

Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	02 NOVEMBER 2025
Team ID	NM2025TMID06584
Project Name	Laptop Request CatalogItem
Maximum Mark	4 Marks

Technical Architecture:

The deliverable includes the architectural diagram (below) and the following technical details as per Table 1 & Table 2.

Example :Laptop allocation workflow in ServiceNow for ITSM automation.

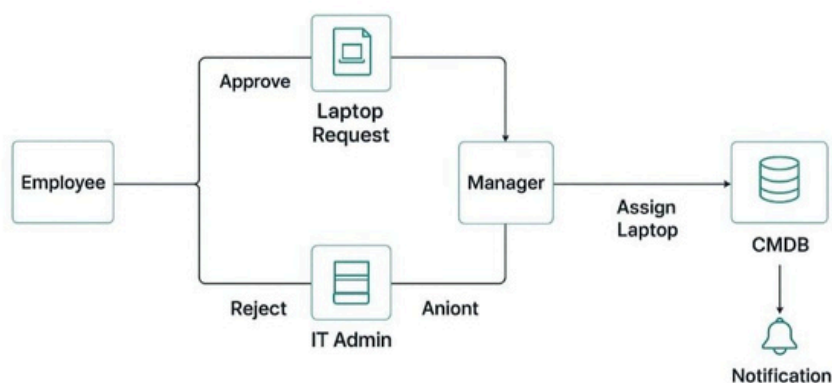
Reference: <https://developer.ibm.com/articles/what-is-system-architecture-in-software-engineering/>

Architecture Description:

The Laptop Request Catalog Item automates IT asset requests and approvals in ServiceNow.

Employees can raise a request for a laptop through the Service Catalog. The workflow routes the request for manager approval, followed by IT admin fulfillment. Notifications are sent at each stage. This ensures transparency, reduces manual effort, and maintains complete asset tracking.

Data Flow in ServiceNow Laptop Request System



Guidelines:

Include all processes (Application Logic / Technology Blocks)

Provide infrastructural demarcation (Local / Cloud)

Indicate external interfaces (APIs, HRMS, Email, etc.)

Indicate Data Storage components / services

Indicate interface to machine learning models (if applicable)

Table 1: Components & Technologies

S.No	Components	Description	Technology
1	User Interface	Employee submits laptop request via ServiceCatalog	ServiceNow Service Portal
2	Application Logic-1	Captures catalog request and routes to manager	Flow Designer
3	Application Logic-2	Manager approval logic (approve/reject)	ServiceNow Approval Engine
4	Application Logic-3	Assigns laptop asset and updates inventory	GlideRecord Script
5	Database	Stores request, approval, and asset details	ServiceNow CMDB, Request Tables
6	Cloud Databases	Managed via ServiceNow backend	ServiceNow Cloud Database
7	File Storage	Minimal; attachment logs (e.g., employee ID proof)	ServiceNow Attachments

8	External API-1	Optional integration with HRMS for user validation	REST API in ServiceNow
9	External API-2	Not applicable	-
10	Machine Learning Model	Not applicable for current use case	-
11	Infrastructure (Server/Cloud)	Hosted on ServiceNow SaaS platform	ServiceNow Cloud (SaaS)

Table 2: Application Characteristics

S.No	Components	Description	Technology
1	Open-Source Frameworks	Not applicable (ServiceNow is proprietary)	-
2	Security Implementations	Role-based access control, ACLs, secure scripts	Scoped Applications, ACLs
3	Scalable Architecture	SaaS-based, horizontally scalable via ServiceNow	ServiceNow Cloud Architecture
4	Availability	High availability with ServiceNow hosting	Load-balanced ServiceNow Instances
5	Performance	Optimized through Flow Designer and indexed tables	GlideRecord, Background Scripts