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Modern ABAP Foundations

From Code to Enterprise in 3 days

FA-0323 · 3 days

Software Development · Mainframe & Enterprise Systems

Introduction

Learn ABAP from the ground up—master core concepts, tools, and modern patterns.

This course cuts through the jargon and dives into what matters most: writing meaningful ABAP code that powers enterprise systems today. You'll start with the essentials—ABAP's syntax, environment, and data handling—then move smoothly into object-oriented programming, database access, and modern ABAP frameworks.

On the final day, you'll glimpse how this evolves within **SAP S/4HANA**, equipping you to not just code, but craft scalable, future-ready solutions. From day one, everything taught reflects real SAP developer challenges and current industry demand.

Learning outcomes

By the end of this course, participants will be able to:

- Understand ABAP's architecture, development environments (SAP GUI and ABAP in Eclipse), and transaction usage.
- Write and debug basic ABAP programs including reports and module pools with correct syntax and structure.
- Use ABAP Dictionary (DDIC) to define tables, data elements, structures, views, and domain objects.
- Manipulate internal tables and data constructs effectively.
- Utilize ABAP SQL for data selection, modification, and transactional handling.
- Apply object-oriented principles using ABAP Objects: classes, methods, interfaces, inheritance, polymorphism.
- Explore modern ABAP techniques: inline declarations, chained statements, BTAP RESTful Application Programming Model (RAP), ABAP CDS Views (if time permits).

- Gain a high-level overview of **SAP S/4HANA**, its relationship to ABAP, and how ABAP development shifts in an S/4HANA context.

Prerequisites

- Proficiency in any modern procedural or object-oriented programming language (e.g., Java, Python, C#).
- Basic understanding of relational databases (tables, queries, schemas).
- Eagerness to work within SAP's development tools and environment.

Training outline

1. ABAP Fundamentals

Introduction to ABAP

1. History: Origins in 1983, evolution from SAP R/2 to R/3 and S/4HANA
2. Procedural base and 4GL nature of ABAP

Development Environments

1. ABAP Workbench
2. ABAP in Eclipse (ADT): setup and workflow

Writing First ABAP Program

1. Structure of a report (e.g., REPORT ... WRITE 'Hello, World!')
2. Syntax rules: statements ending with period, comments (* and ")
3. Chained statements, inline declarations, whitespace sensitivity

Data Types and Variables

1. Built-in types (I, P, F, C, STRING, etc.) and type declaration
2. Inline DATA(...) assignment

2. Data Handling & ABAP Dictionary

Understanding ABAP Dictionary and metadata management

1. Tables: transparent, pooled, clustered
2. Structures, domains, data elements, views, search helps, lock objects.

Internal Tables

1. Defining, populating, iterating, and manipulating internal tables

Open SQL in ABAP

1. Basic SELECT, INSERT, UPDATE, DELETE
2. Advanced Open SQL features: host expressions, path expressions (if covered)

3. Modularization & Control Flow

1. Modular units: FORM/ENDFORM, function modules, include programs
2. Control structures: IF, CASE, LOOP AT, WHILE, etc.
3. Error handling: simple exceptions and checks

4. Object-Oriented ABAP

1. Introduction to ABAP Objects: classes, methods, attributes.
2. Encapsulation, inheritance, polymorphism, interfaces
3. Creating and using class definitions in ABAP

5. Modern ABAP Techniques

1. Inline declarations and expressions (e.g. DATA(...)), chaining
2. ABAP RESTful Application Programming Model (RAP): concepts & use
3. ABAP CDS Views: defining data models and integration into Open SQL

6. Introduction to SAP S/4HANA

1. What is S/4HANA and its evolution from SAP ERP
2. How ABAP is used in S/4HANA vs traditional environments
3. Key modern paradigms: ABAP Cloud, S/4HANA-ready development, RAP as primary model
4. Practical implications: performance, CDS layers, Fiori integration (overview-level)

Overview of the format

- **Day 1**: Build a solid foundation—syntax, tools, basic programming, and data handling.
- **Day 2**: Lift into structured architecture—data dictionary, modularization, OO programming, and modern features.
- **Day 3**: Bring it all together with modern ABAP approaches and a forward-looking overview of S/4HANA—bridging current skill to future needs.

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