

Project Design Phase-II

Technology Stack (Architecture & Stack)

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|--------------|----------------------------|
| 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.

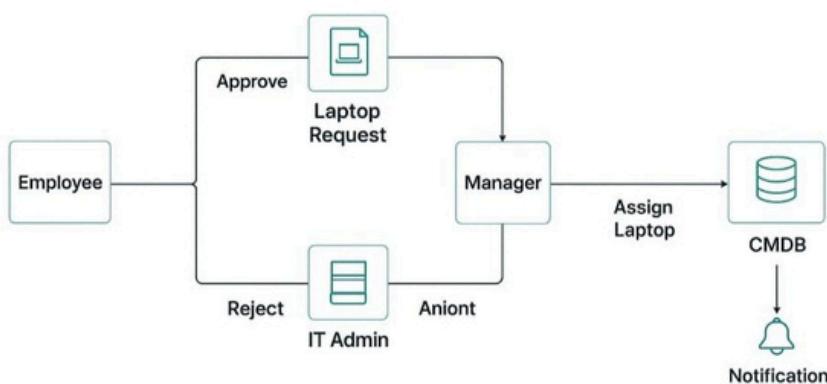
Example :Laptop allocation workflow in ServiceNow for ITSM automation.

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 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 Database | 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 |