HA300

SAP HANA 2.0 SPS07 - Modeling

COURSE OUTLINE

Course Version: 19
Course Duration:

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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:

- Database Administrator

UNIT 1 Preparing the Modeling Environment

Lesson 1: Getting Started with SAP Web IDE for SAP HANA

Lesson Objectives

After completing this lesson, you will be able to:

- Describe SAP Web IDE for SAP HANA and how it is used for development in SAP HANA

Lesson 2: Importing an Existing Project in SAP Web IDE for SAP HANA

Lesson Objectives

After completing this lesson, you will be able to:

- Import a Project into your Workspace of SAP Web IDE for SAP HANA

UNIT 2 Creating Calculation Views

Lesson 1: Understanding Basic Concepts and Terminology

Lesson Objectives

After completing this lesson, you will be able to:

- Understand modeling terminology of SAP HANA

Lesson 2: Checking the Output of a Calculation View

Lesson Objectives

After completing this lesson, you will be able to:

- Check the output of a calculation view to ensure correct results are generated

Lesson 3: Creating Dimension Calculation Views

Lesson Objectives

After completing this lesson, you will be able to:

- Create a dimension calculation view using the graphical calculation view editor

Lesson 4: Creating Cube Calculation Views

Lesson Objectives

After completing this lesson, you will be able to:

- Create a cube calculation view using the graphical calculation view editor

Lesson 5: Creating SQL Access Only Calculation Views

Lesson Objectives

After completing this lesson, you will be able to:

- Design SQL Access Only Calculation Views

Lesson 6: Choosing a Data Source for a Calculation View

Lesson Objectives

After completing this lesson, you will be able to:

- Understand which data sources are supported by calculation views

Lesson 7: Working with Common Features of Calculation Views

Lesson Objectives

After completing this lesson, you will be able to:

- Describe features that are common to all types of calculation view

Lesson 8: Defining the Top View Node

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the function of the top view node

UNIT 3 Working with Common Nodes in Calculation Views

Lesson 1: Using Projection Nodes

Lesson Objectives

After completing this lesson, you will be able to:

- Use a projection node

Lesson 2: Working with Aggregation Nodes

Lesson Objectives

After completing this lesson, you will be able to:

- Aggregate measures using the aggregation node

UNIT 4 Joining Data Sources in Calculation Views

Lesson 1: Combining data sources using a join node

Lesson Objectives

After completing this lesson, you will be able to:

- Implement a join node to combine data sources

Lesson 2: Joining more than two tables in a single join node

Lesson Objectives

After completing this lesson, you will be able to:

- Join more than two tables in a single join node

Lesson 3: Creating Cube with Star Join Calculation Views

Lesson Objectives

After completing this lesson, you will be able to:

- Create a cube with star join calculation view using the graphical calculation view editor

Lesson 4: Configuring non-equi joins

Lesson Objectives

After completing this lesson, you will be able to:

- Configure a non-equi joins

Lesson 5: Preventing incorrect aggregations using a dynamic join

Lesson Objectives

After completing this lesson, you will be able to:

- Describe how a dynamic join can prevent incorrect aggregations

Lesson 6: Optimizing Joins

Lesson Objectives

After completing this lesson, you will be able to:

- Optimize joins to improve calculation view performance

UNIT 5 Working with Union Nodes in Calculation Views

Lesson 1: Working with the Union Node

Lesson Objectives

After completing this lesson, you will be able to:

- Combine data from different sources using the union node

UNIT 6 Creating Data Slices

Lesson 1: Implementing Minus and Intersect Nodes

Lesson Objectives

After completing this lesson, you will be able to:

- Generate data slices from multiple sources using minus and intersect nodes

UNIT 7 Ranking Data

Lesson 1: Implementing Rank Nodes

Lesson Objectives

After completing this lesson, you will be able to:

- Configure a rank node to identify the top or bottom values of a data set

UNIT 8 Embedding Functions in Calculation Views

Lesson 1: Generating Restricted Columns

Lesson Objectives
After completing this lesson, you will be able to:

- Generate a restricted column

Lesson 2: Generating Calculated Columns

Lesson Objectives
After completing this lesson, you will be able to:

- Generate a calculated column

Lesson 3: Filtering Data

Lesson Objectives
After completing this lesson, you will be able to:

- Implement a filter to restrict data

Lesson 4: Implementing Currency Conversion

Lesson Objectives
After completing this lesson, you will be able to:

- Describe how to implement currency conversion

UNIT 9

Creating Dynamic Calculation Views

Lesson 1: Implementing Variables

Lesson Objectives

After completing this lesson, you will be able to:

- Implement variables to filter data by attributes

Lesson 2: Defining Value Help Views

Lesson Objectives

After completing this lesson, you will be able to:

- Define Value Help Views

Lesson 3: Implementing Input Parameters

Lesson Objectives

After completing this lesson, you will be able to:

- Define input parameters

Lesson 4: Mapping Variables and Input Parameters

Lesson Objectives

After completing this lesson, you will be able to:

- Map Variables and Input Parameters

UNIT 10 Implementing Hierarchies in Calculation Views

Lesson 1: Modeling Hierarchies

Lesson Objectives

After completing this lesson, you will be able to:

- Define a hierarchy to organize data for efficient navigation

Lesson 2: Creating Time-Based Dimension Calculation Views

Lesson Objectives

After completing this lesson, you will be able to:

- Create a time-based dimension calculation view using the graphical calculation view editor

Lesson 3: Using a Hierarchy for Value Help

Lesson Objectives

After completing this lesson, you will be able to:

- Use a hierarchy in value help

UNIT 11 Developing Custom Logic using SQL

Lesson 1: Introducing SAP HANA SQL Console

Lesson Objectives

After completing this lesson, you will be able to:

- Write and execute SQL in the SQL Console

Lesson 2: Implementing SQL in Calculation Views

Lesson Objectives

After completing this lesson, you will be able to:

- Implement SQL in a calculation view

Lesson 3: Querying a Modeled Hierarchy Using SQL

Lesson Objectives

After completing this lesson, you will be able to:

- Query a modeled hierarchy using SQL

Lesson 4: Working with SQLScript

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the additional features provided by SQLScript compared to standard SQL

Lesson 5: Creating and Using Functions

Lesson Objectives

After completing this lesson, you will be able to:

- Describe how functions can be consumed by calculation views

Lesson 6: Creating and Using Procedures

Lesson Objectives

After completing this lesson, you will be able to:

- Create and use procedures

UNIT 12

Applying Best Practices for Modeling

Lesson 1: Implementing Recommended Modeling Practices

Lesson Objectives

After completing this lesson, you will be able to:

- Implement recommended modeling practices

Lesson 2: Implementing Best Practices in Calculation View Nodes

Lesson Objectives

After completing this lesson, you will be able to:

- Implement best practices in calculation view nodes

UNIT 13

Using Tools to Check Model Performance

Lesson 1: Validating Calculation Views with Performance Analysis Mode

Lesson Objectives

After completing this lesson, you will be able to:

- Validate calculation views with the Performance Analysis mode

Lesson 2: Debugging Calculation Views with the Debug Query Mode

Lesson Objectives

After completing this lesson, you will be able to:

- Debug calculation views with the Debug Query Mode

Lesson 3: Analyzing executions with the SQL Analyzer

Lesson Objectives

After completing this lesson, you will be able to:

- Analyze executions with the SQL Analyzer

UNIT 14

Implementing Features to Improve Performance

Lesson 1: Implementing Union Pruning

Lesson Objectives

After completing this lesson, you will be able to:

- Implement Union Pruning

Lesson 2: Controlling Parallelization

Lesson Objectives

After completing this lesson, you will be able to:

- Controlling Parallelization

Lesson 3: Partitioning Tables

Lesson Objectives

After completing this lesson, you will be able to:

- Define partitions to improve calculation view runtime

UNIT 15

Storing Calculation View Results

Lesson 1: Implementing Static Cache to Improve Performance

Lesson Objectives

After completing this lesson, you will be able to:

- Improve calculation view performance with static cache

Lesson 2: Creating Snapshots

Lesson Objectives

After completing this lesson, you will be able to:

- Define snapshots queries on a calculation views to store its results

UNIT 16

Using Additional Modeling Productivity Tools

Lesson 1: Developing Calculation views more efficiently

Lesson Objectives

After completing this lesson, you will be able to:

- Use features to increase productivity of calculation view development

Lesson 2: Working with Modeling Content in a Project

Lesson Objectives

After completing this lesson, you will be able to:

- Audit calculation views using provided tools

UNIT 17 Working in a Modeling Project

Lesson 1: Explaining the Project Structure

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the structure of a project

Lesson 2: Building Models

Lesson Objectives

After completing this lesson, you will be able to:

- Build modeling content

Lesson 3: Managing modeling content

Lesson Objectives

After completing this lesson, you will be able to:

- Manage modeling content

UNIT 18

Managing the Lifecycle of a Modeling Project

Lesson 1: Creating a Project

Lesson Objectives

After completing this lesson, you will be able to:

- Create a modeling project in XS Advanced

Lesson 2: Enabling Access to External Data

Lesson Objectives

After completing this lesson, you will be able to:

- Set up access to external data

Lesson 3: Using Git to Manage Source Code

Lesson Objectives

After completing this lesson, you will be able to:

- Manage source files using Git

Lesson 4: Deploying an Application

Lesson Objectives

After completing this lesson, you will be able to:

- Manage the lifecycle of a project

Lesson 5: Migrating Modeling Content

Lesson Objectives

After completing this lesson, you will be able to:

- List the deprecated modeling artifacts
- Explain how to migrate modeling content

UNIT 19

Implementing Security in SAP HANA Modeling

Lesson 1: Defining Analytic Privileges

Lesson Objectives

After completing this lesson, you will be able to:

- Define analytic privileges

Lesson 2: Defining Roles

Lesson Objectives

After completing this lesson, you will be able to:

- Create a design-time role

Lesson 3: Masking Sensitive Data

Lesson Objectives

After completing this lesson, you will be able to:

- Restrict access to columns containing sensitive data within a View

Lesson 4: Anonymizing Data

Lesson Objectives

After completing this lesson, you will be able to:

- Protect sensitive data with anonymization