

# HA400

## ABAP Programming for SAP HANA

### COURSE OUTLINE

Course Version: 14

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	<i>Example text</i>
Window title	<i>Example text</i>



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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 basics
- Understand the fundamental technical concepts of SAP HANA

## **Lesson 2: Introducing the SAP HANA Studio**

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Know SAP HANA studio
- Connect SAP HANA studio to an SAP HANA system
- Understand SAP HANA catalog (schemas and tables)
- Know SAP HANA content (packages, views, procedures)

## **Lesson 3: ABAP and SAP HANA**

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Explain the SAP HANA and ABAP evolution
- Identify SAP HANA-specific settings in ABAP Dictionary
- Describe the various code-to-data concepts

## **Lesson 4: Introducing the ABAP Development Tools (ADT)**

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Work with ABAP Development Tools



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

### Lesson Objectives

After completing this lesson, you will be able to:

- Access a secondary database via Open SQL

## Lesson 2: Static Code Checks to Prepare ABAP Code for SAP HANA

### Lesson Objectives

After completing this lesson, you will be able to:

- Use Code Inspector and ABAP Test Cockpit

## Lesson 3: Tools to Analyse Potential Performance Issues

### Lesson Objectives

After completing this lesson, you will be able to:

- Understand the reason for potential performance issues
- Use analysis tools to measure and compare runtime consumption
- Search for potential performance issues with Code Inspector and ABAP Test Cockpit
- Use SQL Trace (ST05) for in-depth analysis of database accesses

## Lesson 4: Guided Performance Analysis

### Lesson Objectives

After completing this lesson, you will be able to:

- Understand the SQL Monitor (SQLM)
- Use the Performance Tuning Worklist (SWLT)

## Lesson 5: SQL Performance Rules for SAP HANA

### Lesson Objectives

After completing this lesson, you will be able to:

- Know the performance rules and guidelines for SAP HANA

## Lesson 1: Classical Open SQL and Its Limitations

### Lesson Objectives

After completing this lesson, you will be able to:

- Know the limitations of classical Open SQL

## Lesson 2: Enhanced Open SQL

### Lesson Objectives

After completing this lesson, you will be able to:

- Describe the motivation for enhanced Open SQL
- Use the new syntax of Open SQL
- Use new features of Open SQL in SELECT statements

## Lesson 3: The Basics of Core Data Services in ABAP

### Lesson Objectives

After completing this lesson, you will be able to:

- Describe the concept of ABAP Core Data Services
- Use expressions, joins, aggregations, grouping and filtering in CDS views
- Use Open SQL to select data based on CDS views

## Lesson 4: Associations in Core Data Services

### Lesson Objectives

After completing this lesson, you will be able to:

- Use CDS views with associations

## Lesson 5: Outlook: More Interesting Features of CDS

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain CDS view extensions
- Define and use CDS views with input parameters
- Explain authorization checks with CDS

## Lesson 1: SAP HANA Native SQL Syntax

### Lesson Objectives

After completing this lesson, you will be able to:

- Know the basics of SAP HANA native SQL syntax

## Lesson 2: ABAP-Managed Database Procedures

### Lesson Objectives

After completing this lesson, you will be able to:

- Understand ABAP-Managed Database Procedures
- Create an ABAP-Managed Database Procedure
- Call an ABAP-Managed Database Procedure in ABAP
- Know how AMDP enhancement works
- Debug an ABAP-Managed Database Procedure

## Lesson 3: 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 1: Working with SAP HANA Objects in SAP HANA Studio

### Lesson Objectives

After completing this lesson, you will be able to:

- Analyze and test SAP HANA objects

## Lesson 2: Consuming SAP HANA Objects with Native SQL

### Lesson Objectives

After completing this lesson, you will be able to:

- Read from SAP HANA views with native SQL
- Call SAP HANA stored procedures with native SQL

## Lesson 3: Using Proxy Objects to Consume SAP HANA Objects

### Lesson Objectives

After completing this lesson, you will be able to:

- Define and use external views
- Understand Database Procedure Proxies



## Lesson 1: Transporting HANA Objects with ABAP Transport Requests

### Lesson Objectives

After completing this lesson, you will be able to:

- Know the techniques for ABAP transport of SAP HANA objects
- Understand SAP HANA Transport Container (HTC)
- Use SAP HANA Transport for ABAP (HTA)

## Lesson 2: Using SAP HANA Full Text Search

### Lesson Objectives

After completing this lesson, you will be able to:

- Use SAP HANA full-text search
- Enable proposal search and fulltext search in a dictionary search help
- Describe SAP HANA linguistic search

## Lesson 3: ABAP List Viewer with Integrated Database Access (ALV IDA)

### Lesson Objectives

After completing this lesson, you will be able to:

- Understand the basics of SAP List Viewer with Integrated Data Access (ALV with IDA)
- Describe the differences between ALV with IDA and classical ALV
- Display data with ALV with IDA
- Use select options in the data retrieval of ALV with IDA
- Supply values for input parameters of views



## Lesson 1: Optimizing a Report with CDS View and ALV IDA

### Lesson Objectives

After completing this lesson, you will be able to:

- Optimizing a report with CDS view and ALV with IDA



## **Lesson 1: Additional ABAP Language Enhancements**

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Use inline data declarations in ABAP code

## **Lesson 2: External Session Debugging of ABAP-Managed Database Procedures**

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Debugging ABAP-Managed Database Procedures before NetWeaver 7.50