

# Requirement Analysis Phase

## Technology Stack

## Template

### Educational Organisation Management using ServiceNow

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Team ID	NM2025TMID06510
Project Name	Educational Organisation Management using ServiceNow

### Technology Stack – Educational Organisation Management System

The Technology Stack defines the **software, platforms, and tools** used to develop, deploy, and maintain the Education Management System. It ensures the solution is **robust, scalable, secure, and maintainable**.

The screenshot shows the ServiceNow user interface for creating a new record. The top navigation bar includes 'servicenow', 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. The main header indicates 'Salesforce - Create SAL0001036'. The form contains the following fields:

- Admin Number: SAL0001036
- Admin Date: [Empty field]
- Grade: -- None --
- Student Name: [Empty field]
- Fathers Name: [Empty field]
- Mother Name: [Empty field]
- Father Cell: [Empty field]
- Mother Cell: [Empty field]

A 'Submit' button is located at the bottom left of the form area.

The image displays two screenshots of the ServiceNow user interface, specifically the 'Admission' and 'Students Progress' forms.

**Top Screenshot: Admission - Create SAL0001037**

The top screenshot shows the 'Admission' form. The header bar includes the ServiceNow logo, navigation tabs (All, Favorites, History, Workspaces, Admin), and a search bar. The form title is 'Admission - Create SAL0001037'. Below the header, there is a progress bar with stages: New, In progress, Joined, Rejected, Rejoined, Closed, and Cancelled. The form fields include:

- Admission Number (text input)
- Purpose of join (dropdown menu, currently set to '-- None --')
- Student Name (text input)
- Fathers Name (text input)
- Mother Name (text input)
- Admin Date (text input)
- Grade (dropdown menu, currently set to '-- None --')
- Fee (text input, currently set to 0.00)
- Father Cell (text input)
- Mother Cell (text input)
- Admin Status (dropdown menu, currently set to '-- None --')
- Comments (text area)

Below the form fields, there is a 'School Details' section with a 'Submit' button. The 'School Details' section includes a 'School area' dropdown menu (currently set to '-- None --') and a 'School' dropdown menu (currently set to '-- None --').

**Bottom Screenshot: Students Progress - Create SAL0001038**

The bottom screenshot shows the 'Students Progress' form. The header bar is similar to the top screenshot, but the form title is 'Students Progress - Create SAL0001038'. The form fields include:

- Admission Number (text input)
- Admin Number (text input)
- Admin Date (text input)
- Student Name (text input)
- Grade (dropdown menu, currently set to '-- None --')
- Fathers Name (text input)
- Mother Name (text input)
- Father Cell (text input)
- Mother Cell (text input)

Below the form fields, there is a 'student progress' section with a 'Submit' button. The 'student progress' section includes a list of subjects (Science, Hindi, Telugu, Social, Maths, English) and a 'Total' field. The 'Total' field is currently set to 0.00. The 'Result' field is currently set to 0.00. The 'Percentage' field is currently set to 0.00.

## 1. Platform Layer

- **ServiceNow Platform**

- Provides core capabilities for workflow automation, database management, and reporting.
- Hosts modules like Admissions, Academic Tracking, Workflow Automation, and Analytics.
- Offers configurable forms, dashboards, and role-based access control.

## 2. Front-End Layer

- **ServiceNow UI / Web Interface**

- Intuitive dashboards and portals for students, teachers, and administrators.
- Responsive design for desktop, tablet, and mobile devices.
- Provides forms, notifications, and visual analytics.

- **Optional Mobile Interface**

- ServiceNow mobile app for remote access to workflows and dashboards.
  - Push notifications for alerts and updates.
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### **3. Back-End / Application Layer**

- **Workflow Engine**

- Automates admissions, approvals, notifications, and interdepartmental processes.

- **Scripting & Business Rules**

- JavaScript-based scripts for validations, automation, and workflow logic.

- **Integration Layer**

- APIs for integration with external systems (finance, library, examination systems) if required.
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### **4. Database Layer**

- **ServiceNow Database (CMDB & Tables)**

- Centralized storage for student, teacher, and administrative data.
  - Supports CRUD operations (Create, Read, Update, Delete).
  - Role-based access ensures data security and integrity.
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### **5. Analytics & Reporting Layer**

- **ServiceNow Performance Analytics & Dashboards**

- Provides visual dashboards, KPI tracking, and customizable reports.

- Supports real-time insights for academic performance, attendance trends, and workflow efficiency.
  - **Export & Visualization Tools**
    - Charts, graphs, heatmaps, and exportable reports for management and audits.
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## 6. Security & Compliance

- **Role-Based Access Control (RBAC)**
    - Ensures students, teachers, and administrators access only permitted data and features.
  - **Data Encryption**
    - Encryption of data at rest and in transit.
  - **Audit Logging**
    - Tracks user activities, workflow approvals, and system changes for accountability.
  - **Compliance Standards**
    - Ensures adherence to institutional, regional, and legal requirements for student data management.
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## 7. Development & Testing Tools

- **ServiceNow Studio** – For module development, scripting, and workflow configuration.
  - **ServiceNow Automated Test Framework (ATF)** – For testing forms, workflows, and integrations.
  - **Version Control** – To manage scripts, configurations, and updates.
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## 8. Benefits of this Technology Stack

- **Scalable & Flexible:** Easily adapts to increasing users and future module additions.
- **Secure:** Role-based access, encryption, and audit logs protect sensitive data.

- **Integrated:** Centralized platform reduces fragmentation and streamlines operations.
- **User-Friendly:** Intuitive dashboards and mobile support improve adoption.
- **Data-Driven:** Analytics and reporting enable better decision-making and institutional planning.