SAP BTP – Backend Developer – SAP Cloud Application Programming Model

Course Description

This course is designed to build end-to-end backend development capabilities on **SAP Business Technology Platform (SAP BTP)** using the **SAP Cloud Application Programming Model (CAP)**. The course begins with SAP BTP fundamentals covering architecture, integration, data, analytics, AI, security, and sustainability. It then introduces clean core principles for SAP S/4HANA Cloud, followed by hands-on development using SAP Business Application Studio and CAP to design, build, secure, deploy, and integrate side-by-side extensions aligned with SAP best practices and cloud-compliant standards.

Audience Profile

- Backend Developers working on SAP BTP

- Developers extending SAP S/4HANA Cloud applications

- SAP Technical Consultants and Application Developers

- Professionals preparing for CAP-based backend development roles

Prerequisite

- Basic knowledge about IT landscapes

- Familiarity with programming concepts

- Recommended: basic understanding of cloud development

- Recommended: exposure to JavaScript (Node.js) or similar languages

Course Objective

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

- Understand SAP BTP strategy, architecture, services, and commercial models

- Apply clean core principles for SAP S/4HANA Cloud extensibility

- Develop cloud-native backend applications using SAP CAP

- Use SAP Business Application Studio for end-to-end development

- Secure applications using authorization and trust management

- Deploy and integrate applications on SAP BTP runtimes

- Build compliant side-by-side extensions aligned with SAP best practices

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- SAP BTP Architecture and Services

- Application Development and Automation on SAP BTP

- Integration on SAP BTP

- Data and Analytics on SAP BTP

- Artificial Intelligence on SAP BTP

- Security Fundamentals on SAP BTP

Module 2: SAP Cloud for Sustainable Enterprises

- Clean Core for SAP S/4HANA Cloud

- Benefits of Clean Core

- Clean Core Dimensions and Best Practices

Module 3: SAP Business Application Studio Fundamentals

- Developer productivity and tooling

- SAP Business Application Studio overview

- Account and dev space setup

- Development environment walkthrough

Module 4: Building Applications with SAP Business Application Studio

- Application use case and architecture

- Creating new projects

- Designing data models

- Defining CAP-based services

- Consuming SAP S/4HANA services

- Adding sample data

- Building UI using SAP Fiori tools

- Previewing and testing applications

- User role creation and access control

- Version control using Git

- Deployment to SAP BTP Cloud Foundry

- Managing application lifecycle using CI/CD

Module 5: Mobile Enablement and Multitenancy

- Adding mobile UI applications

- Enabling multitenancy for SAP BTP applications

Module 6: SAP Cloud Application Programming Model (CAP) Fundamentals

- Side-by-side extensibility concepts

- CAP architecture and principles

- SAP BTP Developer's Guide overview

Module 7: Setting Up a CAP Project

- OData protocol fundamentals

- JSON and YAML configuration

- End-to-end CAP use case

- Creating CAP-based services

Module 8: Serving User Interfaces in CAP

- Serving UIs in CAP applications

- Generating SAP Fiori elements–based UIs

Module 9: Custom Business Logic in CAP

- Event handling in CAP

- Custom business logic scenarios

- Error handling strategies

- Implementing custom logic

- Local launch pages

Module 10: Authorization and Trust Management

- Authorization and trust management concepts

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- Extensibility and connectivity in CAP

- Unit testing concepts

- Creating and managing test cases

- Integrating external services

Module 12: Deploying CAP Applications

- Deployment options in CAP

- CAP deployment lifecycle

- Preparing applications for SAP BTP Cloud Foundry

- Deploying and validating applications

Module 13: Integrating with SAP Build Work Zone

- SAP Build Work Zone overview

- Integrating CAP applications into SAP Build Work Zone

Module 14: Certification and Role Readiness

- SAP CAP concepts alignment

- CI/CD fundamentals for SAP BTP

- SAP BTP runtime alignment

- SAP S/4HANA Cloud extensibility alignment