

# HA300

## SAP HANA 2.0 SPS05 - Modeling

### COURSE OUTLINE

Course Version: 17

Course Duration:

# SAP Copyrights, Trademarks and Disclaimers

© 2020 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 <http://global12.sap.com/corporate-en/legal/copyright/index.epx> 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	<i>Example text</i>
Window title	<i>Example text</i>



# Contents

## vii Course Overview

### 1 Unit 1: Calculation Views

- 1 Lesson: Introducing Calculation Views
- 1 Lesson: Understanding the Different Types of Views
- 1 Lesson: Working with Common View Design Features

### 3 Unit 2: Using Nodes in Calculation Views

- 3 Lesson: Using Projection Nodes
- 3 Lesson: Using Joins Nodes
- 3 Lesson: Working with Data Sets
- 3 Lesson: Aggregating Data
- 3 Lesson: Creating CUBE with Star Join Calculation Views
- 4 Lesson: Extracting Top Values with Rank Nodes

### 5 Unit 3: Modeling Functions

- 5 Lesson: Creating Restricted and Calculated Columns
- 5 Lesson: Filtering Data
- 5 Lesson: Using Variables and Input Parameters
- 5 Lesson: Using Hierarchies
- 5 Lesson: Implementing Currency Conversion

### 7 Unit 4: Using SQL in Models

- 7 Lesson: Introducing SAP HANA SQL
- 7 Lesson: Query a Modeled Hierarchy Using SQL
- 7 Lesson: Working with SQLScript
- 7 Lesson: Creating and Using Functions
- 7 Lesson: Creating and Using Procedures

### 9 Unit 5: Optimization of Models

- 9 Lesson: Implementing Good Modeling Practices
- 9 Lesson: Using Tools to Check Model Performance
- 9 Lesson: Developing a Data Management Architecture

### 11 Unit 6: Management and Administration of Models

- 11 Lesson: Working with Modeling Content in a Project
- 11 Lesson: Creating and Managing Projects
- 11 Lesson: Enabling Access to External Data
- 11 Lesson: Working with GIT Within the SAP Web IDE
- 11 Lesson: Migrating Modeling Content

**13      Unit 7:      Security in SAP HANA Modeling**

13	Lesson: Understanding Roles and Privileges
13	Lesson: Defining Analytic Privileges
13	Lesson: Defining Roles
13	Lesson: Masking Sensitive Data
13	Lesson: Anonymizing Data

# Course Overview

## TARGET AUDIENCE

This course is intended for the following audiences:

- Database Administrator





## Lesson 1: Introducing Calculation Views

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain modeling objects

## Lesson 2: Understanding the Different Types of Views

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain the types of views used in graphical modeling

## Lesson 3: Working with Common View Design Features

### Lesson Objectives

After completing this lesson, you will be able to:

- Use common features to design calculation views
- Get an overview of the different types of nodes



## Lesson 1: Using Projection Nodes

### Lesson Objectives

After completing this lesson, you will be able to:

- Use a projection node

## Lesson 2: Using Joins Nodes

### Lesson Objectives

After completing this lesson, you will be able to:

- Use joins to combine data sources
- Join more than two tables in a single join node
- Work with non-equi joins
- Use a Dynamic Join
- Define Join Columns Optimization

## Lesson 3: Working with Data Sets

### Lesson Objectives

After completing this lesson, you will be able to:

- Use Union Nodes to combine data sets
- Use Set Operations: Minus and Intersect

## Lesson 4: Aggregating Data

### Lesson Objectives

After completing this lesson, you will be able to:

- Use Aggregation Nodes
- Control the behavior of the Aggregation Node

## Lesson 5: Creating CUBE with Star Join Calculation Views

## **Lesson Objectives**

After completing this lesson, you will be able to:

- Use a Star Join in a CUBE calculation view

## **Lesson 6: Extracting Top Values with Rank Nodes**

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Use a rank node to extract the top values of a data set

## Lesson 1: Creating Restricted and Calculated Columns

### Lesson Objectives

After completing this lesson, you will be able to:

- Create restricted and calculated columns

## Lesson 2: Filtering Data

### Lesson Objectives

After completing this lesson, you will be able to:

- Filter data

## Lesson 3: Using Variables and Input Parameters

### Lesson Objectives

After completing this lesson, you will be able to:

- Implement variables
- Define input parameters
- Map variables and input parameters

## Lesson 4: Using Hierarchies

### Lesson Objectives

After completing this lesson, you will be able to:

- Use hierarchies

## Lesson 5: Implementing Currency Conversion

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain the general principles of currency conversion



## Lesson 1: Introducing SAP HANA SQL

### Lesson Objectives

After completing this lesson, you will be able to:

- Describe SAP HANA SQL

## Lesson 2: Query a Modeled Hierarchy Using SQL

### Lesson Objectives

After completing this lesson, you will be able to:

- Query a modeled hierarchy using SQL

## Lesson 3: Working with SQLScript

### Lesson Objectives

After completing this lesson, you will be able to:

- Develop Skills using SQLScript

## Lesson 4: Creating and Using Functions

### Lesson Objectives

After completing this lesson, you will be able to:

- Work with functions

## Lesson 5: Creating and Using Procedures

### Lesson Objectives

After completing this lesson, you will be able to:

- Create and use procedures





## Lesson 1: Implementing Good Modeling Practices

### Lesson Objectives

After completing this lesson, you will be able to:

- Implementing good modeling practices

## Lesson 2: Using Tools to Check Model Performance

### Lesson Objectives

After completing this lesson, you will be able to:

- Use tools to check model performance

## Lesson 3: Developing a Data Management Architecture

### Lesson Objectives

After completing this lesson, you will be able to:

- Implement Good Data Management Architecture



## Lesson 1: Working with Modeling Content in a Project

### Lesson Objectives

After completing this lesson, you will be able to:

- Analyze and document information models
- Explain the structure of a project
- Build modeling content
- Modify and move modeling content

## Lesson 2: Creating and Managing Projects

### Lesson Objectives

After completing this lesson, you will be able to:

- Define the key settings of a project
- Manage the lifecycle of a project

## Lesson 3: Enabling Access to External Data

### Lesson Objectives

After completing this lesson, you will be able to:

- Set up access to external data

## Lesson 4: Working with GIT Within the SAP Web IDE

### Lesson Objectives

After completing this lesson, you will be able to:

- Use the Native Git Integration of the SAP Web IDE

## 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

## Lesson 1: Understanding Roles and Privileges

### Lesson Objectives

After completing this lesson, you will be able to:

- Understand roles and privileges

## Lesson 2: Defining Analytic Privileges

### Lesson Objectives

After completing this lesson, you will be able to:

- Define analytic privileges

## Lesson 3: Defining Roles

### Lesson Objectives

After completing this lesson, you will be able to:

- Create a design-time role

## Lesson 4: 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 5: Anonymizing Data

### Lesson Objectives

After completing this lesson, you will be able to:

- Protect sensitive data with anonymization