A.R.J

COLLEGE OF ENGINEERING& TECHNOLOGY

EDAIYARNATHAM, MANNARGUDI-614 001 (APPROVED BY AICTE, NEW DELHI & AFFILIATED FOR ANNA UIVERSITY) (AN ISO 9001:2000 CERTIFIED INSITITUTION)

NM1051—SERVICENOW ADMINISTRATOR

DEPARTMENT OF COMPUTER SCIENCE

PROJECT TITLE: EDUCATIION ORGANIZATION USING SERIVICENOW

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EDUCATIONAL ORGANIZATION USING SERVICENOW

ABSTRACT

Educational institutions are responsible for maintaining large amounts of data related to students, admissions, academic performance, and administrative processes. Traditionally, these records are maintained manually, which leads to difficulties such as data duplication, delays, inconsistency, reduced transparency, and operational inefficiency. The advent of cloud platforms like ServiceNow has enabled automation and digitization of these critical administrative tasks.

This project, titled *Educational Organization Management System Using ServiceNow*, aims to design and implement a centralized, automated, and user-friendly system that streamlines admission processing, maintains student records, and monitors student academic performance. The project makes use of ServiceNow capabilities such as Table Creation, Form Layout Design, Number Maintenance, Client Scripts, and Process Flow to build an efficient workflow system. The system not only minimizes human error but also improves the overall administrative efficiency of the educational institution. By incorporating auto-population scripts, validation mechanisms, and status-based tracking flows, the system ensures that student data is recorded accurately and updated instantly. Thus, this project demonstrates how ServiceNow can be extended beyond corporate IT service management into academic and administrative domains successfully.

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2. INTRODUCTION

Educational administration involves numerous tasks ranging from managing admission procedures, maintaining student demographic and academic records, calculating results, and generating reports. These operations need to be consistent, accurate, and accessible. In many cases, institutions still rely on manual documentation practices such as handwritten records, registers, or spreadsheets, which often lead to errors, inconsistencies, and time delays.

To address these limitations, modern institutions require a systematic, automated, and secure data management platform. ServiceNow is a powerful cloud-based platform widely used for workflow automation, data management, business process modeling, and enterprise-level service operations. Although ServiceNow is predominantly used in IT service management and corporate environments, it can also be applied effectively within educational organizations.

This project utilizes ServiceNow to develop a complete Educational Organization Management System. It involves creating custom tables for storing student admission records and academic progress data. Further, the system incorporates form redesign, automatic number generation, automated field population, validation scripts, and sequential admission process flow. These features collectively ensure improved data reliability, better process visibility, and time-efficient operations.

By the end of the project, the institution is able to maintain well-organized, structured student records and easily monitor student academic development. This system reduces manual dependencies and introduces automation, accuracy, and accessibility in daily workflows.

3. EXISTING SYSTEM

In the existing traditional system, student administration activities are carried out manually. Student admission forms are filled on paper, details are manually transferred into registers or Excel sheets, and academic scores are computed manually. While this system has been used for decades, it comes with several drawbacks, such as:

- **High Risk of Human Error:** Manual data entry leads to spelling mistakes, incorrect numerical entries, and inconsistent data.
- **Time-Consuming Processing:** Searching, updating, and retrieving data takes a considerable amount of time.
- **No Centralized Database:** Data scattered across registers, files, and separate spreadsheets lacks synchronization.
- **Difficulty in Tracking Progress:** Tracking the status of admissions, withdrawals, or academic performance is not straightforward.
- **Lack of Automation:** Repetitive operations like calculating total marks, percentage, or verifying student identity must be done manually.

- **Limited Accessibility:** Data is not easily accessible outside the physical bounds of the institution.

Due to these limitations, administrative efficiency becomes low, transparency decreases, and decision-making becomes delayed.

4. PROPOSED SYSTEM

The proposed system digitizes and automates the management of student information using ServiceNow. The goal is to establish an integrated and centralized Educational Information Management platform in which student details can be stored, modified, and retrieved efficiently.

Key Functions of Proposed System:

1. **Automated Student Admission Management:** Records student enrollment information with validated input fields.
2. **Centralized Data Storage:** All student and academic records are saved in a structured database within ServiceNow.
3. **Auto-Generation of Admission Number:** Unique identification numbers are created using Number Maintenance to avoid duplication.
4. **Dynamic Data Auto-Population:** Client Scripts automatically populate fields to reduce repetitive data entry.
5. **Academic Progress Calculation:** Automated scripts compute total, percentage, and result.
6. **Process Flow Automation:** Manages admission lifecycle stages (New → In Progress → Joined → Rejoined → Closed → Cancelled).

With these improvements, the system reduces errors, improves accessibility, and provides standardized workflows that can be adopted by any educational organization.

5. SYSTEM ANALYSIS

5.1 Functional Requirements

- Ability to store and update student admission records
- Ability to record student academic progress
- Automated admission number generation
- Role-based data access
- Automated field population and validation

5.2 Non-Functional Requirements

- **Reliability:** The system must maintain accurate student data.
- **Usability:** The user interface must be easy for staff to use.
- **Security:** Access should be restricted to authorized users only.
- **Scalability:** Must support increasing student data over time.

5.3 System Architecture

The system follows a **Client-Server, Cloud Hosted** architecture through ServiceNow.

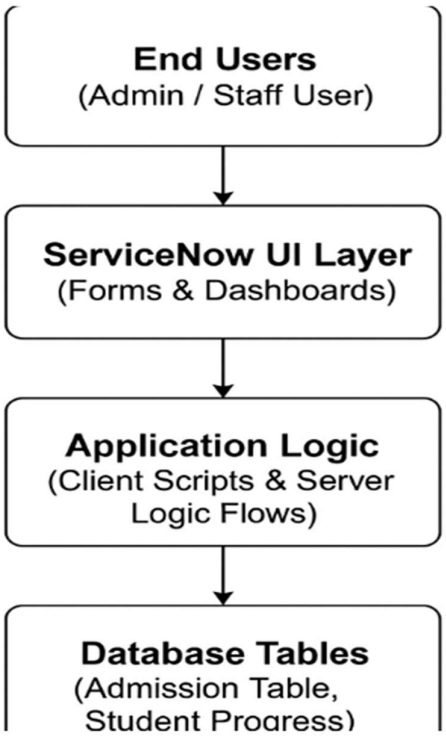
User Interface (Forms) → Application Logic (Client Scripts + Process Flow) → Database Tables

6. SYSTEM DESIGN

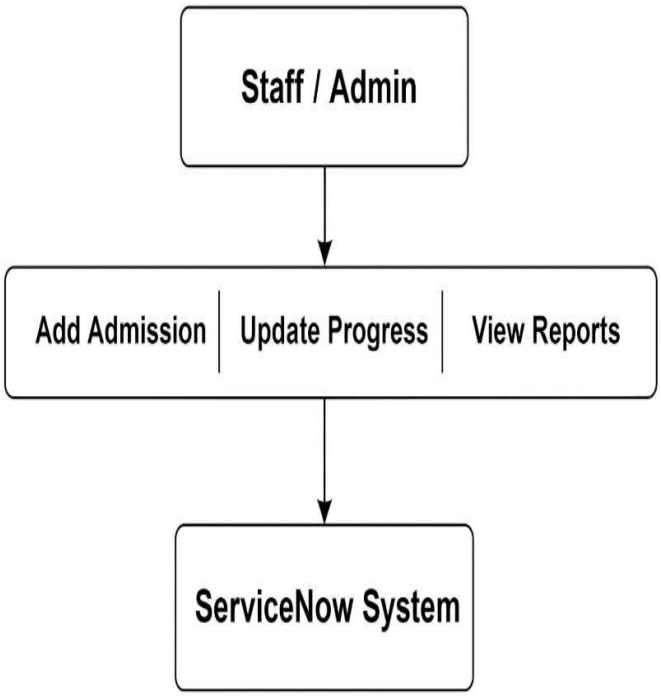
System design defines how the Educational Organization Management System is structured internally. It describes the data model, the workflows involved, and the sequence of interactions between users and the system. The primary goal of system design is to ensure that the system is efficient, scalable, and easy to use for institutional operations.

6.1 System Architecture Diagram

This layered architecture ensures separation of user interface, workflow logic, and data storage, resulting in efficient processing and maintainability.



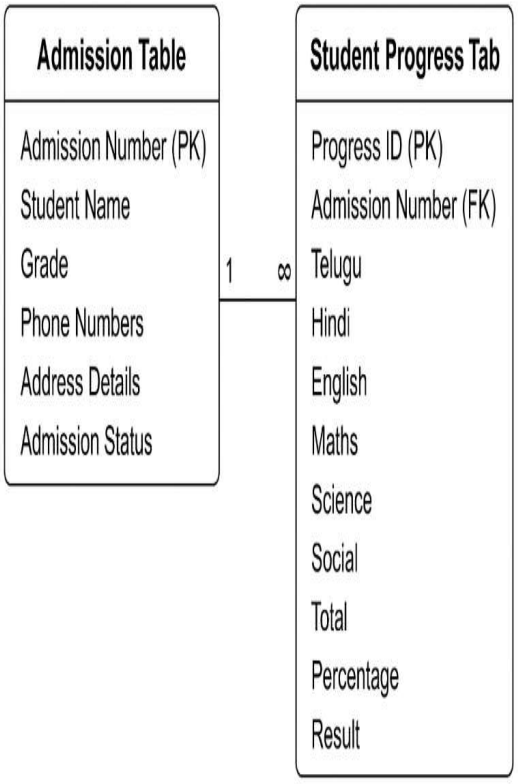
6.2 Use Case Diagram



Explanation:

- The **Admin/Staff** role interacts with the system to create and manage student and admission data.
- The use cases represent system functionalities like **adding records**, **updating student progress**, and **reviewing student details**.

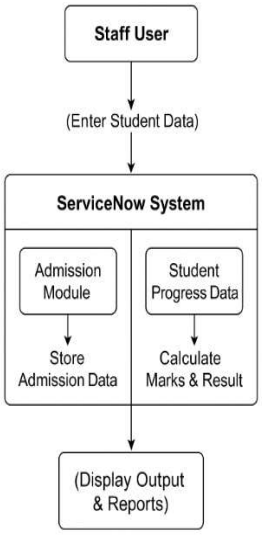
6.3 Entity Relationship Diagram (ERD)



Explanation:

- The **Admission Table** stores personal and admission-related information.
- The **Student Progress Table** stores academic marks and links to the Admission Table using **Admission Number** as a foreign key.

6.4 Data Flow Diagram (Level – 1)



7. MODULE DESCRIPTION

This project consists of **three major modules**, each contributing to the system's automation capabilities.

7.1 Admission Management Module

This module is responsible for capturing and maintaining complete admission-related information.
Features include:

- Unique **Admission Number** generation through Number Maintenance.
- Dynamic selection of grade, purpose of joining, and school details using choice fields.
- Auto-population of existing student details based on admission reference number.

7.2 Student Progress & Performance Module

This module stores and calculates student academic results based on the marks entered.

- Marks are entered for subjects like Telugu, Hindi, English, Mathematics, Science, and Social.
- Total Marks, Percentage, and Result fields are automatically calculated using **Client Scripts**.
- The system classifies the student result as **Pass** or **Fail** based on percentage logic.

7.3 Process Flow Tracking Module

A ServiceNow WorkFlow / Process Flow is created to track student admission lifecycle:

New → In Progress → Joined → Rejected → Rejoined → Closed → Cancelled

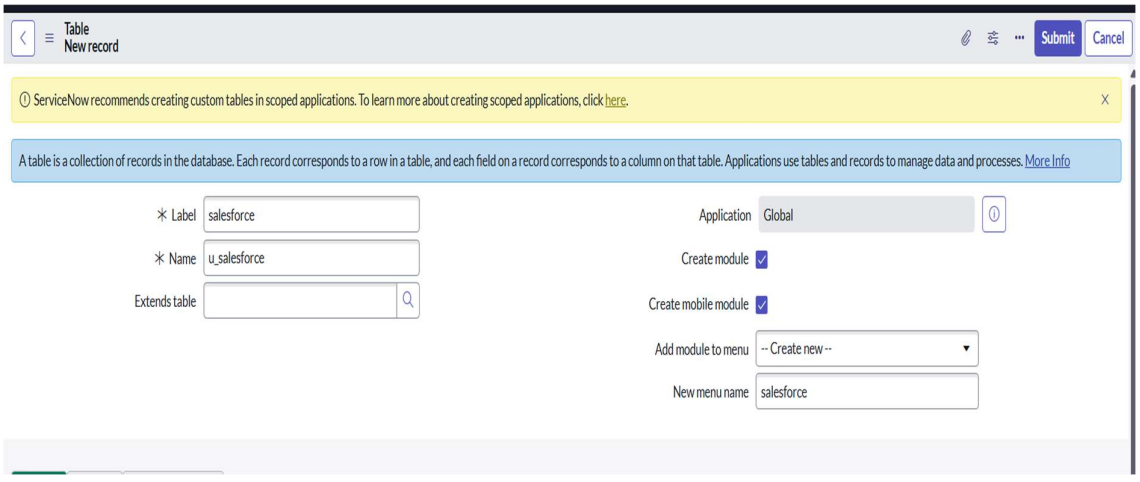
This provides clarity in admission status at every stage and avoids confusion during student registration.

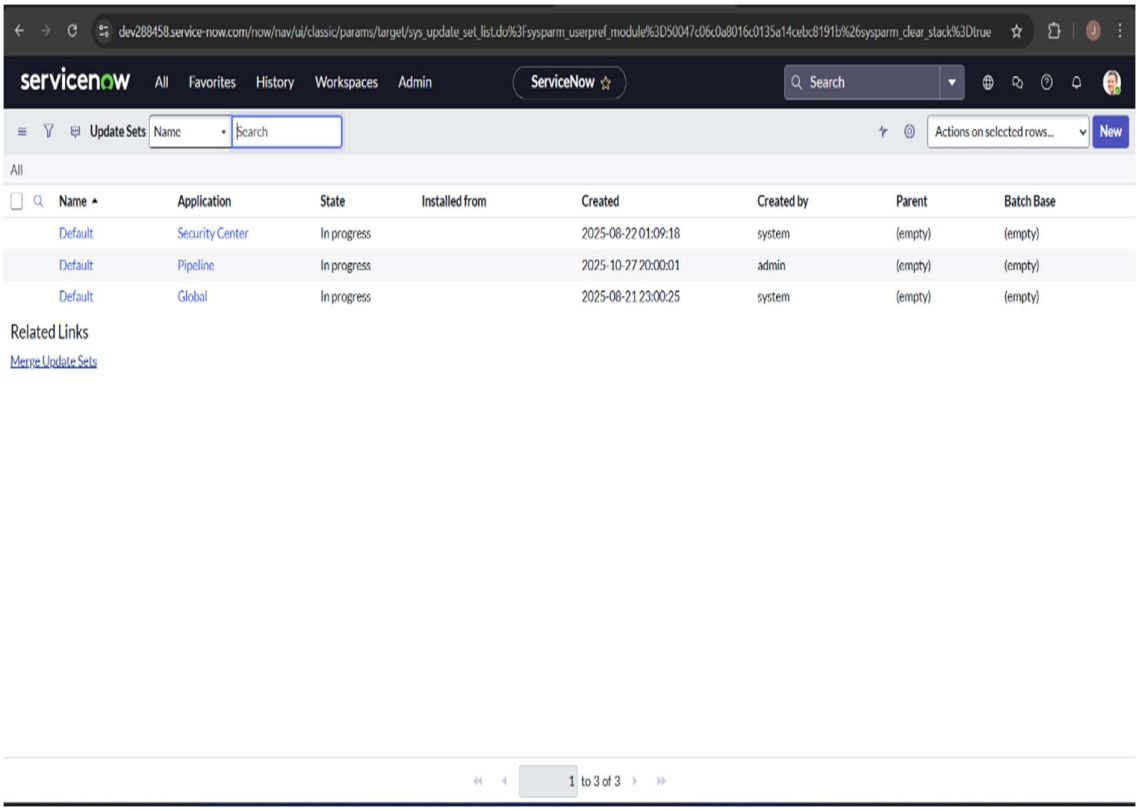
8. METHODOLOGY

The methodology explains the step-by-step development approach used in ServiceNow.

8.1 Table Creation

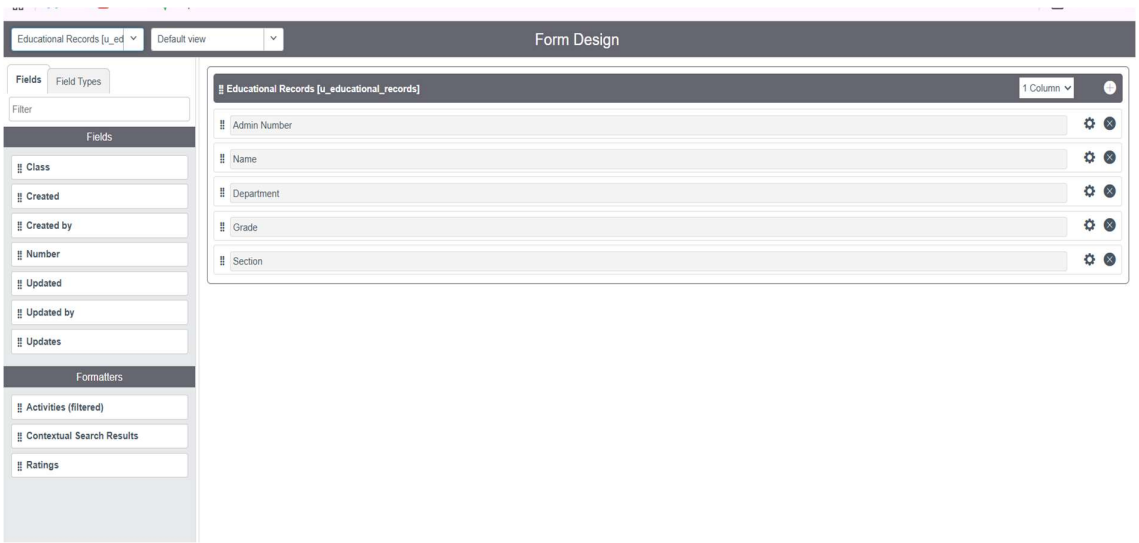
- **Salesforce Table** and **Admission Table** were created to store student personal and academic information.
- Additional fields were added for address, phone numbers, and admission-related metadata.





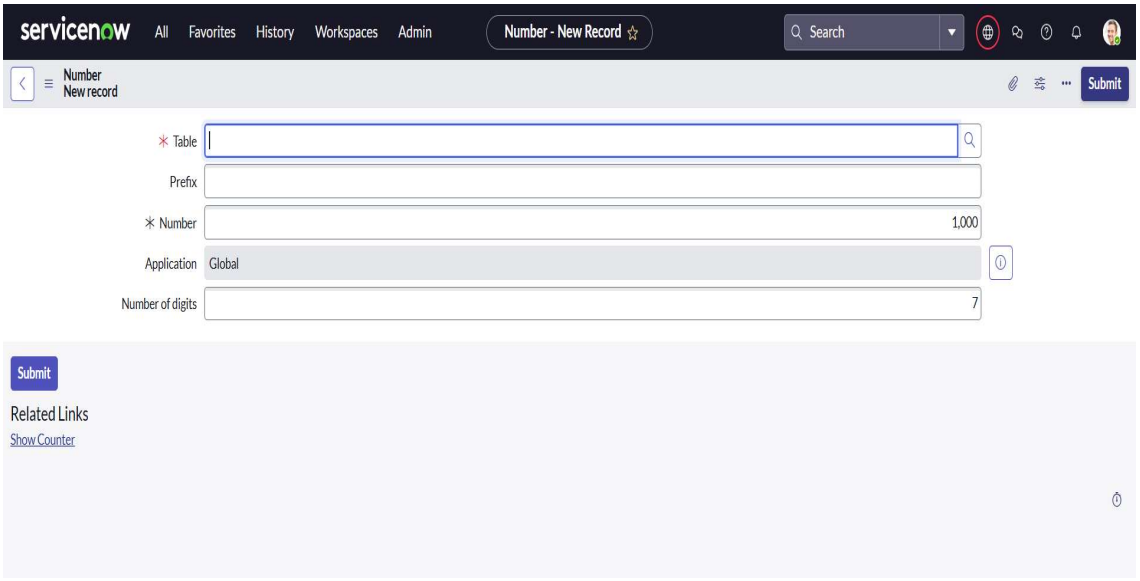
8.2 Form Design

- Forms were modified to improve data readability and user convenience.
- Frequently used fields were placed at the top.
- Unnecessary sections were removed to simplify the layout.



8.3 Number Maintenance Setup

- Admission Number automatically increments (e.g., ADM001, ADM002…).
- Ensures uniqueness and prevents duplicate student accounts.



8.4 Process Flow Creation (Admission Lifecycle)

The admission progress is visually and logically tracked:

Order	Status Name
1	New
2	In Progress
3	Joined
4	Rejected
5	Rejoined
6	Closed
7	Cancelled

This ensures transparency and clarity throughout the student onboarding journey.

8.5 Client Scripts Implementation (Detailed)

A. Auto Populate Script

Automatically fills form fields based on Admission Number selection.

Purpose: Reduce repeated data entry & ensure accuracy.

```
function onChange(control, oldValue, newValue, isLoading, isTemplate) {
  if (isLoading || newValue === '') {
    return;
  }

  //Type appropriate comment here, and begin script below
  var a = g_form.getReference('u_admission_number');
  g_form.setValue('u_admin_date',a.u_admin_date);
  g_form.setValue('u_grade',a.u_grade);
  g_form.setValue('u_student_name',a.u_student_name);
  g_form.setValue('u_father_name',a.u_father_name);
  g_form.setValue('u_mother_name',a.u_mother_name);
  g_form.setValue('u_father_cell',a.u_father_cell);
  g_form.setValue('u_mother_cell',a.u_mother_cell);


  g_form.setDisabled('u_admin_date',a.u_admin_date);
  g_form.setDisabled('u_grade',a.u_grade);
  g_form.setDisabled('u_student_name',a.u_student_name);
  g_form.setDisabled('u_father_name',a.u_father_name);
  g_form.setDisabled('u_mother_name',a.u_mother_name);
  g_form.setDisabled('u_father_cell',a.u_father_cell);
  g_form.setDisabled('u_mother_cell',a.u_mother_cell);
}
```

B. Pincode Update Script

Displays location automatically when Pincode is entered.

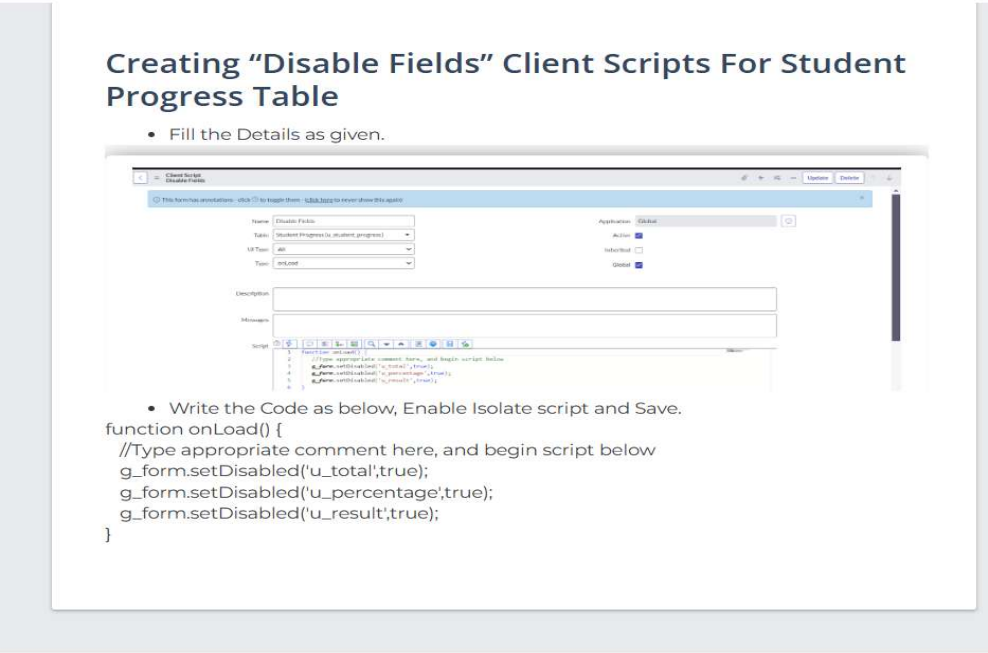
Purpose: Improve convenience and avoid address errors.

```
function onChange(control, oldValue, newValue, isLoading, isTemplate) {
  if (isLoading || newValue === '') {
    return;
  }
   var a = g_form.getValue('u_pincode');
if(a == '509358')
{
g_form.setValue('u_mandal', 'kadthal');
g_form.setValue('u_city', 'kadthal');
g_form.setValue('u_district', 'RangaReddy');

}
else if(a == '500081')
{
g_form.setValue('u_mandal', 'karmanghat');
g_form.setValue('u_city', 'karmanghat');
g_form.setValue('u_district', 'RangaReddy');

}
else if(a == '500079')
{
g_form.setValue('u_mandal', 'Abids');
g_form.setValue('u_city', 'AsifNagar');
g_form.setValue('u_district', 'Hyderabad');
}

  //Type appropriate comment here, and begin script below

}
```

C. Disable Fields Script (Progress Table)

Prevents users from modifying total, percentage, and result.

Purpose: Protect calculated values from accidental edits.



D. Total Marks Calculation Script

Adds marks of all subjects and updates Total field dynamically.

```
function onChange(control, oldValue, newValue, isLoading, isTemplate) {
  if (isLoading || newValue === '') {
    return;
  }

  //Type appropriate comment here, and begin script below
if (newValue){
var a = parseInt(g_form.getValue('u_telugu'));
var b = parseInt(g_form.getValue('u_hindi'));
var c = parseInt(g_form.getValue('u_english'));
var d = parseInt(g_form.getValue('u_maths'));
var e = parseInt(g_form.getValue('u_science'));
var f = parseInt(g_form.getValue('u_social'));
var Total = parseInt(a+b+c+d+e+f);
g_form.setValue('u_total', Total);
}
}
```

E. Percentage Calculation Script

Computes percentage based on Total marks out of 600.

```
function onChange(control, oldValue, newValue, isLoading, isTemplate) {
  if (isLoading || newValue === '') {
    return;
  }
  //Type appropriate comment here, and begin script below
  if(newValue) {
    var a = parseInt(g_form.getValue('u_percentage')); // Convert the value to an
integer for comparison
    if(a >= 0 && a <= 59){
      g_form.setValue('u_result','Fail');
    } else if(a >= 60 && a <= 100) {
      g_form.setValue('u_result','Pass');
    } else {
      // Handle the case if a is out of range (optional)
      g_form.addErrorMessage('Percentage should be between 0 and 100.');
      g_form.clearValue('u_result');
    }
  }
}
```

F. Result Evaluation Script

Assigns *Pass* or *Fail* based on percentage threshold.

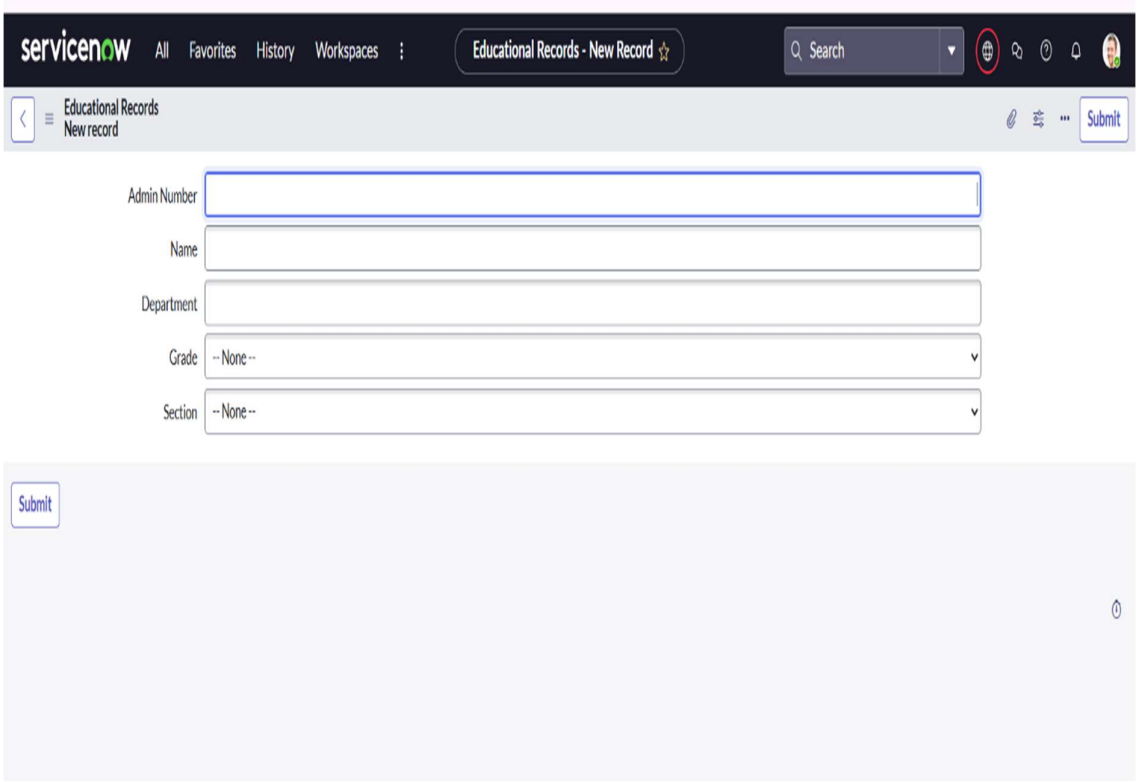
```
function onChange(control, oldValue, newValue, isLoading, isTemplate) {
  if (isLoading || newValue === '') {
    return;
  }

  //Type appropriate comment here, and begin script below
  var Total = g_form.getValue('u_total');
  var Percentage = (Total/600)*100;
  g_form.setValue('u_percentage',Percentage+'%');
}
```

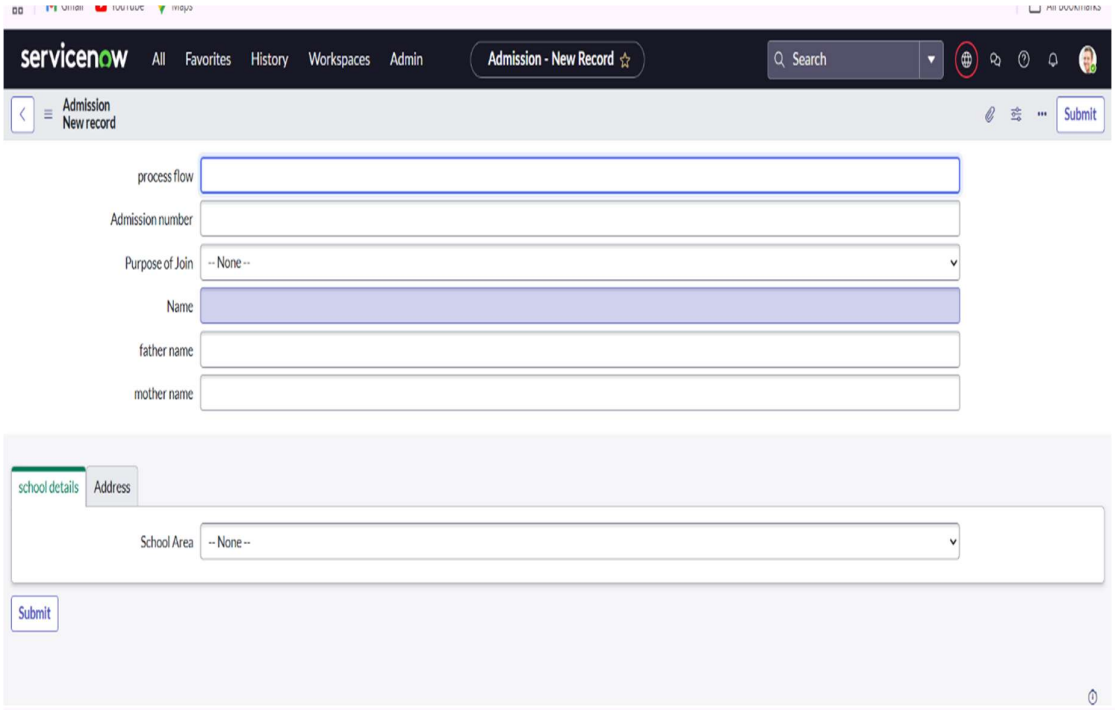
9.RESULTS

The implementation of the Educational Organization Management System in ServiceNow resulted in a streamlined and well-structured administrative workflow. The system successfully automated critical processes such as student admission, record management, teacher data maintenance, and student progress tracking. Forms and tables created within ServiceNow provided a centralized space to store, manage, and retrieve student information with high reliability and accuracy.

The Number Maintenance module ensured that each student received a unique Admission Number, eliminating duplication and manual entry errors. The Form Design improvements allowed staff to interact with the system in a more user-friendly manner, reducing training time and improving adoption across the institution. The use of Flow Designer and Client Scripts enhanced the system's functionality by introducing real-time automation and validation.

Overall, the system demonstrated improved operational efficiency, minimized paperwork, reduced manual administrative workload, and provided data accessibility through a single platform. These results indicate that ServiceNow can serve as an effective cloud-based solution for educational institutions seeking digital transformation.

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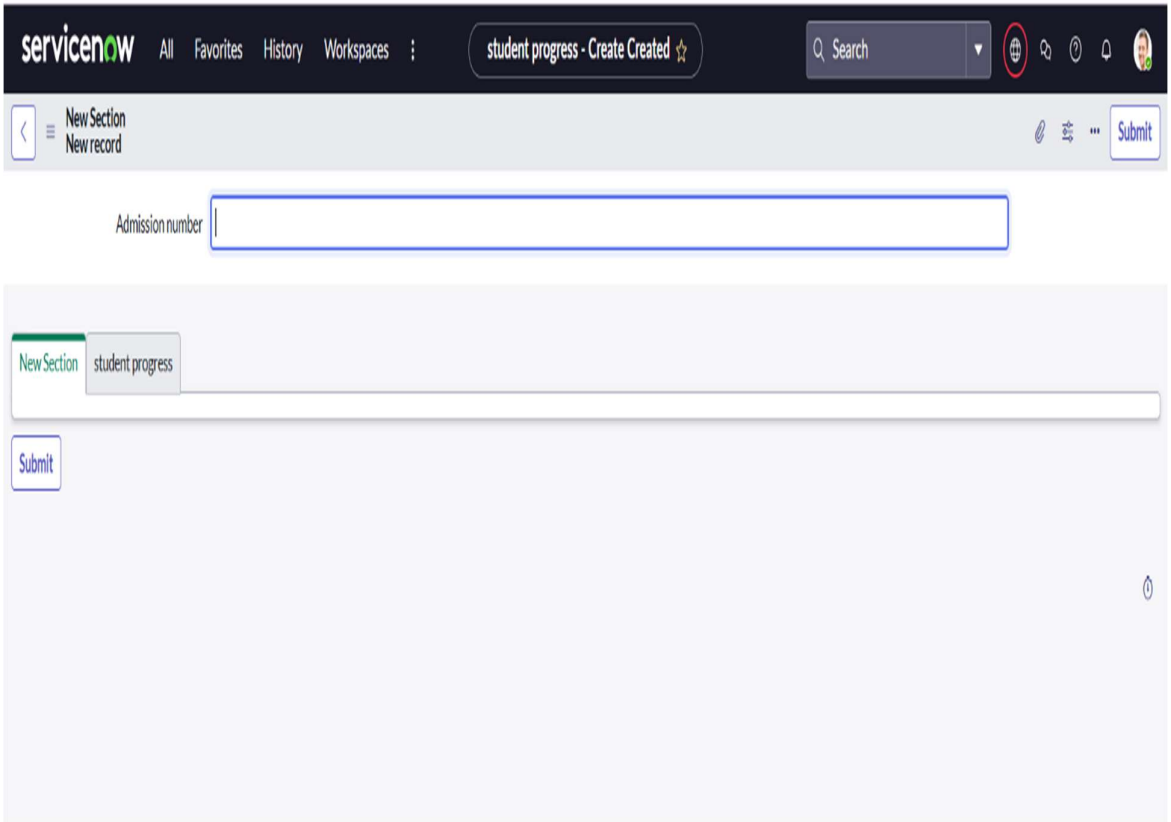
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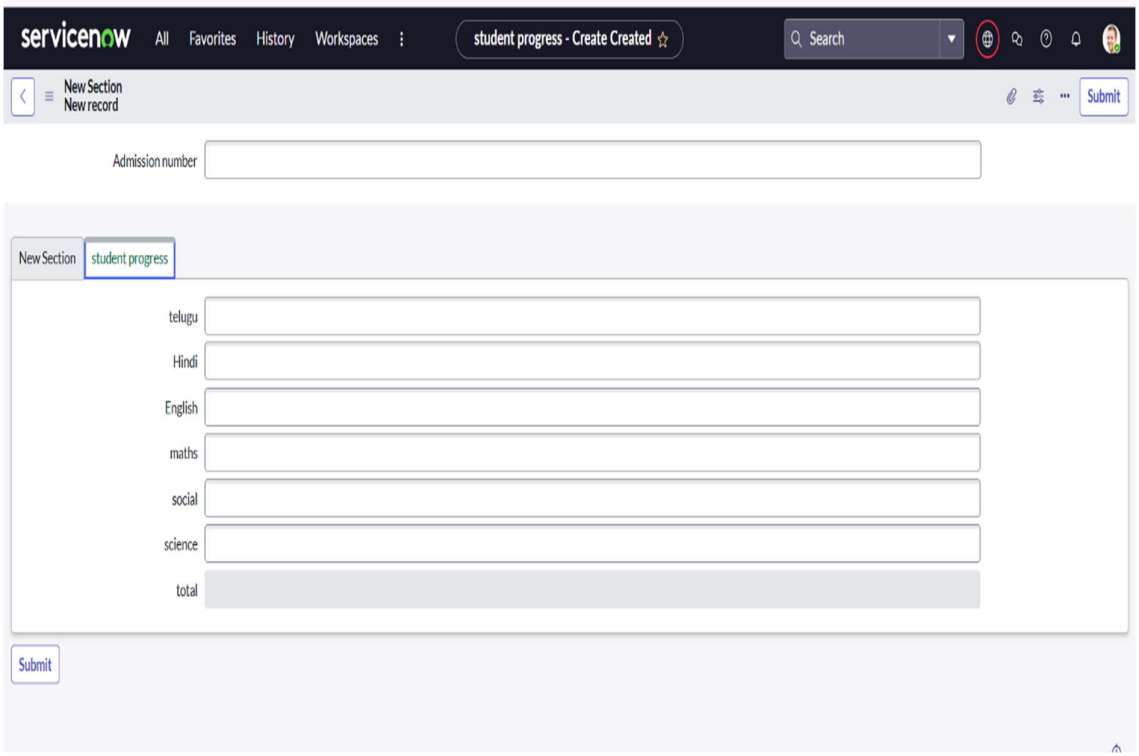

ADVANTAGES

1. **Centralized Data Management:**
   Student information, admission details, and progress records are stored in a unified database, ensuring consistency and reducing redundant data entry.
2. **Improved Efficiency:**
   Automation of workflows such as admission assignment and record updates reduces manual effort and administrative overhead.
3. **Reduced Errors:**
   Number Maintenance ensures unique identification of students, eliminating issues caused by manual numbering mistakes.
4. **Secure and Role-Based Access:**
   ServiceNow offers controlled access based on user roles, ensuring data privacy and preventing unauthorized access.
5. **Scalable and Customizable:**
   The platform allows future expansion of modules as the institution grows, making it adaptable to changes.
6. **User-Friendly Interface:**
   The drag-and-drop Form Design and UI controls make the system easy to use for administrative staff without technical expertise.

7. **Cloud-Based Solution:**
   Data is stored securely online, ensuring availability anytime from anywhere.

10.DISADVANTAGES

1. **Requires Stable Internet Connection:**
   Since the system is cloud-based, it cannot function effectively without internet access.
2. **Initial Setup Time:**
   Designing forms, tables, workflows, and scripts requires time and planning before it becomes operational.
3. **Training Requirements:**
   Staff must be trained to use the platform efficiently, especially those with limited computer experience.
4. **Limited Offline Access:**
   ServiceNow does not provide offline functionality, which may be a limitation in remote or low-connectivity regions.
5. **Customization Complexity:**
   Advanced workflows and scripting may require technical expertise to configure and maintain.

11.FUTURE ENHANCEMENTS

1. **Student Attendance Tracking Module:**
   A dedicated module can be integrated to automatically record and analyze class attendance.
2. **Parent/Guardian Portal:**
   A user interface could be built for parents to view student progress, attendance, and announcements.
3. **Teacher Scheduling and Timetable Management:**
   Automation of class schedules and faculty timetables can further reduce administrative load.
4. **Result & Grade Report Generation:**
   The system can be enhanced to automatically generate and export marksheets and performance reports.
5. **Integration with SMS / Email Notification System:**
   Notifications can be sent to students or parents regarding admissions, fees due, or exam dates.
6. **Mobile App Development:**
   A mobile interface can make the system more accessible and modern for end-users.

12.CONCLUSION

The Educational Organization Management System built using ServiceNow demonstrates how cloud-based enterprise platforms can significantly improve institutional workflows. By automating student admission processes, centralizing academic records, and providing an easily customizable environment, the system addresses common administrative challenges faced by educational institutions. The project successfully highlights the flexibility, security, and scalability of ServiceNow in non-industry domains such as education.

The adoption of such automated systems enhances transparency, accuracy, and data availability, leading to better decision-making and efficient academic administration. With future enhancements, the platform has the potential to evolve into a complete educational management ecosystem.

13.REFERENCES

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5. Official Tutorials and System Configuration Guidelines from ServiceNow Community