HANA Cloud Development on Business Application Studio with BTP

Target Audience: *You are working as an SAP consultant in companies. Now you see there is a shift in industry towards the cloud-based solutions. SAP BTP plays a critical role in the process of transforming to intelligent enterprise.*

Prerequisites-Basic *knowledge of Basic programming, Knowledge of database, SAP Basic knowledge, Basic knowledge of JS will be helpful.*

Duration: 30 Hours – A promise of no copy paste

▶ **What you get by joining our training**

- 30 Hours of Detailed Lecture with Videos
- Support for issues and deployment
- Presentation and Whiteboards
- Real-time project Experience
- Exclusive Access to our GIT Repository
- Setup of SAP HANA cloud & Build native HANA objects like Calculation views
- Best-in-class cutting edge content
- Hands-on Exercises
- Latest concepts on Business Application Studio and VS Code
- End to End development using Cloud Application Programming Model (CAPM) in BTP
- HANA Cloud Covered for development

Our Course Page:

https://anubhavtrainings.com/hana-cloud-development-btp

Getting Started

- **What is SAP Business Technology Platform (BTP)?**
- **SAP BTP Account Creation Process.**
- **What is Cloud Foundry?**
- **History of Cloud Foundry**
- **Understanding how CF works**
- **Introduction to the Development tools**
  - **Business Application Studio (BAS)**
  - **VS Code**
- **Step by Step Process to Setup BAS**

NodeJS & JavaScript

- **What is Node JS?**
- **What is JavaScript?**
- **Basics of JavaScript**
- **How to use Functions in JavaScript**
- **Understanding the Asynchronous behavior of JS**
- **Concept of Events in NodeJS**
- **Steps to create a NodeJS project**
- **Creating a Server using the NodeJS and Express Module**
- **Introduction to the Node Package Manager (NPM)**
- **Creating Microservices using the NodeJS**

SAP HANA Cloud

- **What is SAP HANA Cloud?**
- **Difference b/w SAP HANA Cloud and On-premise**
- **Instances and Services in HANA Cloud**
- **Understanding the concept of HDI Containers**

- Introduction to the Runtime and Design Time Objects

- Process of Creating the HANA Cloud Instance

Cloud Application Programming Model (CAP)

- What is SAP CAPM?

- Understanding the CAP Architecture

- Understanding the benefits of using the CAP model

- Introduction to CDS and CDS-DK

- Creating the Dev Space for CAP development

- HANA Cloud Configuration for CAP Project

- What is Multi-Target Application (MTA)?

- Introduction to Git and GitHub

- Understanding the working of GitHub

- Creating a GitHub Repository for our project

Data Model, Associations, Aspects and Abstract Entities

- Creating our first Sample Database Table in CAPM

- CDS – Core Data and Service

- Understanding the Process of creating a db Table

- Understanding the EMP Data Model for our use case

- Build and Deployment Process of datamodel to HANA Cloud

- Understanding the concept of Association

- Introduction to the Aspects in CAPM

- Understanding the Use of Aspects and Abstract Entities

Concept of Localization and OData Basics

- Introduction to the concept of Localization

- Static and Dynamic Localization

- Loading initial data in HANA Cloud Database
- Introduction to OData
- Understanding the structure of OData Service
- Introduction to the CURD operations using Odata
- Odata queries
- Creating a Simple OData service using our CAPM Project
- Converting the Odata V4 to Odata V2 service
- Introduction to the Postman Tool
- Testing the OData calls using the postman tool

CDS Views and Modelling in SAP HANA Cloud

- Introduction to CDS Views in SAP CAP
- Understanding why we need views
- Creating CDS Views in SAP HANA Cloud
- Introduction to the Modeling in SAP HANA Cloud
- Legacy v/s new approach of Modeling
- Types of calculation views in HANA
- Creating Dimensional Model
- Creating CUBE Model
- Creating CUBE with Start Schema
- Exposing views using CAP Approach as a Odata service

SQL Scripting

- What is SQL Script?
- Advantage of SQL Script
- Types of SQL Script
- Basic Rules of creating SQL Script
- How to create SQL Script in HANA

- **Create Anonymous Block**

- **Create First Procedure**

- **Expose Procedure as a Service**

Data Flow, Procedures, Libraries and Functions in SQL Script

- **What is Data flow Logic?**
  - **Deep dive inside procedure**
  - **Simple procedure with database SELECT**
- **Parameterized procedure**
- **Using Implicit table variables in procedure**
- **Create SQL Script Library**
- **Consume library**
- **Create SQL Script functions**
- **Difference between procedure and functions**
- **Calling functions in procedure**
- **Debugging SQL Script code**

Event handlers, Entity operations and CDS Query Language (CQL)

- **Using the Entity Operations to restrict the service**
- **Introduction to the Generic Handlers**
- **Understanding the use of Custom Handlers**
- **Introduction to CDS Query Language (CQL)**
- **Debugging the NodeJS Code in BAS**

SAP UI5 and Fiori Elements

- **What is SAP UI5?**
- **Understanding the MVC Architecture in UI5**
- **Introduction to the Client Server Architecture**

- **Introduction to Fiori Elements**

- **Advantages of Using Fiori Elements**

- **Freestyle V/S Fiori Elements Apps**

- **Fiori List Report Application**

- **Fiori Annotation Introduction**

- **Adding Filter Fields and Columns using annotation**

- **Adding Custom Columns and Formatting Column Values**

- **Creating the Custom Action Buttons and Criticality using the Annotations**

- **Adding the Object Page using the Annotations**

Deployment and Security Basics and App router

- **Understand the Process of Deployment**

- **Step by Step Process of the Deployment**

- **Understanding the Concept of Security in SAP BTP**

- **Authentication and Authorization**

- **Introduction to the XSUAA service**

- **Understanding the Basic Terms related to XSUAA**

- **What is IdP- Identity Provider?**

- **What is JWT Token?**

- **Understanding the Concept of Approuter**

- **Understanding the flow of App Router**

xs-app.json and xs-security.json files

- **Adding Security configuration project**

- **Adding the xsuaa service definition to mta**

- **Introduction to the xs-security.json file**

- **Configuring the xs-security.json**

- Configuring xs-app.json

- Authentication Strategies

- Adding auth strategies for local and production environment

- Securing the API's

- Configuring the role template and role collection

HANA On-premise

- Understanding SAP HDI Container

- Use SAP XS_ADMIN user for HANA OP with WebIDE

- Create First project in SAP WebIDE for XSA development

- Adding DB Tables and upload sample data

- Create XSJS and XSODATA Services with @sap/xsenv @sap/xsjs

- Using Security using mta.yaml file

- Managing user

- Securing the API's

- Configuring the role template and role collection