Flowable Hands-on Exercise: Embedded Sub-Process

Scenario: Employee Onboarding Process

A company follows an **onboarding process** for new employees that includes multiple steps such as document verification, IT setup, and HR orientation.

To keep the main process **organized and modular**, we will use an **Embedded Sub-Process** for onboarding tasks.

This exercise will demonstrate how to:
✅ Use an **Embedded Sub-Process** to group related tasks.
✅ Pass **data** between the main process and the sub-process.
✅ Control the flow using an **Exclusive Gateway** inside the sub-process.

Step 1: Create a New Process in Flowable

1. Open **Flowable Modeler**.
2. Create a new **BPMN Process Model** named **Employee Onboarding**.
3. Set **Process ID** as `employeeOnboardingProcess`.

Step 2: Define Process Flow

1️⃣ Start Event

- Drag a **Start Event** onto the canvas and label it **Onboarding Started**.

2️⃣ Embedded Sub-Process

- Drag a **Sub-Process** onto the canvas and label it **Onboarding Tasks**.
- This will contain all onboarding-related tasks.

3️⃣ Inside the Embedded Sub-Process

- Add a **Start Event** inside the sub-process.
- Add three **User Tasks** and name them:
    1. **Verify Documents (HR Team)**
    2. **Setup IT Access (IT Team)**
    3. **HR Orientation (HR Team)**

4️⃣ Exclusive Gateway for IT Setup Condition

- Add an **Exclusive Gateway** after **Verify Documents**.

- If IT setup is **required**, the process flows to **Setup IT Access**.
- If not, it goes directly to **HR Orientation**.
- Define conditions:
  - `${itRequired == true}` → Goes to **Setup IT Access**
  - `${itRequired == false}` → Goes to **HR Orientation**

5️⃣ End Event for Sub-Process

- Connect **HR Orientation** to an **End Event** inside the sub-process.

6️⃣ Continue the Main Process

- Connect the **Embedded Sub-Process** to a **Final Approval Task (Manager)**.
- End with an **End Event** labeled **Onboarding Completed**.

Step 3: Define Process Variables

1. `itRequired` (Boolean) - Determines if IT setup is needed.
2. `employeeName` (String) - Stores the employee's name.

Step 4: Deploy and Test

1. Deploy the process in Flowable.
2. Start a new process instance with:

```
{
  "employeeName": "John Doe",
  "itRequired": true
}
```

3. Observe the following behavior:
   - If **IT setup is required**, the process follows all three onboarding steps.
   - If **IT setup is NOT required**, it skips IT access and moves directly to HR orientation.
4. Once onboarding is completed, the **Manager reviews and approves the onboarding**.

Expected Behavior

Employee Name	IT Required	Steps Taken	Manager Approval
John Doe	✓ Yes	Verify Docs → IT Setup → HR Orientation	✓

Employee Name	IT Required	Steps Taken	Manager Approval
Jane Smith	✘ No	Verify Docs → HR Orientation	✓