Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	13 November 2025
Team ID	LTVIP2025TMID31059
Project Name	Laptop Request Catalog Item using ServiceNow
Maximum Marks	4 Marks

Technical Architecture:

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

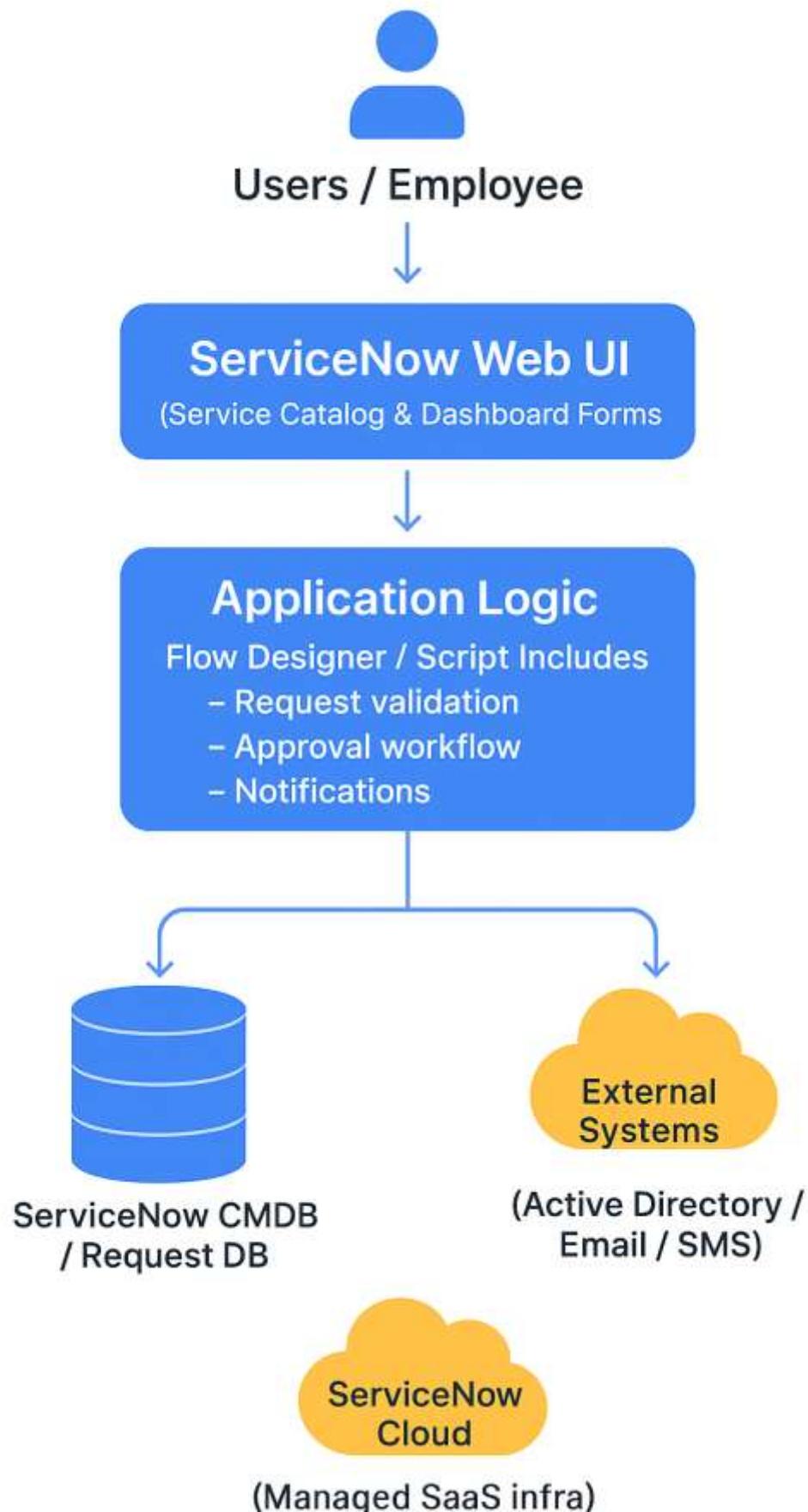| Guidelines: |
|---|
| In this phase, the focus is on defining and documenting the **technology stack** and overall **system architecture** of the project. The architecture should clearly illustrate how different components of the system interact, including the **frontend** (user interface), **backend** (server-side logic), **database** (data storage), and any **cloud or external services** used. A well-designed architectural diagram helps visualize the flow of data and the separation of concerns across layers. Alongside the diagram, a **technology stack table** should summarize each layer's technologies, their purpose, and any relevant notes, such as why a particular framework, library, or database was chosen. This documentation ensures clarity in design decisions, aids future development or maintenance, and demonstrates that the project has a structured and scalable foundation. |

Users / Employee

ServiceNow Web UI
(Service Catalog & Dashboard Forms

Application Logic
Flow Designer / Script Includes
– Request validation
– Approval workflow
– Notifications

ServiceNow CMDB
/ Request DB

External
Systems
(Active Directory /
Email / SMS)

ServiceNow
Cloud
(Managed SaaS infra)

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Employees submit laptop requests via Service Catalog; Managers & IT Admins track and process requests	ServiceNow Web UI
2	Application Logic-1	Validates user request and role before submission	ServiceNow Flow Designer, Script Includes
3	Application Logic-2	Approval workflow routing to Manager & IT Admin	ServiceNow Flow Designer, Business Rules
4	Application Logic-3	Sends email/SMS notifications on request status updates	ServiceNow Notifications, Email/SMS Integration
5	Database	Stores laptop requests, user details, and inventory	ServiceNow CMDB, Request Tables
6	Cloud Database	Managed by ServiceNow Cloud backend	ServiceNow Cloud Database
7	File Storage	Minimal use; internal logs for auditing	ServiceNow System Logs
8	External API-1	Integration with Active Directory to auto-populate user details	REST API in ServiceNow
9	External API-2	Optional integration with IT Asset Management or ERP systems	REST API (Optional)
10	Machine Learning Model	Not applicable for this use case	-
11	Infrastructure	Fully hosted and managed on ServiceNow SaaS platform	ServiceNow Cloud (SaaS)

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks / Security Implementations	Not applicable; ServiceNow is proprietary	-
2	Role-based Access Control	Users, Managers, IT Admins have defined access via ACLs and scoped apps	ServiceNow ACLs, Scoped Applications
3	Scalable Architecture	Horizontally scalable SaaS design, handles multiple concurrent requests	ServiceNow Cloud Architecture
4	Availability	Highly available with managed ServiceNow cloud hosting	ServiceNow Cloud
5	Performance	Optimized using asynchronous flows, indexed tables, and GlideRecord operations	ServiceNow Flow Designer, Background Scripts, GlideRecord