Project Design Phase-II
Technology Stack (Architecture & Stack)
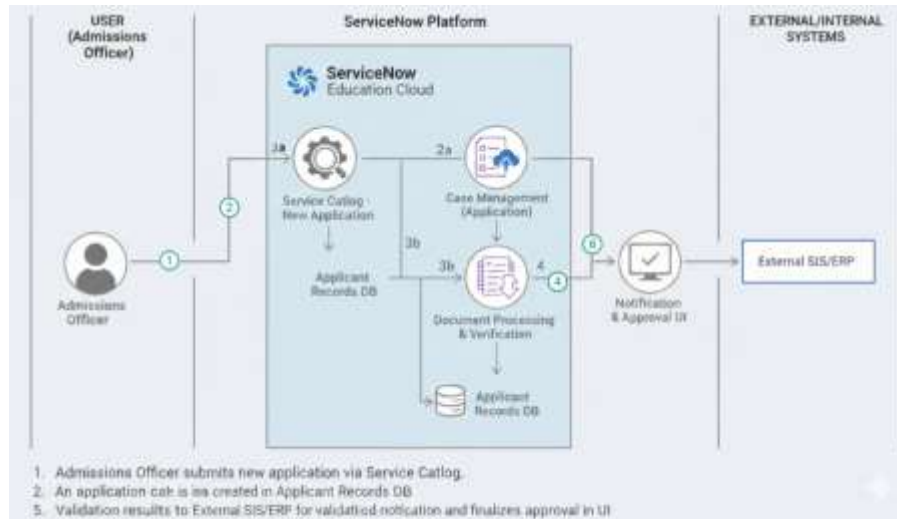
Date	22 January 2026
Team ID	LTVIP2026TMIDS87961
Project Name	Educational Organisation Using ServiceNow
Maximum Marks	4 Marks

Technical Architecture:

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

Example: Order processing during pandemics for offline mode

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	Interface for students, teachers, and admins to interact with the system (portal & dashboards)	ServiceNow Portal, HTML, CSS, JavaScript
2.	Application Logic-1	Core workflows for admissions, approvals, and user onboarding	ServiceNow Flow Designer / Business Rules
3.	Application Logic-2	Academic processes like attendance, grading, and progress tracking	ServiceNow Scripts (Glide API / Script Includes)
4.	Application Logic-3	Notifications and communication workflows	ServiceNow Notifications / IntegrationHub
5.	Database	Stores student, teacher, academic, and administrative data	ServiceNow Tables (Relational Database)
6.	Cloud Database	Managed cloud data storage within platform	ServiceNow Cloud Platform
7.	File Storage	Storage for documents like certificates, admission forms, reports	ServiceNow Attachment Storage
8.	External API-1	Email/SMS service for alerts and notifications	SMTP / SMS Gateway Integration
9.	External API-2	Identity or authentication integration (if required)	SSO / OAuth / Institutional Identity API
10.	Machine Learning Model	Predictive insights such as student performance analysis (optional)	ServiceNow Predictive Intelligence
11.	Infrastructure (Server / Cloud)	Hosting and deployment environment	ServiceNow Cloud (SaaS Platform)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	UI enhancements and integrations may use open web technologies for portals and custom widgets	HTML, CSS, JavaScript, Bootstrap
2.	Security Implementations	Secure authentication, role-based access, data encryption, and compliance with security best practices	ServiceNow IAM, Role-Based Access Control (RBAC), SSL/TLS Encryption, OAuth
3.	Scalable Architecture	Cloud-based multi-tenant architecture that supports growing users and data without performance degradation	ServiceNow SaaS Architecture (Multi-instance, 3-tier architecture)
4.	Availability	High availability ensured through cloud infrastructure with redundancy and failover mechanisms	ServiceNow Cloud Infrastructure, Load Balancing, Data Replication
5.	Performance	Optimized workflows and database queries with caching and efficient processing for fast response times	ServiceNow Performance Analytics, Caching, Optimized Business Rules

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d