

# Institute Management System

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## 1. Project Overview

The Institute Management System is a comprehensive Salesforce solution designed to efficiently manage student records, course offerings, enrollments, and attendance tracking. This system automates repetitive tasks, ensures data integrity, and provides meaningful insights through dynamic reports and dashboards. By leveraging Salesforce's automation and security features, the system delivers an intuitive and secure platform for administrators to manage educational workflows.

### Key Highlights:

- Centralized management of Students, Courses, Enrollments, and Attendance
  - Automation of attendance creation using Record-Triggered Flows
  - Validation rules to prevent duplicate enrollments
  - Interactive dashboards and detailed reports for analytics
  - Role-based access control and field-level security for data protection
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## 2. Project Objectives

The primary objectives of this project are:

1. Streamline the management of student and course information.
  2. Automate attendance tracking and reduce manual errors.
  3. Provide real-time insights through reports and dashboards.
  4. Enforce secure, role-based access to sensitive data.
  5. Ensure consistency, accuracy, and maintainability of records.
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## Phase 1: Problem Understanding & Industry Analysis

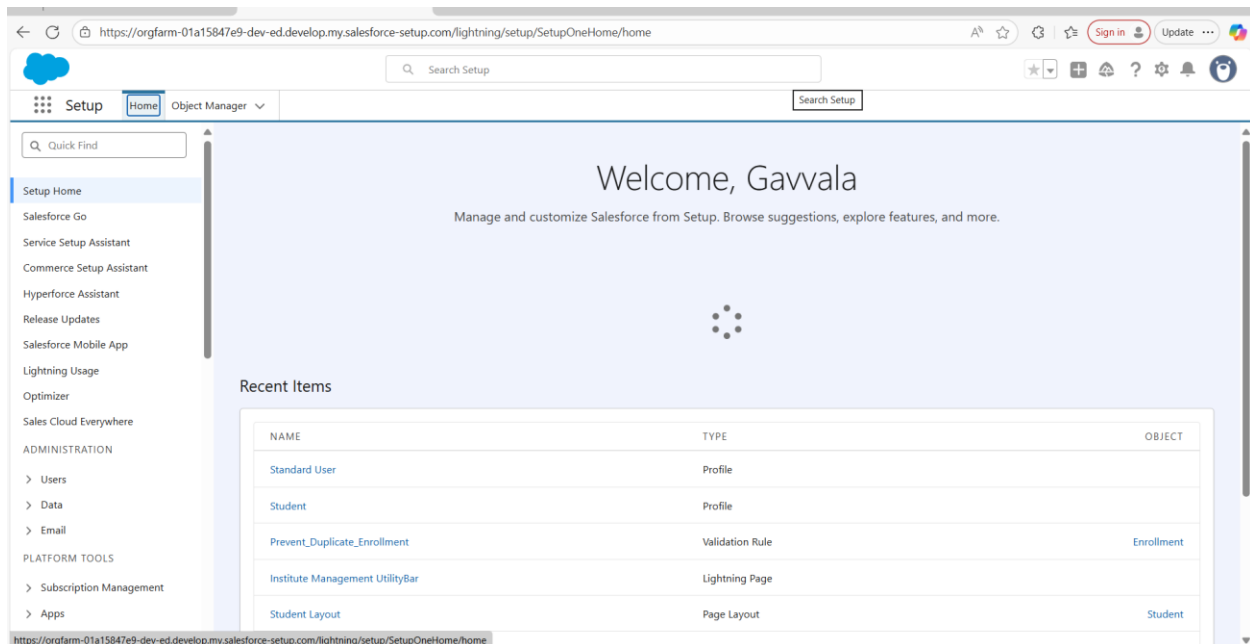
### Requirement Gathering

The project began with identifying the key challenges faced by educational institutions in managing student and course data. Manual tracking of enrollments, attendance, and academic information often led to duplication, data inconsistency, and administrative delays. Through stakeholder discussions, the following requirements were gathered:

- Maintain centralized student and course information.
- Automate attendance creation when a student enrolls.
- Prevent duplicate enrollments and missing attendance data.
- Generate real-time reports and dashboards for administrators.
- Ensure data security with role-based access.

## Phase 2: Org Setup & Configuration

- This project was developed using the Salesforce Developer Edition, which provides all necessary CRM features for building and testing custom applications.



## Phase 3: Custom Objects & Data Modeling

### 3.1 Student Object

The Student object captures all essential student information.

- **Fields:** Student Name, Email, Phone, Date of Birth,, Status (Active/Inactive)
- **Purpose:** Central repository of all students, enabling enrollments and attendance tracking.

The screenshot shows the Salesforce Setup interface for the 'Student' object. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules, and Scoping Rules. The main content area is titled 'Fields & Relationships' and shows a list of 10 fields. The fields are sorted by Field Label. The fields are: Course (Course\_\_c, Lookup(Course)), Created By (CreatedById, Lookup(User)), DOB (DOB\_\_c, Date), Email (Email\_\_c, Email), Enrollment (Enrollment\_\_del\_\_c, Lookup(Enrollment)), Enrollment Status (Enrollment\_Status\_\_c, Picklist), Last Modified By (LastModifiedById, Lookup(User)), Owner (OwnerId, Lookup(User,Group)), Phone (Phone\_\_c, Phone), and Student Name (Name, Text(80)).

Field Label	Field Name	Data Type	Controlling Field	Indexed
Course	Course__c	Lookup(Course)		
Created By	CreatedById	Lookup(User)		
DOB	DOB__c	Date		
Email	Email__c	Email		
Enrollment	Enrollment__del__c	Lookup(Enrollment)		
Enrollment Status	Enrollment_Status__c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		
Phone	Phone__c	Phone		
Student Name	Name	Text(80)		

### 3.2 Course Object

Holds details about each course offered.

- **Fields:** Course Name, Department, Duration, Credits, Instructor
- **Purpose:** Allows the organization to define and manage course offerings.

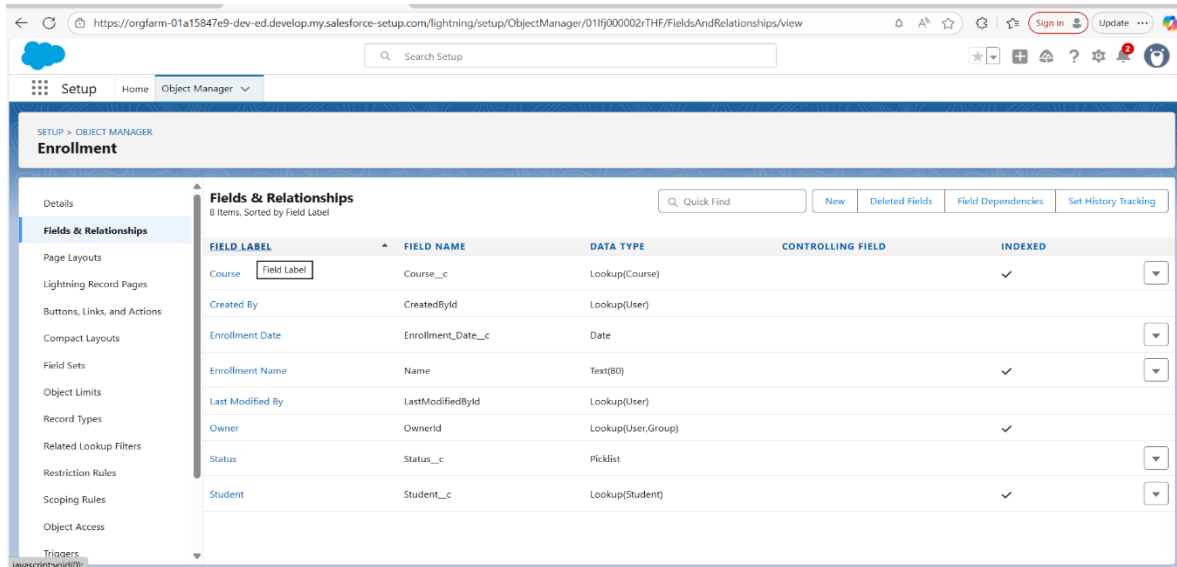
The screenshot shows the Salesforce Setup interface for the 'Course' object. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Restriction Rules, Scoping Rules, Object Access, and Triggers. The main content area is titled 'Fields & Relationships' and shows a list of 8 fields. The fields are sorted by Field Label. The fields are: Course Name (Course\_Name\_\_c, Text(20)), Course Name (Name, Text(80)), Created By (CreatedById, Lookup(User)), Credits (Credits\_\_c, Number(2, 0)), Department (Department\_\_c, Picklist), Duration (Duration\_\_c, Number(3, 0)), Last Modified By (LastModifiedById, Lookup(User)), and Owner (OwnerId, Lookup(User,Group)).

Field Label	Field Name	Data Type	Controlling Field	Indexed
Course Name	Course_Name__c	Text(20)		
Course Name	Name	Text(80)		
Created By	CreatedById	Lookup(User)		
Credits	Credits__c	Number(2, 0)		
Department	Department__c	Picklist		
Duration	Duration__c	Number(3, 0)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		

### 3.3 Enrollment Object

Links students to courses and tracks enrollment status.

- **Fields:** Enrollment Name (Auto Number), Student (Lookup), Course (Lookup), Enrollment Date, Status (Enrolled, Completed, Dropped)



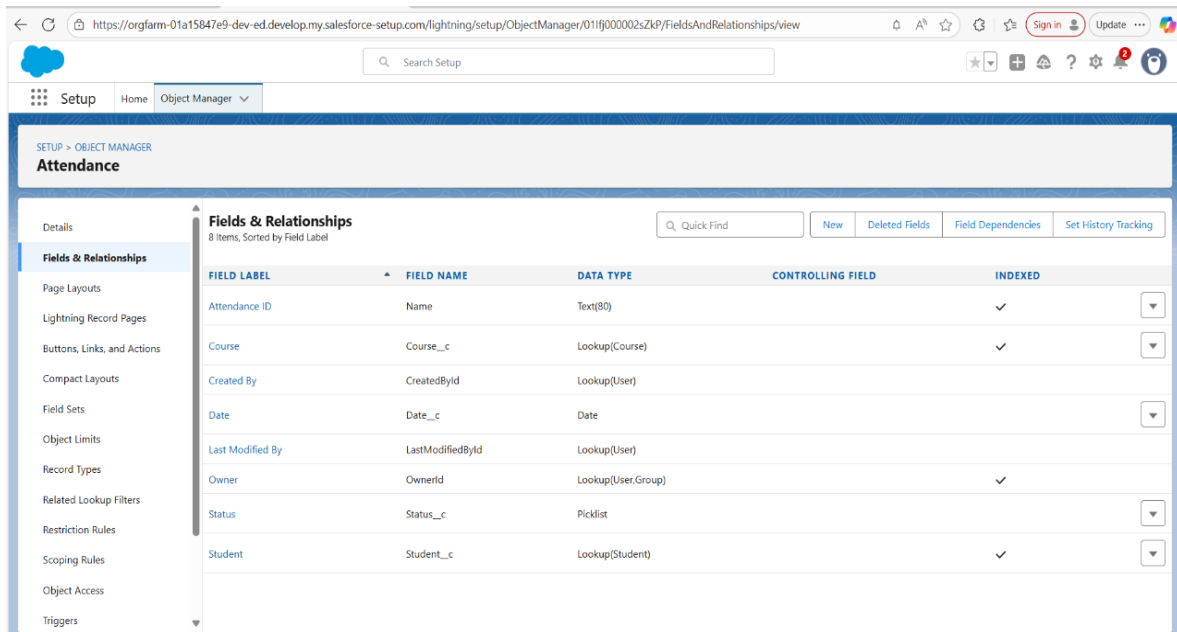
The screenshot shows the Salesforce Setup interface for the Enrollment object. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Restriction Rules, Scoping Rules, and Object Access. The main content area is titled 'Enrollment' and 'Fields & Relationships'. It displays a table with 8 items, sorted by Field Label. The table has columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are Course, Created By, Enrollment Date, Enrollment Name, Last Modified By, Owner, Status, and Student.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Course	Course__c	Lookup(Course)		✓
Created By	CreatedById	Lookup(User)		
Enrollment Date	Enrollment_Date__c	Date		
Enrollment Name	Name	Text(80)		✓
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Status	Status__c	Picklist		
Student	Student__c	Lookup(Student)		✓

### 3.4 Attendance Object

Records daily attendance for each enrollment.

- **Fields:** Attendance ID (Auto Number), Enrollment (Lookup), Date, Status (Present, Absent, Late, Excused), Remarks



The screenshot shows the Salesforce Setup interface for the Attendance object. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Restriction Rules, Scoping Rules, and Object Access. The main content area is titled 'Attendance' and 'Fields & Relationships'. It displays a table with 8 items, sorted by Field Label. The table has columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are Attendance ID, Course, Created By, Date, Last Modified By, Owner, Status, and Student.

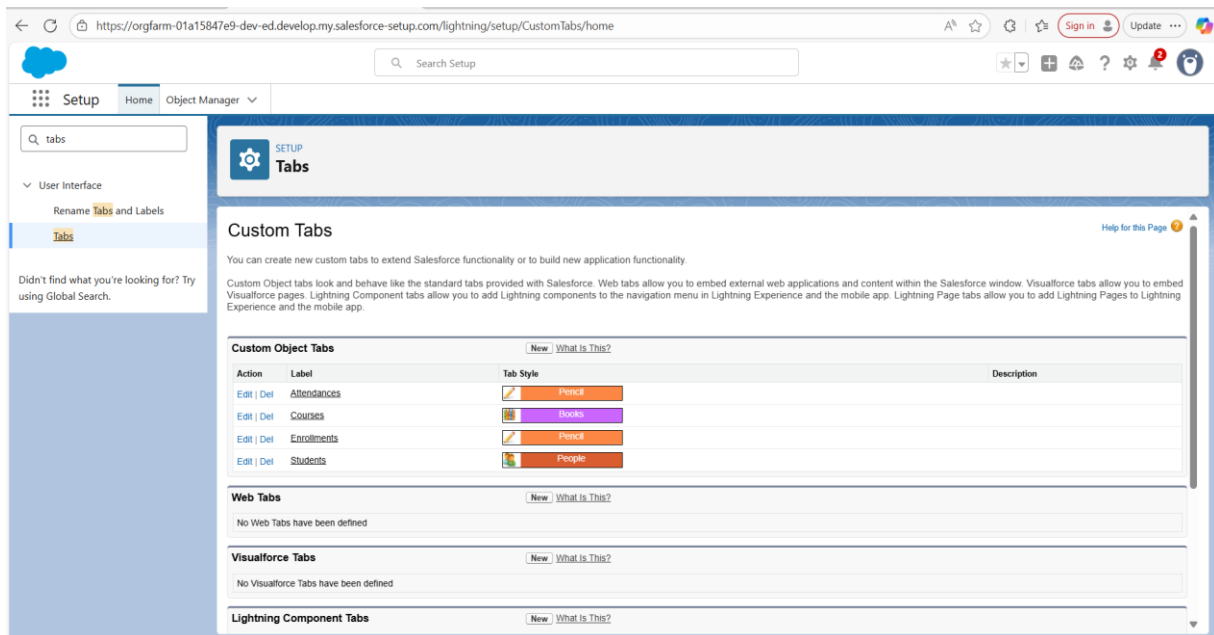
FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Attendance ID	Name	Text(80)		✓
Course	Course__c	Lookup(Course)		✓
Created By	CreatedById	Lookup(User)		
Date	Date__c	Date		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Status	Status__c	Picklist		
Student	Student__c	Lookup(Student)		✓

### 3.5 Relationships

- **Student → Enrollment:** One student can have multiple enrollments.
  - **Course → Enrollment:** Each course can have multiple student enrollments.
  - **Enrollment → Attendance:** Each enrollment can have multiple attendance records.
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## Phase 4: Page Layouts & Related Lists

- **Student Page Layout:** Displays all student fields and includes Enrollments related list.
- **Course Page Layout:** Shows course fields and includes Enrollments related list.
- **Enrollment Page Layout:** Shows enrollment details with Attendance related list.
- **Attendance Page Layout:** Displays enrollment reference, date, status, and remarks.



## Phase 5: Lightning App Setup

- **App Name:** Institute Management System
- **Tabs Included:** Students, Courses, Enrollments, Attendance
- **Navigation Style:** Standard
- **Branding:** Optional custom branding to match institute theme

Lightning App Builder

App Settings

Pages

Institute Management

App Settings

App Details & Branding

App Options

Utility Items (Desktop Only)

Navigation Items

User Profiles

App Details & Branding

Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.

App Details

App Branding

\* App Name

Institute Management

\* Developer Name

auto\_populates

Description

Manage Students, Courses, Enrollments, and Attendance

Image

Primary Color Hex Value

#007002

Upload

Org Theme Options

☐ Use the app's image and color instead of the org's custom theme

App Launcher Preview

IM

Institute Management  
Manage Students, Courses,  
Enrollments, and Attendance

Lightning App Builder

App Settings

Pages

Institute Management

App Settings

App Details & Branding

App Options

Utility Items (Desktop Only)

Navigation Items

User Profiles

App Options

Navigation and Form Factor

Setup and Personalization

\* Navigation Style

Standard navigation

Console navigation

\* Supported Form Factors

Desktop and phone

Desktop

Phone

Setup Experience

Setup (full set of Setup options)

Service Setup

Data Cloud Setup

App Personalization Settings

☐ Disable end user personalization of nav items in this app

☐ Disable temporary tabs for items outside of this app

☐ Use Omni-Channel sidebar

Lightning App Builder

App Settings

Pages

Institute Management

App Settings

App Details & Branding

App Options

Utility Items (Desktop Only)

Navigation Items

User Profiles

Navigation Items

Choose the items to include in the app, and arrange the order in which they appear. Users can personalize the navigation to add or move items, but users can't remove or rename the items that you add. Some navigation items are available only for phone or only for desktop. These items are dropped from the navigation bar when the app is viewed in a format that the item doesn't support.

Available Items

Selected Items

Type to filter list...

Accounts

Action Hub

Activation Targets

Activations

All Sites

Alternative Payment Methods

Analytics

App Launcher

Appointment Categories

Appointment Invitations

Approval Requests

Students

Courses

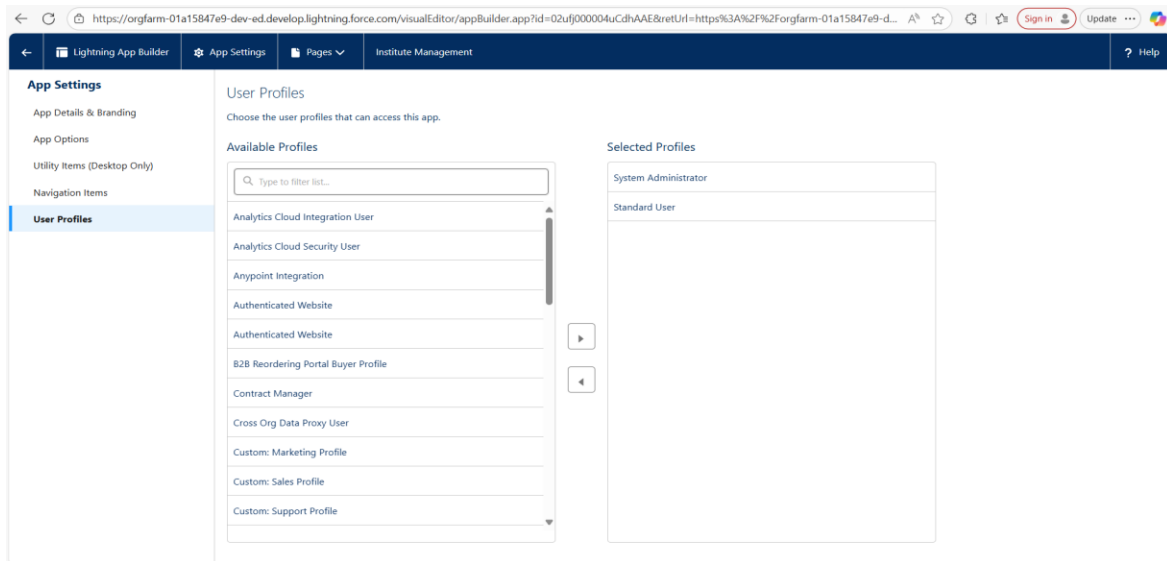
Enrollments

Attendances

Reports

Dashboards

javascript:void(0)



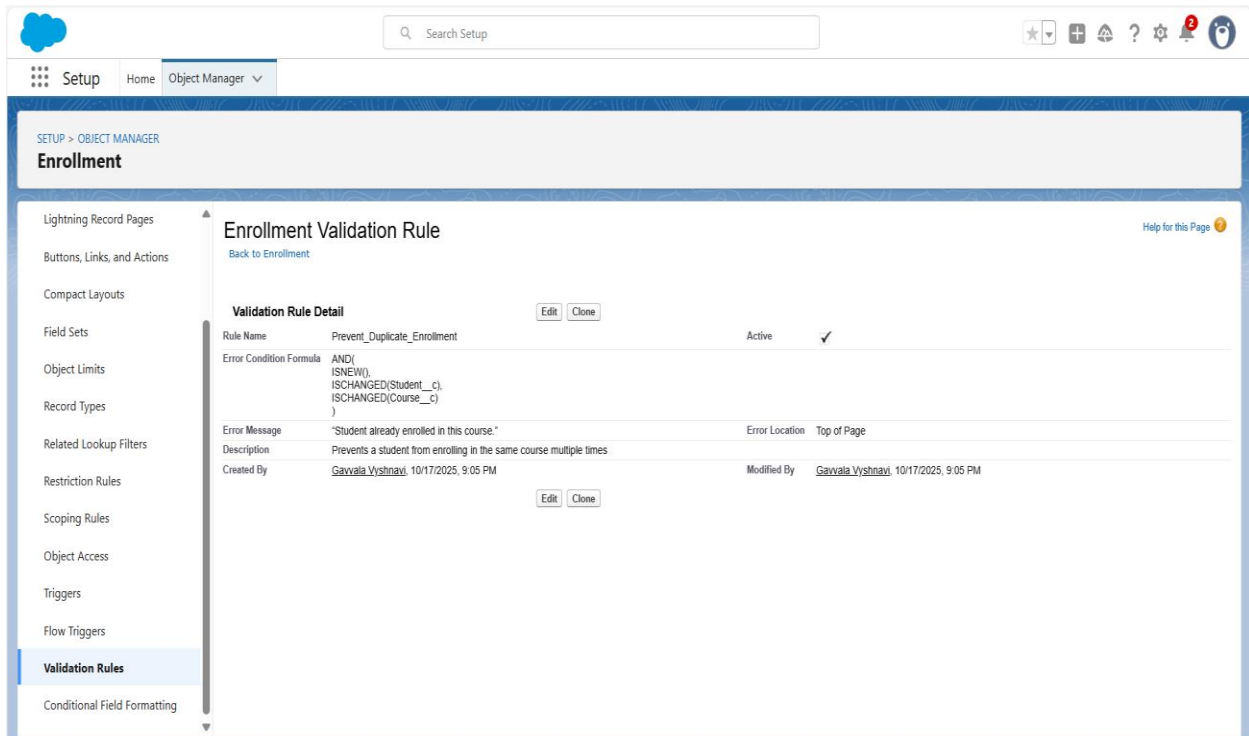
## Phase 6: Automation (Flows & Validation Rules)

### 6.1 Validation Rule

- Prevents duplicate enrollments for the same student and course.

AND (ISNEW(), ISCHANGED(Student\_\_c), ISCHANGED(Course\_\_c))

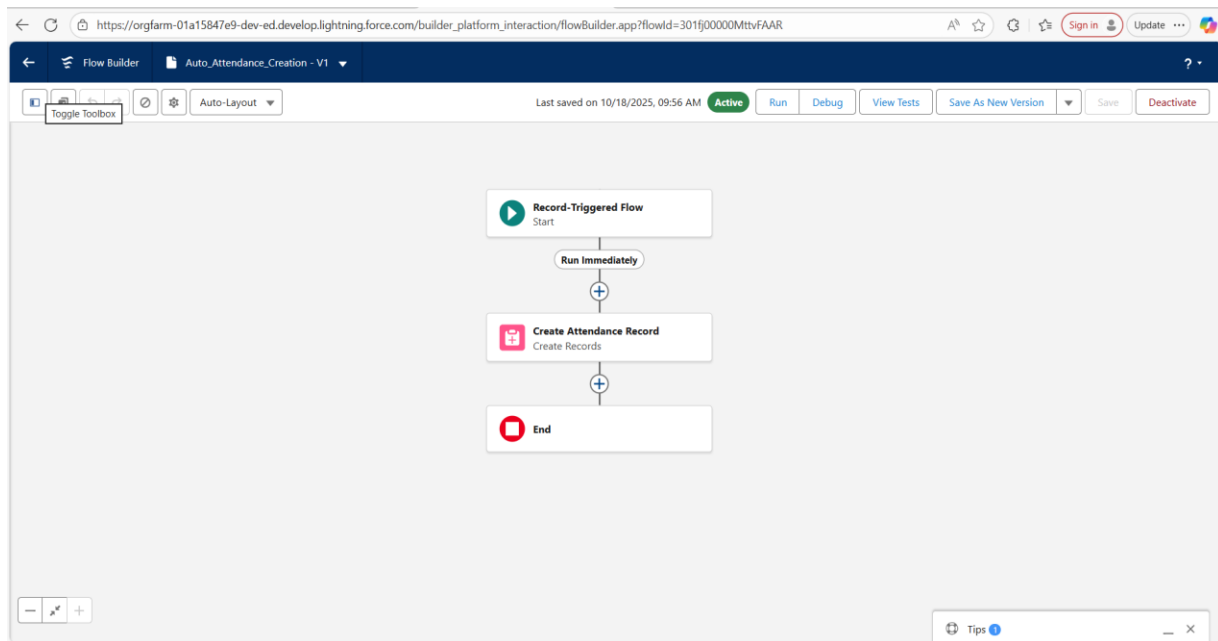
Error Message: "Student already enrolled in this course."



## 6.2 Auto Attendance Flow

- **Trigger:** Record-Triggered Flow on Enrollment creation.
- **Entry Condition:** Status = Active
- **Action:** Create Attendance record automatically
  - Enrollment = {!\$Record.Id}
  - Status = Present
  - Date = Today

This automation ensures that attendance tracking is seamless and reduces manual entry errors.



## Phase 7: Reports & Dashboards

### 7.1 Reports

#### Student Enrollment Report:

- **Report Type:** Students with Enrollments
- **Columns:** Student Name, Email, Phone, Course Name, Enrollment Status
- **Filters:** Enrollment Status = Enrolled
- **Grouping:** By Course Name



https://orgfarm-01a1584/e9-dev-ed.develop.lightning.force.com/lightning/r/Report/000f0000049b65EAA/view/queryScope=userolders

Institute Managem... Students Courses Enrollments Attendances Reports Dashboards

Report: Students  
**Student Enrollment Report**

Total Records: 4

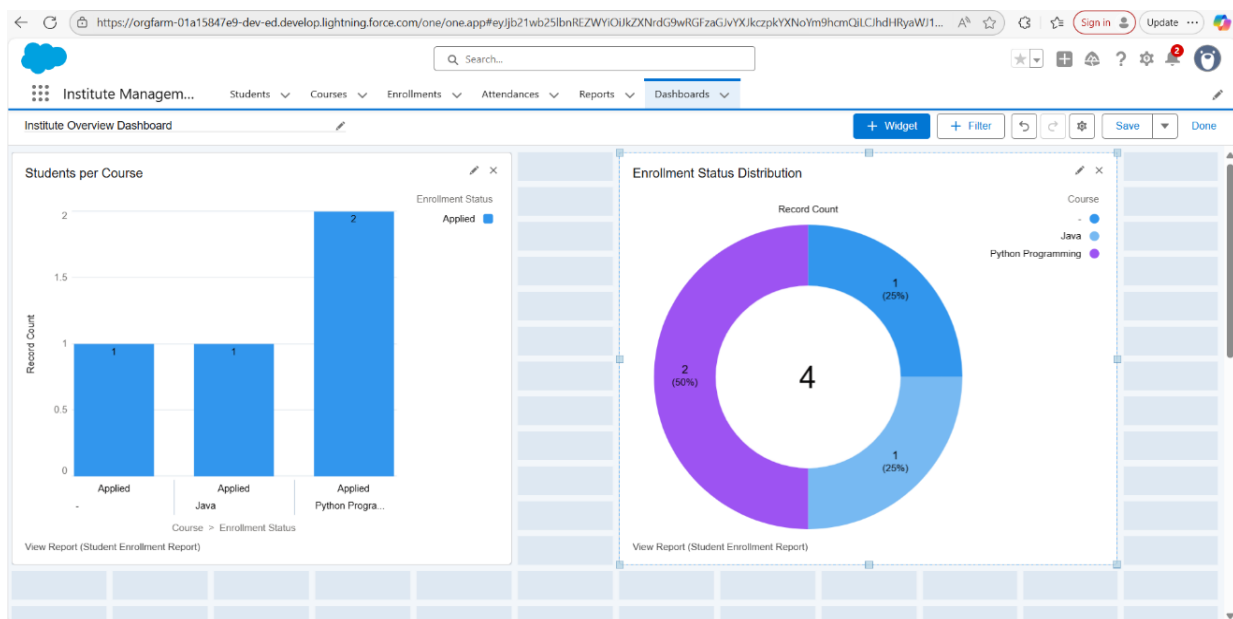
Course	Enrollment Status	Student: Student Name	Email	Phone
(1)	Applied (1)	vyshnavi	gavvalavyshnav284@gmail.com	9502138859
Subtotal				
Subtotal				
Java (1)	Applied (1)	Gavvala Vyshnavi	gavvalavyshnav284@gmail.com	9502138859
Subtotal				
Subtotal				
Python Programming (2)	Applied (2)	John Doe	gavvalavyshnav284@gmail.com	9502138859
		Larkin	224g1a32b9@sant.ac.in	9014670299
Subtotal				
Subtotal				
Total (4)				

Row Counts: ☒ Detail Rows: ☒ Subtotals: ☒ Grand Total: ☒

## 7.2 Dashboards

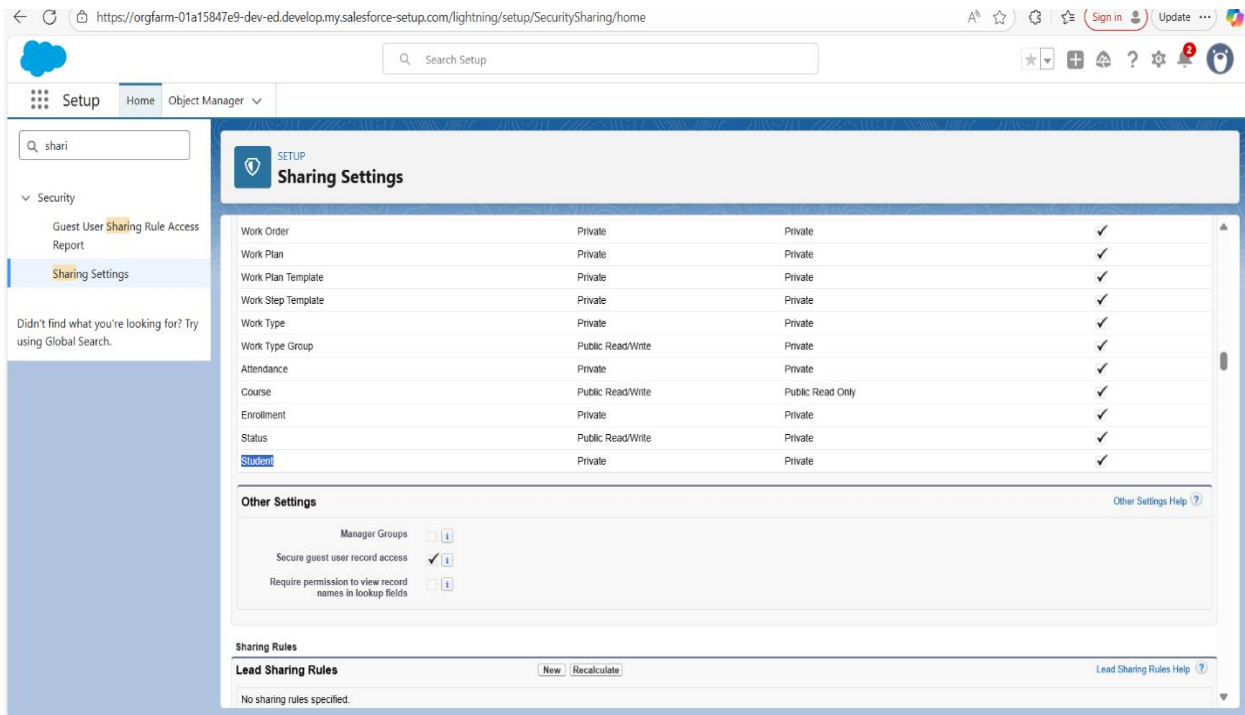
### Institute Overview Dashboard:

- **Bar Chart:** Displays number of students per course
- **Donut Chart:** Shows attendance status distribution
- Dashboards are interactive, allowing administrators to filter and analyze data in real-time.



## Phase 8: Security & Access

- **Profiles:**
  - Admin: Full CRUD access to all objects
  - Standard User: Read/Edit access to relevant objects, no delete
- **Field-Level Security:** Sensitive fields (DOB, Email) restricted for standard users
- **Role Hierarchy:** Admin > Students
- **OWD Settings:**
  - Student: Private
  - Course: Public Read Only
  - Enrollment: Private
  - Attendance: Private
- **Sharing Rules:** Standard Users can view/edit only relevant enrollments and attendance



The screenshot shows the Salesforce Setup interface for Sharing Settings. The left sidebar contains a search bar with 'shari' and a list of navigation items under 'Security', including 'Guest User Sharing Rule Access Report' and 'Sharing Settings' (which is highlighted). Below the sidebar, a message states: 'Didn't find what you're looking for? Try using Global Search.'

The main content area is titled 'Sharing Settings' and contains a table with the following data:

Object	Private	Public Read/Write	Public Read Only
Work Order	Private	Private	✓
Work Plan	Private	Private	✓
Work Plan Template	Private	Private	✓
Work Step Template	Private	Private	✓
Work Type	Private	Private	✓
Work Type Group	Public Read/Write	Private	✓
Attendance	Private	Private	✓
Course	Public Read/Write	Public Read Only	✓
Enrollment	Private	Private	✓
Status	Public Read/Write	Private	✓
Student	Private	Private	✓

Below the table, there is a section titled 'Other Settings' with the following options:

- Manager Groups: ☐ [Help]
- Secure guest user record access: ☒ [Help]
- Require permission to view record names in lookup fields: ☐ [Help]

At the bottom, there is a section titled 'Sharing Rules' with a sub-section 'Lead Sharing Rules'. It includes buttons for 'New' and 'Recalculate', and a message stating 'No sharing rules specified.' A link for 'Lead Sharing Rules Help' is also present.

## Phase 9: Data Import

- **Students & Courses:** Imported via Data Import Wizard
- **Attendance:** Bulk import using Data Loader
- **Duplicate Rules:** Enabled to maintain data integrity

The screenshot shows the 'Edit mapping' step of the Data Import Wizard in Salesforce. The progress bar at the top indicates 'Almost done' with three steps: 'Choose data', 'Edit mapping' (current), and 'Start import'. The title is 'Edit Field Mapping: Courses'. A message states: 'Your file has been auto-mapped to existing Salesforce fields, but you can edit the mappings if you wish. Unmapped fields will not be imported.' Below this is a table for mapping CSV headers to Salesforce objects.

Edit	Mapped Salesforce Object	CSV Header	Example	Example	Example
<a href="#">Change</a>	Course Name	Course Name	Salesforce Basic	Advanced Apex	Data Management
<a href="#">Change</a>	Department	Department	IT	IT	IT
<a href="#">Change</a>	Duration	Duration	30	45	40
<a href="#">Change</a>	Credits	Credits	3	4	3
<a href="#">Change</a>	Course Name	Instructor	Mr. Smith	Mrs. Johnson	Mr. Brown

At the bottom right, there are buttons for 'Cancel', 'Previous', and 'Next'.

The screenshot shows the 'Bulk Data Load Jobs' page in Salesforce. The left sidebar has a search bar with 'data impo' and a list of integrations including 'Data Import Wizard'. The main content area shows details for a specific Bulk Data Load Job.

**Bulk Data Load Job**  
750fj0000082wg1

View the details of a bulk data load job.  
[Back to List: Bulk Data Load Jobs](#)

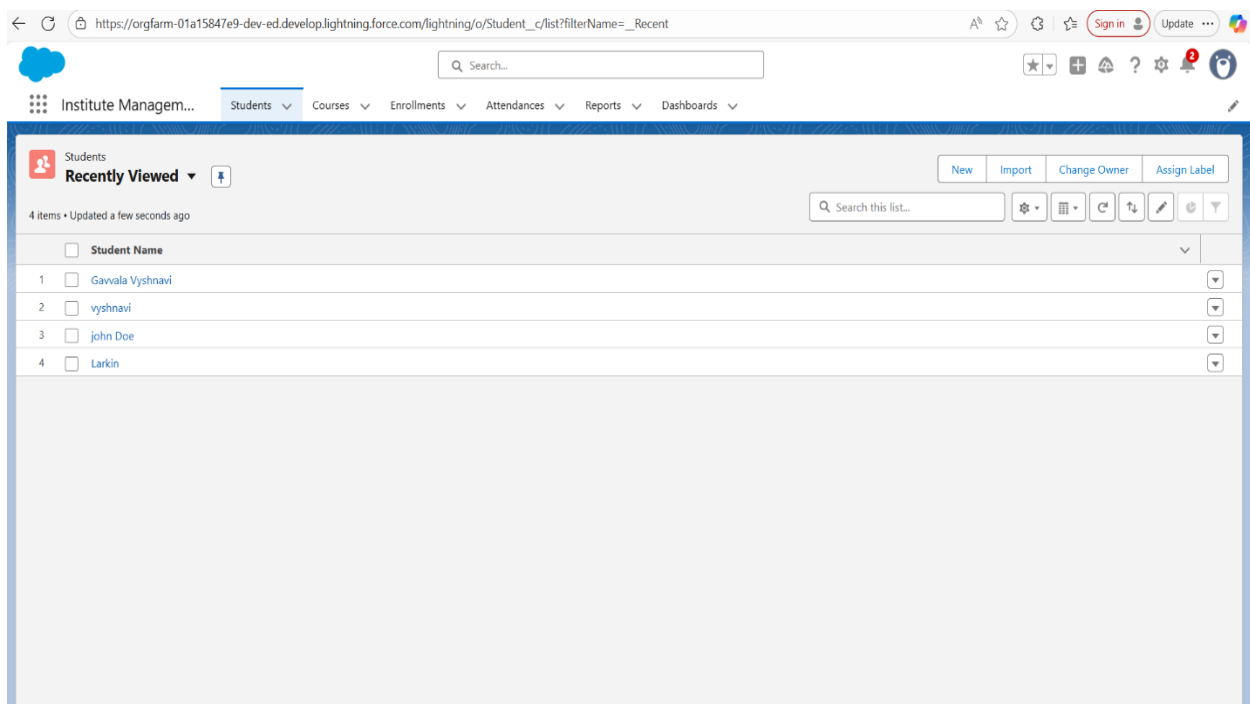
**Bulk Data Load Job Detail** [Reload](#)

Job ID	Job Type	Bulk V1	Status	Closed
750fj0000082wg1	Operation	Insert	Total Processing Time (ms)	87
Submitted By: <a href="#">Garvaja Vyshnavi</a>	Queued Batches	0	API Active Processing Time (ms)	10
Start Time: 10/17/2025, 10:12 PM PST	In Progress Batches	0	Apex Processing Time (ms)	0
End Time: 10/17/2025, 10:12 PM PST	Completed Batches	1		
Time to Complete (hh:mm:ss): 00:01	Failed Batches	0		
Object: Course	Progress	100%		
External ID Field	Records Processed	3		
Content Type: CSV	Records Failed	3		
Concurrency Mode: Parallel	Retries	0		
API Version: 65.0				

At the bottom, there is a 'Reload' button.

## Phase 10: Testing

- Created sample Students, Courses, Enrollments, and Attendance records
- Verified validation rules to prevent duplicate enrollments
- Tested Auto Attendance Flow to ensure records are created automatically
- Checked reports and dashboards for accurate grouping and metrics
- Security tested for correct access permissions and field-level restrictions
- Screenshots captured for all key functionalities



← ↻ https://orgfarm-01a15847e9-dev-ed.develop.lightning.force.com/lightning/r/Student\_c/a00f00000U67YCAA/view

Institute Managem... Students Courses Enrollments Attendances Reports Dashboards

Student **Gavvala Vyshnavi** New Contact Edit New Opportunity

Related **Details**

Student Name	Gavvala Vyshnavi	Owner	Gavvala Vyshnavi
Email	<a href="mailto:gavvalavyshnavi264@gmail.com">gavvalavyshnavi264@gmail.com</a>		
Phone	(950) 213-8859		
DOB	9/5/2005		
Enrollment Status	Applied		
Enrollment	<a href="#">Gavvala Vyshnavi</a>		
Course	<a href="#">Java</a>		
Created By	<a href="#">Gavvala Vyshnavi</a> , 9/25/2025, 12:10 AM	Last Modified By	<a href="#">Gavvala Vyshnavi</a> , 10/17/2025, 8:44 PM

**Activity**

Filters: All time • All activities • All types

[Refresh](#) • [Expand All](#) • [View All](#)

**Upcoming & Overdue**

No activities to show.  
Get started by sending an email, scheduling a task, and more.

No past activity. Past meetings and tasks marked as done show up here.

← ↻ https://orgfarm-01a15847e9-dev-ed.develop.lightning.force.com/lightning/o/Course\_c/list?filterName=\_Recent


Institute Managem... Students Courses Enrollments Attendances Reports Dashboards

Courses **Recently Viewed**

2 items • Updated a few seconds ago

New Import Change Owner Assign Label

	Course Name	
1	<input type="checkbox"/> <a href="#">Java</a>	
2	<input type="checkbox"/> <a href="#">Python Programming</a>	



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Institute Managem...

Students

Courses

Enrollments

Attendances

Reports

Dashboards

Course

Java

New Contact

Edit

New Opportunity

Related

Details

Course Name

Java

Owner

Gavvala Vyshnavi

Course Name

Credits

3

Department

CSD

Duration

6

Course Code

12345

Start Date

10/17/2025

End Date

4/17/2026

Created By

Gavvala Vyshnavi

9/24/2025, 11:49 PM

Last Modified By

Gavvala Vyshnavi

10/17/2025, 8:44 PM

← ↻

https://orgfarm-01a15847e9-dev-ed.develop.lightning.force.com/lightning/o/Enrollment\_c/list?filterName=\_\_Recent

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Institute Managem...

Students

Courses

Enrollments

Attendances

Reports

Dashboards

Enrollments

Recently Viewed

New

Import

Change Owner

Assign Label

4 items • Updated a few seconds ago

☐

Enrollment Name

1

☐

john Doe

2

☐

Gavvala Vyshnavi

3

☐


Larkin

4


☐

vyshnavi




← ↻ [https://orgfarm-01a15847e9-dev-ed.develop.lightning.force.com/lightning/r/Enrollment\\_c/a01f00000MtmQjAAJ/view](https://orgfarm-01a15847e9-dev-ed.develop.lightning.force.com/lightning/r/Enrollment_c/a01f00000MtmQjAAJ/view) A ☆ ↺ ⚙️ Sign in Update ...

 Search...


Institute Managem... Students Courses Enrollments Attendances Reports Dashboards

 Enrollment **John Doe** New Contact Edit New Opportunity


Related **Details**

Enrollment Name	john Doe	Owner	 Gavala Vyshnavi
Student	<a href="#">john Doe</a>		
Course	<a href="#">Python Programming</a>		
Status	Active		
Enrollment Date	10/15/2025		
Created By	 Gavala Vyshnavi, 10/17/2025, 8:41 PM	Last Modified By	 Gavala Vyshnavi, 10/17/2025, 8:41 PM




← ↻ [https://orgfarm-01a15847e9-dev-ed.develop.lightning.force.com/lightning/r/Attendance\\_c/a04f000000kdxAAC/view](https://orgfarm-01a15847e9-dev-ed.develop.lightning.force.com/lightning/r/Attendance_c/a04f000000kdxAAC/view) A ☆ ↺ ⚙️ Sign in Update ...

 Search...

Institute Managem... Students Courses Enrollments Attendances Reports Dashboards

 Attendance **1** New Contact Edit New Opportunity

Related **Details**

Attendance ID	1	Owner	 Gavala Vyshnavi
Student	<a href="#">john Doe</a>		
Course	<a href="#">Python Programming</a>		
Date	10/17/2025		
Status	Present		
Enrollment	<a href="#">john Doe</a>		
Created By	 Gavala Vyshnavi, 10/17/2025, 8:12 PM	Last Modified By	 Gavala Vyshnavi, 10/17/2025, 8:54 PM

## **11. Conclusion**

The Salesforce Institute Management System is fully functional, tested, and ready for deployment. It streamlines administrative processes, automates attendance tracking, enforces robust security, and provides actionable insights through reports and dashboards. This project demonstrates the power of Salesforce in managing educational operations efficiently and securely.

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