

## Project Design Phase-II

### Technology Stack (Architecture & Stack)

Date	02 NOVEMBER 2025
Team ID	NM2025TMID05464
Project Name	Laptop Request Catalog Item
Maximum Mark	4 Marks

#### Technical Architecture:

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

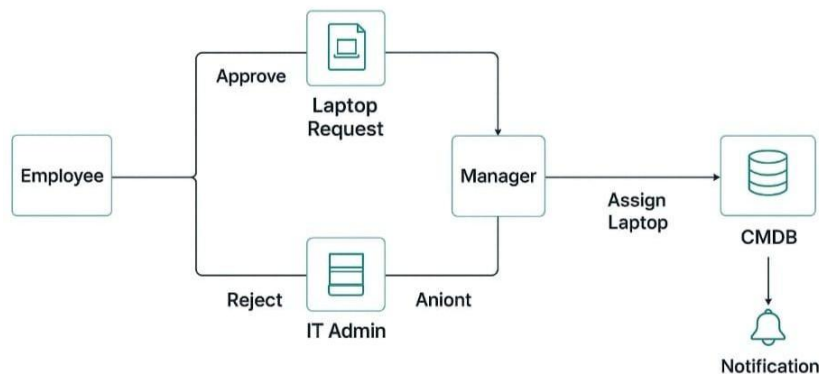
**Example :** Laptop allocation workflow in ServiceNow for ITSM automation.

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

#### Architecture Description:

The Laptop Request Catalog Item streamlines IT asset requests and approvals within ServiceNow. Employees can submit laptop requests via the Service Catalog, which are then routed through a workflow for manager approval and subsequent IT administrator fulfillment. Automated notifications keep users informed at each stage. This approach enhances transparency, minimizes manual effort, and ensures comprehensive tracking of IT assets.

#### Data Flow in ServiceNow Laptop Request System



**Guidelines:**

- Document all processes, including application logic and technology components.
- Clearly define the infrastructure boundaries, distinguishing between local and cloud-based elements.
- Specify all external interfaces, such as APIs, HRMS, email systems, etc.
- Identify all data storage components or services used in the solution.
- Highlight any connections or interfaces with machine learning models, if relevant.

**Table 1: Components & Technologies**

S.No	Components	Description	Technology
1	User Interface	Employee submits laptop request via Service Catalog	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 Databas	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