

S4D430

Data Modeling in ABAP Dictionary and ABAP Core Data Services

COURSE OUTLINE

Course Version: 24

Course Duration:

SAP Copyrights, Trademarks and Disclaimers

© 2024 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. Please see <https://www.sap.com/corporate/en/legal/copyright.html> for additional trademark information and notices.

Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors.

National product specifications may vary.

These materials may have been machine translated and may contain grammatical errors or inaccuracies.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP SE or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP SE or SAP affiliate company 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.

In particular, SAP SE or its affiliated companies have no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation, and SAP SE's or its affiliated companies' strategy and possible future developments, products, and/or platform directions and functionality are all subject to change and may be changed by SAP SE or its affiliated companies at any time for any reason without notice. The information in this document is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

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

vii	Course Overview
1	Unit 1: Exploring Data Modeling in ABAP
1	Lesson: Exploring ABAP Dictionary
1	Lesson: Exploring ABAP Core Data Services
3	Unit 2: Creating Database Tables
3	Lesson: Defining Domains and Data Elements
3	Lesson: Creating Database Tables
3	Lesson: Handling Changes to Database Tables
5	Unit 3: Defining Global Data Types
5	Lesson: Using Dictionary Objects as Data Types
5	Lesson: Defining Dictionary Structures
5	Lesson: Defining Dictionary Table Types
7	Unit 4: Defining Basic CDS Views
7	Lesson: Defining a Basic CDS View
7	Lesson: Using ABAP Annotations in CDS Views
7	Lesson: Building Views on Views
9	Unit 5: Defining Relationships and Associations
9	Lesson: Defining Relationships Between Database Tables
9	Lesson: Defining Associations Between CDS Views
9	Lesson: Using Associations in Path Expressions
11	Unit 6: Using Code Pushdown in CDS Views
11	Lesson: Implementing SQL Expressions in CDS Views
11	Lesson: Calling Built-in Functions in CDS Views
11	Lesson: Defining CDS Views with Input Parameters
11	Lesson: Processing Data Sets in CDS Views
13	Unit 7: Defining Meta Objects for Dictionary Objects and CDS Views
13	Lesson: Preventing Unauthorized Access to Data
13	Lesson: Extending Dictionary Objects
13	Lesson: Extending CDS Views
13	Lesson: Creating Metadata Extensions

Course Overview

TARGET AUDIENCE

This course is intended for the following audiences:

- Development Consultant
- Developer

Lesson 1: Exploring ABAP Dictionary

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the basic tasks of the ABAP Dictionary
- Name the most important Dictionary objects

Lesson 2: Exploring ABAP Core Data Services

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the basic tasks of the ABAP Core Data Services
- Name the most important ABAP CDS objects

Lesson 1: Defining Domains and Data Elements

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the use of data elements and domains when defining database tables
- Create domains
- Create data elements

Lesson 2: Creating Database Tables

Lesson Objectives

After completing this lesson, you will be able to:

- Create a table definition
- Edit the field list of a database table
- Maintain additional table properties
- Define and use include structures

Lesson 3: Handling Changes to Database Tables

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the adjustment of database tables
- Adjust direct changes to database tables
- Describe the conversion process for database tables
- Adjust indirect changes to database tables

Lesson 1: Using Dictionary Objects as Data Types

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the use of dictionary objects as data types

Lesson 2: Defining Dictionary Structures

Lesson Objectives

After completing this lesson, you will be able to:

- Define dictionary structures

Lesson 3: Defining Dictionary Table Types

Lesson Objectives

After completing this lesson, you will be able to:

- Define a dictionary table type
- Define a nested table type

Lesson 1: Defining a Basic CDS View

Lesson Objectives

After completing this lesson, you will be able to:

- Create a data definition
- Maintain the FROM clause and element list

Lesson 2: Using ABAP Annotations in CDS Views

Lesson Objectives

After completing this lesson, you will be able to:

- Use ABAP annotations in CDS views
- Work with translatable texts in CDS

Lesson 3: Building Views on Views

Lesson Objectives

After completing this lesson, you will be able to:

- Define a CDS view that reads from another view
- Control the propagation of element annotations

Lesson 1: Defining Relationships Between Database Tables

Lesson Objectives

After completing this lesson, you will be able to:

- Understand relationships in data models
- Define foreign key dependencies in dictionary tables

Lesson 2: Defining Associations Between CDS Views

Lesson Objectives

After completing this lesson, you will be able to:

- Define associations
- Expose associations

Lesson 3: Using Associations in Path Expressions

Lesson Objectives

After completing this lesson, you will be able to:

- Use path expressions in CDS views
- Use filter conditions in path expressions
- Use path expressions in ABAP SQL

Lesson 1: Implementing SQL Expressions in CDS Views

Lesson Objectives

After completing this lesson, you will be able to:

- Motivate the use of code pushdown in CDS Views
- Use SQL expressions in CDS views

Lesson 2: Calling Built-in Functions in CDS Views

Lesson Objectives

After completing this lesson, you will be able to:

- Use built-in functions in ABAP CDS
- Use session variables

Lesson 3: Defining CDS Views with Input Parameters

Lesson Objectives

After completing this lesson, you will be able to:

- Define CDS views with input parameters
- Provide values for CDS view parameters
- Link parameters to ABAP system fields

Lesson 4: Processing Data Sets in CDS Views

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the techniques for processing datasets in ABAP CDS
- Use the DISTINCT addition in ABAP CDS views
- Include aggregations and grouping in CDS views
- Use joins and unions in CDS views

Lesson 1: Preventing Unauthorized Access to Data

Lesson Objectives

After completing this lesson, you will be able to:

- Create authorization fields and authorization objects
- Implement CDS access controls

Lesson 2: Extending Dictionary Objects

Lesson Objectives

After completing this lesson, you will be able to:

- Extend dictionary objects using append structures

Lesson 3: Extending CDS Views

Lesson Objectives

After completing this lesson, you will be able to:

- Extend CDS entities using CDS view extensions

Lesson 4: Creating Metadata Extensions

Lesson Objectives

After completing this lesson, you will be able to:

- Extend views using CDS metadata extensions