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

Date	31 AUG 2025
Team ID	NM2025TMID01174
Project Name	27 OCT2025
Maximum Marks	4 Marks

Technical Architecture:

- **Understand the Goal**
  - The architecture should show how ServiceNow supports educational operations (IT, HR, Student Services, Facilities, etc.).
  - Focus on automation, integration, and service efficiency.
- **Use Layered Design**
  - Divide the architecture into layers such as:
    - User Interface Layer (portals, mobile apps)
    - Application Layer (workflows, business logic)
    - Data Layer (database, CMDB)
    - Integration Layer (APIs, SSO, ERP/LMS connections)
    - Security Layer (access control, encryption)
    - Cloud Infrastructure Layer (ServiceNow cloud hosting)
- **Keep It Simple**
  - Use clear and minimal components.
  - Show how data moves from users → system → database → reports.
- **Show Data Flow**
  - Example: Student submits request → Workflow processes → Data stored → Notification sent → Report generated.
- **Include Security and Backup**
  - Mention authentication, encryption, and data recovery.
- **Use Common Tools**
  - Service Portal
  - Flow Designer
  - IntegrationHub
  - Performance Analytics
  - CMDB (Configuration Database)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Provides the interface through which users interact with the system — web or mobile.	ServiceNow UI (Now Experience Framework) - Service Portal for Students & Staff
2.	Application Logic-1	Contains business logic, rules, and workflows that process user requests and automate operations.	ServiceNow Flow Designer, Script
3.	Application Logic-2	Validates user status from incident table	GlideRecord in Server Script
4.	Application Logic-3	Stores and manages institutional data, user profiles, service requests, and knowledge articles.	ServiceNow CMDB (Configuration Management Database) - ServiceNow Tables (custom & core)
5.	Security Layer	Ensures authentication, authorization, and data protection for all users and transactions.	OAuth 2.0 / SAML for authentication - Role-Based Access Control (RBAC)
6.	Analytics & Reporting Layer	Provides visual insights and performance analytics on institutional operations.	- Performance Analytics (ServiceNow module) - Reporting Engine

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Not applicable (ServiceNow is proprietary)	-
2.	Security Implementations	Role-based access control, ACLs, secure scripts	ACLs, Scoped Applications
3.	Scalable Architecture	SaaS-based, horizontally scalable via ServiceNow architecture	ServiceNow Cloud Architecture
4.	Availability	Highly available with ServiceNow cloud hosting	Load-balanced ServiceNow Instances
5.	Performance	Optimized via asynchronous flows and indexed tables	GlideRecord, Background Scripts