

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

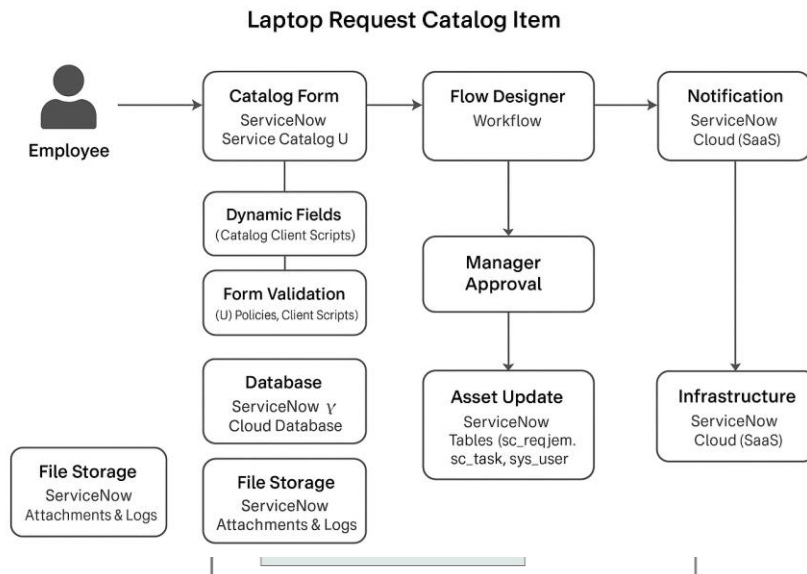
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|---------------|-----------------------------|
| Date | 01 November 2025 |
| Team ID | NM2025TMID08447 |
| Project Name | Laptop Request Catalog Item |
| Maximum Marks | 4 Marks |

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/>



Guidelines (Short Version)

Include all processes as application logic or technology blocks.

Clearly show infrastructure zones – Local, Cloud, and External.

Indicate all external interfaces (e.g., HRMS or Email APIs).

Highlight data storage components/services (ServiceNow tables, logs).

Show optional ML model interfaces (e.g., Predictive Intelligence).

Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|---------------------------------|---|--|
| 1 | User Interface | Employee interacts through the Service Catalog to request a laptop. | ServiceNow Service Catalog UI |
| 2 | Application Logic-1 | Displays dynamic fields based on user selections (e.g., laptop type, duration). | ServiceNow Catalog Client Scripts |
| 3 | Application Logic-2 | Validates input data before submission. | UI Policies, Client Scripts |
| 4 | Application Logic-3 | Sends approval requests to the manager automatically. | Flow Designer, Workflow |
| 5 | Database | Stores catalog request, user, and approval details. | ServiceNow Tables (sc_req_item, sc_task, sys_user) |
| 6 | Cloud Database | Managed by ServiceNow backend for request and approval records. | ServiceNow Cloud Database |
| 7 | File Storage | Minimal use; form logs and attachments stored internally. | ServiceNow Attachments & Logs |
| 8 | External API-1 | (Optional) Integration with HRMS or Asset Management for hardware allocation. | REST API Integration |
| 9 | External API-2 | (Optional) Notification or Email API for custom alerts. | ServiceNow Notification API |
| 10 | Machine Learning Model | (Optional) Can be extended for automated laptop recommendations. | ServiceNow Predictive Intelligence |
| 11 | Infrastructure (Server / Cloud) | Entire solution hosted 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 for employees, managers, and IT admins. | ACLs, Scoped Applications |
| 3 | Scalable Architecture | Built on SaaS model; scales automatically with demand. | ServiceNow Cloud Architecture |
| 4 | Availability | Accessible 24/7 via the Service Portal. | Load-balanced ServiceNow Instances |
| 5 | Performance | Optimized using asynchronous flows, caching, and GlideRecord operations. | GlideRecord, Background Scripts |