

Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	1 November 2025
Team ID	NM2025TMID01871
Project Name	Laptop Request Catalog Item using ServiceNow
Maximum Marks	4 Marks

Technical Architecture

The Laptop Request Catalog Item System automates the process of laptop requests within an organization using ServiceNow. The architecture integrates catalog item design, form logic, approval workflows, notifications, and reporting—all managed within the ServiceNow platform.

Architecture Overview (Descriptive Diagram Explanation):

- 1. User Interface Layer: Employees interact with a Service Catalog form within the ServiceNow portal.
- 2. Application Logic Layer: Uses Flow Designer, Catalog Client Scripts, and UI Policies to manage form logic, validations, and approvals.
- 3. Workflow Layer: Approval requests are routed automatically to the Manager and IT Department through Flow Designer Workflows.
- 4. Database Layer: All laptop requests, approvals, and history data are stored in custom tables and the ServiceNow CMDB.
- 5. Notification & Reporting Layer: Uses Notification Engine for status alerts and Reports/Dashboards for tracking request trends.
- 6. Infrastructure: Fully hosted and managed on ServiceNow Cloud (SaaS) for scalability, security, and availability.

Table-1: Components & Technologies

S.No	Component Description	Technology
1	User Interface – Employees submit laptop requests through a web-based catalog form.	ServiceNow Service Catalog (Web UI)
2	Application Logic-1 – Handles field visibility and validation dynamically.	UI Policies, Client Scripts
3	Application Logic-2 – Manages request routing to appropriate approvers.	Flow Designer, Workflow Editor
4	Application Logic-3 – Sends notifications for approvals, rejections, and updates.	Notification Engine
5	Database – Stores all laptop request and approval records.	ServiceNow Custom Tables, CMDB
6	Cloud Database – Managed storage backend for ServiceNow data.	ServiceNow Cloud Database
7	File Storage – Minimal use; logs and attachments stored internally.	System Logs & Attachment Tables
8	External API-1 (Optional) – Integration with HRMS to verify employee details.	REST API Integration
9	External API-2 – Not applicable.	-
10	Machine Learning Model – Not applicable for this version.	-
11	Infrastructure (Server/Cloud) – Hosted on ServiceNow SaaS environment.	ServiceNow Cloud (SaaS)

Table-2: Application Characteristics

S.No	Characteristic	Description	Technology
1	Open-Source Frameworks	Not applicable (ServiceNow is proprietary).	-
2	Security Implementations	Role-based access control and scoped application permissions.	ACLs, Scoped Apps
3	Scalable Architecture	Horizontally scalable and managed through the ServiceNow SaaS model.	ServiceNow Cloud Architecture
4	Availability	Highly available through load-balanced ServiceNow instances.	Load-Balanced Cloud Instances
5	Performance	Optimized through asynchronous flows and indexed table operations.	Flow Designer, GlideRecord