SAP Integration Lab: In-Class Practical Activity

# 🔍 Objective

Simulate key concepts of SAP system integration using free tools — no paid software or licensed SAP access required.

# 📋 Scenario

You are part of an integration consulting team working for a client who needs to connect an order management system to an SAP S/4HANA instance using RESTful APIs.

# 🎯 Learning Outcomes

• Simulate an OData API call using public SAP samples  
• Understand how an IDoc structure is formed  
• Design a basic message queue-based architecture for decoupled systems  
• Explore the role of middleware in integration

# 🧰 Tools Required (All Free)

• Postman or cURL (to simulate REST API requests)  
• Draw.io (to sketch integration architecture)  
• Text editor (VS Code, Notepad++, or online JSON viewers)

# 🔧 Task 1: OData API Simulation

1. Go to https://api.sap.com  
2. Search for the API: Sales Order (A2X) under SAP S/4HANA Cloud.  
3. Use the "Try Out" feature to simulate a GET request on:  
 /A\_SalesOrder?$top=5  
4. Observe the JSON structure of the returned sales orders.

* 📝 Questions:

• What are the key fields returned?

• What HTTP status code indicates a successful call?

• How could you use this data in an external logistics app?

# 🔧 Task 2: IDoc Structure Exploration

1. Visit: https://help.sap.com and search for ORDERS05 IDoc structure.  
2. Analyze the segments: E1EDK01 (header), E1EDP01 (items), etc.

* 📝 Questions:

• What business document is this IDoc used for?

• How would a mapping to EDI ANSI X12 850 look like?

# 🔧 Task 3: Integration Flow Design

Using Draw.io:  
1. Sketch a basic 3-tier integration design:  
 - Front-end (Web App)  
 - Middleware/API Gateway  
 - SAP S/4HANA  
2. Add one asynchronous component using message queue (Kafka/RabbitMQ).  
  
Deliverable: Upload your .drawio or exported PDF to the class discussion board.

# 💬 Group Discussion Prompts

• When would you choose APIs over EDI?  
• What are potential risks in real-time integrations?  
• How does event-driven architecture differ from request-response?

# ✅ Submission

Each group should:  
• Upload their API screenshots and answers (PDF)  
• Upload their architecture diagram  
• Submit via the LMS by end of class

# 📌 Note

This assignment builds conceptual understanding and practical skills without requiring access to an SAP environment.