Core UI5 Development, SAP Fiori and OData Integration

This document provides a structured, exam-friendly and practical explanation of SAP UI5, SAP Fiori, and OData integration. It starts from basic concepts and gradually moves to advanced development topics.

1. Introduction to SAP UI5

SAP UI5 is a JavaScript-based framework used to build responsive enterprise web applications.

Keyword: SAP UI5 – HTML5-based UI framework for SAP applications.

• Based on MVC architecture • Runs on browser • Device-independent UI

Diagram Representation:

User → Browser → SAP UI5 Framework → Backend Services

2. SAP UI5 Architecture

SAP UI5 follows Model-View-Controller (MVC) architecture.

MVC = Model (Data) + View (UI) + Controller (Logic)

• Model: Holds application data • View: UI layout (XML/HTML) • Controller: Event handling

Flow: User Action → Controller → Model Update → View Refresh

3. UI5 Application Structure

A standard UI5 project contains:

• manifest.json – Application descriptor • Component.js – App initialization • View.xml – UI layout • Controller.js – Business logic

Real-world Example: Employee management application

4. SAP Fiori Overview

SAP Fiori is a UX design principle and application framework.

Keyword: Fiori – Role-based, responsive SAP UX

• Simple • Coherent • Role-based • Adaptive

Fiori App Types: • Transactional • Analytical • Fact Sheet

5. Fiori Design Principles

• Role-based: Designed per business role • Responsive: Works on all devices • Simple: Minimal UI clutter • Consistent: Uniform design

Diagram: User Role → Fiori Launchpad → Fiori App

6. SAP Fiori Launchpad

Central entry point for all Fiori applications.

• Tiles represent apps • Catalogs and Groups control visibility • Authorization based access

7. OData Overview

OData (Open Data Protocol) is a REST-based data protocol.

Keyword: OData – Standard protocol for CRUD operations

Supports: • GET • POST • PUT • DELETE

URL Example: /sap/opu/odata/sap/ZEMP_SRV/Employees

8. OData Service Architecture

Frontend (UI5) → OData Service → SAP Backend

• Entity • Entity Set • Properties • Associations

9. Integrating OData with UI5

Steps to consume OData service:

• Define OData model in manifest.json • Bind model to view • Display data using controls

Code Example:

<Text text="{EmployeeName}" />

10. Data Binding in UI5

Data binding connects UI controls with data model.

Types: • One-way • Two-way • One-time

Important: Two-way binding updates model automatically

11. CRUD Operations in UI5

• Create – POST • Read – GET • Update – PUT • Delete – DELETE

Real-world Example: Create new employee record

12. Error Handling & Best Practices

• Use MessageManager • Handle OData errors gracefully • Follow naming conventions • Optimize performance

13. Advanced Concepts

• Smart Controls • Annotations • Extension Points • Fiori Elements

14. Summary

SAP UI5 with Fiori and OData enables development of scalable enterprise-grade applications.

Revision Tip: Focus on MVC, Fiori principles, and OData integration flow