

## Project Design Phase

### Solution Architecture

Date	02-11-2025
Team ID	NM2025TMID02428
Project Name	Educational Organization
Maximum Marks	4 Marks

#### 🚩 Goals of the Architecture

- To **design a structured, scalable, and secure system** for managing the processes of educational organizations.
- To **enable seamless workflow automation** across key departments such as admissions, examinations, and performance management.
- To **ensure centralized data management** with real-time reporting and insights.
- To **enhance user experience** through a unified and intuitive **ServiceNow portal**.

#### ✳️ Key Components

Component	Description
User Interface Layer	The <b>front-end interface</b> , accessible to students, teachers, and administrators through the <b>ServiceNow portal</b> , offers <b>dashboards, interactive forms, and real-time notifications</b> .
Application Layer (Logic Layer)	The <b>core layer</b> where <b>automated workflows, approvals, and notifications</b> are built and managed using <b>Flow Designer, Business Rules, and Catalog Items</b> .
Database Layer	Securely stores <b>student, staff, and course-related data</b> in <b>ServiceNow tables</b> , complete with <b>audit logs for tracking and accountability</b> .

Component	Description
Integration Layer	Integrates with <b>external systems</b> such as <b>LMS platforms, email services, and payment gateways</b> through <b>API connections</b> .
Security Layer	Applies <b>Role-Based Access Control (RBAC)</b> , <b>encryption</b> , and <b>authentication mechanisms</b> to maintain <b>data security and privacy</b> .

## ❖ Development Phases

Phase	Activity	Tools Used
Phase 1 – Planning	Identify and define <b>user requirements, workflow processes, and access roles</b> to ensure a clear and efficient system structure.	Documentation, ServiceNow Project Planning
Phase 2 – Design	Create data models, workflow diagrams, and UI layouts.	Flow Designer, Data Schema Designer
Phase 3 – Implementation	Develop and configure <b>workflows, dashboards, and forms</b> to support seamless process automation and data visualization.	ServiceNow Studio
Phase 4 – Testing	Conduct pilot testing for one department, fix errors.	Test Management Tool
Phase 5 – Deployment & Maintenance	Implement the system <b>across the organization</b> and continuously <b>monitor its performance and health</b> .	Performance Analytics, Reports

## Solution Architecture Description

The ServiceNow-based Educational Management System utilizes a **multi-layered architecture** designed to efficiently manage academic and administrative operations. Each layer contributes a crucial function within the overall framework:

- The **User Interface Layer** engages directly with end users.
- The **Logic Layer** manages processes through automated workflows.
- The **Database Layer** securely stores and retrieves institutional information.
- The **Integration Layer** maintains seamless connectivity with external platforms.
- The **Security Layer** safeguards data using encryption and controlled access mechanisms.

This structured design enables **modular scalability**, **real-time analytics**, and **efficient data flow** throughout the system.

### Example Solution Architecture Diagram (Text View)

