

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	7 November 2025
Team ID	NM2025TMID09112
Project Name	Laptop Request Catalog Item
Maximum Marks	4 Marks

Technical Architecture:

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

Example: Order processing during pandemics for offline mode

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

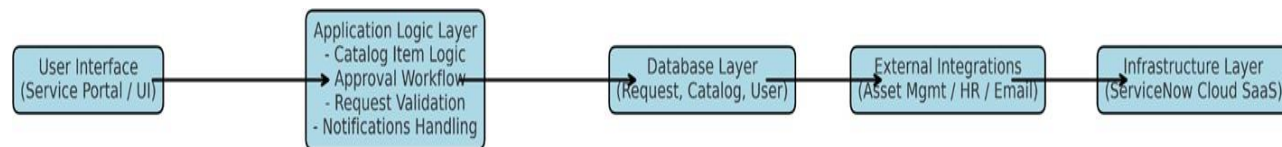


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	End users submit laptop requests through ServiceNow Service Portal or Catalog UI.	Service Portal / Catalog Item UI
2.	Application Logic-1	Validates user details, department, and eligibility before submitting requests.	Flow Designer, Catalog Client Script, UI Policy
3.	Application Logic-2	Routes request for approval (e.g., manager approval) and asset assignment workflow.	Flow Designer, Approval Actions, Business Rules
4.	Application Logic-3	Sends email or notification updates (submission, approval, fulfillment).	ServiceNow Notifications
5.	Database	Stores catalog items, requests, approvals, and asset data.	ServiceNow Tables (sc_req_item, sc_request, alm_asset)
6.	Cloud Database	Managed by ServiceNow cloud backend.	ServiceNow Cloud Database
7.	File Storage	Minimal usage; attachment uploads (e.g., justification docs) stored internally.	ServiceNow system logs
8.	External API-1	Optional integration with HRMS or Asset Management systems to verify user or inventory.	REST API / MID Server Integration
9.	External API-2	Not applicable	REST API in ServiceNow
10.	Machine Learning Model	Not applicable (No ML used in this catalog item).	-
11.	Infrastructure (Server / Cloud)	Hosted on ServiceNow SaaS cloud infrastructure.	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 (only employees can raise requests), ACLs on catalog tables.	ACLs, Scoped Applications
3.	Scalable Architecture	SaaS-based, scales automatically with ServiceNow multi-tenant architecture.	ServiceNow Cloud Architecture
4.	Availability	Highly available; redundant ServiceNow instances ensure uptime.	Load-balanced ServiceNow Instances
5.	Performance	Optimized with asynchronous flows, indexed tables, and background processing.	GlideRecord, Background Scripts