP NetWeaver Business Information Warehouse (BW) and CO-PA integration

# Executing CO-PA Reports (Financial Analytics)

170

## LESSON OVERVIEW

This lesson introduces financial analytics and describes drilldown reporting and its functions.

### Business Example

To evaluate data in CO-PA, you need to drill down the data to analyze it. Then, you need to know the main features of multidimensional reports. For this reason, you require the following knowledge:

- An understanding of the reporting options in CO-PA

Give the participants a rough overview of drilldown analytics, the various report output options (new in 4.6), and the options available while executing a report.

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Execute CO-PA reports

## Reporting Options in CO-PA

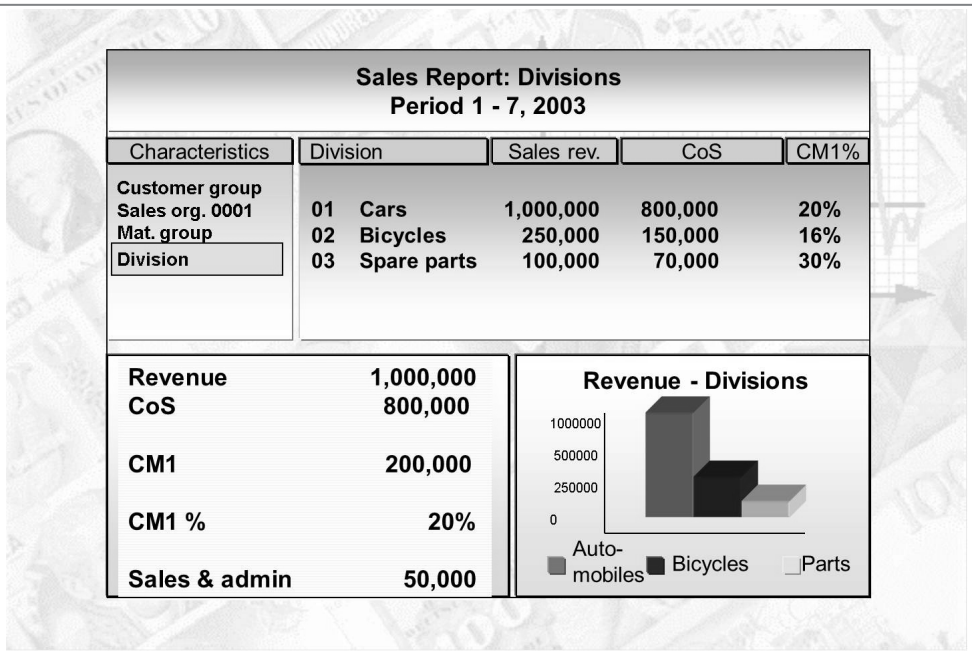



Figure 55: Reporting – Introduction

In the SAP system, drilldown reporting is an online reporting tool that allows you to evaluate the data in CO-PA interactively. Drilldown reporting allows you to select the required dataset using any characteristic in your CO-PA system and draw key figures using the dynamic drilldown function. You can display several profitability segments for a key figure or several key figures for any profitability segment. You can also perform variance analyses in drilldown reporting, such as plan or actual comparisons, fiscal year comparisons, or comparisons of profitability segments. You can use drilldown reporting in both costing-based and account-based CO-PA.

In drilldown reporting, you can display basic reports – with a simple and fixed layout – and form reports – with a more complex structure and formatting.

The drilldown functions are divided into three groups, each with a different scope. Each user can choose or assign the function level that suits their requirements.

**Drilldown - An Overview**

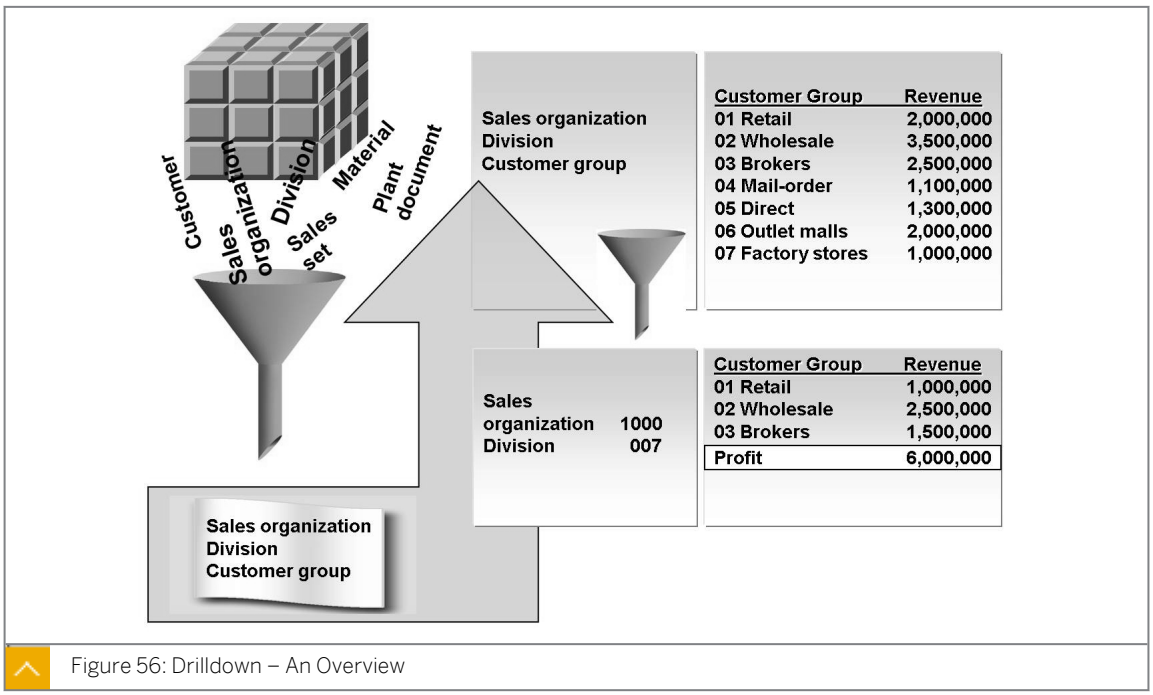



Figure 56: Drilldown – An Overview

The figure shows derived characteristics and then drills down into the report interactively. At each level of the report, display the drilldown list (overview) for extensive information (margin analysis).

### Report Output Types

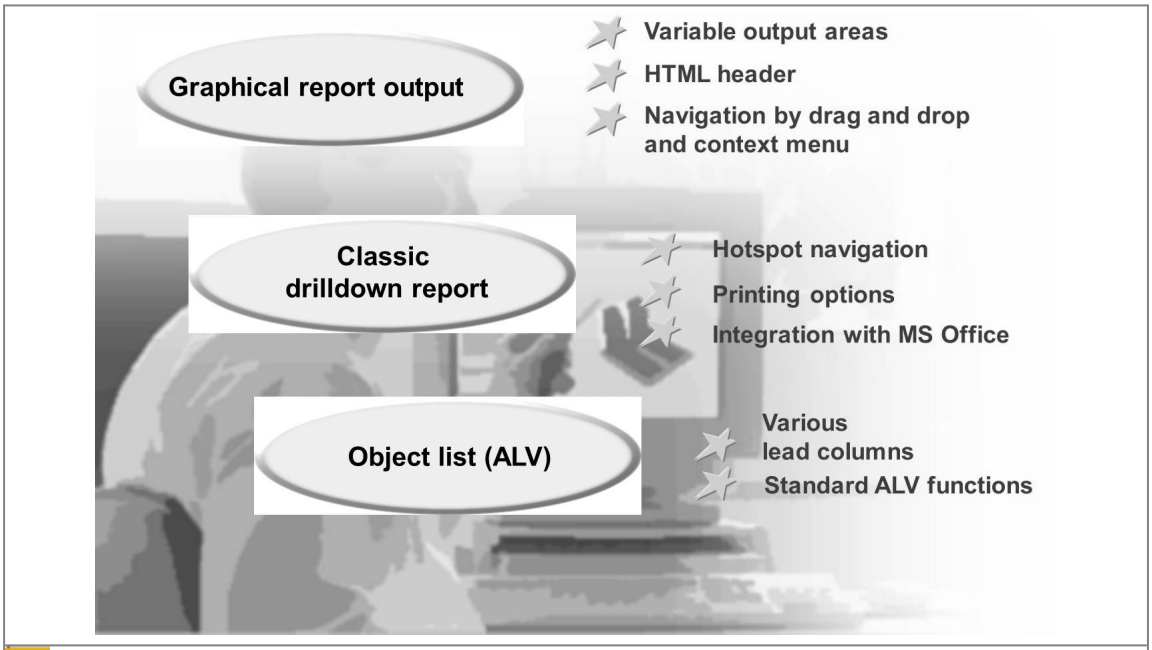



Figure 57: Report Output Types

Drilldown reporting allows for the flexible analysis of business data. According to the type of data in the report, drilldown reporting offers different output and navigation possibilities. Each output type has individual emphasis.

### Functions in Drilldown Reporting

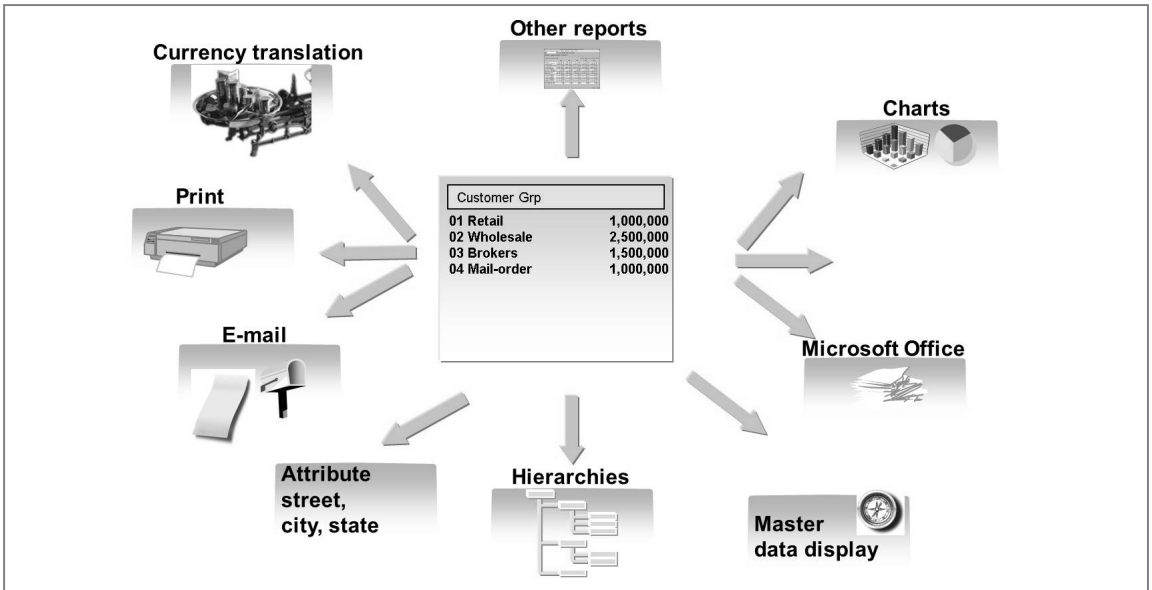



Figure 58: Functions in Drilldown Reporting

**The functions of drilldown reporting are divided into the following requirement levels to give users only those functions that they require:**

- Level 1

Level 1 is designed for users who do not require all the functions of drilldown reporting. Level 1 contains the basic functions of drilldown reporting and enables you to send reports by SAPmail.

- Level 2

  Level 2 contains the rest of the drilldown functions and enables you to display graphics and download reports to Microsoft Excel.

- All functions

  This level includes all functions in drill-down reporting, including the print setup function and the functions for saving report data and defining exceptions. This level is designed for users who need to print and modify reports and all the interactive drill-down functions.

Define the required level for users by entering the parameter RLV (0 = All functions, 1 = Level 1, and 2 = Level 2) in their user parameters.

Remember that the individual function levels are subject to an authorization check.

**Activity-Based Costing (ABC) Analysis**

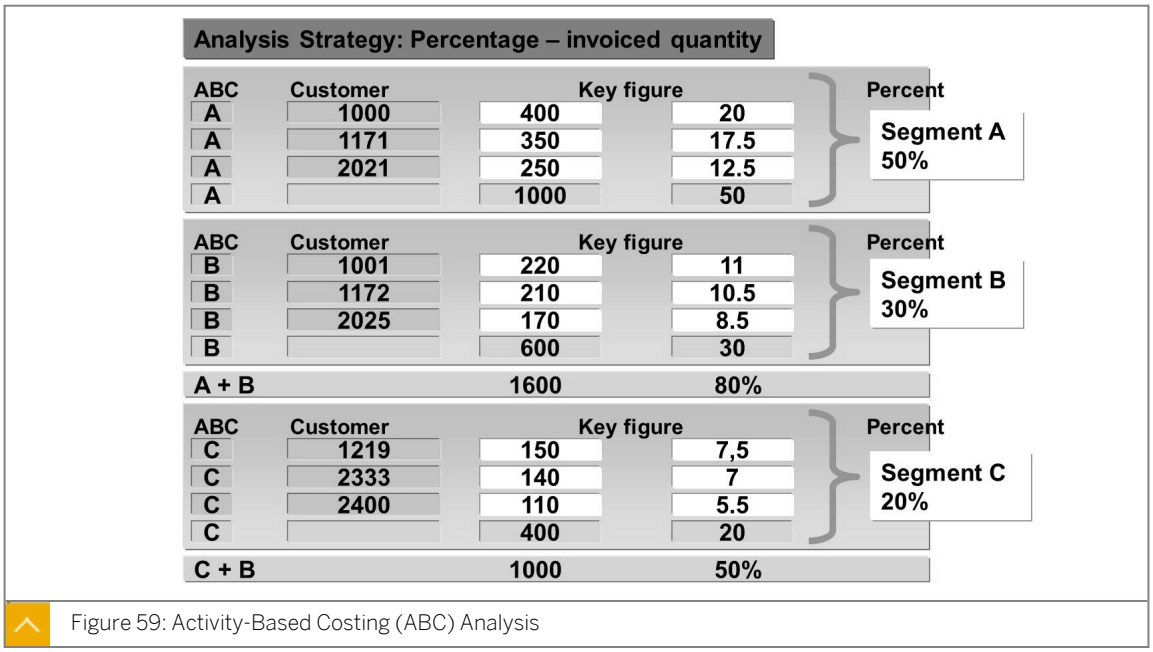



Figure 59: Activity-Based Costing (ABC) Analysis

You can classify and rank your CO-PA data with the help of various analysis functions.

**The analysis functions are as follows:**

- Cumulative curve
- Activity-Based Costing (ABC) analysis
- Classification

### Ranking Report Data

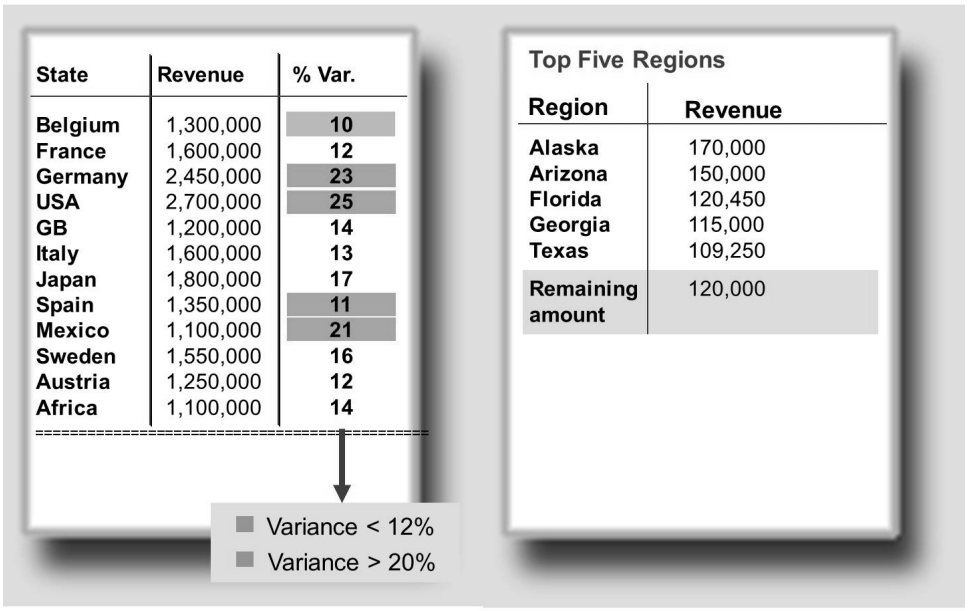



Figure 60: Ranking Report Data

An exception is a rule that determines whether the performance of a profitability segment differs significantly from what is expected. You can define the exceptions for any key figure in a cell or in an entire column of a report.

An exception consists of two threshold values determining the range of tolerance within which the value might move. If the value exceeds the upper threshold or falls below the lower threshold, the system displays the value in the color that was defined for that threshold: Green or red.

There are two types of basic exceptions. You can define an exception for a single cell, which is an intersection between a row and a column, or an intersection for an entire column. You can define an exception on a drilldown list only. After defining the exception, the exception is also applied to the corresponding detail list and can be changed from there.

This means that the exception is valid for that column on every list at every level of the report. In the figure, the list on the left contains the revenue for the various countries and their variance compared to the previous year. An exception is defined for the *Percentage variance* column. When you drill down on the country, United States, you see its regions, the revenue earned in each region, and the corresponding percentage variance. The exception rule defined for the second column is also applied to this list. This means that the exception is checked for the individual countries as well as for the individual regions.

When you define an exception for a cell, it only applies to that cell of that particular list. This means that the exception is not visible if you drill down to the next level.

## Formatting Options

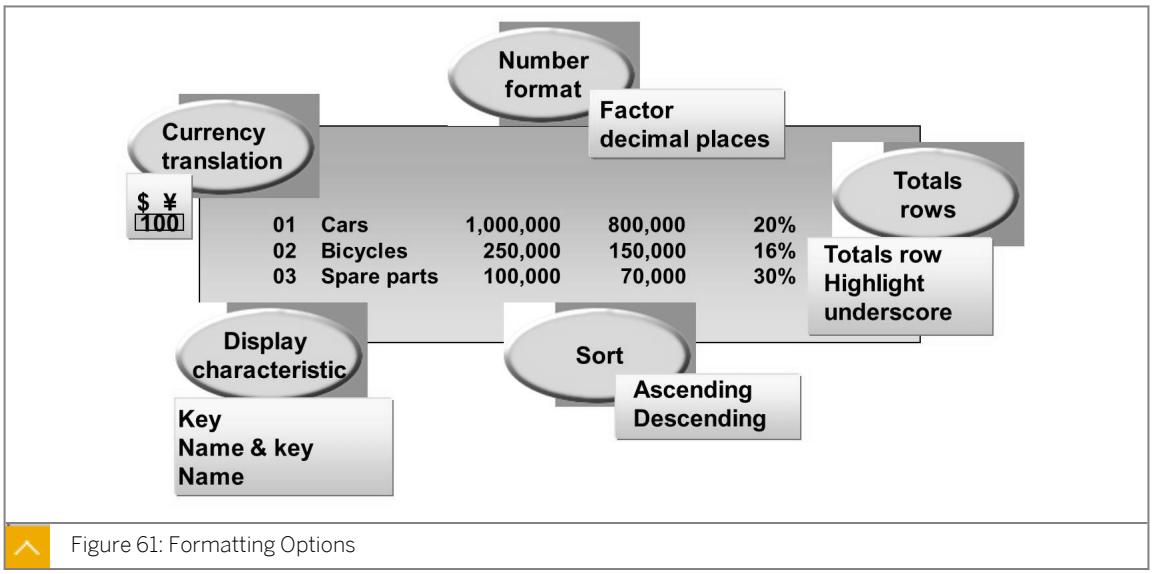



Figure 61: Formatting Options

You can define how to display and print data directly from a current report list using a number of format settings. The settings include changing the currency, the characteristic display, the manner in which the total rows are displayed, sorting functions such as sort columns, switching display variants such as cumulative on/off, and various print settings.

**Report formatting options are as follows:**

- Currency

  The currency option converts the displayed currency to any other currency for the selected columns. The currency translation key is used to find the exchange rate automatically. You can define the currency translation keys in Customizing.

- Sort

  The sort option sorts the rows of a list in ascending or descending order, according to the values contained in the column where you have positioned the cursor. The system displays a dialog box in which you can decide whether you want to sort the column or column group alphabetically. Sorting can be perfomed according to the key or text of the characteristic values, the key figure, a hierarchy, or a hierarchy display, as applicable.

- Number format

  The number format option enables you to change the number format and the sign of individual columns. Make settings depending on the report and the list type displayed, which can be a drill down or detail list.

### Execution of Reports

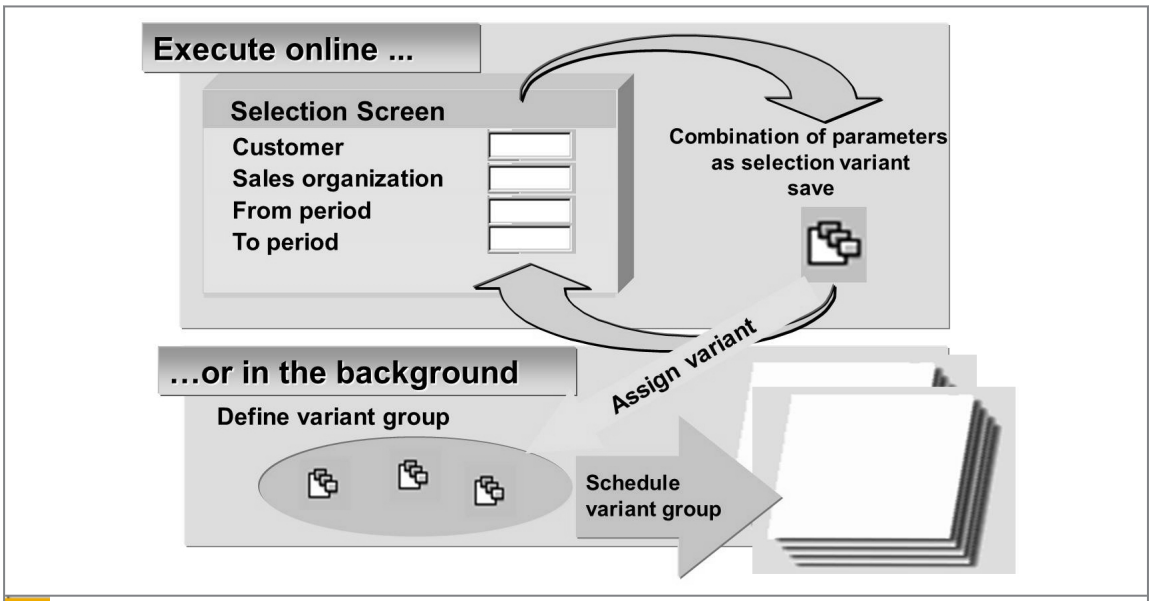



Figure 62: Execution of Reports

Explain why you want to execute reports in the background. In addition, the output of the job will not be a drilldown report but a list view.

1. Maintain a variant of the report, IDES-050, to run the report in the background and freeze the data.

   *Accounting → Controlling → Profitability Analysis → Information System → Current Settings → Background Processing → Maintain Variants*.

2. Define a variant group.

   *Accounting → Controlling → Profitability Analysis → Information System → Current Settings → Background Processing → Define Variant Group*.

3. Maintain your variant group by assigning the report, IDES-050, to the variant you created in step 1.

   *Accounting → Controlling → Profitability Analysis → Information System → Current Settings → Background Processing → Maintain Variant Groups*.

   Schedule your variant group for the IDES-050 report by defining a start date.

   *Accounting → Controlling → Profitability Analysis → Information System → Current Settings → Background Processing → Schedule Variant Group*.

When you execute a drilldown report online, the system displays a Selection Screen where you specify the data you want to see. You can define the selection variants to simplify this process. A selection variant contains a set of selection parameters and other settings for a report.

You can also use the selection variants to execute reports in the background. To complete this task, define a variant group and enter the number of selection variants for the different reports in that group. You can then schedule the entire variant group for background processing.

In this way, a variant group enables you to combine separate tasks into one step, such as scheduling different combinations of variables for one report and scheduling variants for different reports.

You can schedule a job after you define the variant group and select the required reports. You can also schedule this job for execution at regular intervals.

**How to Use the Reporting Functionality**

Demonstrate the steps listed in the Use Reporting Functionality exercise.

Unit 6
Exercise 16

# Use the Reporting Functionality

177

**Business Example**

You need to examine existing CO-PA reports to evaluate their use in the day-to-day reporting needs of your company and establish how to view, sort, and display report data online.

You need to know how to use the basic navigation functions in drilldown reporting. In addition, explore the options available in drilldown reporting and perform the following tasks:

**Task 1**

Execute the CO-PA report *IDES-050*. This report consists of several different product-specific navigation levels. Execute the report for actual data for the period of months from 1 through 12 in the current fiscal year for sales organization 1000.

1. Explore basic drilldown navigation by executing the CO-PA report *IDES-050*. The initial report displays the data for the current fiscal year sorted by division. Drill down to all the customers in *Division 01*. How many customers are displayed?

   Drill down to the products sold to customer *1000 Becker Berlin*. Which products were sold to *Becker Berlin* in the current fiscal year?

   Display all the sold products in all divisions and for all customers in sales organization 1000.

2. Your managers have asked you to identify the top three customers based on revenue in sales organization 1000. Which is the top customer?

   Where is this customer located?

   Position the cursor on the customer and select *Attributes*.

   Delete the ranking after you have reviewed your results.

3. Your sales manager would like to view all the customers with sales greater than **5,000** in green, and the ones with sales less than **1,000** in red. To enable this feature, you set up an exception.

   How many customers fall into the upper bracket?

   Delete the exception after reviewing your results.

4. Change the number format of the *Sales quantity* column.

   Also, display the sales quantities for each division as a pie chart.

5. A sales employee wants to carry out an ABC analysis for all customers in sales organization 1000. The sales employee wants to look at, based on revenue, the best **20%**, the next **50%**, and the last **30%** of the customers. Show the sales employee using the ABC analysis feature in the ABAP List Viewer, which can be directly accessed from the report.

   Which customers are grouped in the top 20%?

   Exit the report without saving your data.

### Task 2

Look at a standard drilldown report. Again, execute report *IDES-050*, but this time select the *Classic Navigation* output type. Use the same parameters.

1. Drill down to the customer and product level.

   Double-click the characteristic values in the columns to drill down through the characteristic sort order and use the hotspot to return to the next higher level.

   Display the detail list.

# Use the Reporting Functionality

179

**Business Example**

You need to examine existing CO-PA reports to evaluate their use in the day-to-day reporting needs of your company and establish how to view, sort, and display report data online.

You need to know how to use the basic navigation functions in drilldown reporting. In addition, explore the options available in drilldown reporting and perform the following tasks:

**Task 1**

Execute the CO-PA report *IDES-050*. This report consists of several different product-specific navigation levels. Execute the report for actual data for the period of months from 1 through 12 in the current fiscal year for sales organization 1000.

1. Explore basic drilldown navigation by executing the CO-PA report *IDES-050*. The initial report displays the data for the current fiscal year sorted by division. Drill down to all the customers in *Division 01*. How many customers are displayed?

   Drill down to the products sold to customer *1000 Becker Berlin*. Which products were sold to *Becker Berlin* in the current fiscal year?

   Display all the sold products in all divisions and for all customers in sales organization 1000.

   a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Execute Report* (`KE30`).

   > Note:
   > If prompted for the operating concern, enter **`IDEA`**, select the *costing based* radio button, and choose *Continue*.

   b) On the *Run Profitability Report: Initial* screen, select the row that has the *IDES-050* value in the *Report* column and choose (*Execute*).

   c) On the *Selection: Actual Data* screen, enter the following data and then choose (*Execute*).

| Field Name or Data Type | Value |
|---|---|
| *Sales Organization* | **1000** |
| *Period from* | 001.Current fiscal year |
| *Period to* | 012.Current fiscal year |
| *Plan/Actual Indicator* | **0** |

| Field Name or Data Type | Value |
|---|---|
| *Version* | Blank |
| *Record Type* | **F** |
| *Output Type* | Select *Graphical report output* |

The initial report displays the data for the current fiscal year, sorted by division.

d) To explore basic drilldown navigation, on the *Execute Profitability Report Actual data* screen, double-click *Division 01 - Pumps*. This filters the report to display *Division 01* and customer is now in the drill down.

e) Turn on *Customer Key* by placing your cursor on the column heading above the customer display. Right-click and choose *Characteristic display* in the context menu.

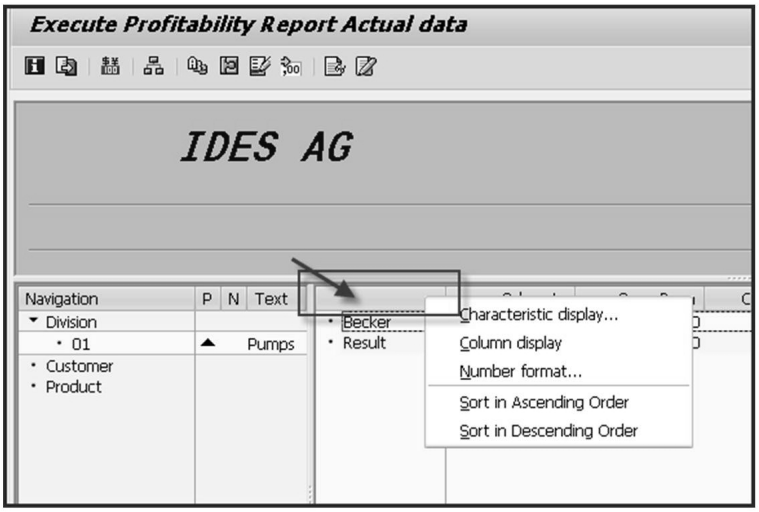



Figure 63: Characteristics Display with Key

f) In the *Determine Structure of Lead Column* dialog box, under the *Value set* pane, select the row that has the *Customer* and *Key* values in the *Column content* and *Format* columns respectively and move it to the *Lead column* pane on the left with the *Add Char.* pushbutton. Then, choose the *Confirm* pushbutton. You receive a warning that you have not created a title for the lead column. Choose *Enter*.

g) On the *Execute Profitability Report Actual data* screen, double-click the *T-CO05A##* value in the table on the right to view the products your *Customer* purchased.

Note:
If you do not see your *Customer*, double-click any customer.

h) Remove the filter for *Division*. On the *Execute Profitability Report Actual data* screen, under the *Navigation* pane, right-click *Division 01* and choose *Cancel selection*.

i) Remove the filter for *Customer*. On the *Execute Profitability Report Actual data* screen, under the *Navigation* pane, right-click *T-CO05A##* and choose *Cancel selection*.

j) Drilldown by *Customer* again. On the *Execute Profitability Report Actual data* screen, under the *Navigation* pane, drag and drop *Customer* on top of a *Product* value.

2. Your managers have asked you to identify the top three customers based on revenue in sales organization 1000. Which is the top customer?

   Where is this customer located?

   Position the cursor on the customer and select *Attributes*.

   Delete the ranking after you have reviewed your results.

   a) On the *Execute Profitability Report Actual data* screen, right-click *Gross Revn* and choose *Ranking List* → *Top N*.

   b) In the *Change Column: Top n* dialog box, enter **3** in the *First ones only* field and then choose the *Confirm* pushbutton.

      The top three customers appear. All others are grouped into the *Remaining* line item.

   c) To determine where these customers are located, select *Customer* and choose  (*Attributes*). The *Display attributes: Customer* dialog box appears, in which you choose *Continue*.

   > Hint:
   > The attributes that are displayed are configured in CO-PA Customizing under *Profitability Analysis* → *Information System* → *Report Components* → *Assign Display Attributes*.

   d) Close the *Display attributes: Customer* dialog box.

   e) On the *Execute Profitability Report Actual data* screen, right-click *Gross Revn* and choose *Condition* → *Delete* to cancel the ranking selection.

      All customers appear again.

3. Your sales manager would like to view all the customers with sales greater than **5,000** in green, and the ones with sales less than **1,000** in red. To enable this feature, you set up an exception.

   How many customers fall into the upper bracket?

   Delete the exception after reviewing your results.

   a) On the *Execute Profitability Report Actual data* screen, choose *Extras* → *Exceptions*.

   b) In the *Area of Validity: Exception for Gross revenue* dialog box, select the *Column* radio button and then choose *Continue*.

   c) In the *Define Exception* dialog box, enter the data as mentioned in the table. Leave all other settings as default and then choose *Enter*. Click anywhere in the report so the *Gross Revn* column is no longer highlighted.

      You see the exception colors applied to the report.

| Field Name or Data Type | Value |
|---|---|
| *Lower threshold: Threshold* | **1000** |
| *Upper threshold: Threshold* | **5000** |

d) On the *Execute Profitability Report Actual data* screen, choose *Extras* → *Exceptions*.

e) In the *Exceptions* dialog box, choose the *Delete exceptions* pushbutton. In the *Delete all exceptions* dialog box, choose the *Yes* pushbutton to delete all the exceptions.

4. Change the number format of the *Sales quantity* column.

   Also, display the sales quantities for each division as a pie chart.

   a) To change the number format of the *Sales qty* column, select the *Sales qty* column and then choose *Settings* → *Number format*.

   b) In the *Number Format* dialog box, select the *two decimal places* radio button and turn *Unit of measure* on by selecting the *on* radio button. Then, choose *Enter*.

   c) To view the data by division, double-click *Division*.

   d) To view the data as a pie chart, right-click the chart in the lower-right corner and choose *Chart Type*.

   e) In the *Chart Type* dialog box, select *Pies* and then select a pie chart of your choice in the top row. Select the *Assign to All Data Rows* radio button and then choose *OK*.

5. A sales employee wants to carry out an ABC analysis for all customers in sales organization 1000. The sales employee wants to look at, based on revenue, the best **20%**, the next **50%**, and the last **30%** of the customers. Show the sales employee using the ABC analysis feature in the ABAP List Viewer, which can be directly accessed from the report.

   Which customers are grouped in the top 20%?

   Exit the report without saving your data.

   a) Under the *Navigation* pane, double-click *Customer*.

   The report is now drilled down by customer.

   b) On the *Execute Profitability Report Actual data* screen, choose *Report* → *Export*. In the *Export* dialog box, choose the *Object List* pushbutton.

   c) In the *Characteristic Selection* dialog box, deselect the *Product* and *Division* checkboxes and choose *Continue*.

   This step exports your report to an Object list.

   d) On the *Object List: IDES-050 - Actual data* screen, select the *Gross Revn* column and then choose *Goto* → *ABC Analysis*.

   e) On the *ABC Analysis* screen, under the *Analysis Type* pane, enter the following data and then choose *Enter*.

| Field Name or Data Type | Value |
|---|---|
| *A Segment* | **20** |
| *B Segment* | **50** |
| *C Segment* | **30** |

   This step groups your customers. Answers vary based on the number of students in the class.

   f) Without saving, exit the report, and return to the *SAP Easy Access* screen.

### Task 2

Look at a standard drilldown report. Again, execute report *IDES-050*, but this time select the *Classic Navigation* output type. Use the same parameters.

1. Drill down to the customer and product level.

   Double-click the characteristic values in the columns to drill down through the characteristic sort order and use the hotspot to return to the next higher level.

   Display the detail list.

   a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Execute Report* (`KE30`).

   b) On the *Run Profitability Report: Initial* screen, select the *IDES-050* value in the *Report* column and choose (*Execute*).

   c) On the *Selection: Actual data* screen, enter the following data and then choose (*Execute*).

| Field Name or Data Type | Value |
|---|---|
| *Sales Organization* | **1000** |
| *Period from* | 001.Current fiscal year |
| *Period to* | 012.Current fiscal year |
| *Plan/Actual Indicator* | **0** |
| *Version* | Blank |
| *Record Type* | **F** |
| *Output Type* | Select *Classic drilldown report* |

   The initial report displays the data for the current fiscal year by division.

   d) On the *Execute Drilldown Report "Actual data": Drilldown List* screen, choose *Division* to drilldown by *Customer*.

   e) On the *Drill-down: Callup for documentation on hotspots* screen, choose the *Never display again* pushbutton.

   This step returns you to the report and highlights Customer and Product.

   f) On the *Execute Drilldown Report "Actual data": Drilldown List* screen, click *Customer*.

   This step displays your report sorted by Customer.

   g) On the *Execute Drilldown Report "Actual data": Drilldown List* screen, choose *Settings* → *Characteristics display* to display the key of the customer. In the *Display Characteristics: All Characteristics* dialog box, select the *Key and name* radio button and choose *Enter*.

   h) On the *Execute Drilldown Report "Actual data": Drilldown List* screen, choose the *diamond* icon to the left of your customer *T-CO05A##*. Then, choose *Product*.

The *diamond* is also a hotspot. These hotspots allow you to navigate through the report. Now you are viewing which products your customer purchased.

i) Currently, you are viewing your report as a *Drilldown List*. Change to the *Detail list*.

Choose the *diamond* icon to the left of one of the products. Then, choose  (*Display Details*).

You are now viewing the *Detail list*. Note that the *Key Figures* are now in the rows, not the columns.

j) Return to the *Execute Drilldown Report "Actual data": Drilldown List* screen, choose the  (*Report Overview*) pushbutton and then choose *Division*.

This step returns you to the way the report originally looked upon execution.

k) Without saving, exit the report.

**LESSON SUMMARY**

You should now be able to:

- Execute CO-PA reports

186

# Creating Basic Reports and Outlining Report Components

## LESSON OVERVIEW

This lesson explains how to create basic reports. In addition, the lesson describes the usage of variables in forms.

### Business Example

Additionally, you need to create reports for your retail dealers. For this reason, you need to standardize the Contribution Margin Reports using a key figure scheme, create basic profitability reports, design the report forms to be used by several users, and insert report variables and report headers. For this reason, you require the following knowledge:

- An understanding of basic reports and report components
- An understanding of how to create a basic report

Introduce the report types. Explain that basic reports are used to define an analysis quickly and easily. A basic report has specific limitations when compared to a form report, including the fact that only the plan data or the actual data can be displayed, not both. Furthermore, only one plan version can be displayed in each case and only one record type is permissible. Execution of formulas or data formatting is not feasible. However, form reports offer all these options.

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Describe how to create basic reports

## Types of Report Outputs

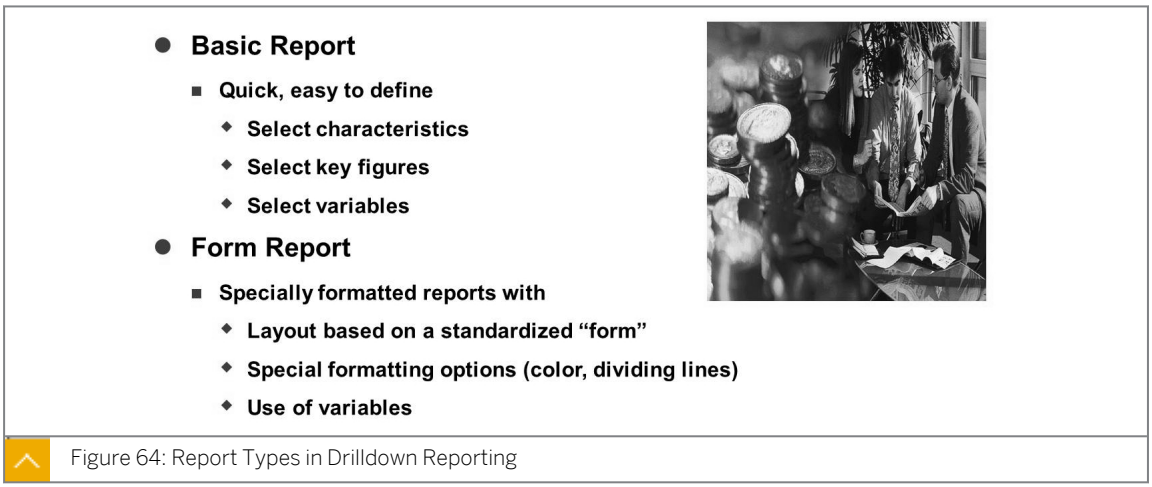



Figure 64: Report Types in Drilldown Reporting

The drilldown reporting tool is designed to provide a simple means to define straightforward reports and to offer all the functions required to create more complex and formatted reports. A distinction is made between the two different types of reports.

Run a quick, ad hoc analysis to search for a specific effect. Basic reports have a predefined basic structure for general use.

Basic reports represent more complex reports and can be designed according to their specific purpose. Basic reports are used for official reports and are suitable for printing.

Form reports are defined by independent objects that can be used for different reports. There are various types of forms that differ in terms of the elements defined and the location of the elements in their structure.

Basic reports do not require the use of a form. When you define a basic report, you simply select the characteristics, characteristic values, and key figures that you want to analyze.

Remember that each report you define is valid only for either costing-based or account-based CO-PA.

**Architecture of Drilldown Reporting**

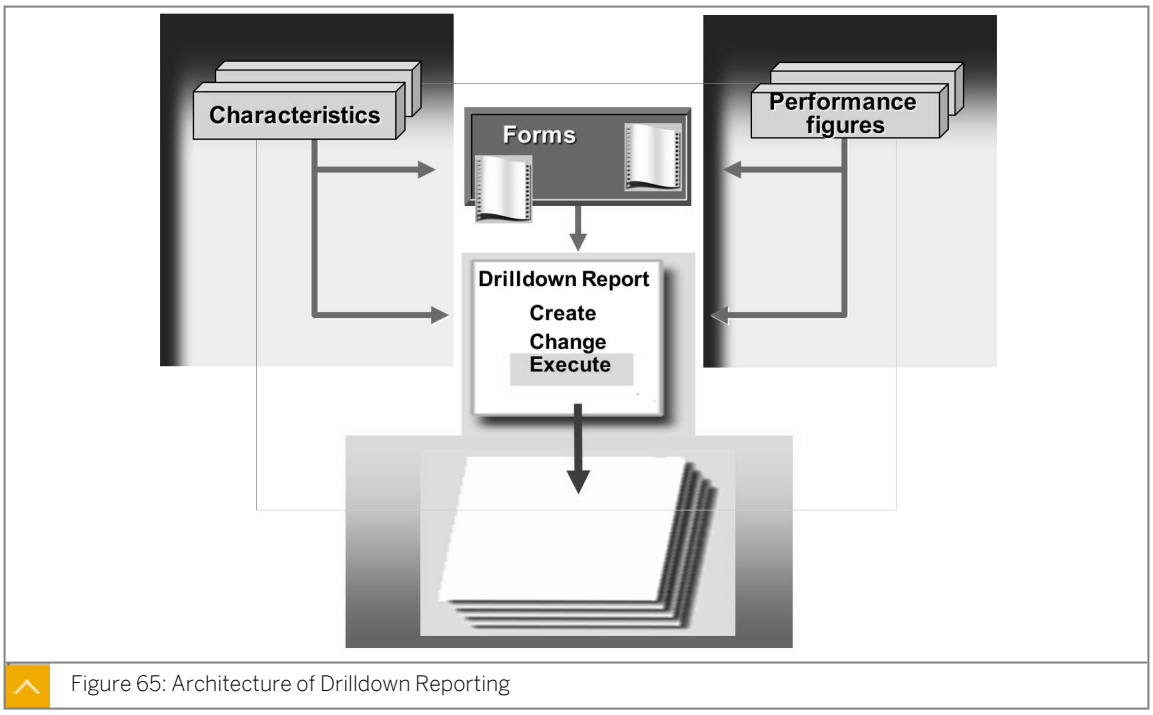



Figure 65: Architecture of Drilldown Reporting

You can use characteristics, key figures, and forms to define a report. As a result, when you display a report, a number of lists and graphics that you can call up and interactively analyze appear on the report.

A form determines the content and the formal structure of a report list. A form can be considered as a semifinished report that you complete by indicating the characteristics and key figures to use when you define the individual report. You can indicate the characteristics in the form as well as in the report. Key figures can be contained in either the form or the report.

Drilldown reporting in CO-PA provides you with easy-to-use functions to move through the dataset. As a result, you can switch from one segment to the next step or to the next segment within a step. Similarly, you can fade out a step of the drilldown hierarchy and switch to and fro between the detail and overview lists. You also have other functions that are available to

edit online reports, such as conditions, sort orders, and ranking lists. You can send report lists by fax, electronic mail, or download them to Microsoft Word or Excel. In addition to the various interactive functions for online lists, drilldown reporting provides special functions to define how to print the report layout, such as page breaks, headers, footers, and underscores.

### Basic Reports

Explain how to create key figure schemes and how to use them in reports. Underline that this function is not available in account-based CO-PA.

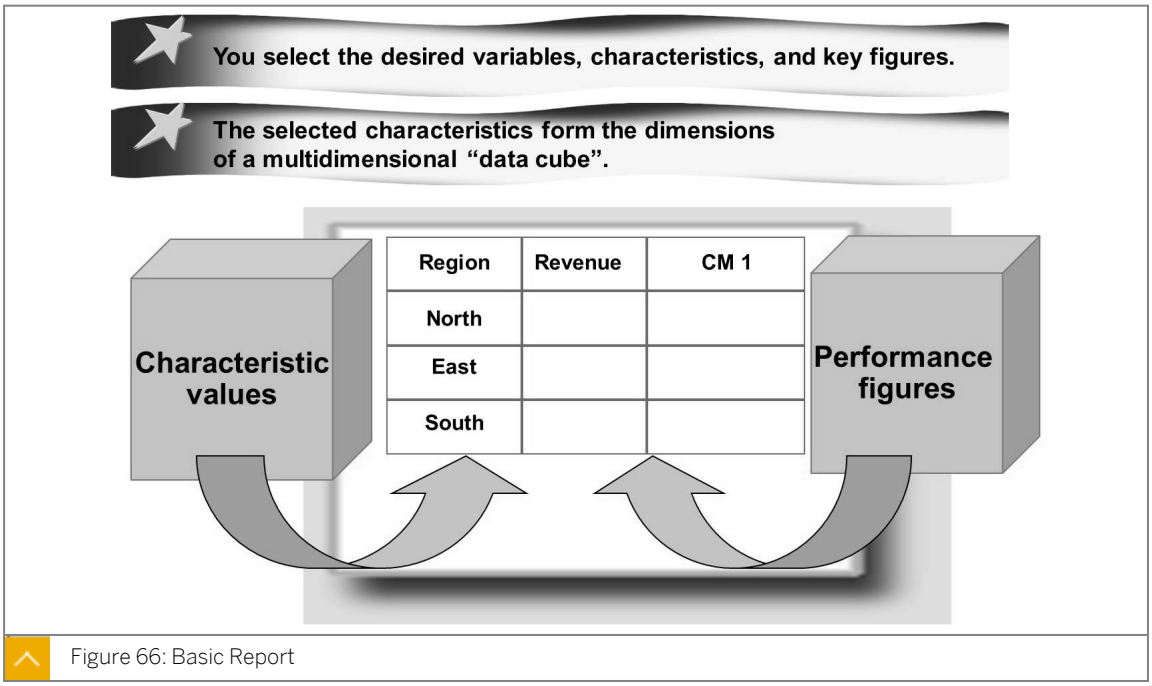



Figure 66: Basic Report

From Customizing or the CO-PA application menu, access the functions used to define reports. To create a report from the Initial screen, process any of the components of the report, in any order that you want.

When you define a basic report, the system asks you to enter a *From* and a *To* period, a plan or actual indicator, and a version, and, in costing-based CO-PA, a record type.

The system displays a list of all the characteristics in the operating concern in a line item report for costing-based CO-PA. In a Summary Level report, the system only displays a list of segment-level characteristics. Here, you can select the characteristics to analyze. These characteristics form the dimensions of your multidimensional data cube. If characteristic groups have been defined for the operating concern, the system also displays the *Characteristic group* field. If you enter a characteristic group, the system displays only the characteristics in that group, instead of all the characteristics of the operating concern.

In the costing-based CO-PA, you can enter a key figure scheme on the *Create Profitability Report: Key Figures* screen to get a list of all the key figures of this scheme. When you choose *Value fields on/off* pushbutton, you can choose to see just the fields of the key figure scheme or all fields. In account-based CO-PA, the system automatically displays a list of all the fixed basic key figures.

If you want to delete a report, use the *Change report* function.

Note:
To delete an entire group of reports easily, use the *Reorganize reports* function in Customizing.

## How to Create a Basic Report

Demonstrate the steps listed in the Create a Basic Report exercise.

## Report Components

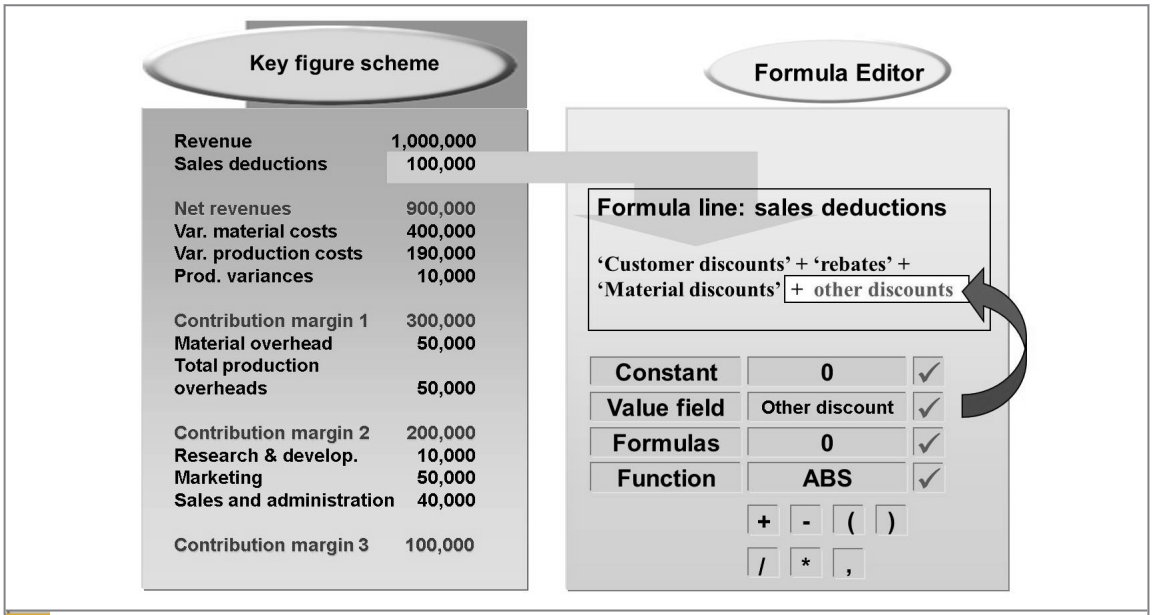



Figure 67: Key Figure Scheme

The formula editor allows you to enter value fields and define complex formulas. As a result, constants and elements of the key figure scheme can be linked by standard arithmetic operations or user-defined ABAP functions.

Use the Check key figure scheme function to run a syntax check on the use of arithmetic operations and parentheses. It also checks for empty formulas, recursive formulas, and any circular conclusions.

### Use of Characteristic Hierarchies

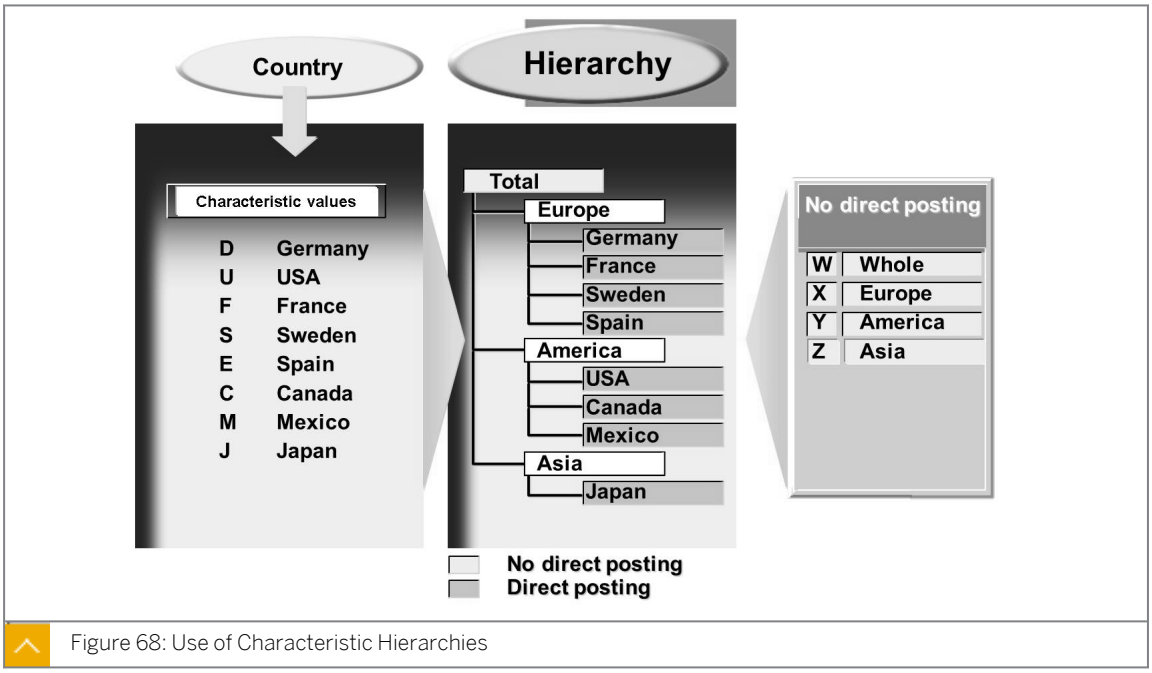



Figure 68: Use of Characteristic Hierarchies

You can define the hierarchical relationships between different characteristic values in CO-PA and analyze these relationships later in drilldown reporting. For example, you can define a hierarchy of products or customers for your organization. You can also define different variants of the same hierarchy and display these variants in reports. These variants allow you to perform simulations and What-if analyses.

A characteristic hierarchy is defined using the master data (characteristic values) that belongs to a characteristic. Notice that different characteristics that use the same master data table have the same master data hierarchy. You cannot define hierarchies for the characteristics that do not use a master data table. This condition applies for the characteristics that were defined with neither a check table nor a text table.

Note:
Characteristic hierarchies are only hierarchies of values of a single characteristic. For this reason, each hierarchy can contain only the values of that particular characteristic. In addition, each characteristic value can occur only one time in a hierarchy. As a result, each value remains unique throughout the entire hierarchy.

### How to Display a Key Figure Scheme

Demonstrate the steps listed in Task 1 of the Create Report Components exercise.

### How to Create a Customer Hierarchy

Demonstrate the steps listed in Task 2 of the Create Report Components exercise.

## Variables in Reports

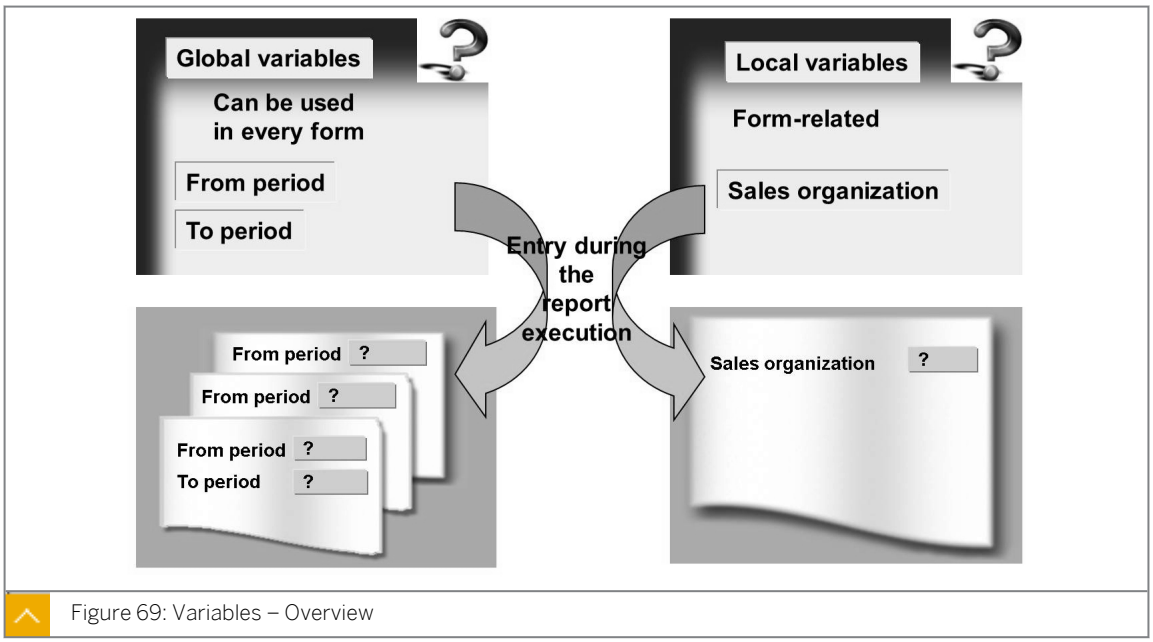



Figure 69: Variables – Overview

Variables allow you better flexibility when defining your forms and reports. Variables are report or form parameters that are not specified until you define or execute a report. You can use different methods to replace variables. Depending on how often you want to use them, you can define your variables globally or locally.

To create a variable that is only needed in one particular form or report, create a local variable. Notice that local variables are only known within the relevant form or report. If you define a local variable in a form, it is also valid for every report that uses that form.

If you define a variable in the report definition, it is valid for that report only. If you use a variable frequently, you can define it globally. You can then use the global variables in all your forms and reports. The global variables are maintained in Customizing. The global variables in a form or report are displayed for selection in the input help.

Note:
Notice that when you change an existing global variable, a number of reports and forms using the same variable may be affected.

### Examples of Variables in Forms

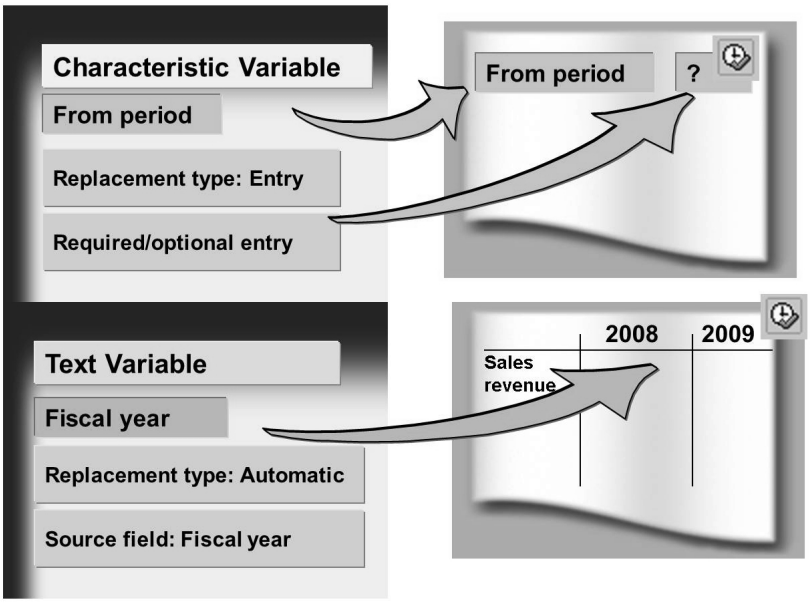



Figure 70: Variables in Forms – Examples

If you want to leave the value of a characteristic undefined in the report, you can use a variable for the characteristic values. Variables for characteristic values can be used in both forms and reports. You can enter these variables while editing or executing the report. When the report is executed, the system replaces the variables used in the report definition.

Note:
Specific variables for characteristic values, such as *Current fiscal period*, are available in the SAP system. To see the other available standard variables, see Customizing.

If you want to use a variable for the line or column text in a form, define a text variable. For example, if you use a variable for the value of the *Country* characteristic, the text to be used in the column is not known when you define the form. In this case, you can define a text variable. Notice that the text variables can be used only in form reports and are always defined directly in the form. They are replaced automatically by the text of the characteristic value when you execute the report. In the example, you can specify any country, which means any characteristic value variable, when you execute the report. When the report is executed, the system then automatically enters the name of that country (which is the characteristic value) in the column header, replacing the text variable.

Specific text variables are contained in the SAP system. To see the other available standard variables, see Customizing.

Unit 6
Exercise 17

# Create a Basic Report

193

**Business Example**

Your sales manager wants to see a simple report sorted by division, customer, and product.

Create a basic report in costing-based CO-PA for analyzing various contribution margins by division, customer, and product. Display the invoiced quantity and the revenue in the report.

1. Call the new basic report *BRXX*, where *XX* is your group number, and enter an appropriate description. Create the report definition so that the sales organization, division, customer, and product are sorted in this order.

   Select the value fields *Invoiced Quantity* and *Revenue*.

   Set the default values for all the months of the current fiscal year sequentially, select the plan or actual indicator 0 and the record type F. Then, set the report so that it is executed in the operating concern currency using summarized and current data.

   For the report output, you have decided to use the *Graphical report-output* option, with **`Info control, navigation control,`** and **`drilldown control`** values.

   In the *Performance* dialog box, choose the *Options* tab page and select *Display Current Data*. You want to read summarization levels and, if no summarization is available, execute the report without any warning or error messages. These performance settings will be discussed at a later point.

   Save the basic report definition.

2. Execute your report using the default settings you have made.

   How does this report layout differ from the report you executed in the earlier exercise?

# Create a Basic Report

194

**Business Example**

Your sales manager wants to see a simple report sorted by division, customer, and product.

Create a basic report in costing-based CO-PA for analyzing various contribution margins by division, customer, and product. Display the invoiced quantity and the revenue in the report.

1. Call the new basic report *BRXX*, where *XX* is your group number, and enter an appropriate description. Create the report definition so that the sales organization, division, customer, and product are sorted in this order.

   Select the value fields *Invoiced Quantity* and *Revenue*.

   Set the default values for all the months of the current fiscal year sequentially, select the plan or actual indicator 0 and the record type F. Then, set the report so that it is executed in the operating concern currency using summarized and current data.

   For the report output, you have decided to use the *Graphical report-output* option, with **`Info control, navigation control,`** and **`drilldown control`** values.

   In the *Performance* dialog box, choose the *Options* tab page and select *Display Current Data*. You want to read summarization levels and, if no summarization is available, execute the report without any warning or error messages. These performance settings will be discussed at a later point.

   Save the basic report definition.

   a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Define Report* → *Create Profitability Report* (`KE31`).

   > Hint:
   > In the *Set Operating Concern* dialog box, enter **`IDEA`** in the *Operating concern* field, select the *costing-based* radio button, and choose *Continue*.

   b) On the *Create Profitability Report: Initial* screen, enter **`BR##`** in the *Report* field and **`Sales and Profit Group ##`** in the *Description* field, select the *Basic report* radio button, and then choose the *Create* pushbutton.

   c) In the *Choose Currencies* dialog box, select the *Operating concern currency* radio button and then choose *Continue*.

   d) On the *Create Profitability Report: Specify Profit. Segment* screen, choose the *Characteristics* tab page and select the *Customer*, *Division*, *Product*, and *Company Code* values from the *Char. list* pane. Then, choose (*Add Char.*).

Hint:
The characteristics list is sorted by *Type of Char.:* Customer-related, Product-related, and others. If you prefer to sort them, highlight the column and choose (*Sort ascending*) for ascending order or (*Sort in Descending Order*) for descending order.

e) Under the *Sel. characteristics* pane, select  (*Variable on/off*) for the *Company Code* characteristic. In the *Variable selection* dialog box, enter **CCGR##** in the *Local variable* field and then choose *Continue* or *Enter*.

Note:
Local variables are only valid in the report in which they are created.

f) Choose the *Sort user-def. char* pushbutton to sort the characteristics. In the *Sort user-defined chars* dialog box, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Customer* | **3** |
| *Division* | **2** |
| *Product* | **4** |
| *Company Code* | **1** |

Choose *Enter*.

g) On the *Key figures* tab page, select the *Invoiced quantity* and *Revenue* values in the *Available key figures* pane and choose the *Add key figure* pushbutton.

Note:
The term “key figures” is generic. If you are building a costing-based report, these key figures are value fields. If you are building an account-based report, these key figures are the amount because they use cost elements to differentiate values.

h) On the *Variables* tab page, enter the following data:

| Field Name or Data Type | Value | Entry at Execution |
|---|---|---|
| *Company Code* | **1000** | Select |
| *Period from* | 001.Current fiscal year | Select |
| *Period to* | 012.Current fiscal year | Select |
| *Plan/Act. Indicator* | **0** | Deselect |
| *Version* | Blank | Deselect |

| Field Name or Data Type | Value | Entry at Execution |
|---|---|---|
| *Record Type* | **F** | Deselect |

Note:
If we deselect the *Entry at Execution* checkbox, users cannot enter a value at runtime. Since we selected *Invoiced Quantity* and want this report to be an actual report, deselect the last three entries so that the value remains *Actual* for *Record Type* **F**.

i) On the *Output Type* tab page, select the *Graphical report-output* radio button and enter **Info control, navigation control, drilldown control** in the *Output areas* field.

j) On the *Options* tab page, select the *Display current data* checkbox, select the *Use a summarization level* and *Execute Report* radio buttons, and then save the basic report definition.

In the *Choose hierarchy:* dialog box, choose *Enter* because we do not want to use any *Hierarchies*.

This step saves the report.

2. Execute your report using the default settings you have made.

How does this report layout differ from the report you executed in the earlier exercise?

a) On the *Create Profitability Report: Initial* screen, choose *Report* → *Execute*.

b) On the *Run Profitability Report: Initial* screen, double-click your *BR##* report.

c) On the *Selection: Sales and Profit Group ##* screen, use the *Report selections* data you configured while creating your report, and then choose  (*Execute*).

d) How does this report layout differ from the report you carried out earlier?

The report shows the information at the top, the navigation pane, and the drilldown list only. There is no detail list or chart.

e) Return to the *SAP Easy Access* screen.

Unit 6
Exercise 18

# Create Report Components

197

Evaluate the existing key figure schemes, use this key figure scheme in an existing report, and create a master data hierarchy to use in a report.

**Business Example**

The CEO wants the following items to have consistent definitions whenever they are used in costing-based CO-PA reports: *Net Revenue*, *Contribution Margin I*, *Contribution Margin II*, and *Operating Profit*. When one of these items is used in a report, it must have a specific meaning.

Your sales manager also wants to group customers in different ways to evaluate customer performance shares.

**Task 1**

View an existing key figure scheme in costing-based CO-PA to determine if it contains the definitions for the marketing key figures that your CEO wants to view in the profitability report.

The CEO has stipulated that the following key figures be defined:

| Component | Meaning |
|---|---|
| Net Revenue | Revenue minus discounts and rebates (incl. cost-accounting value) |
| Contribution margin I | Net revenue minus standard cost of goods sold |
| Contribution margin II | Contribution margin I minus production variances |
| Operating Profit | Contribution margin II minus period costs (Sales and administrative overheads) |

1. View the existing key figure scheme, that is, *Sales Control*.

**Task 2**

Your sales manager wants to group customers in the sales organization into segments based on sales representative. Create a characteristic hierarchy for customers. Name this hierarchy variant **C##**, where ## is your group number, and enter an appropriate description **GR## Customer Hierarchy**. Next, maintain the hierarchy so that customers are broken down into the following four categories:

For nodes in the hierarchy with no direct posting, create the following values, where ## is your group number. Enter the customers under each node, as indicated in the table.

| | Segment A | Segment B | Segment C | New |
|---|---|---|---|---|
| Customer no. | 1174, 1300, 1900, 1175, 1032, 2004 | 1901, 2140, 1001, 1321, 2200, 1033, 2007, 2130, 1460 | 1171, 2141, 1034, 2300, 2000 | T-CO05A## |

1. Create a *Customer Hierarchy* to use in your report. The hierarchy must group customers as follows:

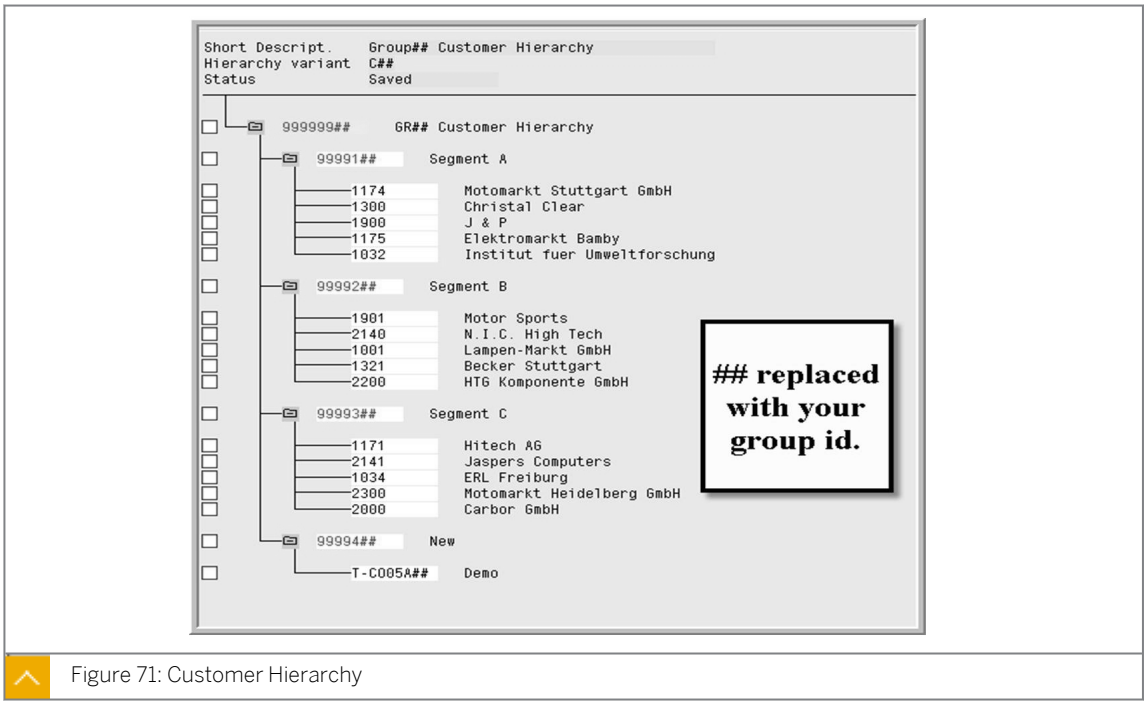



Figure 71: Customer Hierarchy

Save the hierarchy.

**Task 3**

Modify the report you created into a Contribution Margin Report that utilizes the *Sales Control* key figure scheme and the *Customer Hierarchy* you created.

1. Modify the report you created in the earlier exercise to include the *Sales Control* Key Figure Scheme and *Customer Hierarchy*. Be sure to delete the existing value fields in your report before you add the key figure scheme. Save your report and execute it for the same parameters as earlier.

# Create Report Components

199

Evaluate the existing key figure schemes, use this key figure scheme in an existing report, and create a master data hierarchy to use in a report.

**Business Example**

The CEO wants the following items to have consistent definitions whenever they are used in costing-based CO-PA reports: *Net Revenue*, *Contribution Margin I*, *Contribution Margin II*, and *Operating Profit*. When one of these items is used in a report, it must have a specific meaning.

Your sales manager also wants to group customers in different ways to evaluate customer performance shares.

**Task 1**

View an existing key figure scheme in costing-based CO-PA to determine if it contains the definitions for the marketing key figures that your CEO wants to view in the profitability report.

The CEO has stipulated that the following key figures be defined:

| Component | Meaning |
|---|---|
| Net Revenue | Revenue minus discounts and rebates (incl. cost-accounting value) |
| Contribution margin I | Net revenue minus standard cost of goods sold |
| Contribution margin II | Contribution margin I minus production variances |
| Operating Profit | Contribution margin II minus period costs (Sales and administrative overheads) |

1. View the existing key figure scheme, that is, *Sales Control*.
   a) On the *SAP Easy Access* screen, run transaction code **ORKE**.
   b) Define key figure schemes in Customizing, choose *Controlling* → *Profitability Analysis* → *Information System* → *Report Components* → *Define Key Figure Schemes*.

> Hint:
> In the *Set Operating Concern* dialog box, enter **IDEA** in the Operating concern field, select the *costing-based* radio button, and choose *Continue*.

c) On the *Change View "Key figure scheme": Overview* screen, under the *Key figure scheme* pane, select the row that has the *Sales control* value in *Medium-length text* field and then choose Elements of the key figure scheme.

This step displays all elements of the key figure scheme *Sales Control*.

d) On the *Change View "Elements of the key figure scheme": Overview* screen, double-click the *Elements of the key figure scheme* option. Select the row that has the *1100* value in the *Elmnt* column and then choose the *Basic formula* pushbutton.

In the *Change View "Elements of the key figure scheme"* dialog box, you can see *Element 1100* has the value *Revenue* in the *Name* field.

Note:
This *Element* is referred to as *9005*. Place your cursor on the *9005* field and choose the dropdown list (or F4). Elements *9001* and higher refer to actual *Value Fields*. Elements numbered < 9000 are custom created. Close the *Restrict Value Range* dialog box and then close the *Change View "Elements of the key figure scheme"* dialog box.

e) On the *Change View "Elements of the key figure scheme": Overview* screen, select the row that has the *1200* value in the *Elmnt* column and then choose the *Basic formula* pushbutton.

In the *Change View "Elements of the key figure scheme"* dialog box, you can see *Element 1200* has various value fields for discounts and deductions.

f) Close the *Change View "Elements of the key figure scheme"* dialog box.

g) On the *Change View "Elements of the key figure scheme": Overview* screen, select the row that has the *1300* value in the *Elmnt* column and then choose the *Basic formula* pushbutton.

In the *Change View "Elements of the key figure scheme"* dialog box, you can see *Element 1300* takes *Element 1100* (*Revenue*) less *Element 1200* (*Sales Deductions*) to calculate *Net Revenue*.

h) Close the *Change View "Elements of the key figure scheme"* dialog box.

i) Continue to view any other elements you wish to view.

j) When you finish viewing the key figure scheme definition, return to the *SAP Easy Access* screen.

**Task 2**

Your sales manager wants to group customers in the sales organization into segments based on sales representative. Create a characteristic hierarchy for customers. Name this hierarchy variant **C##**, where ## is your group number, and enter an appropriate description **GR## Customer Hierarchy**. Next, maintain the hierarchy so that customers are broken down into the following four categories:

For nodes in the hierarchy with no direct posting, create the following values, where ## is your group number. Enter the customers under each node, as indicated in the table.

| | Segment A | Segment B | Segment C | New |
|---|---|---|---|---|
| Customer no. | 1174, 1300, 1900, 1175, 1032, 2004 | 1901, 2140, 1001, 1321, 2200, 1033, 2007, 2130, 1460 | 1171, 2141, 1034, 2300, 2000 | T-CO05A## |

1. Create a *Customer Hierarchy* to use in your report. The hierarchy must group customers as follows:

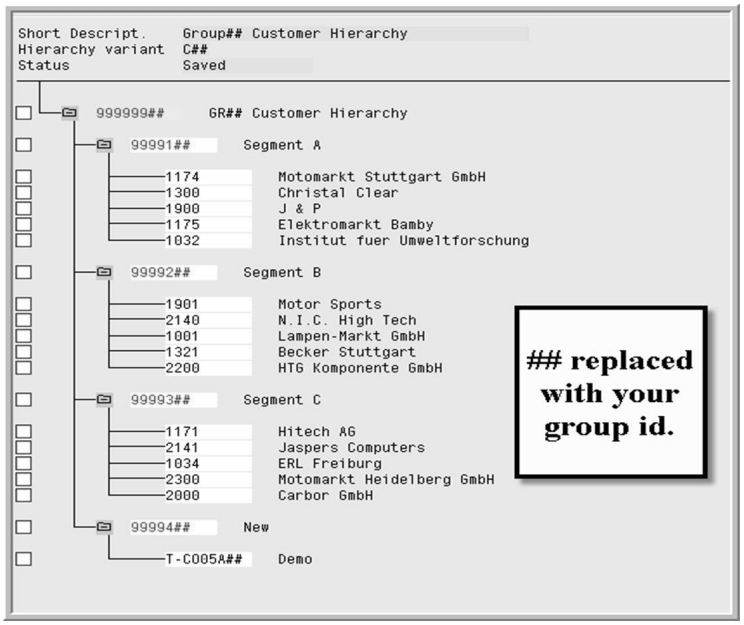



Figure 71: Customer Hierarchy

Save the hierarchy.

a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Master Data* → *Characteristics Values* → *Define Characteristics Hierarchy* (`KES3`).

b) On the *Hierarchy Processing* screen, select the row that has the *Customer* value in the *Char.* column. Enter **`C##`** in the *Variant* field and choose the *Create/Change* pushbutton.

c) On the *Hierarchy Maintenance: Hierarchy Attributes* screen, enter **`GR## Customer Hierarchy`** in the *Short description* field. Choose the *Hierarchy* pushbutton.

A grid appears where you will build your hierarchy.

> Note:
> For the nodes in the hierarchy with no direct posting (Top node, Segments A, B, C, and New), create nodes **`9999x##,`** where x starts at 1 and then increases and ## is your group number. For the actual customers, the description of the customer is default when you press ENTER.

d) On the *Hierarchy Processing: Maintain Hierarchy* screen, starting with the top node, enter **999999##**, where ## is your group number, directly in the node and choose *Enter*. Enter a description **GR## Customer Hierarchy** in the text box for the node.

e) Create the other nodes in the same way. Be sure to hit ENTER after each entry. Your hierarchy must appear as shown in the figure.

> Note:
> If you need additional nodes, utilize (*Same Level*) and (*One Lower Level*).

f) Save the hierarchy.

g) Return to the *SAP Easy Access* screen.

**Task 3**

Modify the report you created into a Contribution Margin Report that utilizes the *Sales Control* key figure scheme and the *Customer Hierarchy* you created.

1. Modify the report you created in the earlier exercise to include the *Sales Control* Key Figure Scheme and *Customer Hierarchy*. Be sure to delete the existing value fields in your report before you add the key figure scheme. Save your report and execute it for the same parameters as earlier.

   a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Define Report* → *Change Report* (KE32).

   b) On the *Change Report: Settings* screen, double-click the *BR##* value in the *Report* column.

   c) On the *Create Profitability Report: Specify Profit. Segment* screen, choose the *Characteristics* tab page and select the *Hierarchy* checkbox under the column for the *Customer* characteristics to turn on the hierarchy.

   d) In the *Choose hierarchy: Customer* dialog box, select the *GR## Customer Hierarchy* radio button and then choose *Enter*.

   e) On the *Key figures* tab page, choose the *Remove all key figures* pushbutton to remove the value fields you have selected.

   Under the *Available key figures* pane, all *Value Fields* are displayed along with all elements of the *Key Figure Scheme* (if selected).

   Choose the *Value fields on/off* pushbutton.

   Now the table on the right is empty.

   f) On the *Key figures* tab page, choose *Sales control* in the *Key figure scheme* field.

   The table now contains the element of the key figure scheme *Sales Control*.

   Choose (*Add all key figures*) to move all elements of the key figure scheme *Sales Control* into the *Selected key figures* pane.

   g) On the *Output Type* tab page, select the *Graphical report-output* radio button but change *Info*, *navigation*, *detail*, *drilldown control* in the *Output areas* field.

   Save your new report definition.

If you receive a warning about the layout information being lost, choose the *Yes* pushbutton.

On the *Change Report: Settings* screen, choose *Report* → *Execute*.

h) On the *Selection: Sales and Profit Group ##* screen, use the *Report selections* data you configured while creating your report, and then choose  (*Execute*).

How does this report differ from the report you created earlier?

- You have both the detail and drilldown lists.
- You are using the *Sales Control* key figure scheme.

i) View your report hierarchically. Drag and drop *Customer* to one of the *Division Values* (for example *01*) on the bottom.

This step displays your drilldown list hierarchically.

Open the hierarchy folder and then double-click a *Customer Value*, for example *T-CO05A##* under the *New* node.

- The *Customer* is filtered
- The *Drilldown* list is now by *Product*
- The *Detail List* shows the key figures for your customer

j) Return to the *SAP Easy Access* screen.

**LESSON SUMMARY**

You should now be able to:

- Describe how to create basic reports

Unit 6
Lesson 3

# Creating Form Reports

205

**LESSON OVERVIEW**

This lesson describes the different types of forms and explains how to create form reports.

**Business Example**

The management of your company wants to implement a profitability accounting application in the SAP system. As a member of the project team, you must recommend whether to implement Profitability Analysis (CO-PA) or classic Profit Center Accounting (EC-PCA). You will then be responsible for implementing the selected applications.

You need to create reports for your retail dealers. For this reason, you need to standardize the Contribution Margin Reports using a key figure scheme, create basic profitability reports, design the report forms to be used by several users, and insert report variables and report headers. For this reason, you require the following knowledge:

- An understanding of the different types of forms
- An understanding of the functionality of form reports

Introduce the report types. Explain that basic reports are used to quickly and easily define an analysis. Also, explain that a basic report has specific limitations when compared to a form report, including the fact that only the plan data or the actual data can be displayed, not both. Furthermore, only one plan version can be displayed in each case and only one record type is permissible. Formulas or data formatting are not possible. Form reports offer all these options.

**LESSON OBJECTIVES**

After completing this lesson, you will be able to:

- Create a form report

## Form Reports

In drilldown reporting, the different types of reports are ad hoc reports and form reports. In contrast to basic reports, the user defines the layout of a form report. Explain the features that the Report Painter offers to change the layout of a report to meet the requirements of an organization.

The number of demonstrations you can use for this topic depends on the time you are left with. If you have sufficient time, demonstrate all three form types. If you are short of time, demonstrate only the form type “one axis without key figure”.

In drilldown analytics, local and global variables are used to enter characteristic values, such as company codes, while executing a report, and to automatically enter text, such as column

headings. Help the participants understand the concept by making use of variables in some of the previous demonstrations.

The aim is to give the participants a general overview of what variables are and how they are used. Demonstrate how to create global variables and how to integrate variables into drilldown analytics and forms.

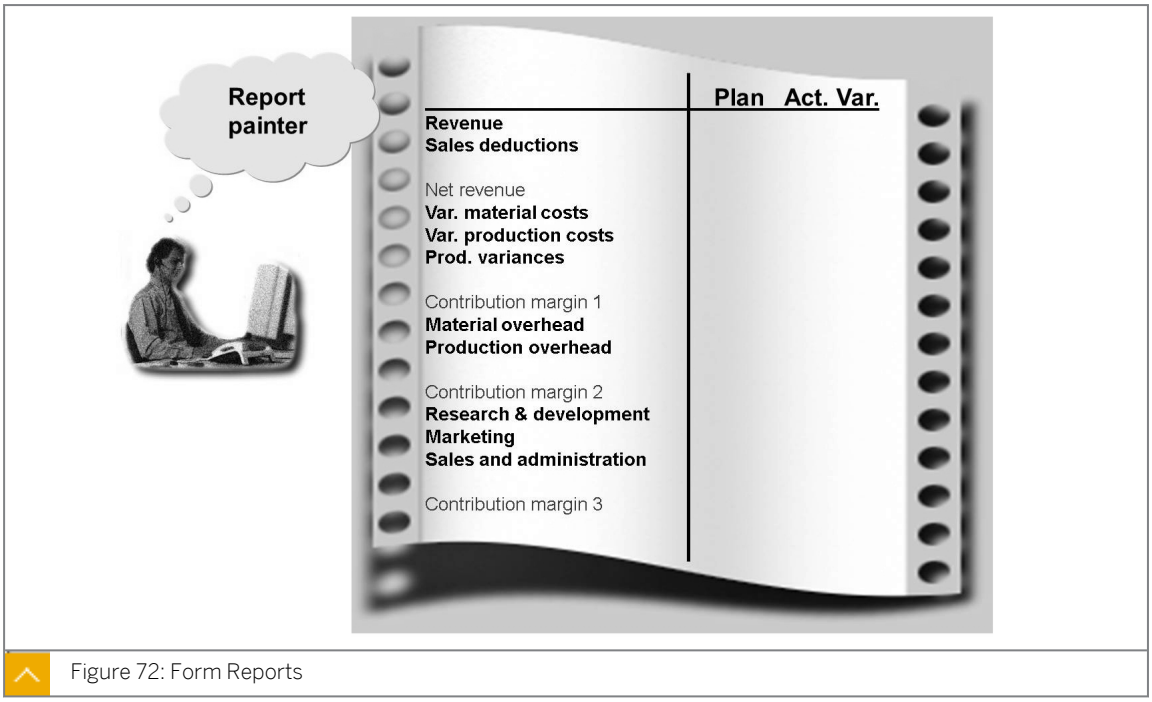



Figure 72: Form Reports

A form determines the content and formal structure of a report list. Complete a form with a semifinished report structure, with the definition of additional characteristics and key figures to define the final report.

The content of a form is regarded as fixed and is only changed under exceptional circumstances because when you change a form, it changes all the reports that use the same form.

Understand the distinction between forms with one axis and forms with two axes. Forms with one axis contain only one dimension, which is either a row or a column. Forms with two axes contain both rows and columns. You can define the forms with one axis and use them as templates to create the forms with two axes. You can use these forms as often as you need them. The type of form you use depends on the type of layout and content you want to display in your reports.

## Different Types of Forms

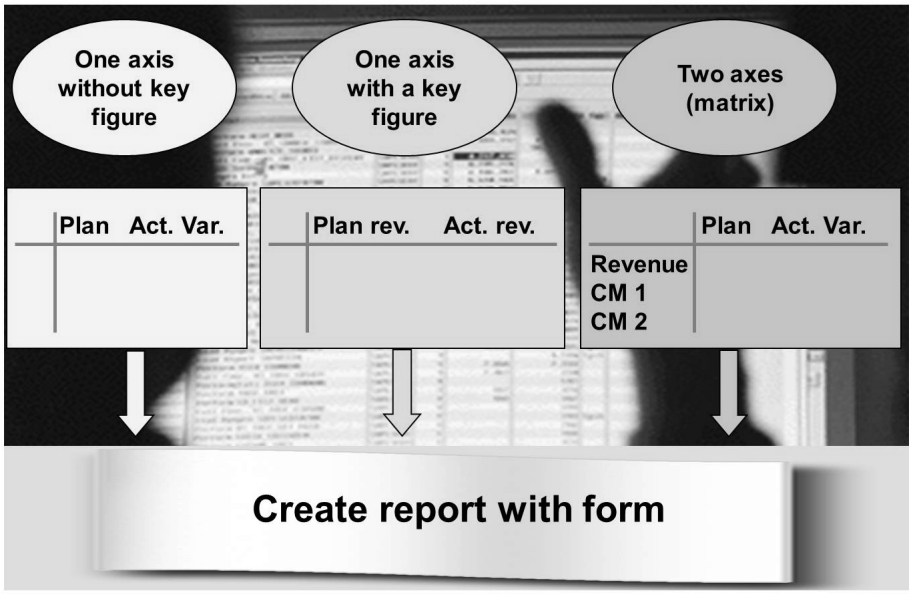



Figure 73: Different Types of Forms

**The different types of forms are as follows:**

- One axis without key figure

  You can define either the rows or the columns using characteristics. Choose *Basic list* to display a blank list with columns.

- One axis with a key figure

  Define either the rows or the columns using characteristics and key figures. Choose *Basic list* to display a blank list with rows.

- Two axes with key figure

  Define both the rows and the columns using characteristics and key figures. Choose *Basic list* to display a blank list with both rows and columns. You can decide whether the key figures must appear in the rows or the columns, depending on what you want to report. Characteristics can be displayed in both the rows and the columns.

To create a form, enter a name and the required type of form.

### One Axis Without Key Figure

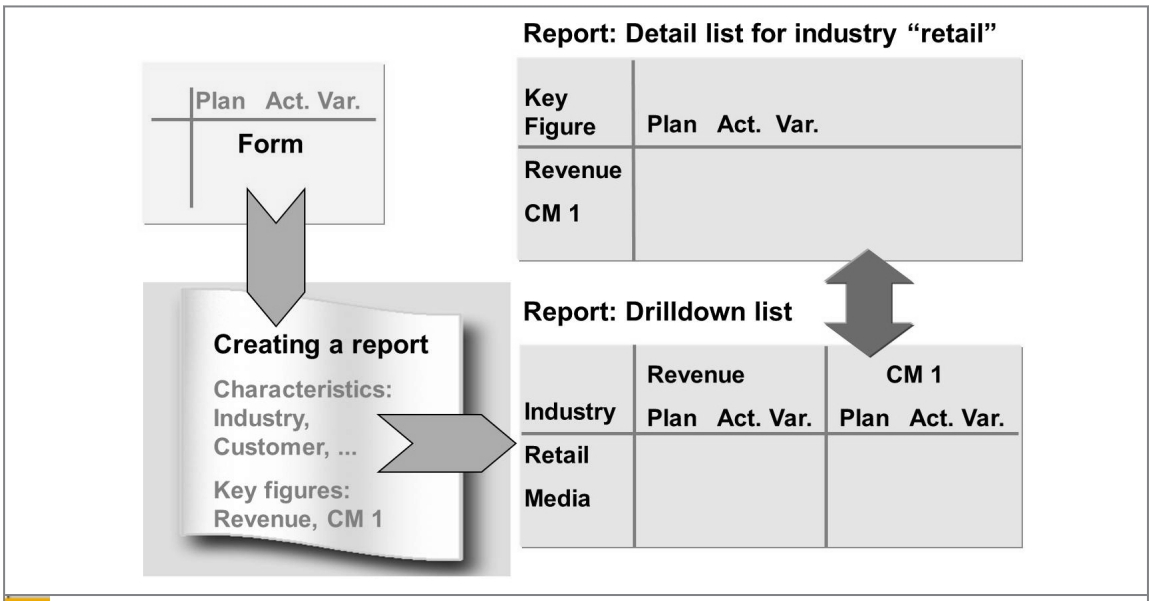



Figure 74: One Axis Without Key Figure

In a form with one axis and without the key figure, define the columns only. For this purpose, you can indicate the characteristics and characteristic values. You can also define additional columns using a formula, such as Plan - Actual = Variance. The characteristics and values you indicate determine the content of the columns.

Decide the key figures that you want to see, such as revenue and contribution margins. Also decide on the drilldown characteristics that you want to analyze when you define the report.

When you execute a report, you obtain a drilldown list with two headers, with each key figure above a group of columns that contains the characteristics that you specified in the form. The individual values of the first drilldown characteristic, Industries, *Retail* and *Media*, are displayed in the rows.

The detail list shows the defined columns by using characteristics in the form definition. The key figures are displayed in the rows. The detail list displays the results of a selected characteristic value (Retail industry).

### One Axis with Key Figure

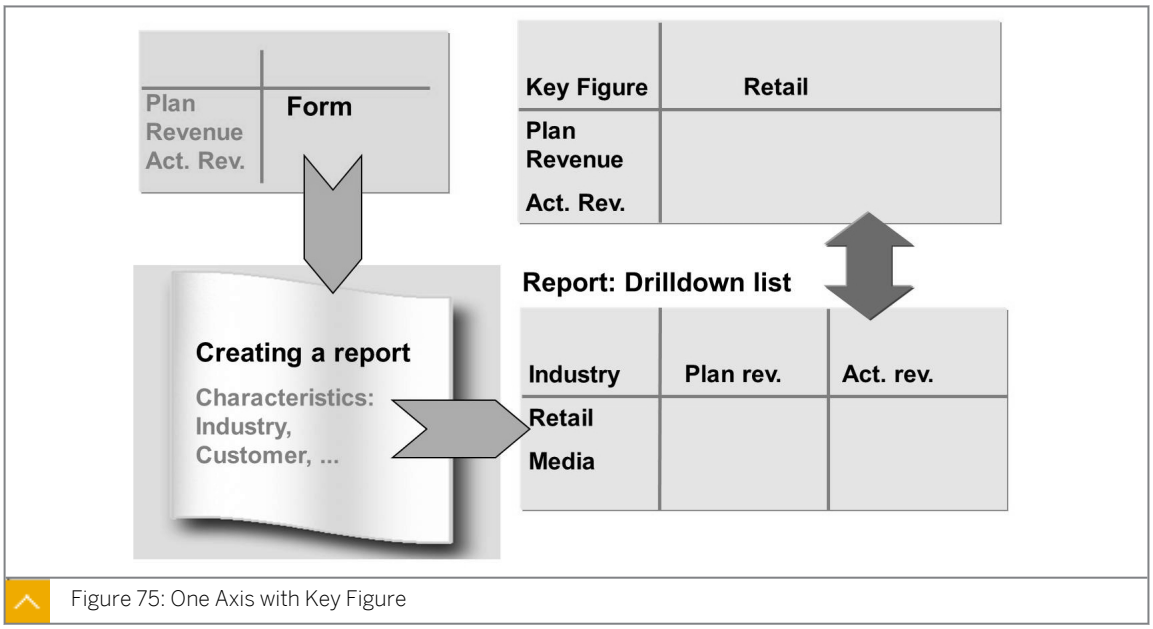



Figure 75: One Axis with Key Figure

In a form with one axis and with the key figure, set the key figures that you want to analyze, such as planned revenue and actual revenue, in the rows of the form. You can also limit the key figures if you specify the characteristics and their values.

When you define the report, only select the drill-down characteristics, such as Industry or Customer. The drilldown list shows the key figures and characteristics from the form in the columns, and the values of the first drilldown characteristics, *Retail* and *Media*, in the rows.

The detail list contains only one column that shows the selected characteristic value (*Retail*). The key figures are shown in the rows.

Remember that in a form with one axis and with the key figure, you can define either the rows or the columns of the form. When you press *Basic list*, the system displays a blank list with rows only. Notice that you can tip this form by moving the rows to the columns using the Column display function.

When you define a form, you define the layout of the detail list. This means that the position of the elements in the form determines their position in the detail list. This is the reason why key figures are shown in the rows, by default, in the forms with one axis.

### Two Axes (Matrix)

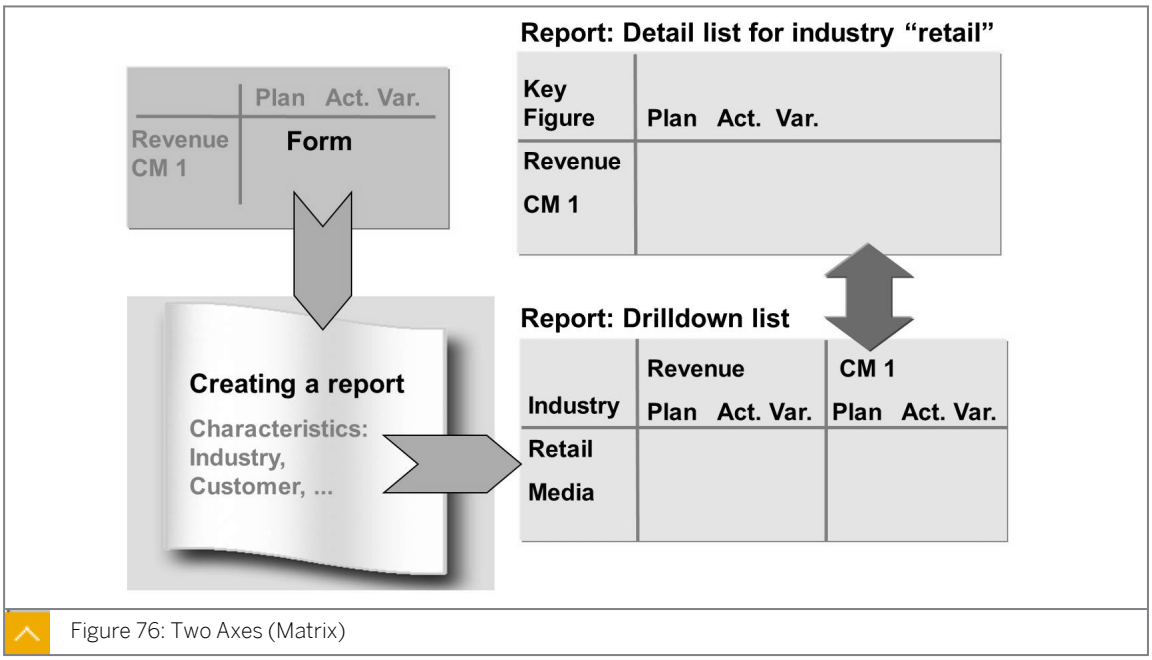



Figure 76: Two Axes (Matrix)

In a form with two axes, for example a matrix form, you can define both the rows and columns using characteristics and key figures. The key figures appear in either the rows or the columns of the form. Conversely, use characteristics to define both rows and columns.

When you define the report, only select the drilldown characteristics, such as Industry and Customer.

Execute the report to obtain a drilldown list with two headers. Each header with key figure, revenue and contribution margin 1 stands above a group of columns containing the specified characteristics in the form, such as plan, actual, and variance. The individual values of the first drilldown characteristic, the industries Retail and Media, are displayed in the rows.

The detail list shows the columns defined using the characteristics in the form definition. The key figures are displayed in the rows. The detail list displays the results of a selected characteristic value, Industry Retail.

Remember that all the different types of forms offer you a number of functions to determine the final layout of your reports, such as colors, number format, line spacing, and text lines.

## Form Settings

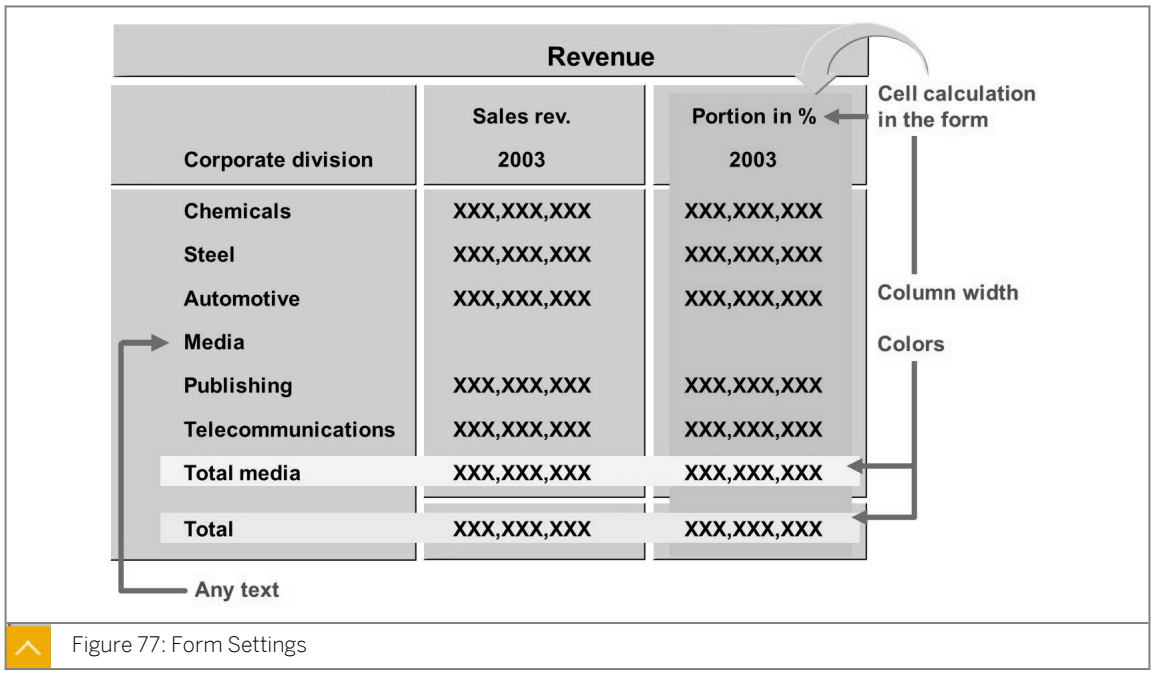



Figure 77: Form Settings

**The following functions are available when you define a form:**

| | |
|---|---|
| Colors: | The colors function highlights specific elements of the form. |
| Number format: | The number format function specifies a display factor and the number of decimal places displayed. This function is always applied to a specific column or row when you execute the report to make additional settings for each row or column. |
| Plus/minus sign reversal: | The plus/minus sign reversal function reverses the signs of a specific column. Using this function, negative values are displayed as positive, and positive values as negative. In the form, '-' indicates this function. |
| Zero suppression: | The zero suppression function hides all the rows with the value 0. 'xxx.xxx.xxx' indicates this in the form definition. |
| Text type: | The text type function allows you to specify whether you want to see the short, medium, or long text of each element in lines or columns. |
| Column width: | The column width function allows you to change the width of a column. |

To use any of these functions, first select the required column and then choose the function.

## How to Create a Form Report

Demonstrate the steps listed in Task 1 and 2 of the Create Form Reports exercise.

If you are short of time, demonstrate only Task 1 of the Create Form Reports exercise.

Unit 6
Exercise 19

# Create Form Reports

213

**Business Example**

Your sales manager wants to use the Sales Control key figure scheme to obtain a quarterly trend report with data related to the customer and the product. Another sales manager requires a similar report but wants to focus on the sales divisions and distribution channels. Another department head also requires quarterly information sorted by product and quantities sold.

Create a simple form report in costing-based CO-PA, execute it, and navigate through it. Then, create a more complex form report in costing-based CO-PA, execute it, and navigate through it.

**Task 1**

Most companies draw up quarterly reports. The most efficient way of drawing up these reports is to use form reporting in CO-PA.

Hint:
A form is a formal structure of rows and columns that you can use in any number of reports in the same operating concern. A form represents the content and the formal structure of a report. It is a type of template. When you create a report, decide whether you want to use a form. You do not need a form to define simple reports. Note that if you want to run more complex reports or format the display for official reports, it is a good idea to define a form before you create the reports.

1. In costing-based CO-PA, create a single axis form without key figures to be used for a specific fiscal year. The form must have company code **1000**, actual data, record type **F**, and the following layout:

| | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Total |
|---|---|---|---|---|---|
| | | | | | |

Name the form **FR1##** with description **Quarterly Profitability Analysis**.

Select the *One axis without key figure* option to create the form. Select *Operating Concern Currency*.

Double-click the first element and select the *Characteristics* radio button. Select the *Period* value and then enter the values **001** to **003**.

Enter **Quarter 1** in the text fields.

Define the columns for quarters 2, 3, and 4 in a similar way, changing the period values to correspond with the quarters.

Use a formula to create the *Total* column.

For general data selections, select the characteristics *Plan/actual indicator*, *Record type*, *Fiscal year*, and *Company code*. Specify values or variables for these characteristics.

Save the form definition.

2. Use the form you just created to define a new report.
   Select report with form, and enter the name of your form in the *Form* field.
   Select *Create*.

Note:
The report and form names need not be the same.

Select the characteristics *Customer* and *Product* for the report. Select all the key figures from the *Sales Control* key figure scheme.

In addition, indicate the current fiscal year as the default year for the report. Ensure that both the company code and the current fiscal year appear in the header of the report list.

Select *Classic Drill-down* as the output type and use summarization data.

Save the form report definition without selecting any hierarchies.

3. Create a header to enter the company code and the fiscal year.
   Save the header definition and the report definition.
4. Execute your report using the default settings you have made.
   How does this report layout differ from the report you executed in the earlier exercise?

### Task 2

In addition to quarterly reporting, most companies draw up some type of plan/actual reports.

Use form reports to do this. In costing-based CO-PA, create a two-axis form for a to-be-specified time interval for company code 1000 for billing documents. Define a column for *Actual values* and a column for *Plan Values, Version 5##*. In addition, define two formula columns for the absolute and percentage variance between the actual and plan figures. The form must appear as follows:

1. Create a form to use in your report **`FR2XX`**, and enter a description such as **`Plan/Actual Form ##`**.
   For the *Variance* column, choose *Formula* instead of *Characteristic*. Define the formula as the *Actual column minus the Plan column*. Enter the text **`Variance`**.
   Select *Formula* as the screen element for the *Variance %* column. Define the formula as *Variance x 100 / Plan* column. Enter the text **`Variance`**.
2. Use the form you just created to define a new report.
   Select report with form and enter the name of your form in the *Form* field.
   Select *Create*.

Note:
The report and form names do not have to be the same.

Select the characteristics *Customer* and *Product* for the report.

Select *Classic Drill-down* as the output type, and use summarization data.

Save the form report definition without selecting any hierarchies.

3. Execute your report using the default settings you made.
4. To make it easy to read the drilldown list, you have decided to show only certain key figures in the report columns on the drilldown list. Select both plan and actual values for *Gross Revenue* and ****Contr. Margin II*.
5. Run the *FR2##* report again with the new settings.

### Task 3

1. What is the difference between local and global variables?
2. Create a global variable for the *Period/Fiscal Year* field.
3. Change your form *FR2##* to utilize the new global variable.
4. Execute report *FR2##* that uses form *FR2##*.

### Task 4

Familiarize yourself with the type of variables.

1. Name the four types of variables. Which type is used most frequently in reports? Which type is used to customize the appearance of a report? Which type is used to customize the meaning of a column in a report?

# Create Form Reports

216

**Business Example**

Your sales manager wants to use the Sales Control key figure scheme to obtain a quarterly trend report with data related to the customer and the product. Another sales manager requires a similar report but wants to focus on the sales divisions and distribution channels. Another department head also requires quarterly information sorted by product and quantities sold.

Create a simple form report in costing-based CO-PA, execute it, and navigate through it. Then, create a more complex form report in costing-based CO-PA, execute it, and navigate through it.

**Task 1**

Most companies draw up quarterly reports. The most efficient way of drawing up these reports is to use form reporting in CO-PA.

Hint:
A form is a formal structure of rows and columns that you can use in any number of reports in the same operating concern. A form represents the content and the formal structure of a report. It is a type of template. When you create a report, decide whether you want to use a form. You do not need a form to define simple reports. Note that if you want to run more complex reports or format the display for official reports, it is a good idea to define a form before you create the reports.

1. In costing-based CO-PA, create a single axis form without key figures to be used for a specific fiscal year. The form must have company code **1000**, actual data, record type **F**, and the following layout:

| | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Total |
|---|---|---|---|---|---|
| | | | | | |

Name the form **FR1##** with description **Quarterly Profitability Analysis**.

Select the *One axis without key figure* option to create the form. Select *Operating Concern Currency*.

Double-click the first element and select the *Characteristics* radio button. Select the *Period* value and then enter the values **001** to **003**.

Enter **Quarter 1** in the text fields.

Define the columns for quarters 2, 3, and 4 in a similar way, changing the period values to correspond with the quarters.

Use a formula to create the *Total* column.

For general data selections, select the characteristics *Plan/actual indicator*, *Record type*, *Fiscal year*, and *Company code*. Specify values or variables for these characteristics.

Save the form definition.

a) Before building the form, ensure that the operating concern is set to costing-based. Execute transaction code `KEBC`.

In the *Set Operating Concern* dialog box, enter **`IDEA`** in the *Operating concern* field, select the *costing-based* radio button, and choose the *Continue* pushbutton.

b) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Current Settings* → *Define Forms for Profitability Reports* (`KE34`).

c) On the *Report Painter: Create Form* screen, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Form* | **`FR1##`** |
| *Description* | **`Sales Qtr Form ##`** |
| *Structure* | Select *One axis without key figure* |

Choose (*Create*). In the *Choose Currencies* dialog box, select the *Operating concern currency* radio button and then choose *Continue*.

d) On the *Report Painter: Create Form* screen, double-click *Element 1*. In the *Select element type* dialog box, select the *Characteristics* radio button and then choose *Enter*.

e) In the *Element definition: Element 1* dialog box, under the *Available characteristics* pane, select the *Period* value and choose (*Move selected to left*) to move it to the *Selected characteristics* pane.

f) Under the *Selected characteristics* pane, enter **`001`** in the *From* field and **`003`** in the *To* field. Choose (*Change short, middle and long texts*).

In the *Text maintenance* dialog box, enter **`Qtr 1`** in the *Short*, *Medium*, and *Long* fields and then choose *Enter*.

In the *Element definition: Qtr 1* dialog box, choose the *Confirm* pushbutton.

Hint:
You can use the *Copy Short Text* pushbutton.

g) Define the columns for quarters 2, 3, and 4 in a similar manner, changing the period values to correspond with the quarters. (Enter **`Qtr 2`** in *Element 2*, **`Qtr 3`** in *Element 3*, and **`Qtr 4`** in *Element 4*).

h) For the final column, create a *Total* column. Even though there are no *Elements* showing, we can utilize the "dot" to the right of *Qtr 4*.

On the *Report Painter: Create Form* screen, double-click the "dot". In the *Select element type* dialog box, select the *Formula* radio button and choose *Enter*.

In the *Enter Formula* dialog box, add the four quarters together (**X001 + X002 + X003 + X004**) and then choose *Enter*.

In the *Text maintenance* dialog box, enter **Total** for the *Short*, *Medium*, and *Long* fields and then choose *Enter*.

i) On the *Report Painter: Create Form* screen, choose *Edit* → *Gen. data selection* → *Gen. data selection* to maintain the general data selections.

In the *Element definition: General data selection* dialog box, under the *Available characteristics* pane, select the *Company Code*, *Record Type*, *Plan/Act. Indicator*, and *Fiscal Year* values and choose (*Move selected to left*) to move it to the *Selected characteristics* pane.

Maintain the following values:

| Field Name or Data Type | Value |
|---|---|
| *Plan/Actual Indicator* | **0** |
| *Record Type* | **F** |
| *Fiscal Year* | Select the (*Variable ON/OFF* ) checkbox. In the *Variable selection* dialog box, enter the **FISCYR** value in the *Local variable* field and then press ENTER. |
| *Company Code* | **1000** |

Choose the *Confirm* pushbutton to accept *Gen. Data Selections*.

j) Save your form and return to the *SAP Easy Access* screen.

2. Use the form you just created to define a new report.

Select report with form, and enter the name of your form in the *Form* field.

Select *Create*.

> Note:
> The report and form names need not be the same.

Select the characteristics *Customer* and *Product* for the report. Select all the key figures from the *Sales Control* key figure scheme.

In addition, indicate the current fiscal year as the default year for the report. Ensure that both the company code and the current fiscal year appear in the header of the report list.

Select *Classic Drill-down* as the output type and use summarization data.

Save the form report definition without selecting any hierarchies.

a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Define Report* → *Create Profitability Report* (KE31).

b) On the *Create Profitability Report: Initial* screen, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Report* | **FR1##** |
| *Description* | **Sales Quarter Report ##** |

| Field Name or Data Type | Value |
|---|---|
| *Report Type* | Select *Report with Form* |
| *Form* | **FR1##** |

Choose (*Create*).

c) On the *Create Profitability Report: Specify Profit. Segment* screen, choose the *Characteristics* tab page and select the *Customer* and *Product* values from the *Char. list* pane. Then, choose (*Add Char.*).

d) On the *Key figures* tab page, choose the *Value fields on/off* pushbutton.

If you have entered the *Sales Control* value in the *Key figure scheme* field, you see just the *Value Fields* from that scheme. If not, the table is empty, so choose the *Key Figure Scheme Sales Control* in the dropdown.

e) Under the *Key figure scheme* pane, choose (*Add all key figures*) to move all elements of *Sales control Key Figure Scheme* into the *Selected key figures* pane.

f) On the *Variables* tab page, enter the current fiscal year in the *Fiscal Year* field and select the *Entry at Execution* checkbox. Because the other characteristics were hard-coded on the form, we do not see them here.

g) On the *Output Type* tab page, select the *Classic drilldown* and *Basic list: Detail* radio buttons.

> Note:
> During the creation of a report, the *Header* and *Footer* checkboxes are grayed out. The report definition must be saved to the database before you can add headers and footers. We will come back to this in a later step.

h) On the *Options* tab page, select the *Display current data* checkbox, select the *Use a summarization level* and *Execute Report* radio buttons, and then save the report definition.

In the *Choose hierarchy* dialog box, because we do not want to use any *Hierarchies*, choose *Continue*.

This step saves the report.

3. Create a header to enter the company code and the fiscal year.

Save the header definition and the report definition.

a) On the *Create Profitability Report: Initial* screen, choose *Report* → *Change*.

b) On the *Change Report: Settings* screen, double-click the *FR1##* report.

c) On the *Output Type* tab page, choose (*Maintain Headers*) to create a header.

In the *Print Settings* dialog box, choose the *Create* pushbutton.

d) On the *Change Headers* screen, enter **Company Code** in the first row and then choose (*Characteristics*).

e) In the *Insert/Change Text Variable* dialog box, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Variable type* | **Characteristics-related text variable** |
| *Characteristics* | **Company Code** (BUKRS) |
| *Text type* | **Value** |
| *Value type* | **From Value** |
| *Width* | 4 |

Choose *Enter*.

f) In the second row, enter **Fiscal Year** and then choose (*Characteristics*).

g) In the *Insert/Change Text Variable* dialog box, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Variable type* | **Characteristics-related text variable** |
| *Characteristics* | **Fiscal Year** (GHAHR) |
| *Text type* | **Value** |
| *Value type* | **From Value** |
| *Width* | **4** |

Choose *Enter*.

h) Save the report. In the *Exit Text* window, choose *Yes*.

4. Execute your report using the default settings you have made.
How does this report layout differ from the report you executed in the earlier exercise?

a) On the *Change Report: Settings* screen, choose *Report → Execute.*

b) On the *Selection: Sales Qtr Report* screen, choose (*Execute)* to run the report for the current fiscal year.

c) On the *Execute Drilldown Report: Detail List* screen, under the *Navigation* column, click the *Customer* field.
You have a contribution report for your customer.

d) Choose (*Drilldown List*) and then select the *Product* field.
The key figures are in the columns.

e) Return to the *SAP Easy Access* screen.

### Task 2

In addition to quarterly reporting, most companies draw up some type of plan/actual reports.

Use form reports to do this. In costing-based CO-PA, create a two-axis form for a to-be-specified time interval for company code 1000 for billing documents. Define a column for *Actual values* and a column for *Plan Values, Version 5##*. In addition, define two formula columns for the absolute and percentage variance between the actual and plan figures. The form must appear as follows:

1. Create a form to use in your report **FR2XX**, and enter a description such as **Plan/Actual Form ##**.

   For the *Variance* column, choose *Formula* instead of *Characteristic*. Define the formula as the *Actual column minus the Plan column*. Enter the text **Variance**.

   Select *Formula* as the screen element for the *Variance %* column. Define the formula as *Variance x 100 / Plan* column. Enter the text **Variance**.

   a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Current Settings* → *Define Forms for Profitability Reports* (KE34).

   b) On the *Report Painter: Create Form* screen, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| Form | **FR2##** |
| Description | **Plan/Actual Form ##** |
| Structure | Select *Two axes (matrix)* |

   Choose the *Create* pushbutton.

   In the *Choose Currencies* dialog box, select the *Operating concern currency* radio button and then choose *Continue*.

   c) On the *Report Painter: Create Form* screen, double-click *Column 1*. In the *Select element type* dialog box, select the *Characteristics* radio button and then choose *Enter*.

   In the *Element definition* dialog box, under the *Available characteristics* pane, select the *Plan/Act. Indicator* value and choose ◀ (*Move selected to left)* to move the selected value to the *Selected characteristics* pane.

   d) Under the *Selected characteristics* pane, enter **0** in the *From* field and choose (*Change short, middle and long texts)*.

   In the *Text maintenance* dialog box, enter **Actual** in the *Short*, *Medium*, and *Long* fields and then choose *Enter*.

   In the *Element definition* dialog box, choose the *Confirm* pushbutton.

   e) On the *Report Painter: Create Form* screen, double-click *Column 2.* In the *Select element type* dialog box, select the *Characteristics* radio button and then choose *Enter*.

   In the *Element definition* dialog box, under the *Available characteristics* pane, select the *Version* value and choose ◀ (*Move selected to left)* to move the selected value to the *Selected characteristics* pane.

   f) Under the *Selected characteristics* pane for the Plan/Act indicator, enter **1** in the *From* field and **5##** in the *Version* field, and choose the *Change short, middle and long texts* pushbutton.

In the *Text maintenance* dialog box, enter **`Plan`** in the *Short*, *Medium*, and *Long* fields and then choose *Enter.*

In the *Element definition* dialog box, choose the *Confirm* pushbutton.

> Note:
> If you did not do the planning exercises, use *Version* **`500`**.

g) Create a *Variance* column as the final column. On the *Report Painter: Create Form* screen, double-click *Column 3*.

In the *Select element type* dialog box, select the *Formula* radio button and choose *Enter*. In the *Enter Formula* dialog box, enter **`(100 * (X001 - X002)/ X002)`**.

Then, choose the *Check* pushbutton. Press ENTER.

In the *Text maintenance* dialog box, enter the **`Variance`** value in the *Short* field, choose the *Copy Short Text* pushbutton, and choose *Enter*.

> Note:
> Do not use the keypad for the 100, but rather type as the exercise states. If you use the keypad, there will be spaces, causing a syntax error. You will only enter one “)” after the first X002. The system will add the other.

Your formula must look like this:

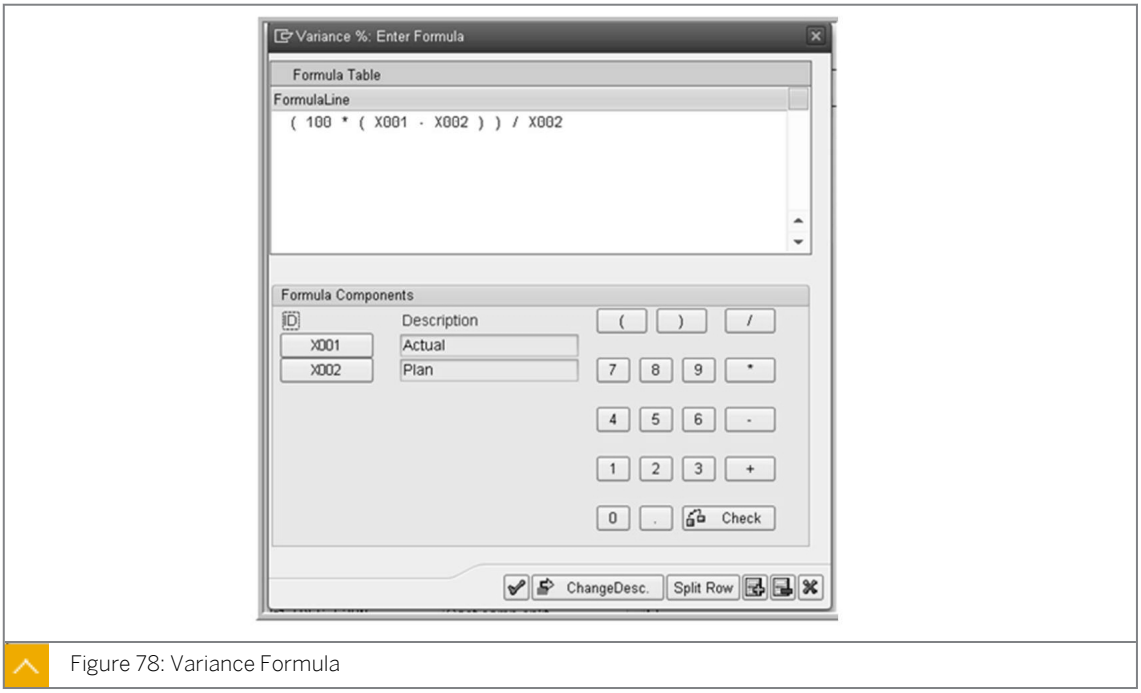



Figure 78: Variance Formula

h) For the rows, use a *Key Figure Scheme* element. On the *Report Painter: Create Form* screen, double-click *Row 1*. In the *Select element type* dialog box, select the *Key figure scheme element* radio button, and then choose *Enter*. In the *Choose Key Figure Scheme* dialog box, select *IDES det. CM scheme* and choose *Enter*.

In the *Element definition* dialog box, choose **`Gross revenue`** in the *Value field* dropdown, choose *Enter* and then choose the *Confirm* pushbutton.

Follow the same steps for rows 2 to 7. For the *Key Figure Elements* whose text is too large, enter the name as per the following table:

| Lead Column | Actual | Plan | Variance % |
|---|---|---|---|
| *Gross revenue* | XXXX.XXX | XXXX.XXX | XXXX.XXX |
| *Sales deductions* | XXXX.XXX | XXXX.XXX | XXXX.XXX |
| *Net revenue after ded* | XXXX.XXX | XXXX.XXX | XXXX.XXX |
| *CMI* | XXXX.XXX | XXXX.XXX | XXXX.XXX |
| *COGM, fixed* | XXXX.XXX | XXXX.XXX | XXXX.XXX |
| *Material OH* | XXXX.XXX | XXXX.XXX | XXXX.XXX |
| ****Contrib. Margin II* | XXXX.XXX | XXXX.XXX | XXXX.XXX |

i) On the *Report Painter: Create Form* screen, choose *Edit* → *Gen. data selection* → *Gen. data selection* to maintain *general data selections*. In the *Element definition: General data selection* dialog box, under the *Available characteristics* pane, select the *Company Code*, *Record Type*, and *Period/Year* values and choose ◀ (*Move selected to left)* to move the selected values to the *Selected characteristics* pane. Maintain the following values:

| Field Name or Data Type | Value |
|---|---|
| Record Type | F |
| Period from | 001.Current fiscal year |
| Period to | 012.Current fiscal year |
| Company Code | 1000 |

Choose the *Confirm* pushbutton to accept *Gen. Data Selections*.

j) Save your form and return to the *SAP Easy Access* screen.

2. Use the form you just created to define a new report.

Select report with form and enter the name of your form in the *Form* field.

Select *Create*.

Note:
The report and form names do not have to be the same.

Select the characteristics *Customer* and *Product* for the report.

Select *Classic Drill-down* as the output type, and use summarization data.

Save the form report definition without selecting any hierarchies.

a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Define Report* → *Create Profitability Report* (`KE31`).

b) On the *Create Profitability Report: Initial* screen, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Report* | **FR2##** |
| *Description* | **Plan/Actual Report ##** |
| *Report with Form* | Select |
| *Form* | **FR2##** |

Choose the Create pushbutton.

c) On the *Create Profitability Report: Specify Profit. Segment* screen, choose the *Characteristics* tab page and select the *Sales Org.*, *Division* and *Customer* values from the *Char. list* pane. Then, choose ◀ (*Add Char.)*.

Note:
There is no *Key Figures* tab page, because we chose the *Key Figures* on our form. Additionally, there is no *Variables* tab page, because none of our *General Data Selections* were variables. If we had made one of our *Characteristics* a variable, the *Variables* tab page would appear.

d) On the *Output Type* tab page, select the *Classic drilldown* and *Basic list: Detail* radio buttons.

e) On the *Options* tab page, select the *Display current data* checkbox, select the *Use a summarization level* and *Execute report* radio buttons, and then save the basic report definition.

f) In the *Choose hierarchy* dialog box, choose *Continue* because we do not want to use any *Hierarchies*.

This step saves the report.

3. Execute your report using the default settings you made.

a) On the *Create Profitability Report: Initial* screen, choose *Report → Execute.*

b) On the *Run Profitability Report: Initial* screen, double-click your *FR2##* report.

Note:
You may not have plan data.

c) Exit the report and return to the *SAP Easy Access* screen.

4. To make it easy to read the drilldown list, you have decided to show only certain key figures in the report columns on the drilldown list. Select both plan and actual values for *Gross Revenue* and ****Contr. Margin II*.

a) On the *SAP Easy Access* screen, choose *Accounting → Controlling → Profitability Analysis → Information System → Current Settings → Define Forms for Profitability Reports* (`KE34`).

b) On the *Report Painter: Create Form* screen, choose *Form* → *Change* to switch to *Change* mode.

c) On the *Report Painter: Change Form* screen, double-click form *FR2##*.

> Hint:
> You can enter the **KE35** transaction code to go directly to the *Change Form* screen.

d) To configure *Drilldown Display*, choose *Extras* → *Drilldown Display* → *Select Rows/ Columns.*

e) Select the *Gross Revenue* field in the rows and then choose (*Select/deselect*). The system will highlight the selection.

Follow the same steps for the ****Contr. Margin II* field in the rows, and for the *Actual and Plan* field in the columns. Then, choose the *Save selections* pushbutton. In the *Layout of Drilldown List* dialog box, choose *Enter* to continue.

f) Apply highlighting to the *CMI* and ****Contr. Margin II* fields. Select the *CMI* field and choose *Formatting* → *Color settings*. In the *Select color type* dialog box, select the *Color for emphasis* radio button and then choose *Enter*.

g) Follow the same steps for ****Contr. Margin II*.

h) Save the form definition and return to the *SAP Easy Access* screen.

5. Run the *FR2##* report again with the new settings.

a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Execute Report* (`KE30`).

b) On the *Run Profitability Report: Initial* screen, double-click your *FR2##* report.

c) On the *Execute Drilldown Report: Detail List* screen, the *Detail list* will show your highlighting.

d) Choose (*Drilldown List*) and then choose the *Division* field.

You see your new *Drilldown List*.

e) Return to the *SAP Easy Access* screen.

### Task 3

1. What is the difference between local and global variables?

a) Global variables are variables that have the same meaning across many forms and reports. It makes sense to define frequently used variables globally. Global variables have more sophisticated substitution logic than local variables do.

Local variables are variables that only have meaning within a particular form or report. When a local variable is used in a form, it has the same meaning across all the reports that share that form.

2. Create a global variable for the *Period/Fiscal Year* field.

a) On the *SAP Easy Access* screen, choose *Accounting → Controlling → Profitability Analysis → Information System → Current Settings → Define Variables for Reports* (KE2E).

b) On the *Change View "Maintain Variables": Overview* screen, choose the *New entries* pushbutton.

c) On the *New Entries: Details of Added Entries* screen, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Type of variable* | **Characteristic Value** |
| *Variable Name* | **AC605GR##** |
| *Replacement Type* | **Entry** |

Choose *Enter*.

The system will show additional fields in which you have to enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Field Name* | **PERIO** |
| *Default value* | **Set/Get Parameter** |
| *Optional entry* | **Required entry** |
| *Parameter/select.opt* | **Select option** |
| *Short text* | **Period/Yr** |
| *Description* | **Period/Yr** |
| *Text* | **Period/Yr** |

d) Save your variable.

3. Change your form *FR2##* to utilize the new global variable.

a) Execute transaction code KE35.

b) On the *Report Painter: Change Form* screen, double-click your form *FR2##*.

c) Choose *Edit → Gen. data selection → Gen. data selection* to maintain the general data selections. In the *Element definition: General data selection* dialog box, under the *Selected characteristics* pane, delete the data from the *From* and *To* fields in the *Period/year* row.

d) Select  (*Variable on/off*) for the *Period/year* row. In the *Variable selection* dialog box, double-click your *AC605GR##* value, and then choose the *Confirm* pushbutton.

e) Save your form and return to the *SAP Easy Access* screen.

4. Execute report *FR2##* that uses form *FR2##.*

a) On the *SAP Easy Access* screen, choose *Accounting → Controlling → Profitability Analysis → Information System → Execute Report* (KE30).

b) On the *Run Profitability Report: Initial* screen, double-click your *FR2##* report.

You can now enter the *From* and *To* values for the *Period/year* field.

### Task 4

Familiarize yourself with the type of variables.

1. Name the four types of variables. Which type is used most frequently in reports? Which type is used to customize the appearance of a report? Which type is used to customize the meaning of a column in a report?
   a) The four types of variables are characteristic value, Hierarchy and hierarchy node, Text, and Formula. Characteristic value variables are used most frequently in report and form definitions. Hierarchy and hierarchy node variables are similar to Characteristic values. Text variables are used to customize the appearance of a report. Formula variables are used to customize the meaning of a column or a row in a report.

**LESSON SUMMARY**

You should now be able to:

- Create a form report

# Creating Line Item and Account-Based Reports

229

**LESSON OVERVIEW**

This lesson describes how to create line items and account-based reports. In addition, it explains the process to transfer report data.

**Business Example**

Your company wants to implement a profitability accounting application in the SAP system. As a member of the project team, you must recommend whether to implement Profitability Analysis (CO-PA) or classic Profit Center Accounting (EC-PCA). Then, you will be responsible for implementing the selected applications.

You need to create reports for your retail dealers. For this reason, you need to standardize the Contribution Margin Reports using a key figure scheme, create basic profitability reports, design the report forms to be used by several users, and insert report variables and report headers. For this reason, you require the following knowledge:

- An understanding of reports based on line items
- An understanding of account-based reports

**LESSON OBJECTIVES**

After completing this lesson, you will be able to:

- Create line items and account-based reports

## Reports Based on Line Items

Line item analytics is used to analyze individual business transactions. Because the participants use this function quite frequently, it is sufficient to explain how they can define and apply their own line item layouts. Highlight the fact that you can also call line item reports from drilldown analytics. As of Release 4.5, drilldown analytics is available for line items. The participants must be informed of the fact that, because the line item reports access the *Ce1* and *Ce2* tables, background processing takes a lot of time.

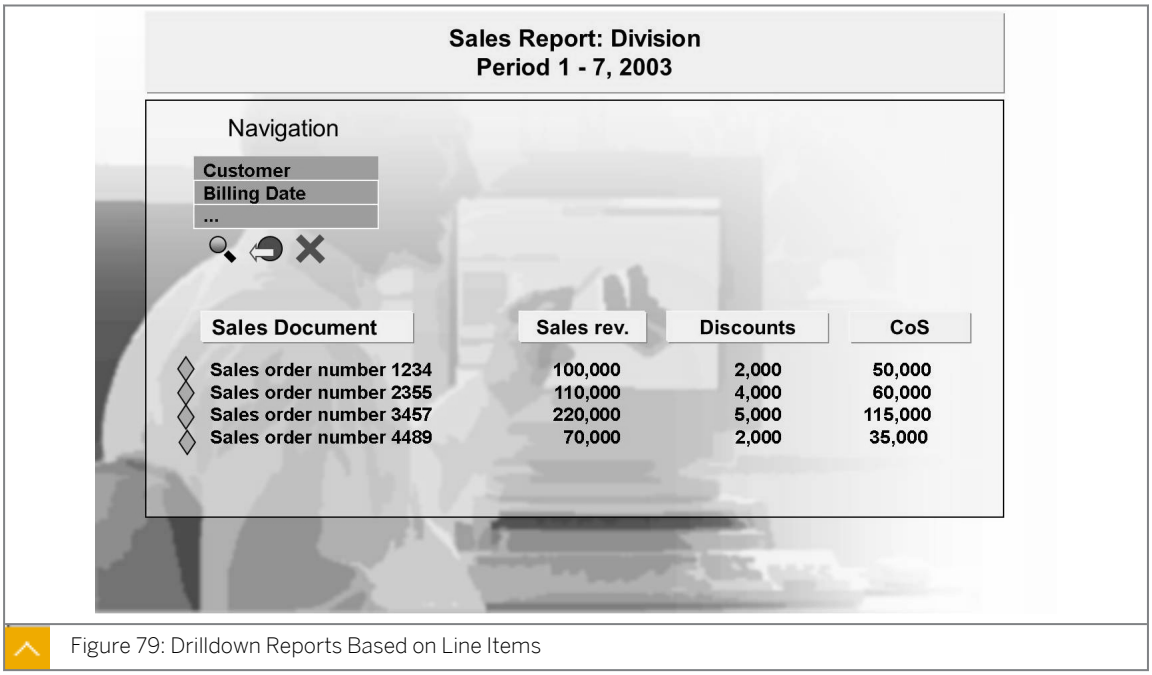



Figure 79: Drilldown Reports Based on Line Items

To supplement the basic line item list, define the drilldown reports based on line items. This type of report allows you to execute a line item analysis and use all the navigation functions in drilldown reporting simultaneously.

**Reports based on line items permit you to use the following characteristics:**

- The characteristics at the segment level
- The characteristics that are not activated as segment-level characteristics
- The date when the line item was created
- The person who created the line item

Create special forms and reports in Customizing for reports based on line items. When you select additional report components such as key figure schemes, variables, and authorization objects, you can refer to the components created for standard drilldown reports.

Reports based on line items are available for costing-based CO-PA only.

Note that the time and effort required to read line item-based reports is high. Summarization data and summarization levels are not supported for this type of report.

## Functions in Line Item Reports

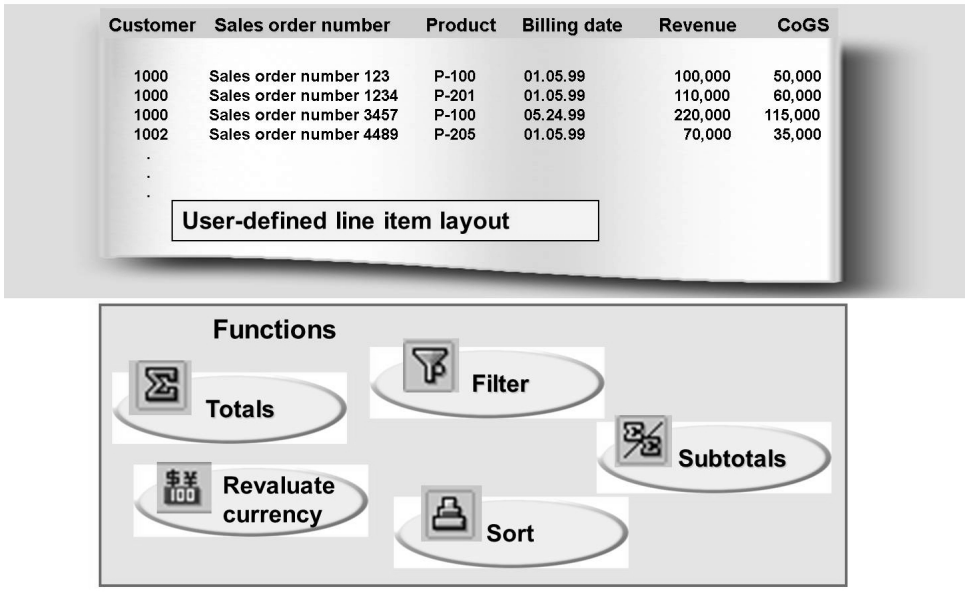



Figure 80: Functions in Line Item Reports

The line item list is defined using the layout functions in the ABAP List Viewer. As a result, you can display a list, adapt it to your requirements, and then save the changes as a layout.

When you display a line item list, a number of additional functions are available to you. These functions enable you to display additional information, such as all the characteristic values of the current profitability segment or long texts for the plan data.

Note:
Before the system selects the line items, it checks whether the selection criteria allows it to use database indexes. If not, a warning is issued. In this case, you need to further restrict the selection conditions. The warning also contains a suggestion on how to restrict the selection conditions. If you call up the line items from a drilldown report and receive a warning, first drill down to a deeper level and then call up line items from there.

## Account-Based Reports

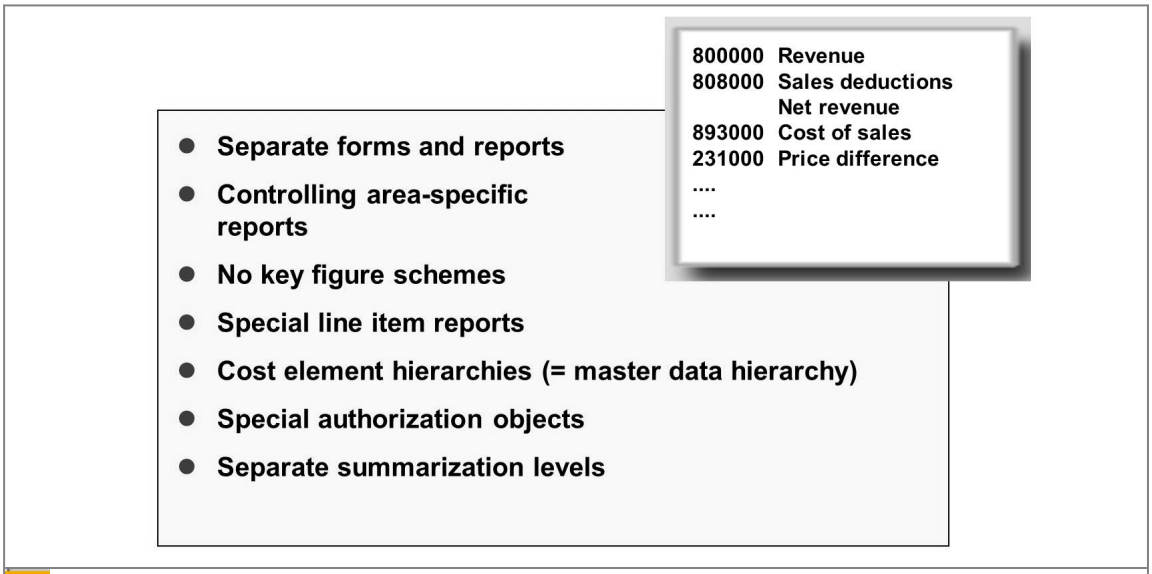



Figure 81: Account-Based Profitability Analysis

The Information System offers some special features for account-based CO-PA.

This type of CO-PA is supported by separate forms, reports, and authorization objects for combinations of characteristics, including costing-based CO-PA characteristics.

A hierarchy on the cost element characteristic can only be represented by specifying a set. You can define line item layouts in Customizing.

**The following display forms are available in account-based CO-PA:**

- Compact display
- Line display
- Asterisk display

**You can display the following currencies in the same report:**

- Controlling area currency
- Company code currency
- Transaction currency

You can display the line item lists in account-based CO-PA. You can also format the lists as per your requirement using your own line item layouts. If you do not specify a layout, the system uses the standard line item layout.

## The Transfer of Report Data

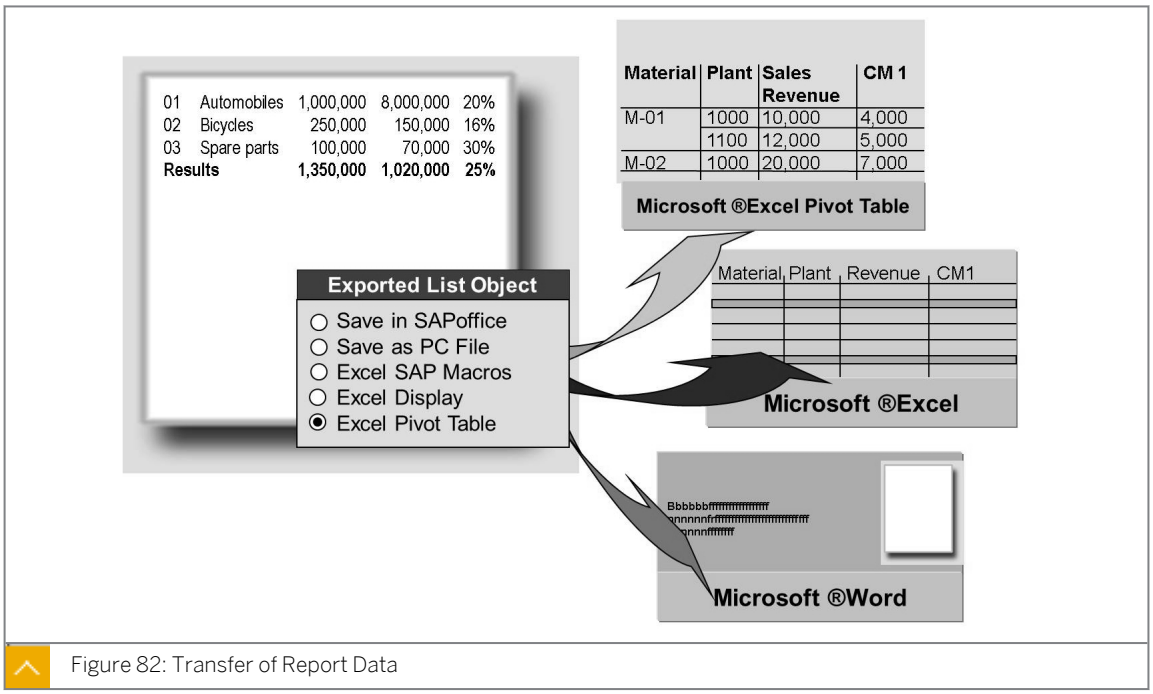



Figure 82: Transfer of Report Data

You can use a special format to transfer data to a spreadsheet application. Using the transfer of report data function to export a report in XXL format, you can transfer all the selected characteristics of the report into the table calculation. In this way, it is possible to carry out a breakdown through the individual characteristics in the table calculation.

**Select the Transport of Report Data function if the following conditions are met:**

- The list currently displayed is a drilldown list. For technical reasons, this function is not available in detail lists.
- The report displays values as absolute values (function Percentage/absolute). The function is not active when you switch to percentages.

In the dialog box that appears, select the characteristics that you want to transfer. Although it is a good idea to select *All characteristics*, select only some of the characteristics if the report list is too large for your spreadsheet application to handle. The interface with Microsoft Word enables you to download drilldown reports to Word and print them. You can print all the reports using Word, except those reports that you called from another report using the report or report interface.

**This function is active if the following conditions are met:**

- You work with the OS/2 Presentation Manager, Windows, Windows NT, Windows 32 bit, or Windows 95 operating system.
- You have Microsoft Word 6.0 or higher installed on your local server and entered in your path.

### How to Create a Line Item-Based Report

Demonstrate the steps listed in Task 1 of the Create a Line Item and Account-Based Report exercise.

### How to Create an Account-Based Report

Demonstrate the steps listed in Task 2 of the Create a Line Item and Account-Based Report exercise.

# Create a Line Item and Account-Based Report

235

**Business Example**

Your sales manager wants to obtain a daily sales report on customer sales figures. The report must allow drilldown to the billing document and billing date.

Create a drilldown report based on line items.

**Task 1**

Hint:
You can create reports based on line items. For this purpose, both basic reports and the reports with forms are available. During characteristic selection, you can access both characteristics at the segment level and the characteristics in the operating concern. For example, you can access the reference document number or the order number.

1. Create a line item report **`LR##`** and the description as **`Line item report ##`**. Create the report definition with characteristics *Sales Order*, *Ref.doc.number*, *Product*, and *Customer*. The report definition should also include the value fields *Invoiced quantity*, *Revenue*, and *Cost of goods sold*. Execute the report for the current period for customer **`T-CO05A##`**.

   Set the default values for the months from 1 to 12 of the current fiscal year, select the plan/actual indicator **`0`**, and the record type **`F`**. Set the report so that it is executed in the operating concern currency. For the report output, use the *Object List (ALV)* option. Save the report definition.

2. Execute your report using the default settings you have made.

**Task 2**

At month end, your manager requires profitability reports along the strategic business units of the company by the income statement account in two currencies. The manager requires one particular report where he can select only the transactions that took place for a given company code in a specific transaction currency. This report enables the manager to analyze and report the business volume that each strategic business unit generates in the local and foreign currencies.

1. To generate these reports, create a basic report for controlling area **`1000`** in account-based CO-PA and name it **`AB##`**, with the description **`SBU Account Based ##`**.

   Create the report definition so that *Cost Element*, *Strategic Bus. Unit*, *Customer group*, and *Material Group* are sorted in this order. Select key figures so that it is possible to report on

the selected transactions in three currencies (total only; do not include quantities or fixed portions).

2. Execute your report using the default settings you have made.

   How does this report layout differ from the report you executed in the earlier exercise?

# Create a Line Item and Account-Based Report

237

**Business Example**

Your sales manager wants to obtain a daily sales report on customer sales figures. The report must allow drilldown to the billing document and billing date.

Create a drilldown report based on line items.

**Task 1**

Hint:
You can create reports based on line items. For this purpose, both basic reports and the reports with forms are available. During characteristic selection, you can access both characteristics at the segment level and the characteristics in the operating concern. For example, you can access the reference document number or the order number.

1. Create a line item report **LR##** and the description as **Line item report ##**. Create the report definition with characteristics *Sales Order*, *Ref.doc.number*, *Product*, and *Customer*. The report definition should also include the value fields *Invoiced quantity*, *Revenue*, and *Cost of goods sold*. Execute the report for the current period for customer **T-CO05A##**.

   Set the default values for the months from 1 to 12 of the current fiscal year, select the plan/actual indicator **0**, and the record type **F**. Set the report so that it is executed in the operating concern currency. For the report output, use the *Object List (ALV)* option. Save the report definition.

   a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Define Report* → *Create Report Based on Line Items* (KE91).

   b) On the *Create Line-Item-Based Profitability Report: Initial* screen, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Report* | **LR##** |
| *Description* | **Line item report ##** |
| *Basic report* | Select |

   Choose the *Create* pushbutton.

c) In the *Choose Currencies* dialog box, select the *Operating concern currency* radio button and choose the *Continue* pushbutton.

d) On the *Create Line-Item-Based Profty Rept: Choose evaluatn objects* screen, choose the *Characteristics* tab and select the *Customer*, *Sales order*, *Product*, and *Ref.doc.number* values under the *Char. list* pane. Then, choose (*Add char.*).

> Note:
> Because we are building this report on *Line Items*, all the characteristics are available, not just the segment-level characteristics.

e) Under the *Sel. characteristics* pane, select  (*Variable on/off*) for the *Customer* characteristic. In the *Variable selection* dialog box, enter **CUST##** in the *Local variable* field and then choose the *Continue* pushbutton.

> Note:
> Local variables are only valid in the report in which they are created.

f) On the *Key figures* tab page, select the *Invoiced quantity*, *Cost of goods sold*, and *Revenue* fields from the *Available key figures* pane and then choose (*Add key figure*).

g) On the *Variables* tab page, enter the following data:

| Field Name or Data Type | Value | Entry at Execution |
|---|---|---|
| *Customer* | **T-CO05A##** | Select |
| *Period from* | 001.Current fiscal year | Select |
| *Period to* | 012.Current fiscal year | Select |
| *Plan/Act. Indicator* | **0** | Select |
| *Version* | Blank | Select |
| *Record Type* | **F** | Select |

h) On the *Output Type* tab page, select the *Object list (ALV)* radio button.

i) On the *Options* tab page, notice that the performance selections that were available on the summary tables are not available for line item reports.

j) Save the basic report definition. In the *Choose hierarchy* dialog box, choose the *Continue* pushbutton because we do not want to use any *Hierarchies*. The report is saved when you perform this step.

2. Execute your report using the default settings you have made.

a) On the *Create Line-Item-Based Profitability Report: Initial* screen, choose *Report* → *Execute*.

On the *Run Profitability Report: Initial* screen, double-click your *LR##* report.

b) On the *Selection: Line Item Report* screen, use the *Report selections* data you configured while creating your report, and then choose  (*Execute*).

c) How does this report layout differ from the report you carried out earlier?
The report shows all columns, not just one lead column.

d) How many reference documents are displayed?
The answers to this question vary.

e) Return to the *SAP Easy Access* screen.

### Task 2

At month end, your manager requires profitability reports along the strategic business units of the company by the income statement account in two currencies. The manager requires one particular report where he can select only the transactions that took place for a given company code in a specific transaction currency. This report enables the manager to analyze and report the business volume that each strategic business unit generates in the local and foreign currencies.

1. To generate these reports, create a basic report for controlling area **1000** in account-based CO-PA and name it **AB##**, with the description **SBU Account Based ##**.

   Create the report definition so that *Cost Element*, *Strategic Bus. Unit*, *Customer group*, and *Material Group* are sorted in this order. Select key figures so that it is possible to report on the selected transactions in three currencies (total only; do not include quantities or fixed portions).

   a) Before building the report, set the operating concern to account-based. Enter transaction code **KEBC**.

   In the *Set Operating Concern* dialog box, enter **IDEA** in the *Operating concern* field, select the *account-based* radio button, and choose the *Continue* pushbutton.

   b) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Define Report* → *Create Profitability Report* (KE31).

   c) Because reports in account-based CO-PA are created by controlling area, enter **1000** in the *Controlling Area* field in the *Set Controlling Area* dialog box and then choose the *Continue* pushbutton.

   d) On the *Create Profitability Report: Initial* screen, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Report* | **AB##** |
| *Description* | **SBU Account Based ##** |
| *Basic report* | Select |

   Choose the *Create* pushbutton.

   e) On the *Create Profitability Report: Specify Profit. Segment* screen, choose the *Characteristics* tab and select the *Customer group*, *Material Group*, *Cost Element*, and

*Strategic Bus. Unit* values under the *Char. list* pane. Then, choose the *Add Char*. pushbutton.

> Note:
> *Customer* and *Product* are not available as they were for the costing-based reports since these fields are not segment-level for account-based, only costing-based.

f) Choose the *Sort user-def. char* pushbutton to sort the characteristics. In the *Sort user-defined chars* dialog box, enter the following data:

| Field Name or Data Type | Value |
|---|---|
| *Cost Element* | **1** |
| *Strategic Bus. Unit* | **2** |
| *Customer group* | **3** |
| *Material Group* | **4** |

Choose *Enter*.

g) On the *Key figures* tab page, select the *Val/CoArea Crcy*, *ValueTran Curr*, and *Val/Obj. Crcy* values from the *Available key figures* pane and choose ◀ (*Add key figure*).
You will receive messages that the *Currency* and *Company Code* characteristics need to be included. Choose *Enter* for each warning. This step adds the characteristics to the *Characteristics* tab page.

h) On the *Variables* tab page, enter the following data:

| Field Name or Data Type | Value | Entry at Execution |
|---|---|---|
| *Controlling area* | **1000** | Select |
| *Period from* | 001.Current fiscal year | Select |
| *Period to* | 012.Current fiscal year | Select |
| *Plan/Act. Indicator* | **0** | Deselect |
| *Version* | Blank | Deselect |

> Note:
> Record type is not available in account-based reports. The purpose of the record type in costing-based CO-PA is to indicate the source of the data transferred to CO-PA, such as billing, cost center assessment, and settlement. You cannot store the record type for account-based CO-PA because its transaction and summary records are stored in general CO transaction data tables.

i) On the *Output Type* tab page, select the *Graphical report-output* radio button and enter **`Info control`**, **`navigation control`**, and **`drilldown control`** in the *Output areas* field.

j) On the *Options* tab page, select the *Display current data* checkbox, select the *Use a summarization level* and *Execute Report* radio buttons, and then save the basic report definition.

In the *Choose hierarchy* dialog box, choose *Enter* because we do not want to use any *Hierarchies*. This step saves the report.

2. Execute your report using the default settings you have made.

How does this report layout differ from the report you executed in the earlier exercise?

a) On the *Create Profitability Report: Initial* screen, choose *Report* → *Execute.*

b) On the *Run Profitability Report: Initial* screen, double-click your *AB##* report.

c) On the *Selection:* screen, use the *Report selections* data you configured while creating your report and then choose  (*Execute*).

d) View your results, then return to the *SAP Easy Access* screen.

**LESSON SUMMARY**

You should now be able to:

- Create line items and account-based reports

Unit 6
Lesson 5

# Integrating SAP BW in CO-PA

243

## LESSON OVERVIEW

This lesson provides an overview of SAP NetWeaver Business Information Warehouse (SAP NetWeaver BW) and its integration with Profitability Analysis (CO-PA). This lesson also evaluates the CO-PA with Business Information Warehouse.

### Business Example

You want to evaluate your options to perform reporting in BW.

You need to analyze your plans to ensure maximum profits. For this reason, you require the following knowledge:

- An understanding of the concept and benefits of financial analytics in SAP NetWeaver BW
- An understanding of the integration between CO-PA and SAP NetWeaver Business Information Warehouse (BW)

## LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Evaluate SAP NetWeaver Business Information Warehouse (BW) and CO-PA integration

## SAP BW and Profitability Analysis Data

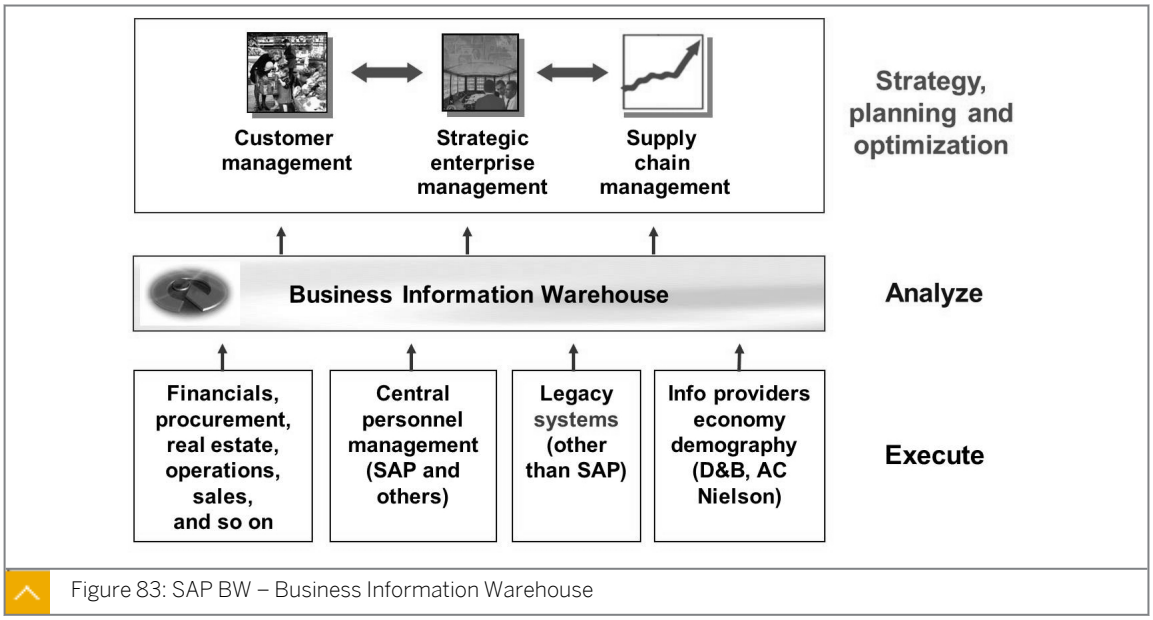



Figure 83: SAP BW – Business Information Warehouse

Supply chain planning is a key business component because it improves the performance of the supply chain of a company and creates shareholder value. Other major benefits include

improved customer service, reduced inventories, cycle time compression, lower supply chain variability, and maximized Return On Assets (ROA).

SAP Advanced Planner and Optimizer (SAP APO) enables a company to implement the best business practices for outstanding improvements. These practices include Sales and Operations Planning (SOP), vendor managed inventory, Synchronous Manufacturing, and Capable-to-Promise.

Coordinating different tasks, people, and technical resources associated with running a warehouse and transporting goods has never been easy. Despite this fact, warehouse and transportation processes are a vital part of the supply chain and essential to create a responsive and efficient business organization. In the past few years, the urgency and complexity of the following factors has increased enormously: Globalization, mergers, fiercely competitive markets that highlight the importance of customer service, and the emergence of new technologies such as the Web. In the past few years, the urgency and complexity of the following factors has increased enormously: Globalization, mergers, fiercely competitive markets that highlight the importance of customer service, and the emergence of new technologies such as the Web.

The Logistics Execution System (LES) is part of the unique supply chain management initiative of SAP. It allows you to forge strong and flexible links among the production, procurement, storage, distribution, transportation, and sales and service processes.

### BW and the Business Framework

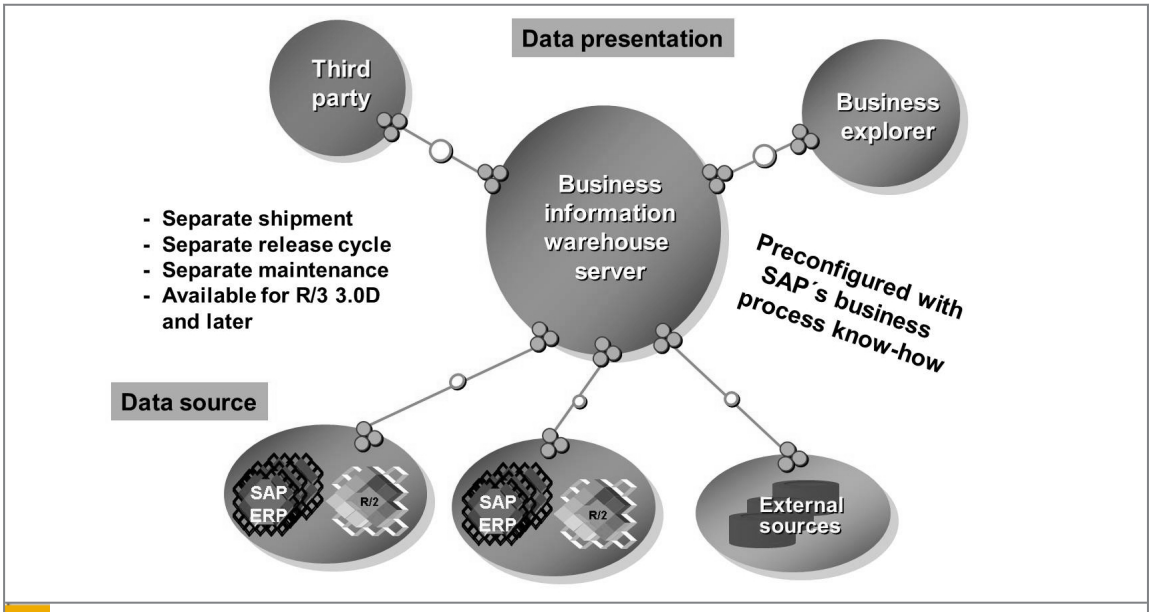



Figure 84: BW and the Business Framework

The requirements for a modern data warehouse solution are taken into account by SAP in the generic Business Framework Architecture.

Flexibility and openness are the foundations of the strategy for the quicker implementation of new functions. The technical prerequisites for the componentization of business standard software are fulfilled by the availability of tried and tested Application Link Enabling (ALE) and techniques in the SAP system.

A business component provides self-contained business functions with stable interfaces. A business component has its own cycle with reference to development, implementation, and maintenance. Some components can run on their own dedicated database.

The business components use the object-oriented interface technology based on Business Application Programming Interfaces (BAPIs). A BAPI is a method of SAP Business Objects and attains a new level of interoperability among the encapsulated SAP business components that can be networked.

SAP uses ALE and SAP Business Workflow to ensure the integration of the entire system. As a result, business processes can also be formed across components.

**Business Content Overview**

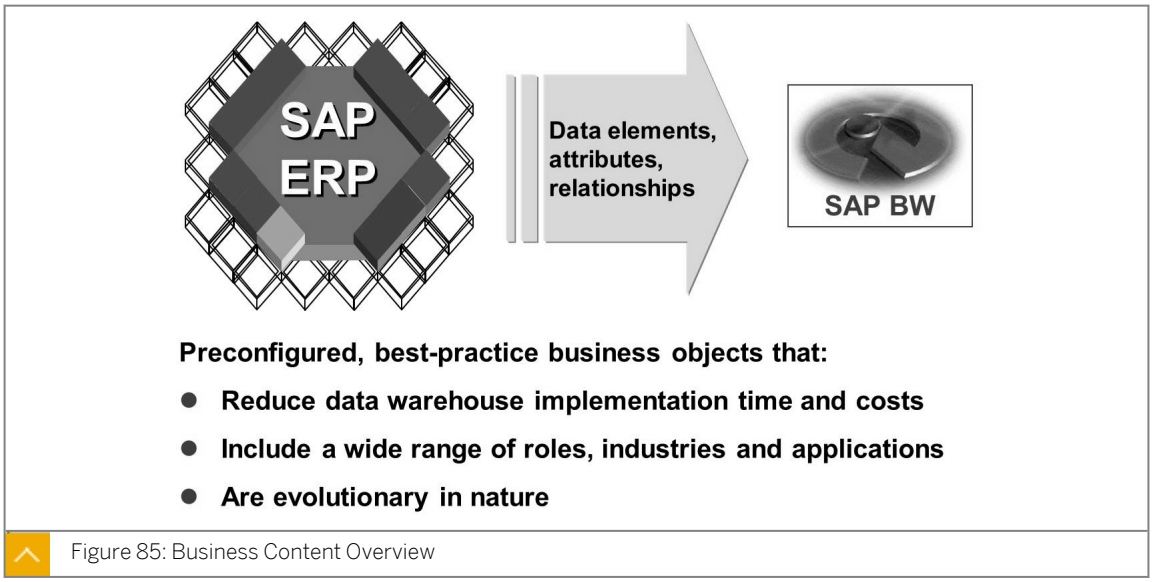



Figure 85: Business Content Overview

The system preconfigures the SAP NetWeaver BW with SAP business know-how or Business Content.

Business Content covers information models, queries, and extractors, as well as external data and company benchmarking.

The SAP NetWeaver BW functions also include a number of standard evaluation possibilities for key business areas.

**The Business Content strategy allows SAP to do the following functions:**

- Map the content of the standard SAP ERP application
- Display the industry-specific models
- Provide a platform for partners' content
- Include external data, such as consolidated point-of-sale (POS) data, market research data, demographic data, and company benchmark data

### Business Information Warehouse Architecture

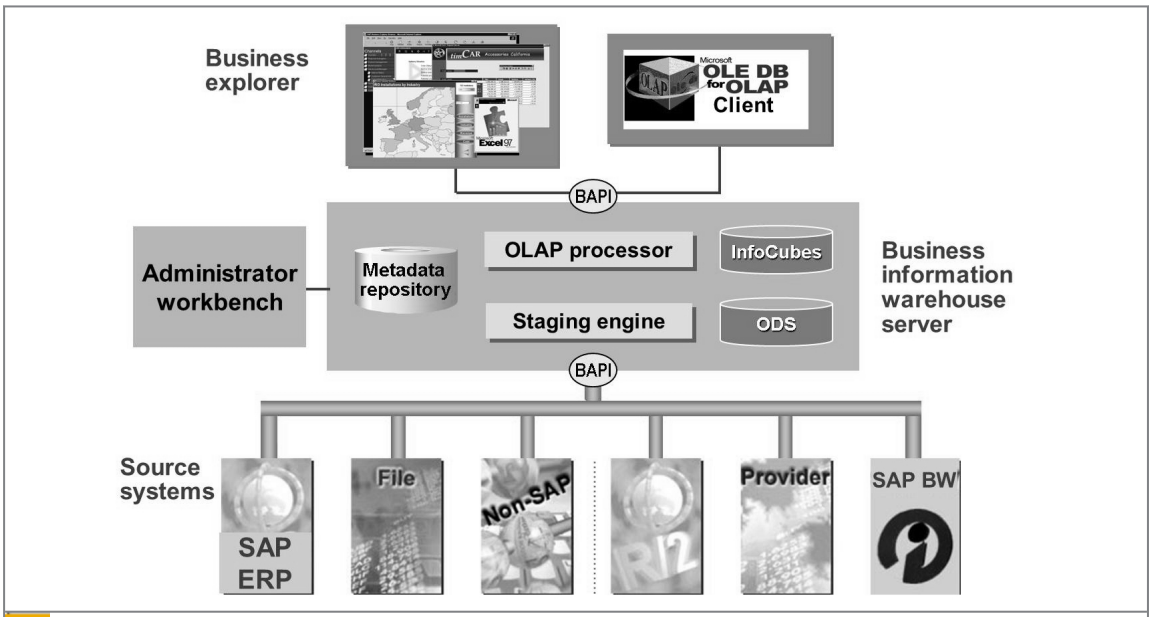



Figure 86: Business Information Warehouse Architecture

This figure provides an overview of the SAP BW structure in a heterogeneous system landscape.

SAP systems and external systems are displayed as Online Transaction Processing (OLTP) systems in the lower part of the screen.

Metadata and application data are managed on the BW server.

You can use BW to manage the various source systems. You can also use the components of the Data Warehousing Workbench, Scheduler, and Monitor to schedule and monitor the transfer of metadata and transaction data from the assigned legacy systems.

The Business Explorer, with its reporting tools, forms a third layer. As components of the Business Framework, the OLTP applications and BW communicate using BAPIs.

SAP delivers Production Data Extractors that prepare SAP ERP data for each application to extract into the SAP BW.

For non-SAP systems, the BW interface allows various adapters to extract the data.

### Extraction of Data from CO-PA to SAP BW

Refer to the product management white paper available through SAPNET if you need more information.

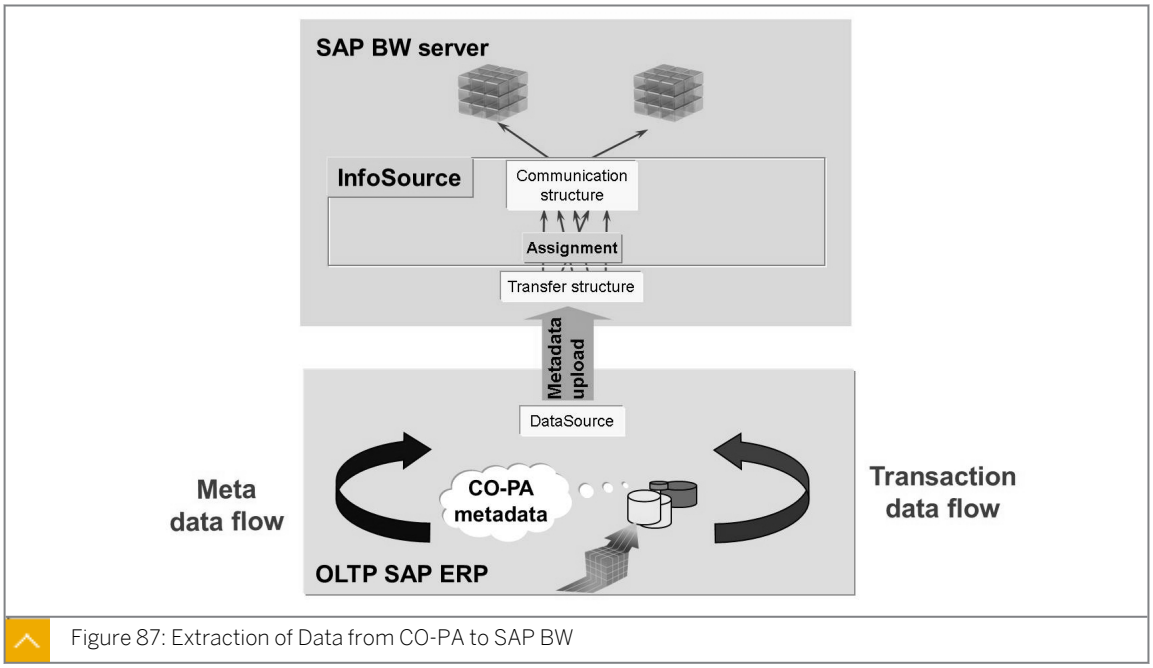



Figure 87: Extraction of Data from CO-PA to SAP BW

The Data Warehousing Workbench is a tool used to transfer data from the source systems into the BW.

All the systems that provide the SAP BW with data are indicated as source systems.

An InfoSource is a quantity of information that is summarized logically for a unit. InfoSources encompass transaction data or master data, such as attributes, texts, and hierarchies.

The business evaluation objects, such as customer and sales revenue, are known as InfoObjects in the BW. They are divided into characteristics, key figures, units, and time characteristics.

Process chains are the connecting link between the source systems and the InfoCubes. Use process chains to establish what data is requested from the source system and at what time it is updated in the InfoCube and the Data Store Object (DSO). The principle of the scheduler goes back to the functions of the SAP ERP background jobs. The data request can be scheduled either straightaway or with a background job, and automatically at a later point in time.

### Profitability Analysis with BW

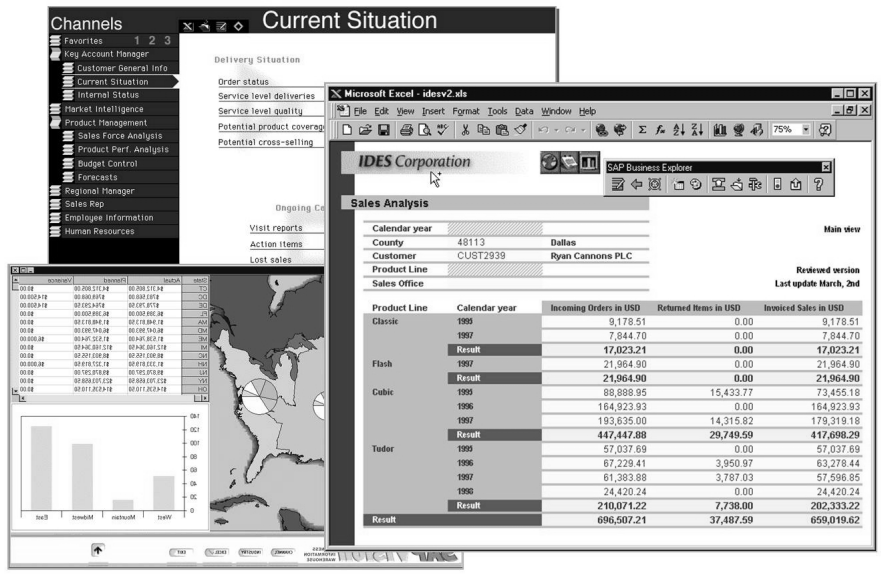



Figure 88: Profitability Analysis with BW

Reporting with the Business Explorer:

BW delivers information for the analysis of all factors that influence the business activities of an enterprise. The databases of BW are structured into self-contained business data areas (InfoCubes). An InfoCube contains the InfoObjects of the type characteristics and key figures.

It is best to consider an InfoCube as a data cube with a key figure axis. Each characteristic, with all its different values, stretches along one axis of the cube. The number of characteristics determines the complexity of the data cube, and the number of characteristic values determines the length of the edge of the cube with this dimension. The amount of the key figures in the InfoCube also forms an axis (+1). The dataset of the InfoCube can be evaluated according to different characteristics and key figures using the BW reporting function. It is possible to carry out all types of variance analyses, such as plan-actual comparison and fiscal year comparison.

### Database Considerations of SAP NetWeaver BW

**The BW has the following database considerations:**

- High data volume
- Cross-application reporting
- Collection of data from different systems
- Combination of legacy system data with CO-PA data

SAP BW is used in profitability reporting to move the reporting tasks from SAP ERP into an independent system. For such a scenario, SAP ERP operates as an OLTP system, which runs the operational business, and the SAP BW system serves as an Online Analytical Processing (OLAP) system.

Environments that involve several SAP ERP systems, each representing slightly different methods of CO-PA for various countries or business units, need to have a cross-system view. In this scenario, the results from the different organizational subunits are combined into a single InfoCube in SAP BW that contains the same reporting levels and calculations of

contribution margins. CO-PA provides the necessary functions for preparing your data basis for group profitability.

A third scenario for the implementation of CO-PA with the SAP BW installation is when the affiliated companies or the parts of your company operate systems other than SAP. Their data has to be consolidated in your reporting of group profitability.

**FACILITATED DISCUSSION**

Outline how you would combine the results from the different organizational subunits into a single InfoCube in the SAP NetWeaver BW containing the same reporting levels and calculations of contribution margins.

**To Integrate SAP BW in CO-PA**

1. On the *SAP Easy Access* screen, run transaction code `SBIW`.
2. Go to *Data Transfer to the SAP Business Information Warehouse* → *Settings for Application-Specific DataSources (PI)* → *Profitability Analysis* → *Create Transaction Data DataSource*.
3. On the *CO-PA/SAP BW: DataSource for Transaction Data* screen, the system will generate a name for the DataSource: *1_CO_PA%CL%ERK*, where *%CL* will be filled by the client and *%ERK* will be filled by the name of the operating concern. If required, you can append to this name. Then, select *Create*. Additionally, select either *Costing-based* or *Account-based* and choose (*Execute*).
4. Enter the description of the DataSource and then select the characteristics and key figures that you would like to extract. You can also select any *Calculated Key Figures* as well. After you finish selecting your fields, click the *InfoCatalog* pushbutton.

   Note:
   If you would like to turn off the characteristics selected by default, enter transaction code **`okcode = INIT`**.

5. For any fields that you would like to filter in your *InfoPackage*, choose the *Selection* field. For any fields you do not wish to extract, choose the *Hide* field. Save your data.
6. In the BW system, enter transaction code **`RSA1OLD`** to replicate your DataSource. Right-click the *ECC Source System* and choose *DataSource Overview*. Under *DataSources SAP* → *SAP Application Components* → *Controlling* → *Profitability Analysis*, right mouse click, then choose *Replicate DataSources*.
7. On the *DataSource from Source System Unknown* screen, choose *3.xDataSource (ISFS)*. We do this so that the system will generate the InfoObjects that were custom-created in the operating concern (*WW Characteristics* and *VV Value* fields).
8. Right-click *Replicated DataSource* and choose *Assign InfoSource*. Accept *Applicntn Proposal*. Open *Communication Structure* and move all the InfoObjects from right to left. This step creates your *Transfer Rules* as well. Activate your *Transfer Rules*.

9. Use the InfoSource as a template to build your InfoProvider.
10. Create an InfoPackage. Create a transformation from the DataSource to the InfoProvider.
    Create a *Data Transfer Process* from the DataSource to the InfoProvider. Execute the InfoPackage. Execute the *Data Transfer Process*. Build a query on the InfoProvider.

**LESSON SUMMARY**
You should now be able to:

- Evaluate SAP NetWeaver Business Information Warehouse (BW) and CO-PA integration

# Learning Assessment

251

1. Which of the following reports are output types of reports?

   *Choose the correct answers.*

   - ☐ A Graphical report
   - ☐ B Drilldown report
   - ☐ C Object list report
   - ☐ D Change report

2. Drilldown reporting allows for the _____ of business data.

   *Choose the correct answers.*

   - ☐ A Different output
   - ☐ B Different navigation possibilities
   - ☐ C ABC analysis
   - ☐ D Extensive information (margin analysis)

3. What do you need in Customizing if you want to delete an entire group of reports?

   *Choose the correct answer.*

   - ☐ A Change report function
   - ☐ B User-defined ABAP functions
   - ☐ C Reorganize reports function
   - ☐ D Standard arithmetic operations

4. Which of the following functions in Form Settings allows you to specify whether you want to see the short, medium, or long text of each element in the lines or columns?

   *Choose the correct answer.*

   - ☐ A Number format
   - ☐ B Plus/minus sign reversal
   - ☐ C Text type
   - ☐ D Zero suppression

5. Line item lists are available for which of the following types of Profitability Analysis?

   *Choose the correct answers.*

   - ☐ A Costing-based Profitability Analysis
   - ☐ B Compact display
   - ☐ C Account-based Profitabiltiy Analysis
   - ☐ D Line Display

6. The business evaluation objects, such as customer and sales revenue, are known as _____ in SAP NetWeaver Business Information Warehouse (BW).

   *Choose the correct answer.*

   - ☐ A InfoSource
   - ☐ B InfoObjects
   - ☐ C InfoCubes
   - ☐ D Characteristics

7. Which tool is used to get data from the source systems into SAP NetWeaver Business Information Warehouse (BW)?

   *Choose the correct answer.*

   - ☐ A Business Explorer
   - ☐ B Data Warehousing Workbench
   - ☐ C Source Systems
   - ☐ D Online Transaction Processing (OLTP) system

# Learning Assessment - Answers

253

1. Which of the following reports are output types of reports?

   *Choose the correct answers.*

   - [X] A Graphical report
   - [X] B Drilldown report
   - [X] C Object list report
   - [ ] D Change report

2. Drilldown reporting allows for the _____ of business data.

   *Choose the correct answers.*

   - [ ] A Different output
   - [X] B Different navigation possibilities
   - [X] C ABC analysis
   - [X] D Extensive information (margin analysis)

3. What do you need in Customizing if you want to delete an entire group of reports?

   *Choose the correct answer.*

   - [ ] A Change report function
   - [ ] B User-defined ABAP functions
   - [X] C Reorganize reports function
   - [ ] D Standard arithmetic operations

4. Which of the following functions in Form Settings allows you to specify whether you want to see the short, medium, or long text of each element in the lines or columns?

   *Choose the correct answer.*

   - [ ] A Number format
   - [ ] B Plus/minus sign reversal
   - [x] C Text type
   - [ ] D Zero suppression

5. Line item lists are available for which of the following types of Profitability Analysis?

   *Choose the correct answers.*

   - [x] A Costing-based Profitability Analysis
   - [ ] B Compact display
   - [x] C Account-based Profitabiltiy Analysis
   - [ ] D Line Display

6. The business evaluation objects, such as customer and sales revenue, are known as _____ in SAP NetWeaver Business Information Warehouse (BW).

   *Choose the correct answer.*

   - [ ] A InfoSource
   - [x] B InfoObjects
   - [ ] C InfoCubes
   - [ ] D Characteristics

7. Which tool is used to get data from the source systems into SAP NetWeaver Business Information Warehouse (BW)?

   *Choose the correct answer.*

   - [ ] A Business Explorer
   - [x] B Data Warehousing Workbench
   - [ ] C Source Systems
   - [ ] D Online Transaction Processing (OLTP) system

# UNIT 7 Tools

**Lesson 1**



**UNIT OBJECTIVES**

- Define summarization levels

Unit 7
Lesson 1

# Analyzing Performance Tools

256

**LESSON OVERVIEW**

This lesson explains how to use tools for performance reporting.

**Business Example**

You will be responsible for implementing the selected application. To increase data retrieval speed on some of your routine reports, you decide to use frozen data. For this reason, you require the following knowledge:

- An understanding of the summarization levels, summarized data, and frozen data

Explain that the main performance-tuning tools used to improve the retrieval of CO-PA data are summarized data, frozen data, and summarization levels. Each tool has its own distinct advantages.

Summarization levels improve CO-PA performance when there are large volumes of data. Emphasize the fact that the summarization levels are not just used within data selection in the Information System, but also within planning and for actual data, cost center assessment, and top-down distribution.

**LESSON OBJECTIVES**

After completing this lesson, you will be able to:

- Define summarization levels

## Performance Settings

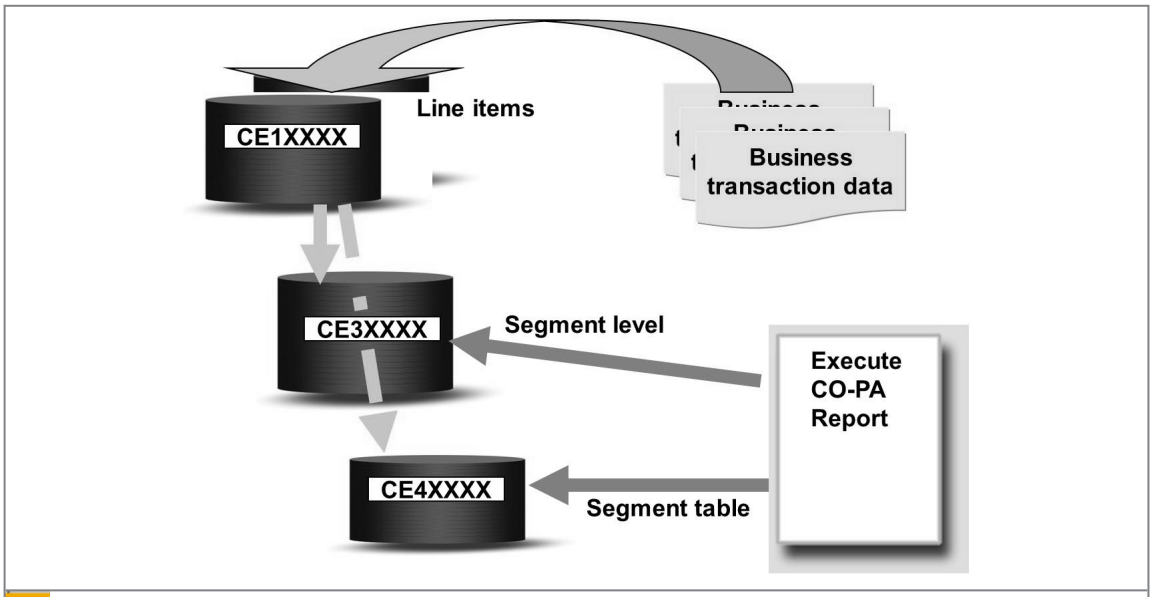



Figure 89: CO-PA Database Structures

The lowest levels from which the application reads data are the segment table and the segment level. These levels contain the data from the line item in a primary summarized form.

The segment table contains the profitability segments and their characteristic values.

The segment level contains the value fields for profitability segments and the time characteristics.

The segment level always contains the most recent data because the system updates it in real-time with each transaction. The division of this information into two tables according to characteristics, segment table, value fields, and segment level reduces data volume by eliminating redundancy.

**The advantages of the performance settings method are as follows:**

- Saving historic data

  If you do not need the original information for data from the previous periods, you can archive the line items and retain only the segment level.

- Realigning posted data

  You can retroactively assign a customer to a different sales representative. This realignment only changes the segment table, and the line items remain assigned in the same way as they were when you originally posted the documents. No change is required in the segment level because the change in the segment table implicitly affects the data for the periods in the segment level.

The data in CO-PA is stored at the individual document level. As a result, every item in a sales order is sent to the CO-PA database as a line item, which can lead to a huge amount of data within a short period of time. As a result, you may experience a run-time of several hours when you run a report. This report displays data summarized to a high degree but the system has to read the entire dataset. You cannot select the data online. To improve system performance, reduce the volume of data that is to be read online by creating summarized versions of the dataset.

## How Performance Settings Work

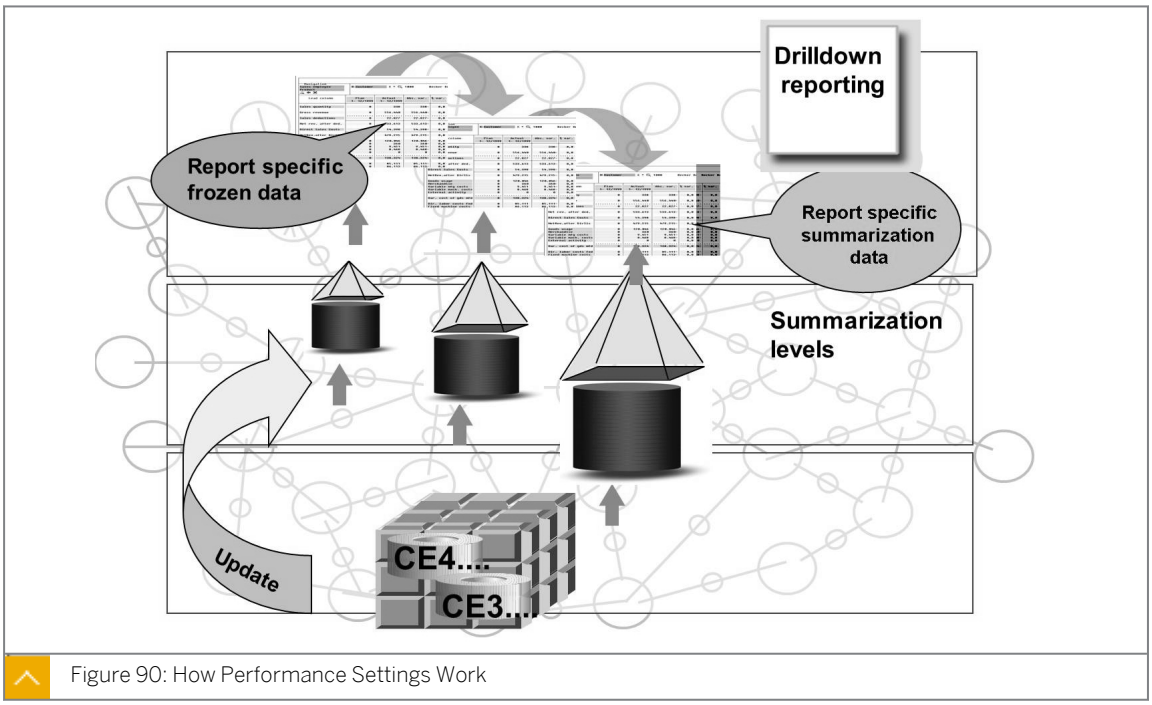



Figure 90: How Performance Settings Work

**In reports, you can display the following data:**

- Only the data from the summarization level is displayed, which is the data available since you most recently updated that level.
- The current data is displayed. In this case, the system reads the summarization level and then adds the line items that have been posted since the last update.

If no suitable summarization level exists, the system displays a warning.

Use the current data when you want to display the data from the current period. Use the most recent summarized data when you only want to display data after the period has ended and the data is not going to change.

If you choose to store the summarization data for a report, the system creates this data by reading a summarization level (if one exsists) or the Database tables. If you use fewer characteristics in the report, the system has to read less data from the summarization level. As a result, it takes less time to display the report.

## Performance Settings – Key Points

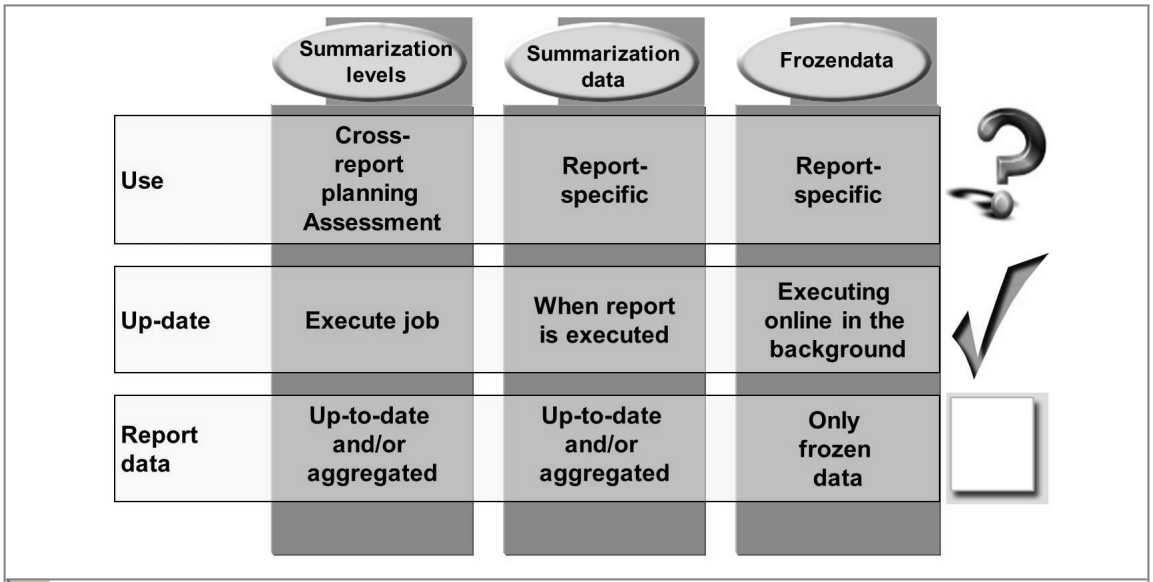



Figure 91: Performance Settings – Key Points

To save the data selected for your report, use the Freeze Report Data function. When you choose this function, the system also saves any changes you have made to the report definition. Use the Freeze Report Data function if you want to call the same set of data later. You can use variants and variant groups to freeze report data at specified times in the background. By freezing the report data, you can execute the report online later without the system needing to read any data from the database, which substantially reduces run-time.

## Summarization Levels

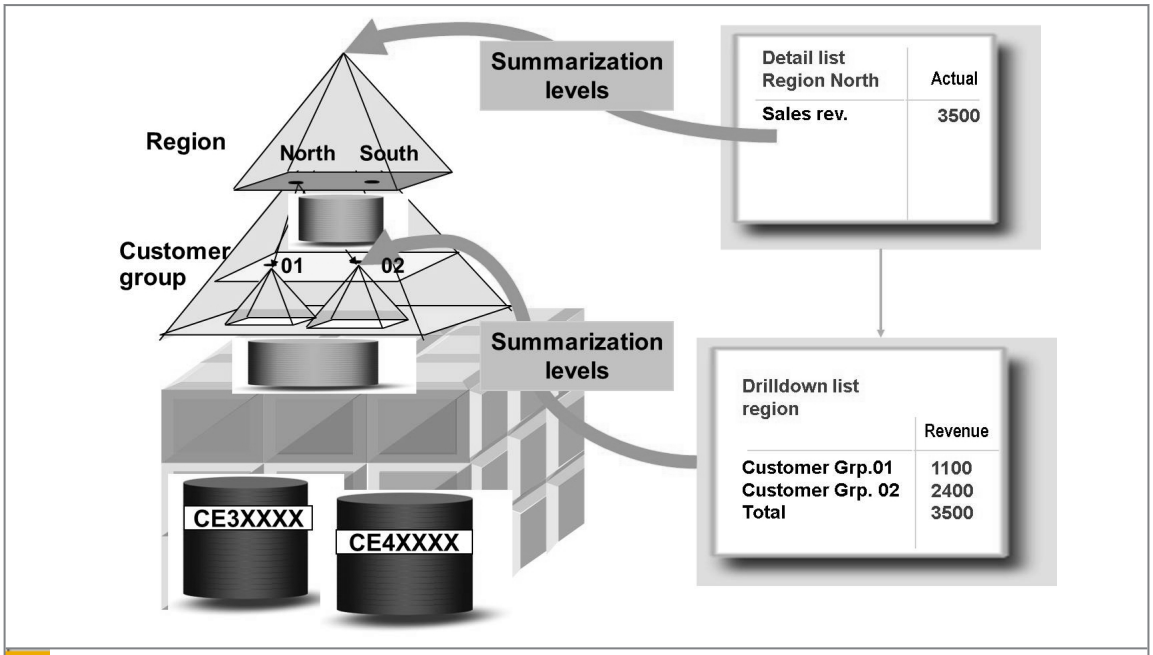



Figure 92: Summarization Levels

**When you define a report in Financial Analytics and a suitable summarization level is not found, the system continues with any one of the following options:**

- The system continues with the execution
- The system issues a warning, which the user can override
- The system terminates the execution

Note:
The first two options can lead to extensive runtimes.

Define whether a report should access the data from a summarization level alone or whether it should read current data. Reading current data requires the addition of data from any line items that have been posted since the level was last updated. Other CO-PA functions can automatically access the current data.

**To use summarization levels, perform the following steps:**

1. Define the summarization levels in configuration.
2. Fill the summarization levels with data from the segment-level summary records on the user side.
3. Update the summarization levels periodically in the background on the user side.

From a physical point of view, every summarization level consists of two tables in the database – a key table and a total records table. The relationship between these two tables is similar to the CE4 and CE3 tables in the costing-based CO-PA. You can evaluate statistics on the summarization levels in the configuration to check their efficiency. You can determine the number of times they are being used by CO-PA functions and their relative size compared to the standard summary table.

Performing a realignment on CO-PA data automatically invalidates all of the data that was earlier summarized in the summarization levels. After a realignment has been performed, the summarization levels are refilled and rebuilt from scratch instead of being updated.

**Summarization Level Proposals**

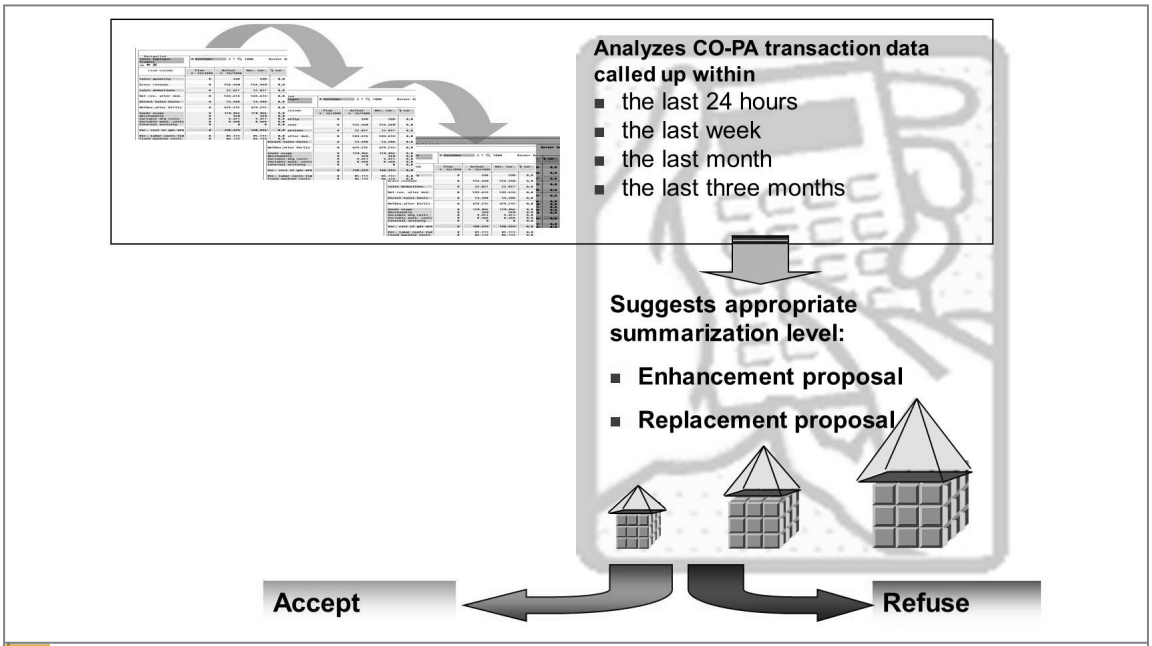



Figure 93: Summarization Level Proposals

**For both account-based and costing-based CO-PA, you can obtain the following information from the system:**

- A record of user behavior in reporting
- Proposals for new summarization levels appropriate to user behavior
- The period to be used for analyzing user behavior

You can decide whether the system should take into account the existing summarization levels while generating proposals or creating new levels completely.

The system generates proposals in the background.

Each proposal displays an estimate of the time saved when the report is run using that particular summarization level. The suggested summarization levels are listed in the order of time saved, starting with the level that saves the maximum time. After you accept a proposal and the system creates the corresponding levels, supply these levels with data using the *RKETRERU* report or choose *Tools → Summarization Levels → Update* (from the menu).

## Summarized and Frozen Data

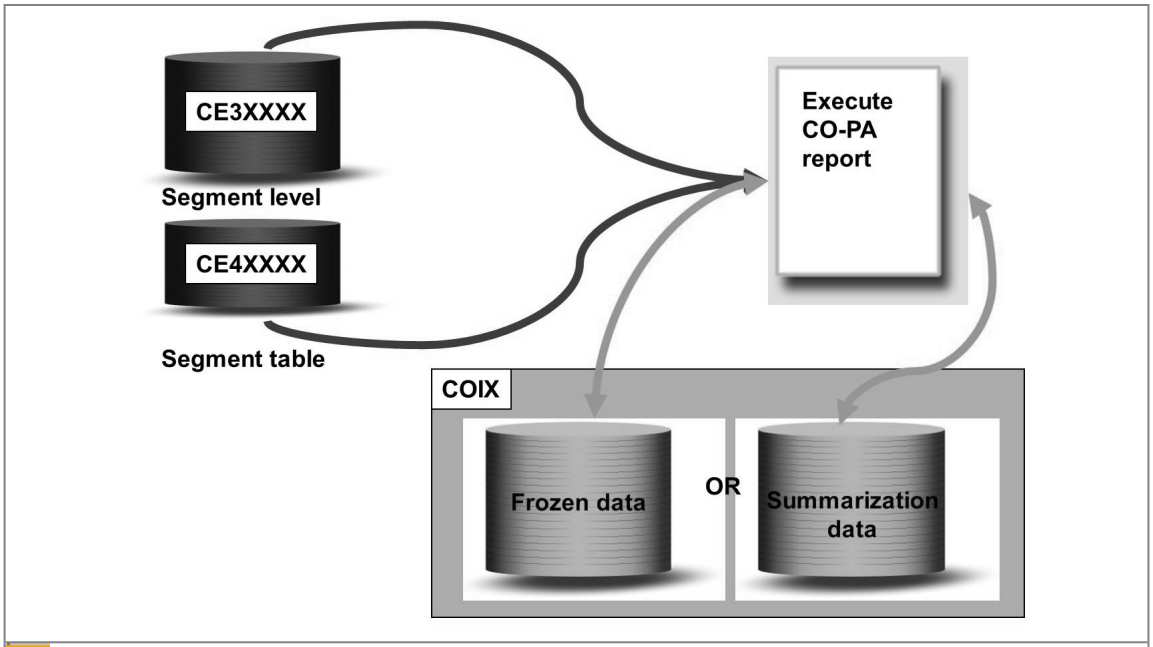



Figure 94: Summarization Data and Frozen Data

Summarization data signifies a set of summarized data for a combination of variables within a specific report. When you execute a report that has existing summarization data, the system accesses the summarization data and updates it by adding the line items that have been posted since the report was last executed. The report output then displays the new summarization data.

Summarization data is efficient for a specific report if you execute that report frequently. For this reason, it is not recommended that you use summarization data for most or all CO-PA reports.

When you define a report, you can specify whether the report accesses summarization levels or uses summarization data. Within the same operating concern, you can define reports with summarization data and reports with summarization levels. For each report, specify how the system is to react if no summarized data or summarization level can be found during report execution.

Frozen data signifies the data stored for a specific report and a specific set of variable values at a specific point in time. There can be only one set of frozen data for each combination of variables in a report.

Like the summarization data, the frozen data is only valid for one report. The difference is that the frozen data cannot be updated, because frozen data is reporting data that has been frozen at a particular point in time. It can be generated from the object level, summarization data, or summarization levels.

**How to Create a Summarization Level and Summarized Data and How to Use Them in Reports**

Demonstrate the steps listed in the Create Frozen Data and Evaluate and Utilize Summarization Level exercises.

Unit 7
Exercise 21

# Create Frozen Data

263

**Business Example**

In an effort to increase the data retrieval speed on some of your routine reports, you have decided to use frozen data.

Run your CO-PA report in the background to create frozen data.

**Task 1**

1. Execute BR##, the first basic report that you created, in which ## is your group number in the background, for the company code **1000**, actual billing data, for the previous and current fiscal years. Instead of printing the report, save the data generated in the background.

   Specify the required characteristic values and select freeze report data under the background execution options.

**Task 2**

1. Retrieve the frozen data for the report you just ran in the background.

   Enter the exact characteristic values that you used when you executed the report in the background. Execute the report.

   In the dialog box that appears, choose the *Frozen Data* option instead of *Current Data*.

# Create Frozen Data

264

**Business Example**

In an effort to increase the data retrieval speed on some of your routine reports, you have decided to use frozen data.

Run your CO-PA report in the background to create frozen data.

**Task 1**

1. Execute BR##, the first basic report that you created, in which ## is your group number in the background, for the company code **1000**, actual billing data, for the previous and current fiscal years. Instead of printing the report, save the data generated in the background.

   Specify the required characteristic values and select freeze report data under the background execution options.

   a) Execute transaction KEBC. In the *Set Operating Concern* dialog box, enter **IDEA** in the *Operating concern* field. Select *costing-based* radio button. Choose *Continue*.

   b) On the *SAP Easy Access* screen, choose *Accounting → Controlling → Profitability Analysis → Information System → Current Settings → Background Processing → Maintain Variants* (KE3Q).

   c) On the *Background Processing for Drilldown Reports* screen, enter **BR##** in the *Report* field.

   d) Choose the *Execute* pushbutton.

   e) On the *Selection: Sales and Profit Group 01* screen, enter the following data:

| Report Selections | |
|---|---|
| *Company Code* | **1000** |
| *Period from* | **001.Current Fiscal Year** |
| *Period to* | **012.Current Fiscal Year** |

| Status of Data | |
|---|---|
| *Read Mode* | **1** |

| Print Settings | |
|---|---|
| *Print report* | deselected |

| Print Settings | |
|---|---|
| *List type* | **1** |

| Presummarized Data | |
|---|---|
| *Rebuild frozen report data* | Select |

Note:
The *Plan/Actual* indicator, *Version*, and *Record type* are not available for selection because we turned off these options on the *Variables* tab page of the report. However, the report is set to run for *Actual Data* for *Record type F*.

f) Choose *Program* → *Execute in Background*.

g) In the *Background Print Parameters* dialog box, ensure that **LOCL** is specified in the *Output Device* field and then choose *Continue*.

h) In the *Start Time* dialog box, choose the *Immediate* pushbutton and save your data.
The job will run in the background.

Note:
This could be scheduled as a nightly job.

i) Return to the *SAP Easy Access* screen.

### Task 2

1. Retrieve the frozen data for the report you just ran in the background.
   Enter the exact characteristic values that you used when you executed the report in the background. Execute the report.
   In the dialog box that appears, choose the *Frozen Data* option instead of *Current Data*.
   a) On the *SAP Easy Access* screen, choose *Accounting* → *Controlling* → *Profitability Analysis* → *Information System* → *Execute Report* (`KE30`).
   b) On *Run Profitability Report: Initial Screen*, double-click report *BR##*. Choose the *Execute* pushbutton.
   c) In the *Profitability report BR##: Execute* dialog box, select the *Saved data* that you just created and choose *Continue*.

Note:
This is a good way to make the reports run faster. However, if any postings were made since the report was frozen, you will not see those postings in your report.

Unit 7
Exercise 22

# Evaluate and Utilize a Summarization Level

267

**Business Example**

If you frequently run reports based on operating concern data that is not extensive, it is useful for you to be able to access the summarized data stored in summarization levels. Summarization levels are updated nightly so that you can quickly access certain levels of data during the day.

You need to display the characteristics for a summarization level and retrieve analytical data on the location, size, and performance of a summarization level. You must also schedule background jobs to update summarization levels and write reports that use summarization levels.

Note:
Before completing this exercise, the instructor should save the Summarization Levels and execute a job to fill the Summarization Levels. Ensure the Instructor has done so.

**Task 1**

Display summarization level definitions and details.

1. Display the definition for summarization level 310. What characteristics were selected?
2. How can you display the number of times the various CO-PA functions, such as reporting, planning, and cost center assessments, have accessed a level?
3. What other key information is available on the details screen for a summarization level?

**Task 2**

Create a report that uses summarization level 310.

1. Create a basic report **`SBU##`** with description **`Strat. Bus Unit ##`**. Create the report for controlling area 1000 and the *Strategic Business Unit* characteristic. Write the report for operating concern currency only.

   Select the invoiced quantity and revenue value fields.

   Set the default values for the months from 1 to 12 of the current fiscal year, the plan/actual indicator to 0, and the record type to F. Set the report so that it is executed in the operating concern currency using summarized and current data.

   For the report output, use the *Graphical report output* option, with the *Info Control*, *Navigation Control*, and *Drill-down output area*.

On the Options tab page in the *Performance* dialog box, select *Display Current Data*. If there are no summarization levels available to read, the system generates a warning message.

2. Execute your report using the default settings you have selected.

### Task 3

When a report is executed, the message “Reading from summarization level XX” appears on the screen briefly while the report reads data from a summarization level. View the summarization level to be sure that it was used.

1. View the summarization level details to be sure that it was used when your report was executed.
2. Can you assign a specific summarization level to a particular report?
3. View the Customizing Monitor to view the reports and summarization levels in your operating concern.

# Evaluate and Utilize a Summarization Level

269

**Business Example**

If you frequently run reports based on operating concern data that is not extensive, it is useful for you to be able to access the summarized data stored in summarization levels. Summarization levels are updated nightly so that you can quickly access certain levels of data during the day.

You need to display the characteristics for a summarization level and retrieve analytical data on the location, size, and performance of a summarization level. You must also schedule background jobs to update summarization levels and write reports that use summarization levels.

Note:
Before completing this exercise, the instructor should save the Summarization Levels and execute a job to fill the Summarization Levels. Ensure the Instructor has done so.

**Task 1**

Display summarization level definitions and details.

1. Display the definition for summarization level 310. What characteristics were selected?
   a) Execute transaction code `ORKE` and in Customizing, choose *Controlling->Profitability Analysis->Tools-> Summarization Levels → Define Summarization Levels.*

      Hint:
      In the *Set Operating Concern* dialog box, enter **`IDEA`** in the *Operating concern* field. Select *costing-based* radio button and choose *Continue*.

   b) On the *Change View "Summarization levels": Overview* screen, select value *310* in the *Level* column by choosing the grey box to the left.

   c) Under the *Navigation* screen area, choose the *Choose Level Detail* pushbutton for *Characteristics*.

   d) On the *Change View "Summarization levels - fields": Overview* screen, view the *Fiscal Year*, *Controlling Area*, *Currency Type (B0 Only)*, *Period*, *Plan/Actual Indicator*, *Version*, *Record Type*, and *Strategic Business Unit* characteristics summarized in this level.

   e) Choose (*Back*) to return to the *Change View "Summarization levels": Overview* screen.

2. How can you display the number of times the various CO-PA functions, such as reporting, planning, and cost center assessments, have accessed a level?
   a) On the *Change View "Summarization levels": Overview* screen, select the *310* value in the *Level* column.
   b) Choose *Goto → Details*.
      View the information under the *Accesses* screen area.
3. What other key information is available on the details screen for a summarization level?
   a) On the *Change View "Summarization levels": Details* screen, the following information is available:
      - The names of the *Key table* and the *Totals table* in the ABAP Dictionary
      - The number of entries in the key table and the totals table
      - The number of CO-PA summary records read for the build
      - The number of CO-PA records read for the updates
      - The most recent time the level was changed
   b) Return to the *SAP Easy Access* screen.

### Task 2

Create a report that uses summarization level 310.

1. Create a basic report **SBU##** with description **Strat. Bus Unit ##**. Create the report for controlling area 1000 and the *Strategic Business Unit* characteristic. Write the report for operating concern currency only.
   Select the invoiced quantity and revenue value fields.
   Set the default values for the months from 1 to 12 of the current fiscal year, the plan/actual indicator to 0, and the record type to F. Set the report so that it is executed in the operating concern currency using summarized and current data.
   For the report output, use the *Graphical report output* option, with the *Info Control*, *Navigation Control*, and *Drill-down output area*.
   On the Options tab page in the *Performance* dialog box, select *Display Current Data*. If there are no summarization levels available to read, the system generates a warning message.
   a) On the *SAP Easy Access* screen, choose *Accounting → Controlling → Profitability Analysis → Information System → Define Report → Create Profitability Report* (KE31).
   b) On *Create Profitability Report: Initial Screen*, enter **SBU##** in the *Report* field with description **Strat. Bus Unit ##**. Select the *Basic report* radio button and choose the *Create* pushbutton.
   c) In the *Choose Currencies* dialog box, select the *Operating concern currency* radio button and choose *Continue*.
   d) On the *Create Profitability Report: Specify Profit. Segment* screen, choose the *Characteristics* tab page and select the *Strategic Bus. Unit* and *CO Area* characteristics from the *Char. list* screen area. Then, choose ◀ (*Add char.*).

e) On the *Key figures* tab page, select the *Invoiced quantity* and *Revenue* characteristics and choose (*Add char.*).

f) On the *Variables* screen, enter the following data:

| Field Name or Data Value | Value |
|---|---|
| *Period from* | **001.Current Fiscal Year** |
| *Period to* | **012.Current Fiscal Year** |
| *Plan/Act. Indicator* | **0** |
| *Version* | Leave blank |
| *Record Type* | **F** |

g) Choose the *Output Type* tab page. For the report output, use the *Graphical report output* option, with the *Output areas: Info control, navigation control, and drilldown control*.

h) Choose the *Options* tab page. In the *Performance* screen area, select *Display current data*. For *Presummarized data*, select *Use a summarization level* and for *Reaction if no presummarized data exists*, select *Warning*.

i) Save the basic report definition.

2. Execute your report using the default settings you have selected.

a) Choose *Report* → *Execute*.

b) On *Run Profitability Report: Initial Screen*, double-click your *SBU##* report. Keep the Report selections you made and choose *Execute*.

c) Did the report use the summarization level?

If you did not receive a warning, the summarization level was used.

d) Return to the *SAP Easy Access* screen.

### Task 3

When a report is executed, the message “Reading from summarization level XX” appears on the screen briefly while the report reads data from a summarization level. View the summarization level to be sure that it was used.

1. View the summarization level details to be sure that it was used when your report was executed.

a) Enter transaction code **ORKE** and in Customizing, choose *Controlling* → *Profitability Analysis* → *Tools* → *Summarization Levels* → *Define Summarization Levels*.

b) On the *Change View “Summarization levels”: Overview* screen, select value *310* in the *Level* column and choose *Goto* → *Details*.

The *Change View “Summarization levels”: Details* screen is displayed. View the number of *Accesses*. There should be at least one. There may be more if other participants have to run their reports as well.

Hint:
If you run the report again this number increases. However, you would have to leave this transaction and come back to view the increase.

a) Return to the *SAP Easy Access* screen.

2. Can you assign a specific summarization level to a particular report?
   a) You cannot assign a report to a specific summarization level because the report automatically searches for the most efficient (smallest) one that corresponds to the selection criteria.
3. View the Customizing Monitor to view the reports and summarization levels in your operating concern.
   a) Enter the transaction code **ORKE** and in Customizing, choose *Controlling → Profitability Analysis → Tools → Analysis → Check Customizing Settings.*
   b) Choose *Customizing Monitor → Analysis Options → Report Overview*.
   c) For *Sort Reports*, select the *According to Similarities* radio button.
   d) Select *Display Summarization Levels* then choose the *Execute* pushbutton.
      All reports and summarization levels are displayed. You may have to scroll right to see the summarization levels.
   e) Return to the *SAP Easy Access* screen.

**LESSON SUMMARY**

You should now be able to:

- Define summarization levels

# Learning Assessment

275

1. How does frozen data differ from summarization data?

   *Choose the correct answers.*

   - [ ] A Frozen data is only valid for one report
   - [ ] B Frozen data cannot be updated
   - [ ] C Frozen data can be generated from the object level
   - [ ] D There can only be one set of frozen data for each combination of variables in a report

# Learning Assessment - Answers

276

1. How does frozen data differ from summarization data?

   *Choose the correct answers.*

   - [ ] A Frozen data is only valid for one report
   - [x] B Frozen data cannot be updated
   - [ ] C Frozen data can be generated from the object level
   - [x] D There can only be one set of frozen data for each combination of variables in a report