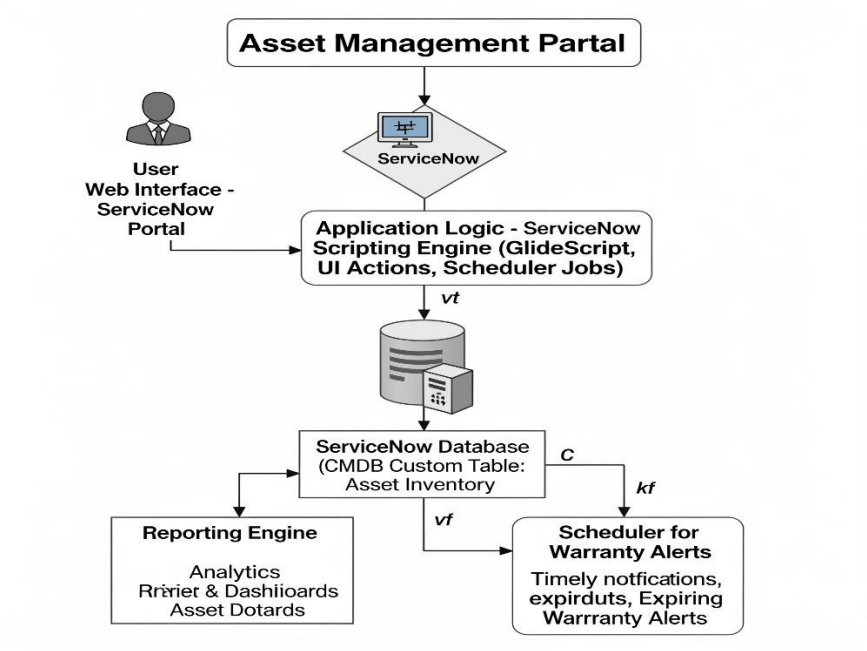
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	19 February 2026
Team ID	LTVIP2026TMIDS37339
Project Name	Asset Management Portal
Maximum Marks	4 Marks

Technical Architecture:

The **Asset Management Portal** is a centralized web-based application built on the **ServiceNow platform**, allowing real-time tracking, allocation, and maintenance of IT and non-IT assets. The architecture uses a multi-tier model supported by ServiceNow's built-in cloud capabilities. The system includes asset tables, scheduled jobs for notifications, custom UI actions, and reporting features.

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 infrastructural demarcation (Local / Cloud)
- Indicate external interfaces (third party API's etc.)
- Indicate Data Storage components / services
- Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web interface for asset request and admin dashboard	HTML, CSS, Bootstrap (via ServiceNow UI)
2.	Application Logic-1	Asset lifecycle updates via UI Actions	ServiceNow GlideScript (JavaScript)
3.	Application Logic-2	Scheduled warranty expiry alerts	ServiceNow Scheduled Jobs (Glide API)
4.	Application Logic-3	Asset status transitions and validations	ServiceNow Table (u_asset_inventory)
5.	Database	Custom table to store asset data	ServiceNow Cloud Database
6.	Cloud Database	Cloud-hosted CMDB & Custom Tables	ServiceNow Attachment Table
7.	File Storage	Attachments and document uploads	ServiceNow Email Notification Engine
8.	External API-1	Email Notifications via Notification API	IBM Weather API, etc.
9.	External API-2		
10.	Machine Learning Model	Not applicable (for current version)	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Cloud-hosted platform for deployment	ServiceNow SaaS Cloud Environment

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Client-side interactions and Bootstrap UI	Bootstrap, jQuery (within ServiceNow UI)
2.	Security Implementations	Role-based access, form restrictions, data encryption at rest	ServiceNow ACLs, RBAC, HTTPS, TLS
3.	Scalable Architecture	Multi-tier modular design with built-in scalability	ServiceNow Cloud Infrastructure
4.	Availability	High availability with built-in redundancy by ServiceNow	Distributed SaaS with built-in Load Balancer
5.	Performance	Optimized queries, indexed tables, caching for frequent data access	ServiceNow Performance Analytics, GlideQuery

References:

- C4 Model – Structuring Software Architecture
- IBM Cloud Architecture Center
- AWS Architecture Blog
- IBM AI-powered backend system example