

HA400

ABAP Programming for SAP HANA

COURSE OUTLINE

Course Version: 10

Course Duration: 4 Day(s)

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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

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Course Overview

TARGET AUDIENCE

This course is intended for the following audiences:

- Developer
- Development Consultant

Lesson 1: SAP HANA Basics and Technical Concepts

Lesson Objectives

After completing this lesson, you will be able to:

- Describe SAP HANA goals, technical innovations and challenges
- Understand the fundamental technical concepts of SAP HANA
- Explain the SAP HANA and ABAP evolution, architecture, and direction
- Determine if HANA's row store or column store is used for an ABAP transparent table, and which indices are used on HANA

Lesson 2: Introducing the SAP HANA Studio

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the central functions of HANA Studio
- Switch between different perspectives in the SAP HANA Studio
- Set up a connection to a SAP HANA database
- Understand schemata and tables in SAP HANA Studio
- Analyze the definition of tables in SAP HANA Studio

Lesson 3: Introducing the ABAP Development Tools (ADT)

Lesson Objectives

After completing this lesson, you will be able to:

- Use the ABAP Development Tools in Eclipse

Lesson 4: Introducing the EPM Sample Application

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the Enterprise Procurement Model business example

- Describe the Open Item Analytics sample applications and which computations it involves

Lesson 1: SAP HANA as Secondary Database– Access via Open SQL

Lesson Objectives

After completing this lesson, you will be able to:

- Describe how to access the SAP HANA Database by using Open SQL and a secondary database connection

Lesson 2: Preparing for SAP HANA

Lesson Objectives

After completing this lesson, you will be able to:

- Use Code Inspector (SCI) and ABAP Test Cockpit (ATC) to locate potential functional and performance issues.
- Use the ABAP Trace (SAT) and the ABAP Profiling perspective to measure and compare runtime consumption

Lesson 3: Guided Performance Analysis

Lesson Objectives

After completing this lesson, you will be able to:

- Use the SQL Monitor (SQLM) to identify most important database access
- Use the Performance Tuning Worklist (SWLT) to combine static and dynamic performance analysis results
- Use SQL Trace (ST05) for in depth analysis of database accesses

Lesson 4: Performance Rules and Guidelines for SAP HANA

Lesson Objectives

After completing this lesson, you will be able to:

- Understand the performance rules and guidelines for ABAP on SAP HANA

Lesson 1: Classical Open SQL and Its Limitations

Lesson Objectives

After completing this lesson, you will be able to:

- Explain Open SQL in the context of SAP HANA
- Know the limitations of classical Open SQL

Lesson 2: ABAP Database Connectivity (ADBC)

Lesson Objectives

After completing this lesson, you will be able to:

- Understand ABAP Database Connectivity (ADBC)
- Use ADBC to execute native SQL statements

Lesson 3: Native SQL Syntax

Lesson Objectives

After completing this lesson, you will be able to:

- Understand the main difference between native SQL Syntax and Open SQL Syntax
- Write syntactically correct Native SQL Statements

Lesson 4: Working with Views in SAP HANA Studio

Lesson Objectives

After completing this lesson, you will be able to:

- Describe different approaches to moving data-intensive calculations into a secondary SAP HANA database
- Search for views in SAP HANA Studio
- Analyze the Definition of SAP HANA views
- Describe the different Types of SAP HANA views
- Test views with the data preview

Lesson 5: Consuming SAP HANA Views using Native SQL

Lesson Objectives

After completing this lesson, you will be able to:

- Consume HANA views in ABAP

Lesson 6: Working with Database Procedures in SAP HANA Studio

Lesson Objectives

After completing this lesson, you will be able to:

- Work with database procedures in SAP HANA Studio

Lesson 7: Calling SAP HANA Procedures in ABAP

Lesson Objectives

After completing this lesson, you will be able to:

- Call SAP HANA procedures in ABAP

Lesson 1: New Open SQL

Lesson Objectives

After completing this lesson, you will be able to:

- Describe code-to-data approaches possible with ABAP 7.4 SP05
- Use the new Open SQL syntax for simple SELECT statements
- Use expressions in Open SQL SELECT statements

Lesson 2: Core Data Services in ABAP

Lesson Objectives

After completing this lesson, you will be able to:

- Define database views using Core Data Services (CDS) in ABAP
- Use expressions, joins, aggregations, grouping and filtering in CDS views
- Use in union in CDS views
- Use Open SQL to select data based on CDS views
- Enhance a CDS view

Lesson 3: Associations in Core Data Services

Lesson Objectives

After completing this lesson, you will be able to:

- Use associations in Core Data Services

Lesson 1: Core Data Services with Input Parameters

Lesson Objectives

After completing this lesson, you will be able to:

- Define CDS Views in ABAP with scalar input parameters
- Use CDS Views with input parameters in other CDS views and in Open SQL

Lesson 2: ABAP-Managed Database Procedures

Lesson Objectives

After completing this lesson, you will be able to:

- Understand the benefits of using ABAP Managed Database Procedures
- Create ABAP-managed database procedures
- Call ABAP-managed database procedures in ABAP

Lesson 3: Debugging ABAP-Managed Database Procedures

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the authorizations required and user accounts involved to debug ABAP-managed database procedures
- Debug ABAP-managed database procedures

Lesson 1: Accessing SAP HANA Views via ABAP Dictionary External Views

Lesson Objectives

After completing this lesson, you will be able to:

- Describe the bottom-up approaches to the code-to-data paradigm possible with ABAP 7.4 SP02
- Create external views in the ABAP Dictionary
- Explain the mapping of SAP HANA data types and ABAP Dictionary types
- Adjust data type mappings
- Select from an external view with Open SQL

Lesson 2: Calling SAP HANA Procedures via ABAP Database Procedure Proxies

Lesson Objectives

After completing this lesson, you will be able to:

- Use database procedure proxies in ABAP.

Lesson 3: Transport of SAP HANA Objects

Lesson Objectives

After completing this lesson, you will be able to:

- Explain the use of Delivery Units
- Create delivery units and assign packages
- Explain the usage of HANA Transport Containers
- Create HANA Transport Containers and assign delivery units

Lesson 1: Using SAP HANA Full Text Search

Lesson Objectives

After completing this lesson, you will be able to:

- Describe when fuzzy search can be used
- Configure a table column for fuzzy search
- Write a SELECT statement that uses fuzzy search
- Enable an input field on an SAP GUI screen for type-ahead with fuzzy search

Lesson 2: ABAP List Viewer (ALV) with Integrated Access to SAP HANA

Lesson Objectives

After completing this lesson, you will be able to:

- Understand the benefits of SAP List Viewer (ALV) optimized for HANA
- Describe the differences between ALV for HANA and classical ALV
- Display data in ALV for HANA
- Use select options in the data retrieval of ALV for HANA
- Supply values for input parameters of external view

UNIT 8

Case Study: Optimize a Report on Flight Customer Revenue

Lesson 1: Creating an Analytic View

Lesson Objectives

After completing this lesson, you will be able to:

- Create an Analytic view

Lesson 1: Exercises Based on Flight DataModel

Lesson Objectives

After completing this lesson, you will be able to:

- Complete alternate exercises based on flight data model.

Lesson 1: Additional ABAP Language Enhancements

Lesson Objectives

After completing this lesson, you will be able to:

- Use inline data declarations in ABAP code
- Use string and table expressions in ABAP code