

ADVANCED SAP FIORI FULL-STACK APPLICATION DEVELOPMENT & INTEGRATION ON SAP BTP

Courses Covered: UX405 + UX406 + UX410 + CLD200 + CLD900 + S4D437 + S4D430

Total Parts: 7

Duration: ~ 80 Hours

Total Modules: 48

Course Description

This learning journey provides an advanced, end-to-end path for SAP Fiori and SAP BTP developers, combining UX405 (Advanced SAP Fiori Elements Development), UX406 (Getting Started with Creating an SAP Fiori Elements App Based on an OData V4 RAP Service), UX410 (Developing SAP Fiori UIs), CAPM/CLD200 (Develop Extensions with CAP Following the SAP BTP Developer's Guide), CLD900 (SAP Cloud Platform Integration Service Overview), CDS (Building Data Models with the ABAP Dictionary and ABAP Core Data Services), and RAP (Building Transactional Apps with the ABAP RESTful Application Programming Model).

Participants will deepen their expertise in SAP Fiori elements development on CAP- and RAP-based OData V4 services, SAP Fiori UI extensibility, side-by-side extensibility on SAP BTP, ABAP CDS data modeling, and SAP Integration Suite fundamentals. The journey is designed for developers who already have foundational SAPUI5/Fiori experience and want to build advanced, production-ready, and integration-aware SAP Fiori applications.

Audience Profile

- SAP Fiori / SAPUI5 Developers
- SAP ABAP Developers
- SAP BTP Developers
- SAP Integration Consultants
- SAP Technical Consultants
- Solution Architects
- Full-Stack SAP Developers

Prerequisites

- Working knowledge of SAPUI5 and SAP Fiori elements development
- Basic understanding of the ABAP RESTful Application Programming Model (RAP)
- Familiarity with OData services and REST-based APIs
- Basic understanding of SAP BTP and SAP Business Application Studio
- Basic knowledge of ABAP and CDS view concepts
- Completion of, or familiarity with, UX400 (Developing UIs with SAPUI5) is recommended

Course Objectives

After completing this learning journey, participants will be able to:

- Develop advanced SAP Fiori elements applications on CAP- and RAP-based OData V4 services

- Build and extend SAP Fiori elements List Report and Object Page applications
- Configure SAP Fiori launchpad navigation and extensibility
- Extend SAP Fiori UIs using SAPUI5 extension points, view extensions, and controller extensions
- Develop and deploy side-by-side extensions using the SAP Cloud Application Programming Model (CAP)
- Implement authorization, trust management, and unit testing in CAP applications
- Explain SAP's integration strategy and the capabilities of SAP Integration Suite
- Build data models using the ABAP Dictionary and ABAP Core Data Services (CDS)
- Design and implement transactional business objects using the ABAP RESTful Application Programming Model (RAP)
- Implement draft handling, compositions, validations, determinations, and business events in RAP
- Enable and develop data model and behaviour extensibility for RAP-based applications

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Part 1: UX405 – Advanced SAP Fiori Elements Development

Module 1: SAP Cloud Application Programming Model Fundamentals

Topics

- Understanding the CAP Programming Model
 - Domain Modeling and Common Reuse Types and Aspects
 - CDS Fundamentals and Working with OData
 - Defining Actions and Functions in CAP
-

Module 2: Building an SAP Fiori Elements App on CAP OData V4

Topics

- Using the SAP Fiori Application Generator
 - Defining Annotations for List Report, Object Page, and Overview Page
 - Setting Up Navigation in the SAP Fiori Launchpad
-

Module 3: Advanced Floorplans, Cards, and Custom Extensions

Topics

- Developing Overview Page Cards and Analytics
 - Understanding Data Measures and Dimensions in Analytics
 - Creating Custom Cards Components
 - Using SAP Fiori Tools Extensions for Visualization and Code Generation
-

Module 4: SAP Fiori Elements Simulations and Testing

Topics

- Running SAP Fiori Elements Simulations

- Validating Annotations and UI Vocabulary
-

Part 2: UX406 – Getting Started with Creating an SAP Fiori Elements App Based on an OData V4 RAP Service

Module 5: Overview of SAP Fiori Elements for OData V4 and ABAP RAP

Topics

- Getting an Overview of SAP Fiori Elements for OData V4
-

Module 6: Introduction to the ABAP RESTful Application Programming Model

Topics

- Getting an Overview of the ABAP RESTful Application Programming Model (RAP)
-

Module 7: CDS Annotations, Virtual Elements, and OData V4 Service Publishing

Topics

- Adding ABAP CDS Annotations and Using Virtual Elements
 - Publishing the OData V4 Service
-

Module 8: Creating a List Report App in SAP Business Application Studio

Topics

- Creating an SAP Fiori Elements App using the List Report Template
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Module 9: Configuring List Report Columns and Flexible Column Layout

Topics

- Adding and Editing Table Columns
 - Configuring the Flexible Column Layout
-

Module 10: Configuring Search, Filtering, and Value Help

Topics

- Configuring Search and Filter Bar Fields
 - Configuring Value Help
-

Module 11: Configuring the Object Page Header and Data Points

Topics

- Adding Fields as Data Points to the Object Page Header

Module 12: Configuring Object Page Sections and Facets

Topics

- Configuring Object Page Sections and Facets

Module 13: Implementing Internal and External Navigation

Topics

- Configuring Internal Navigation Between Pages
- Configuring External Navigation

Module 14: Using SAP Fiori Tools for Development and Deployment

Topics

- Using SAP Fiori Tools Graphical Editors and Code Completion
- Deploying the App to the SAP BTP ABAP Environment

Module 15: Extending the App with the Flexible Programming Model

Topics

- Using the Flexible Programming Model to Add Custom Code

Part 3: UX410 – Developing SAP Fiori UIs

Module 16: SAP Fiori UI Extensibility Concepts

Topics

- Explaining Extension Points in SAPUI5
- Implementing View Extension, Modification, and Replacement
- Implementing Controller Extensions and Hook Methods
- Extending Translations with Customer Properties

Module 17: SAP Fiori Launchpad Configuration and Navigation

Topics

- Configuring the SAP Fiori Launchpad
- Implementing Launchpad Navigation

Module 18: SAP Fiori Design Guidelines and Floorplans

Topics

- Understanding Floorplans as Defined in the SAP Fiori Guidelines
 - Understanding List Report, Object Page, and Worklist
 - Understanding the Overview Page and Wizard Floorplan
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Module 19: SAP Fiori Layout Decision Guidelines

Topics

- Differentiating Application Framework, Page Layout, and Floorplans
 - Understanding the Flexible Column Layout, Full Screen, and Split Screen Layouts
 - Understanding Master-Detail Layout
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Module 20: Developing Custom SAP Fiori UIs with SAP BTP and SAP BAS

Topics

- Developing Custom SAP Fiori UIs using SAP Business Technology Platform
 - Developing SAP Fiori UIs for Navigation in the SAP Fiori Launchpad
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Part 4: CLD200 – Develop Extensions with CAP Following the SAP BTP Developer's Guide

Module 21: Discovering the SAP Cloud Application Programming Model (CAP)

Topics

- Identifying the Need for Side-By-Side Extensibility
 - Exploring the SAP Cloud Application Programming Model
 - Introducing the SAP BTP Developer's Guide
-

Module 22: Setting Up the CAP Project

Topics

- Introducing the OData Protocol
 - Explaining JSON/YAML
 - Discovering the End-to-End Use Case
 - Creating CAP-Based Services
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Module 23: Serving User Interfaces in CAP

Topics

- Serving User Interfaces in CAP
 - Generating User Interfaces
-

Module 24: Adding Custom Business Logic

Topics

- Explaining Event Handling in CAP
 - Explaining the Need for Custom Business Logic
 - Describing Error Handling
 - Adding Custom Business Logics
 - Adding Local Launch Pages
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Module 25: Understanding Authorization and Trust Management

Topics

- Describing Authorization and Trust Management (XSUAA)
 - Defining CDS Restrictions and Roles
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Module 26: Consuming External Services

Topics

- Explaining Extensibility and Connectivity in CAP
 - Explaining Unit Tests
 - Adding Test Cases
 - Adding External Services
-

Module 27: Deploying the Application

Topics

- Identifying Deployment Options in CAP
 - Explaining the Deployment Process
 - Preparing for Deployment in the SAP BTP, Cloud Foundry Runtime
 - Deploying the Application
-

Module 28: Integrating into SAP Build Work Zone, Standard Edition

Topics

- Explaining SAP Build Work Zone, Standard Edition
 - Integrating the App with SAP Build Work Zone
-

Part 5: CLD900 – SAP Cloud Platform Integration Service Overview

Module 29: Describing the Integration Strategy of SAP

Topics

- Presenting the SAP Integration Strategy
- Introducing the Clean Core Approach

Module 30: Introducing SAP Integration Suite

Topics

- Discussing Distributed Architectures and their Challenges
- Understanding the SAP Integration Suite
- Navigating SAP Integration Suite: Capabilities and Considerations
- Exploring the Capabilities of SAP Integration Suite

Module 31: Understanding API Management

Topics

- Understanding API Management
- Understanding the Components of API Management
- Understanding API Lifecycle
- Building An API Provider
- Building API Proxies
- Using Policies
- Editing APIs
- Working with Developer Hub
- Deploying a Product to Developer Hub
- Working with Graph

Module 32: Implementing Cloud Integration

Topics

- Introducing the Basic Concepts
- Employing Connectivity Options
- Understanding the Operating Model in SAP Integration Projects
- Understanding System Scope in the Cloud Foundry Environment
- Defining Design Guidelines
- Developing Integration Content
- Monitoring and Logging Message
- Utilizing the Camel Data Model and Simple Expression Language
- Understanding the Integration Flow

Module 33: Exploring Event Mesh

Topics

- Introducing Event-Driven Architectures
 - Understanding Direct and Guaranteed Messaging
 - Discussing SAP Event Mesh
 - Understanding the Event Mesh Capability in SAP Integration Suite
 - Introducing SAP Integration Suite, Advanced Event Mesh
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Part 6: S4D430 – Building Data Models with the ABAP Dictionary and ABAP Core Data Services

Module 34: Exploring Data Modeling in ABAP

Topics

- Exploring ABAP Dictionary
 - Exploring ABAP Core Data Services
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Module 35: Creating Database Tables

Topics

- Defining Domains and Data Elements
 - Creating Database Tables
 - Handling Changes to Database Tables
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Module 36: Defining Global Data Types

Topics

- Using Dictionary Objects as Data Types
 - Defining Dictionary Structures
 - Defining Dictionary Table Types
-

Module 37: Defining Basic CDS Views

Topics

- Defining a Basic CDS View
 - Using ABAP Annotations in CDS Views
 - Building Views on Views
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Module 38: Defining Relationships and Associations

Topics

- Defining Relationships Between Database Tables
 - Defining Associations Between CDS Views
 - Using Associations in Path Expressions
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Module 39: Using Code Pushdown in CDS Views

Topics

- Implementing SQL Expressions in CDS Views
- Calling Built-in Functions in CDS Views
- Defining CDS Views with Input Parameters
- Processing Data Sets in CDS Views

Module 40: Defining Meta Objects for Dictionary Objects and CDS Views

Topics

- Preventing Unauthorized Access to Data
 - Extending Dictionary Objects
 - Extending CDS Views
 - Creating Metadata Extensions
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Part 7: S4D437 – Building Transactional Apps with the ABAP RESTful Application Programming Model

Module 41: Explaining the ABAP RESTful Application Programming Model

Topics

- Understanding the ABAP RESTful Application Programming Model
 - Defining OData UI Services
-

Module 42: Working with Business Objects

Topics

- Defining Business Objects and their Behavior
 - Using the Entity Manipulation Language to Access Business Objects
 - Understanding Concurrency Control
 - Defining Actions and Messages
 - Implementing Authority Checks
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Module 43: Adding Basic Operations Update and Create

Topics

- Defining Static Field Control and Value Helps
 - Implementing Input Checks Using Validations
 - Setting Values Using Numbering and Determinations
 - Implementing Dynamic Feature Control
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Module 44: Developing Draft-Enabled Services

Topics

- Understanding the Draft Concept
 - Implementing the Behavior of Draft-Enabled Business Objects
 - Defining Determine Actions and Side Effect
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Module 45: Defining Compositions

Topics

- Defining Composite Business Objects
 - Defining Compositions in OData UI Services
 - Implementing the Behavior of Composite Business Objects
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Module 46: Implementing Unmanaged Data Access

Topics

- Exploring Behavior Implementation Options
 - Implementing Unmanaged Business Objects
 - Implementing Data Access in Managed Business Objects
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Module 47: Integrating Business Events

Topics

- Raising and Handling Business Events
 - Working with Event Parameters
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Module 48: Enabling and Using Extensibility

Topics

- Exploring Extensibility Options
 - Enabling Data Model Extensibility
 - Developing Data Model Extensions
 - Enabling and Developing Behavior Extensions
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