

## Project Design Phase-II

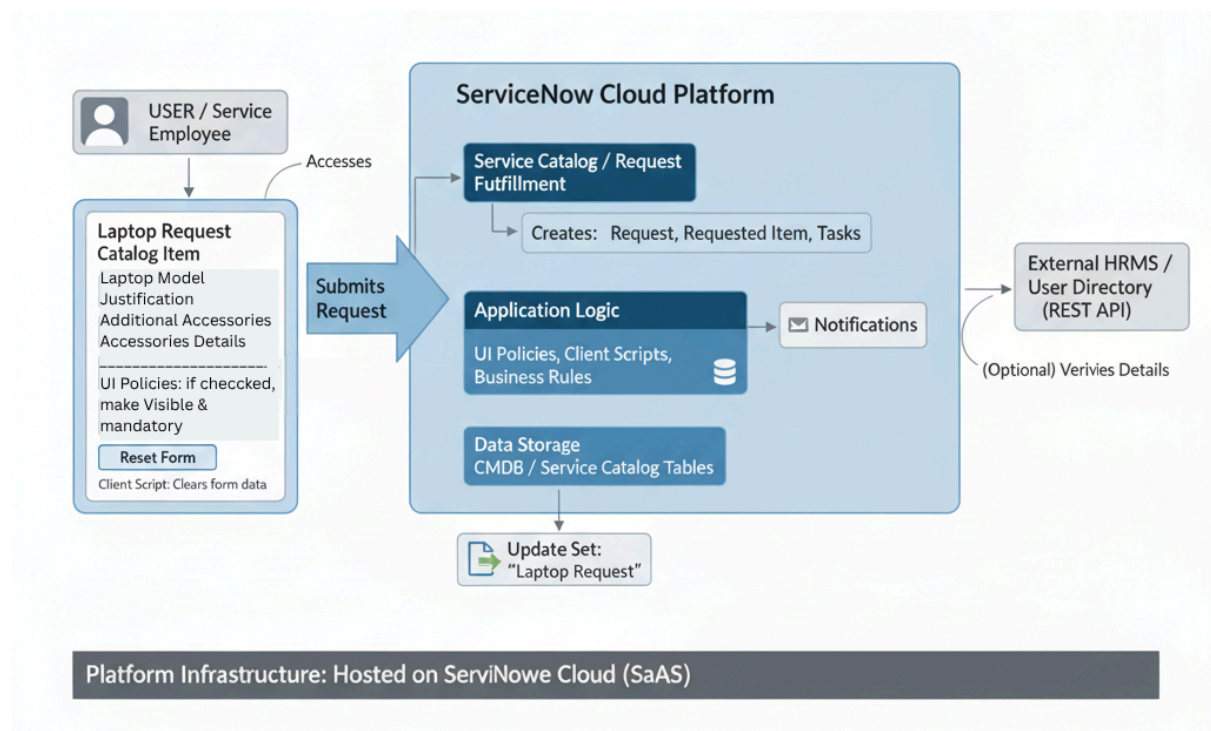
### Technology Stack (Architecture & Stack)

|               |                             |
|---------------|-----------------------------|
| Date          | 02 November 2025            |
| Team ID       | NM2025TMID04313             |
| Project Name  | Laptop Request Catalog Item |
| Maximum Marks | 4 Marks                     |

#### Technical Architecture (Service Catalog Item):

The "Laptop Request Catalog Item" is implemented using a standard **ServiceNow 3-tier architecture**, residing within the application layer and interacting with the UI and Database layers.

#### Technical Architecture Flow Diagram:



#### Flow Diagram Description:

The architecture outlines the self-service interaction:

1. **Presentation Layer:** The **End User** accesses the **Service Portal** and loads the **Catalog Item Form**.
2. **Application Logic (Client-Side):** The **Catalog UI Policy** and **Client Script** execute on the browser to enforce dynamic behavior (e.g., hiding/showing fields, resetting the form).

3. **Application Logic (Server-Side):** Upon submission, the platform triggers the **Flow Designer** process.
4. **Data Layer:** The Flow Designer creates records in the core tables: `sc_request` (REQ), `sc_req_item` (RITM), and `sc_task` (SCTASK), storing all data in the **ServiceNow Database (CSDM)**.
5. **Fulfillment:** Fulfiller agents interact with the `sc_task` records to complete the request.

## Component & Technology Breakdown

The project leverages ServiceNow's core components for a low-code/no-code implementation.

**Table-1: Components & Technologies**

| S.No | Component                         | Technology                                    | Purpose in Project   |
|------|-----------------------------------|---|--|
| 1.   | User Interface                    | Service Portal / Catalog Item Widget          | Provides the modern user interface (UI) where the request form is displayed and submitted.   |
| 2.   | Application (Client-Side) Logic-1 | Catalog UI Policy                             | Controls the dynamic display of the <code>accessories_details</code> variable (Show/Hide) based on the <code>additional_accessories</code> checkbox. |
| 3.   | Application (Client-Side) Logic-2 | Client Script (UI Action)                     | <b>JavaScript</b> used for the "Reset Form" UI Action to clear user input fields before submission.  |
| 4.   | Server-Side Logic                 | Flow Designer (or Legacy Workflow)            | Manages the <b>automated fulfillment process</b> post-submission, including creating tasks and generating the final RITM record.                     |
| 5.   | Data Storage                      | ServiceNow Database (underlying MySQL/Oracle) | Stores the <b>Variables</b> and the <b>Request/RITM/Task records</b> in the respective tables.   |
| 6.   | Governance                        | Local Update Set                              | Used for packaging all configurations (Catalog Item, Variables, UI Policy, Client Script) for migration to higher environments.                      |

|     |                       |                                |   |
|-----|-----------------------|--------------------------------|---|
| 7.  | <b>Cloud Database</b> | <b>ServiceNow Cloud</b>        | Managed by ServiceNow backend                       |
| 8.  | <b>File Storage</b>   | <b>Update Set Repository</b>   | Logs stored for audit and rollback                  |
| 9.  | <b>External API-1</b> | <b>REST API in ServiceNow</b>  | (Optional) HRMS integration to verify user identity |
| 10. | <b>Infrastructure</b> | <b>ServiceNow Cloud (SaaS)</b> | Hosted on ServiceNow SaaS                           |

### Application Characteristics:

**Table-2: Application Characteristics**

| S.No | Characteristics                 | Description  | Technology   |
|------|---------------------------------|--|--|
| 1.   | <b>Security Implementations</b> | Role-based access control (User role to access Portal, ITIL role to fulfill), security scripts, and ACLs.                      | ACLs, User Roles, Scoped Applications (if custom app used) |
| 2.   | <b>Scalable Architecture</b>    | SaaS-based, horizontally scalable architecture managed and provided by the ServiceNow cloud.                                   | ServiceNow Cloud Architecture                              |
| 3.   | <b>Availability</b>             | Highly available platform guaranteed by ServiceNow's Service Level Agreement (SLA).  | Load-balanced ServiceNow Instances                         |
| 4.   | <b>Performance</b>              | Optimized via the platform's ability to handle asynchronous processing (workflows/flows) and indexed tables for fast querying. | Flow Designer/Workflow Engine, Indexed Database Tables     |