

Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	13 November 2025
Team ID	NM2025TMID06014
Project Name	Laptop Request Catalog Item using ServiceNow
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Guidelines:
<p>In this phase, the focus is on defining and documenting the technology stack and overall system architecture of the project. The architecture should clearly illustrate how different components of the system interact, including the frontend (user interface), backend (server-side logic), database (data storage), and any cloud or external services used. A well-designed architectural diagram helps visualize the flow of data and the separation of concerns across layers. Alongside the diagram, a technology stack table should summarize each layer's technologies, their purpose, and any relevant notes, such as why a particular framework, library, or database was chosen. This documentation ensures clarity in design decisions, aids future development or maintenance, and demonstrates that the project has a structured and scalable foundation.</p>



Users / Employee

F



(Service Catalog & Dashboard Forms

Flow Designer / Script Includes

- Request validation
- Approval workflow
- Notifications

L



ServiceNow CMDB
/ Request DB

External
System

(Active Directory /
Email / SMS)

ServiceNow
Cloud

(Managed SaaS infra)

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Employees submit laptop requests via Service Catalog; Managers & IT Admins track and process requests	ServiceNow Web UI
2	Application Logic-1	Validates user request and role before submission	ServiceNow Flow Designer, Script Includes
3	Application Logic-2	Approval workflow routing to Manager & IT Admin	ServiceNow Flow Designer, Business Rules
4	Application Logic-3	Sends email/SMS notifications on request status updates	ServiceNow Notifications, Email/SMS Integration
5	Database	Stores laptop requests, user details, and inventory	ServiceNow CMDB, Request Tables
6	Cloud Database	Managed by ServiceNow Cloud backend	ServiceNow Cloud Database
7	File Storage	Minimal use; internal logs for auditing	ServiceNow System Logs
8	External API-1	Integration with Active Directory to auto-populate user details	REST API in ServiceNow
9	External API-2	Optional integration with IT Asset Management or ERP systems	REST API (Optional)
10	Machine Learning Model	Not applicable for this use case	-
11	Infrastructure	Fully hosted and managed on ServiceNow SaaS platform	ServiceNow Cloud (SaaS)

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks / Security Implementations	Not applicable; ServiceNow is proprietary	-
2	Role-based Access Control	Users, Managers, IT Admins have defined access via ACLs and scoped apps	ServiceNow ACLs, Scoped Applications
3	Scalable Architecture	Horizontally scalable SaaS design, handles multiple concurrent requests	ServiceNow Cloud Architecture
4	Availability	Highly available with managed ServiceNow cloud hosting	ServiceNow Cloud
5	Performance	Optimized using asynchronous flows, indexed tables, and GlideRecord operations	ServiceNow Flow Designer, Background Scripts, GlideRecord