

Developing Advanced Extensions with SAP Cloud SDK

Course Description:

This learning journey provides developers with the knowledge and skills required to build side-by-side extensions on SAP Business Technology Platform (BTP) for SAP solutions such as SAP S/4HANA Cloud Public Edition and SAP SuccessFactors using SAP Cloud SDK. Participants will learn how to develop and integrate Java, JavaScript, and TypeScript extension applications, interact with SAP APIs, and deploy applications to SAP BTP. The course also includes advanced topics such as resilience, caching, authentication, authorization, and multi-target application development.

Audience Profile:

This course is intended for developers who want to extend SAP solutions using SAP Cloud SDK. It is ideal for those seeking hands-on experience in building and deploying extension applications on SAP BTP.

Prerequisites:

- **Mandatory:** Managing Clean Core for SAP S/4HANA Cloud
- **Recommended:** Programming knowledge in Java and JavaScript

Course Objectives:

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

- Explain side-by-side extensibility for SAP S/4HANA Cloud.
- Activate and test SAP APIs for cloud extensions.
- Develop and deploy Java, JavaScript, and TypeScript applications using SAP Cloud SDK.
- Implement resilience, caching, authentication, and authorization in extension applications.
- Work with multi-target applications and deployment strategies.

Table of Contents (TOC):

Unit 1: Introducing SAP S/4HANA Cloud Public Edition Extensibility

- Exploring Side-by-side Extensibility
- Testing APIs in the SAP Business Accelerator Hub
- Activating APIs in SAP S/4HANA Cloud

Unit 2: Introducing Cloud Extension Applications Development

- Preparing Development SDK and Environment
- Extending with SAP Business Technology Platform
- Creating a Free Trial Account in SAP BTP
- Understanding SAP Cloud SDK and SAP Cloud Application Programming Model
- Using OData Mock Service for Business Partner API of SAP S/4HANA Cloud
- Setting Up a Mock Server

Unit 3: Developing Java Extensions

- Developing with SAP Cloud SDK for Java
- Debugging a Spring Boot Application in Cloud Foundry
- Querying SAP APIs in a Java Program
- Querying SAP APIs in a Java Spring Application
- Implementing Resilience and Caching in Java Applications
- Implementing CRUD Operations in a Java Spring Application
- Deploying Java Spring Applications to SAP BTP
- Implementing Authentication and Authorization in Java Spring Applications

Unit 4: Developing JavaScript and TypeScript Extensions

- Developing with SAP Cloud SDK for JavaScript and TypeScript
- Debugging a Nest.js Application in Cloud Foundry
- Querying SAP APIs in JavaScript and TypeScript Applications
- Implementing Resilience and Caching in TypeScript NestJS Applications
- Implementing CRUD Operations in a TypeScript NestJS Application
- Deploying TypeScript NestJS Applications to SAP BTP
- Implementing Application Router in TypeScript NestJS Applications
- Sending Emails using SAP Cloud SDK
- Function-as-a-Service in Kyma Environment
- Implementing Authentication and Authorization in TypeScript NestJS Applications

Unit 5: Developing a Multi-target Application

- Introducing Multi-target Application Development
- Understanding and Working with the Mta.yaml File
- Developing a Multi-target Application in SAP Business Application Studio