

UI5 and Fiori Development Training with OData **on Business Application Studio and WebIDE**



Target Audience: Application Developers, UX Consultants, Portal and ABAP Consultants, Designers, Freshers want to start career in SAP

Prerequisites-Basic knowledge of Application Program programming, Basic programming skills. Core ABAP knowledge will be helpful.

Duration: 40+ Hours – A promise of no copy paste

We also provide server access on-demand which has all latest stuff you need.

At the end of the training you

- Will be able to work on both development and maintenance projects on SAP Fiori
- Will be able to develop Fiori UX with high efficiency and best-practices
- Understand exposing ERP data to Fiori Applications
- Debug and Troubleshoot Fiori Apps and Integrate with Launchpad
- Get used to latest tools and services offered by SAP to Develop Apps

Highlights:

7+ Case Studies | Latest Server

Newest Concepts | Top notch tooling like BAS- Business Application Studio

Certification Guidance | Interview Questions

Certification Code – C_FIORIDEV_21



Phase 1: Fundamentals for UI5

Getting Started

- What is UI5 framework?
- Introduction to the Development tools
 - Business Application Studio (BAS)
 - WebIDE
- Step by Step Process to Setup BAS
- Steps to Setup WebIDE Personal Edition

HTML 5

- Introduction to the Client-Server Architecture
- What is HTML?
- Difference Between HTML and HTML5
- Creating our first web page
- Introduction to Tags in html
- Understanding the Attributes
- Understanding the Multimedia Tags
- Making a Table using the Table Elements
- Making a Form using form tag
- Understanding the GET/POST methods in form
- Understanding Document Object Model (DOM)
- Other HTML related terms

Cascading Style Sheet (CSS)

- What is CSS and Why we use CSS?
- Understanding Ways of Applying CSS
 - Inline style
 - Internal style



- External style
- Understanding the Box Model
- Understanding What is Responsive Web Design
- Concept of Classes in CSS
- Styling Using ID's, Child Selectors and pseudo classes
- Styling an HTML page using CSS

Java Script (JS)

- Introduction to JavaScript
- Understanding the Syntax of JS
- Understanding Naming Convention in JS
- Describing the Ways of Using JS
 - Inline JS
 - Internal JS
 - External JS
- Types of JS
 - Client-side JS
 - Server-side JS
- Introduction to Console
- Variables and Data Types
- Understanding Different Data Types
 - Operators
 - Integer
 - String
 - Float
 - Object
 - Events
- Concept of Functions in JS
- Functions with Parameters



- **Function with Multiple Parameters**

Understanding the Concept of Non-Blocking I/O

- **Understanding the Meaning Synchronous and Asynchronous function**
- **Understanding the Concept of Call back and Promise in JS**
- **Understanding the concept of Array and Object**
- **Concept of Conditional Statements**
 - If, else
 - Nesting if
 - Switch case
- **Concept of Loops**
 - For loop
 - While loop
- **Use of JS for Validations in different elements in HTML**
- **Understanding Different type of Operations on HTML elements**
 - Creating
 - Modifying
 - Appending
 - Deleting
- **Concept of Object-Oriented JavaScript**
- **Concept of JavaScript Object Notation (JSON)**
- **Use cases of JavaScript**

jQuery

- **Introduction jQuery**
- **Concept of Write less and Do more in jQuery**
- **Understanding the Syntax of jQuery**



UI5 and Fiori Development Training with Business Application Studio and WebIDE

<https://www.anubhavtrainings.com/ui5-and-odata-training>

- **Using Selectors in jQuery**
- **Understanding the Concept of Content Delivery Network (CDN)**



Phase 2: Fundamentals for UI5

Core Concepts of UI5 Framework

- What is Ui5
- Understanding the Structure of UI5 framework
- Concept of SAPUI5 components
 - Design Time Components
 - Run Time Components
- How UI5 framework is structured
- Understanding the Use of SAPUI5 SDK (Software Development Kit)
- Understanding how to use
 - Constructors
 - Properties
 - Aggregation
 - Association
 - Events
 - Methods
- Basic Idea of Object-oriented programming
- Concept of Association, Aggregation and Composition in OOP's
- Understanding the Control Hierarchy
- How to use Parent Class

MVC (Model View Controller) Architecture

- What is MVC Architecture?
- What are Views and Types of Views?
- Making a different type of views
- What are Models?
- What is Controller and types of controller?



- Understanding the Skeleton of a Controller

Concept of Control Objects in Sap UI5

- What are Control Objects?
- How to get Application element object?
- How to use get UI5 element object?
- Understanding the flow of Execution of an Application
- Understanding what is Event handler and how to use it
- Concept of 'this' pointer

Creating XML View

- What is XML?
- Syntax of XML
- How an XML View is created?
- Understanding the use of namespace in xml View
- Advantages of using XML Views
- Creating a Simple form using xml and aggregations

Concept of Base Controller and Hook Methods

- What are Hook Methods in Controller?
- Understanding the concept of Multiple Controller System
- What is a Base Controller?
- How to inherit Base Controller in other Controllers?
- Understanding Scaffolding template in a Controller
- Understanding Dependencies in a Controller
- Creating a Simple Web App which contains the use of Base Controller

Models in UI5

- What are Models?



- **Defining the types of Models**
 - **JSON Model**
 - **XML Model**
 - **Resource Model**
 - **OData Model**
- **What are Client Side and Server-Side Models?**
- **Step by Step Process to Create and Use a Model**
- **How to address Model properties?**
- **Creating a Table Control in UI5**
- **Binding a JSON Model with a Table in UI5**

Binding in UI5

- **What is Binding?**
- **Understanding Types of Binding**
 - **Property Binding**
 - **Expression Binding**
 - **Aggregation Binding**
 - **Element Binding**
- **What are Binding Modes?**
- **Understanding types of Binding Modes**
 - **One Way**
 - **Two Way**
 - **One Time**
- **Use Case of Expression Binding in UI5**

Thoroughly Understanding Aggregation Binding

- **What is Aggregation Binding?**
- **Understanding the Concept of Relative Path and Absolute Path**
- **Use cases of Aggregation Binding in different Fields**



- Input Field
- Selection Field
- Text Field
- Check Box, etc.
- Event handling in Table in UI5
- Understanding Debugging and Troubleshooting using Console in Browser window

Element Binding and Property Binding

- What is Element Binding?
- What is Property Binding?
- Different Syntaxes of Property Binding
 - Direct
 - Path Variable
 - Using Method
 - Using property Binding method
- Use cases of Element and Property Binding

Understanding the Concept Resource Model

- Introduction to Resource Model
- Understanding the requirements of the resource model
- Creating methods or Resource model
- Difference between a Developer and a Knowledge manager
- Syntax to use i18n properties in web application
- Switching App language Using the Resource Model

Concept of Formatters in UI5

- Introduction to the Formatters
- Understanding the need of formatter in application
- Syntax of Defining Formatter



- **Creating a Formatter Function**
- **Understanding the ways of using formatter in xml Views**

Phase 3: UX Development Using Fiori

Introduction to Fiori

- **What is Fiori Guideline?**
- **How to use Fiori Guidelines?**
- **UI5 vs Fiori Development**
- **Difference between UI and UX**
- **Understanding the Structure of a Fiori Application**
- **Use case scenario of Fiori Development**

Creating a New Fiori Like App

- **Introduction to the Component.js file**
- **Understanding the need of Component.js file**
- **Skeleton on Component.js**
- **Creating a Container based Fiori Application**
- **Describing the Concept of App container**
- **Understanding the Concept of Owner Component**

List UI Control

- **Introduction to the List Control**
- **Different types of List Controls in UI5**
- **Understanding the List Control Hierarchy**
- **Creating Different type of List Controls like**
 - **Object List Item**
 - **Display List Item**
 - **Action List Item**



- **Standard List Item**
- **Feed List Item**
- **Column List Item**
- **Select List Item, etc.**

Describing Manifest json

- **Introduction to Manifest json**
- **Understanding why we use manifest json**
- **Use case of manifest**
- **Step by step process to create manifest json in BAS**
- **Step by Step process to create manifest in WebIDE**
- **Defining data model in Manifest**
- **Instantiating manifest json file in our webapp**

Concept of List Operation and List Modes

- **Creating a WorkList app using List Control**
- **Introduction to the List Operations**
- **Different Type of List Operations**
 - **Sorting**
 - **Searching**
 - **Live Searching**
 - **Filtering**
 - **Grouping**
- **Implementation on List Operations in our Fiori app**
- **Introduction to the List Modes**
- **Understanding different type of List Modes**
 - **Single Select**
 - **Multi select**
 - **Master selects**



- Delete

Concept of Split app in UI5

- Understanding the meaning of master detail pages
- What is the structure of master detail pages?
- Navigation between master page and detail page
- Making a master detail application work in Mobile Phones

Table control in Fiori and Icon Tab Filter Bar

- What is Icon Tab Filter Bar?
- Method of Using the IconTab Filter bar
- Message Control to show success and error messages
- How to use Table Control in UI5?
- Creating rows in Table using Column List Control
- Difference Between a UI Table and Mobile Table
- Understanding how to view our application in mobile mode
- Making our application compatible with Mobiles and Tablets

Concept of Router and Navigation

- Introduction to the Router
- Understanding the need of router in an application
- How to Configure Router
- Method of Implementing the Router in our application
- Benefits of using Router in application
- Understanding what is Control Aggregation
- Understanding different types of Control Aggregation
- Concept of key in Router Configuration
- Initializing Router in webapp

Concept of Route Match Handler in UI5



- Introduction to the Route match Handler
- Understanding the importance of Route Match handler
- Method of Creating Route Match Handler
- How to initialize Route Match Handler
- Enabling the Browsers back and Forward Button
- Restoring the Current State of application after browser Reload

Modularization of views Using Fragments

- What is Modularization of views?
- Method of achieving the modularization
- Introduction to the fragments
- Understanding the Structure of Fragments
- How to create fragments
- How to Call a fragment in a View?
- How to Call a fragment in a Controller?
- Method of using one Fragment at multiple places
- Understanding the use of different controls in Fragment
- Use Case of Fragment in our Application

Fiori Architecture

- Introduction to the Fiori Architecture
- How Fiori Consumes data from SAP System
- Introduction to ECC and Application layer
- Understanding the Central hub Scenario
- Introduction to Fiori Front-End System and Fiori Back-end System
- Pros and Cons of ECC system and Central hub scenario
- Service Access techniques

Phase 4: OData Development and Consumption in Fiori



OData Basics

- Introduction NetWeaver Gateway
- NetWeaver Gateway Usage
- Gateway Architecture overview
- Technical Components Involved
- Connectivity option to Connect SAP system
- Introduction to REST
- Introduction to OData
- OData advantages
- Introduction to OData formats JSON and XML

Understanding Connectivity to SAP Server

- Introduction of Connectivity to SAP Server
- Understanding the Requirements before Connecting with the SAP server
- Understanding the need of Destination
- Steps of Destination Creation for WebIDE
- Understanding how to Create Project using Template in WebIDE
- Introduction to Neo-app.json file
- Creating a Fiori project using template in BAS
- Understanding the Configuration of Ui5 yaml file in BAS

Generating OData Service Using ABAP Programming

- Basics of ABAP Programming
- Introduction to the Function Modules in SAP (BAPI's)
- Understanding the Concept MPC and DPC classes
- Creating Our first GET service using ABAP
- Implementing Pagination concepts in the GET service



Implementing GET and Create Operation in OData Service

- Implementing the GET operation in OData services like
 - Filtering and Projecting (\$filter and \$select)
 - Sorting (\$orderby)
 - Client-Side Paging (\$top, \$skip, and \$inlinecount)
 - Counting (\$count)
 - Inlining (\$expand)
 - Formatting (\$format)
- Understanding Exception Handling in OData service
- Implementing the POST operation in OData service

Service Generation Techniques

- What is Service Generation?
- Understanding basics of Function Modules
- Introduction to the Postman tool
- Making a GET Call using the Postman
- Making a POST call using the Postman
- Understanding the Concept of X-csrf-Token

Concept of Association

- What are Associations?
- Requirement of Association in OData Service
- Types of Associations
- Implementing Association in Entity sets in OData service
- Implementing navigation property in OData service using Associations

Function import and Image Processing in the Service

- Introduction to function import



- **Creating a function in the OData Service**
- **Understanding the Concept of Working with Images in OData service**
- **Implementing the Image support in our OData Service**

Connecting the Backend system with Frontend (Fiori)

- **Configuring the SAP BTP Cockpit to the destination**
- **Configuring manifest json file to connect with OData service**
- **Creating xs-app.json in the our webapp in BAS**
- **Step by Step process of Connecting OData service with BAS**
- **Understanding how to use html5-repo mock service in BAS**
- **Using the Sap data in our Fiori app**

Performing CURDQ Operations in Fiori

- **Perform a POST request using Fiori**
- **Perform a DELETE request using Fiori**
- **Error Handling on Fiori side**
- **Understanding the use of Function Import in Fiori**
- **Use of Associates Properties of OData service in Bas**
- **Use of Associates Properties of OData service in WebIDE**

Deploying SAP Application to Backend System

- **Introduction to Deployment**
- **Why we need the Deployment of an application**
- **Deployment of an App using BAS**
- **Deployment of an app using WebIDE to ABAP repository**

Concept of Fiori Launchpad

- **Introduction to Fiori Launchpad**
- **Understanding the need of Fiori Launchpad**



- Introduction to LPD (Launchpad Designer)
- Step by step process to add our app to Fiori launchpad
- Adding app tile of our sap application in Launchpad

Understanding the Use of GitHub

- What is GitHub?
- What is the need of GitHub for Developers?
- How to create a git repository?
- Pushing a code to git repository using BAS tool
- Pushing a code to git repository using WebIDE
- How to handle conflicts in git while pushing a code
- How to resolve code conflicts in GitHub

Complementary Material

OOPS Application Program Complementary Sessions

- What is Object and class?
- Why to define a class?
- Components of class o Attributes - Instance, static, constant
- Methods- instance, static o Role of Attributes & Methods in OOPs programming
- Defining class in class builder o Accessing Attributes in a method
- Instantiation of object in report program o Visibility - Public, Private, Protected
- Method parameters - importing, exporting, changing, returning o Relationship between objects
- Association
- Aggregation
- Composition



- **Realization**
- **Generalization**
- **Interface**
- **Abstract class**
- **Type casting**
- **Widening Casting**
- **Narrow Casting**

