

Project Design Phase-II

Technology Stack (Architecture & Stack)

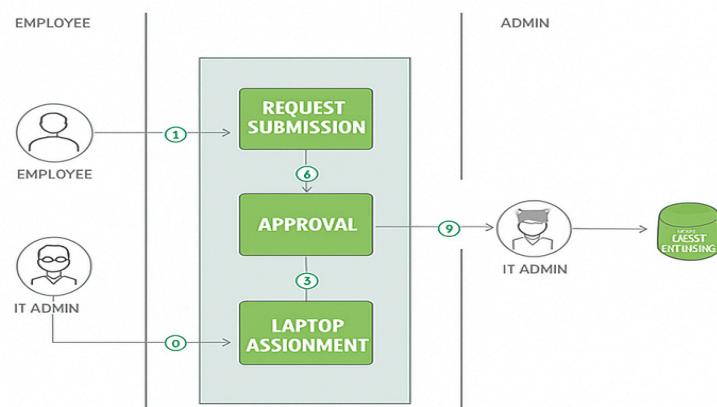
Date	02 NOVEMBER 2025
Team ID	NM2025TMID06623
Project Name	Laptop Request Catalog Item
Maximum Marks	4 Marks

Technical Architecture:

The project “Laptop Request Catalog Item” focuses on automating laptop request, approval, and fulfillment workflows within the **ServiceNow Service Catalog**.

Example: Order processing during pandemics for offline mode

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>



Guidelines:

- Include all the processes (As an application logic / Technology Block)
- Provide infrastructure alemarcation (Local / Cloud)
- Indicate external interfaces (third party API's etc.)
- Indicate Data Storage components / services

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Employees, managers, and IT admins interact through a responsive Service Catalog portal.	ServiceNow Service Catalog UI
2.	Application Logic-1	Handles request submission, captures details like model, justification, and department	Service Catalog Item Form & Catalog Client Scripts
3.	Application Logic-2	Automates approval routing to the appropriate manager.	Flow Designer, Approval Actions
4.	Application Logic-3	Assigns laptop and updates asset details in CMDB once approved..	Business Rules, Script Includes, CMDB Integration
5.	Database	Stores all catalog requests, approval data, and fulfillment records.	ServiceNow Tables: sc_request , task , cmdb_ci_computer
6.	Cloud Database	Managed automatically by ServiceNow cloud backend for performance and reliability..	ServiceNow Cloud Database
7.	External API-1	Optional HRMS integration for pre-onboarding laptop requests.	REST API Integration in ServiceNow
8.	External API-2	Optional inventory management or procurement system integration.	REST API in ServiceNow
9.	DataBase	Not applicable	-
10.	Machine Learning Model	Not applicable for current use case	-
11.	Infrastructure (Server / Cloud)	Hosted and managed on ServiceNow SaaS platform	ServiceNow Cloud (SaaS)

Table-2: Application Characteristics:

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