Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	Team ID	Project Name	Maximum Marks
01 NOV 2025	NM2025TMID00669	EDUCATIONAL ORGANIZATION USING SERVICE NOW	4

MarksTechnical Architecture:

The solution architecture for "Prevent Course Deletion If Assigned to Active Students or Trainers" in the educational organization's ServiceNow platform ensures data integrity by verifying dependencies before allowing a course to be deleted.

This architecture integrates ServiceNow's native modules, scripting logic, and cloud infrastructure to automate validation, maintain relational consistency, and ensure secure administrative control.

The architecture includes the following elements:

- Process validation within ServiceNow Flow Designer
- Integration with the student–trainer database (CMDB tables)
- Notifications to academic coordinators when a deletion is blocked
- Cloud-based hosting with scalable and secure ServiceNow infrastructure

Components & Technologies:

1. User Interface-Admin interacts through a web dashboard to manage courses, students, and trainers.

2. Application Logic-1-Checks if a course is linked to any active student or trainer before allowing deletion. ServiceNow Flow Designer, Server-side Script

3. Application Logic-2-Validates course relationships from the student and trainer assignment tables.

4. Application Logic-3-Sends a notification or warning to the admin or academic coordinator if deletion is blocked.

5. Database Stores data about courses, students, trainers, and their associations.ServiceNow CMDB, Custom Course and Assignment Tables

6. Cloud Database-Managed automatically through ServiceNow's cloud environment.

7. File Storage Minimal use; system logs and audit trails stored internally for admin reference.

8. External API-1 (Optional)-Integration with Student Information System (SIS) or HRMS to verify user and course status.REST API in ServiceNow

9. External API-2-Not applicable in the current use case.

10. Machine Learning Model Not applicable for this use case.

11. Infrastructure (Server / Cloud)Fully hosted and managed on ServiceNow's secure cloud SaaS infrastructure. ServiceNow Cloud (SaaS)

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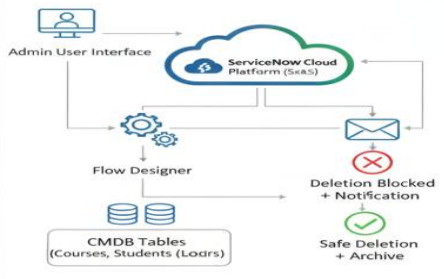
Technical Architecture



Components & Technologies

Component	Technology / Description
1. **User Interface**: Web course management	2. Web dashboard for course management
2. **Application Logic-1**	3. Servıowie Flow Designer, Server-side Script
3. **Application Logic-2** Servvowie Flow Designer, relationships	4. **Application Logic-3** Sends course relatizastion if blocked
6. **Database** Servvovie CMBB, Custems	6. Servıowie Cloud Tables) REST API (SIS/HRMS)
7. **External API-1** (Optional) **Security**	7. Role-based Security 8. Role-based Access Cantrol (ACLS)

Application Characteristics

- Scalable Architecture
- High Avaialbility
- Optimized Performance
- Role-based Security

Application Characteristics:

1. Open-Source Frameworks-Not applicable since ServiceNow is a proprietary low-code platform.

2. Security Implementations-Role-based access control ensures only authorized admins can manage or delete courses.ACLs, Scoped Applications

3. Scalable Architecture-SaaS-based ServiceNow architecture allows horizontal scalability as course and user data grow.

4. Availability The system is highly available with redundancy through ServiceNow's global data centers.

5. Performance-Optimized with asynchronous scripts, indexed tables, and efficient GlideRecord queries.