Project Design Phase-II

Technology Stack Template

Date	26-09-2025
Team ID	NM2025TMID00843
Project name	Educational Organization using ServiceNow
Maximum Marks	4 Marks

1. Technical Architecture

The Technical Architecture of the Educational Organization Management System outlines how various system layer front-end, back-end, database, integration, security, and reporting interact within the ServiceNow platform. It is designed to deliver automation, centralized data access, and secure workflow management for students, teachers, and administrators.

Key Objectives

- Provide a centralized digital platform for managing academic and administrative operations.

- Enable workflow automation using ServiceNow's Flow Designer.

- Maintain data consistency and security through the ServiceNow CMDB.

- Ensure scalability and seamless integration with external systems.

2. Example: ServiceNow-Based Architecture

Example Scenario: Course Registration Process

When a student registers for a course, the system performs the following automated steps:

1. Data Submission: The student submits registration data through the Service Portal (Front-End).

2. Workflow Processing: The request is processed using Flow Designer for workflow automation.

3. Data Storage: All related data is securely stored in CMDB Tables (Database Layer).

4. Notification: The Administrator receives an automated notification through the Notification Service (Integration Layer).

5. Reporting: Real-time reports are generated using Performance Analytics (Reporting Layer).

System Layers and Components

Layer	Component / Technology	Functionality
Front-End	HTML5, CSS3, JavaScript, Service Portal	Provides the interface for students, teachers, and administrators to access system features and services.
Back-End	ServiceNow Business Rules, Script Includes, Flow Designer	Executes business logic, approval workflows, and automation of institutional processes.
Database Layer	ServiceNow CMDB, Tables, Relationships	Manages secure storage and retrieval of student, staff, and academic data.
Integration Layer	REST APIs, IntegrationHub, Email Services	Connects the system to external applications such as LMS, email, and payment services.
Security Layer	Role-Based Access Control (RBAC), Audit Logs, SSL Encryption	Protects system data, manages access permissions, and ensures data integrity.
Reporting Layer	Dashboards, Performance Analytics	Provides analytical insights, KPI visualization, and dynamic reporting.

System Characteristics

Characteristics	Description
Platform Type	Cloud-based, low-code/no-code application built on the ServiceNow platform.
Accessibility	Web-based; accessible via both desktop and mobile devices.
Scalability	Supports an increasing number of users, departments, and academic modules.
Automation	Employs Flow Designer and Workflows to minimize manual intervention.
Maintainability	Easily maintained and updated through ServiceNow Studio and Update Sets.
Security	Ensures encryption, audit trails, and strict access control mechanisms.
User Experience	Provides an intuitive and user-friendly interface using the Service Portal.

This Technical Architecture establishes a robust foundation for the ServiceNow-based Educational Management System, ensuring reliability, scalability, and operational efficiency across all institutional processes.