

## SAP Fiori Hybrid App development || SAP MDK Development on BTP

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

**Target Audience:** You are working as an SAP Fiori and UI5 developer in companies. You have been asked by customers to offer a complete native mobile app (apk,ipa) with offline capability along with bar code integration. They want you to also authenticate with google suite. In the light of advancement, we will also learn the MDK development.

**Prerequisites-** Complete UI5 and Fiori Development experience on VS Code with UI5 tooling is mandatory\*

**Duration: 25 Hours – A promise of no copy paste**

### ▶ What you get by joining our training

- 25 Hours of Detailed Lecture with Videos
- Support for issues and deployment (no job support)
- Presentation and Whiteboards
- Best-in-class cutting edge content
- Latest concepts on Business Application Studio
- End to End development with integration to S/4HANA APIs
- Cross Integration also covered with troubleshooting



### **Our Course Page:**

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

Say no to trainer who only teach copy-paste of code

## SAP Fiori Hybrid App development || SAP MDK Development on BTP

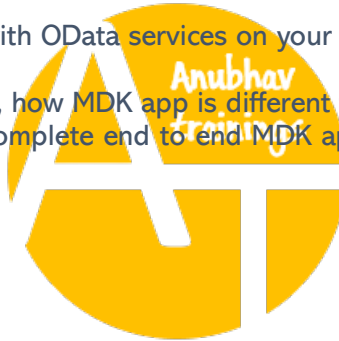
<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

### ▶ About the Course

In this course, we will learn building end to end mobile applications using existing SAP UI5 and Fiori Applications with real-time use cases. You will learn integrating with bar code, google authentication with GSuite, Build offline Fiori app and share APK and IPA with business users. We will cover MDK development on SAP BTP with Business Application Studio.

### ▶ In this Training of SAP Hybrid App development and MDK, we will:

- First, we will start with a short theory to understand what hybrid v/s native apps is
- Then we will learn general concepts of mobile app development of hybrid nature
- Then we will get starting with our development environment setup with VS Code, Node JS and cordova toolkit
- After that, we will learn to build end to end application with cordova
- We will then move our existing Fiori app with mock data to the hybrid app and deploy it to mobile phone.
- After that, we will learn debugging and troubleshooting with common issues
- Once we have developed our app, we will learn how to integrate with bar code, google authentication and offline feature
- Learn Latest integration concept with OData services on your S/4HANA system
- After that, we will start setup MDK, how MDK app is different from the hybrid apps
- We will design and develop and complete end to end MDK application with offline capability for android and add UI5 flavor to it



<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

Say no to trainer who only teach copy-paste of code

## COURSE CONTENT (UNIT WISE)

### Unit 1 – Introduction to the course (Demo Session)

- Who is this course for
- Course overview
- Start VS Code
- Create your first hybrid app
- Deploy and test our APK
- FAQs

### Unit 2 – Setup Tools and Dependencies

- Understanding required tools and frameworks
- Setting up development tools VS Code
- Setting up Java and Node JS
- Installing UI5 tooling
- Installing Cordova Framework
- Installing Android studio
- Adding gradle and configure same



### Unit 3 – Build first Cordova Application

- Introduction to Cordova
- Advantage of Cordova
- Limitations of Cordova
- Understand **config.xml**
- Create first Cordova App for android
- Create first Cordova App for iOS

### Unit 4 – First Fiori Hybrid App using Cordova

- Install Yeoman Generator
- Configure app with git and gitHUB
- Create first Hybrid Fiori app
- Build, and deploy the APK
- Test First Fiori app on phone

## Unit 5- Understanding bootstrap and run in offline

- Run the app in offline mode
- Experience the bootstrap issue in offline mode
- Understand UI5 tooling
- Use SAP UI5 advance tooling to download UI5 resources
- Run and test app locally w/o connectivity

## Unit 6- Performance improvement of Fiori App

- Understanding packing of Hybrid app resources
- Build with self-contained option
- Check performance of the build
- Improve performance with Execution Tasks in tooling
- Package correct resources
- Creating Component and preloads
- Integrating preloads to dist
- Streamline build and packaging process
- Use npm tasks
- Use @powershell for packaging www folder
- Test the automated build of hybrid app
- Improvement in the process with sap-ui-custom.js
- Solve navigation issue using Router

## Unit 7- Custom Login Screen

- Why we need custom login screen
- Adding login screen
- Solve challenge of navigation from App to SplitApp
- Build and check the problem arises during new updates
- Upgrade latest version
- Build and test APK in android simulator
- Test app being working on offline mode

## Unit 8- Cordova Plugins

- Introduction to plugin
- Add network information plugin

## SAP Fiori Hybrid App development || SAP MDK Development on BTP

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

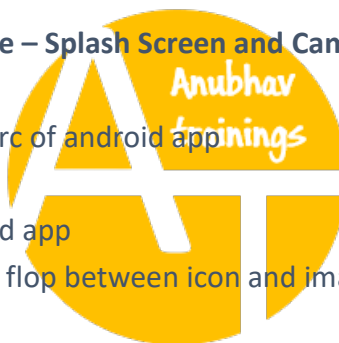
- Check the status of network using the plugin
- Integrate status of connection on master page
- Test and display device status using APK
- Deploy APK in simulator

### Unit 9- OData Integration with Hybrid App

- Integrate OData with dynamic login screen
- Creating OData model V2 at runtime
- Using concept of event attachMetadataLoaded for the app
- Testing the app as Fiori Developer in local browser
- Adapting app to run for business user in mobile with hybrid approach
- Security considerations
- Adding required special configuration to solve CORS issue with OData connection

### Unit 10 - Cordova Plugins Advance – Splash Screen and Camera Integration

- Introduction to splash screen
- Adding splash screens to the src of android app
- Testing splash screen plugin
- Adding camera plugin to hybrid app
- Adding Fiori UI Controls to flip flop between icon and images
- Display camera action button
- Trigger plugin to integrate with camera
- Common issues for camera integration and fix



### Unit 11- Offline Application development using offline DB SQLite

- Introduction to SQLite DB
- Test SQLite DB in local mode with VS Code environment
- Adding the SQLite offline store plugin
- Detailed explanation of login use-cases
  - o Scenario 1 – user is online, authenticate using OData and store credentials in offline dB mode
  - o Scenario 2 – user is offline, check for user existence
  - o Scenario 3 – user is offline, check for offline credentials
  - o Scenario 4 – user is offline, let user connect to app in offline mode
- Including promise with reusable DB api to manage credentials

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

Say no to trainer who only teach copy-paste of code

## SAP Fiori Hybrid App development || SAP MDK Development on BTP

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

- Create offline DB tables
- Insert data to offline DB Tables
- Select data from Offline stores

### Unit 12- Offline Application development using offline DB SQLite

- Anubhav Trainings Exclusive Reusable DB Utility class
- How to use our DB utility for offline operations in Node JS
- How to use our DB utility for offline operations in Fiori App
- Using promises with sync and async approaches
- Triggering operations
- Integrating the utility
- Troubleshooting and debugging for issues

### Unit 13- Offline Application development with GET

- Create offline store for storing application data
- Design consideration of Offline DB to manage data operations
- Create reuse functions to initialize offline store data in Base Controller
- Change binding in app to local model
- Understand flow of data management with offline store
- Integrating product entity to manage list and detail screen with offline store
- Debugging and finding root cause of GET issues
- Testing the app with product data

### Unit 14- Offline Application development with POST

- Understanding the algorithm to manage the store for POST
- Always store post request data to local DB store
- Design screen to sync changes to sap s/4hana server
- Manage sync status in the offline store
- Send changes to server at the online status

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

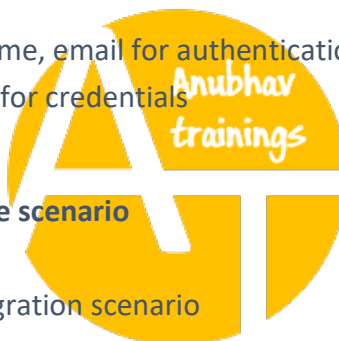
Say no to trainer who only teach copy-paste of code

### Unit 15- Open Questions and Gallery store

- Can we use mock server for offline store in Hybrid Fiori Apps
- Considerations for performance and real-time application pointers
- Working with plugin to store images captured using camera to phone gallery

### Unit 16 – G Suite Integration

- What is google suite
- How to create client application for corporates
- Using the client app key
- Adding google integration plugin
- Implementation of google IDP authentication
- Working with OAuth token
- Extract user details such as name, email for authentication
- Mapping table in offline store for credentials



### Unit 17 – Introduction to bar code scenario

- Understand the bar code integration scenario
- Create DB Design
- Develop tables in SAP System
- Build OData services
- Test Services

### Unit 18 – UI for bar code

- Understanding UI Mockup
- Create first project using template
- Integrate with OData service
- Build Fiori App with Article count screen
- Test the application in browser
- Keep placeholder for barcode

## SAP Fiori Hybrid App development || SAP MDK Development on BTP

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

### Unit 19 – Barcode integration

- Create new cordova app
- Add barcode plugin with android platform
- Integrate barcode plugin code with options to scan
- Make changes to connect to SAP OData in seamless way
- Handle event for bar code
- Build, deploy and test barcode application

### Unit 20 – Publish app to android store

- Generate sign in certificate
- Create the build.json file
- Sign the apk file
- Generate release apk
- Deploy app to android store



### Unit 21 – SAP BTP Introduction

- What is SAP BTP
- Why we need SAP BTP
- Introduction to Platform, Runtime and Environment
- What is backing services in BTP
- Understanding BTP Account management
- Setting up BTP Trial account
- Managing the BTP Environments

### Unit 22 – Getting Started with BTP MDK Development

- What is SAP MDK
- Why MDK and how it is different from Hybrid Development
- Getting started with Business Application Studio
- Developer On-boarding for MDK App
- Setting up MDK backing service
- Create First MDK Project in mobile service cockpit

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

Say no to trainer who only teach copy-paste of code



## SAP Fiori Hybrid App development || SAP MDK Development on BTP

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

- Create the ESPM destination

### Unit 23 – Create First MDK App and onboard

- Purpose of destination
- Connectivity for mobile application
- Connectivity for the web application
- Create First MDK project in BAS
- Understanding project structure and components
- Deploy first MDK app to SAP Cloud Foundry
- On-boarding SAP MDK Mobile client app

### Unit 24 – Create Customer Detail Application

- Adding Section page to the pages
- Adding the list control
- Perform binding with ESPM service
- Adding Button Control
- Navigation to the page control
- Adding Form cell page
- Adding object header in Customer details
- Navigation from List to detail page
- Testing web application and mobile app in MDK
- Integration with barcode
- Integration with Call and Email application in iPhone



### Unit 25 – Manage Edit Customer with offline action

- Create Form Cell page for customer app
- Adding Form Cell items for fields
- Adding key value properties
- Binding with OData
- Enable offline data store
- Sync offline store
- Handling success and error response while sync offline to online

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

Say no to trainer who only teach copy-paste of code

### Unit 26 – Create and Delete Customer app

- Add Create form cell page
- Adding field controls with cell properties
- Managing save and cancel actions
- Handling messages on save and on cancellation
- Loading model dialog on create action
- Closing model box
- Managing delete entity
- Create delete action with confirmation message
- Adding Rules to the MDK app for popup confirmation
- Fire the OData Entity delete and handle response
- Handling success and error response
- Integrate with main page

### Unit 27 – Integrate Dependent Entity

- Understanding OData dependent entity with expand
- Adding Customer orders page with Object table
- Binding with expanded entity properties
- Creating binding with i18n and currency and date time formatting
- Integrate object page below the customer data
- Bind the table with Top 5 order along with @odata.readlink
- Create Rule to count orders for customer
- Bind rule with UI layout
- Create new Order create page for customer orders
- Adding SimpleFormProperty and DatePicker controls
- Perform field control binding

### Unit 28 – Build MDK online CURD application

- Create new MDK online app
- Integrate Products, Purchase orders and purchase order items
- Adding custom styling to the application



## SAP Fiori Hybrid App development || SAP MDK Development on BTP

<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

- Include LESS for customized branding to app
- Applying CSS classes to the control binding
- Adding customized formatting with i18n

### Unit 29 – MDK push notification

- Cross app navigation to another MDK app
- Cross app navigation to Anubhav trainings website
- Configure push notification enablement to mobile center
- Adding Push notification register action on load of the app
- Show message after registration
- Send notification from mobile service center cockpit
- Internationalization and localization
- Translation of application texts and labels
- Test app in iPhone

### Unit 30 – Consume REST Service in MDK app

- Introduction to Fiori Elements
- Build MDK online app
- Include Fiori annotations to the app
- Test app with Fiori Element annotations
- Understand Swagger API for pet store
- Test the API on open browser
- Register destination for open REST API
- Use destination to create CRUD app with REST API
- Perform bindings
- Trigger the GET, POST request to the open REST API
- Test application in web and MDK Client



<https://www.anubhavtrainings.com/hybrid-mdk-app-development>

Say no to trainer who only teach copy-paste of code