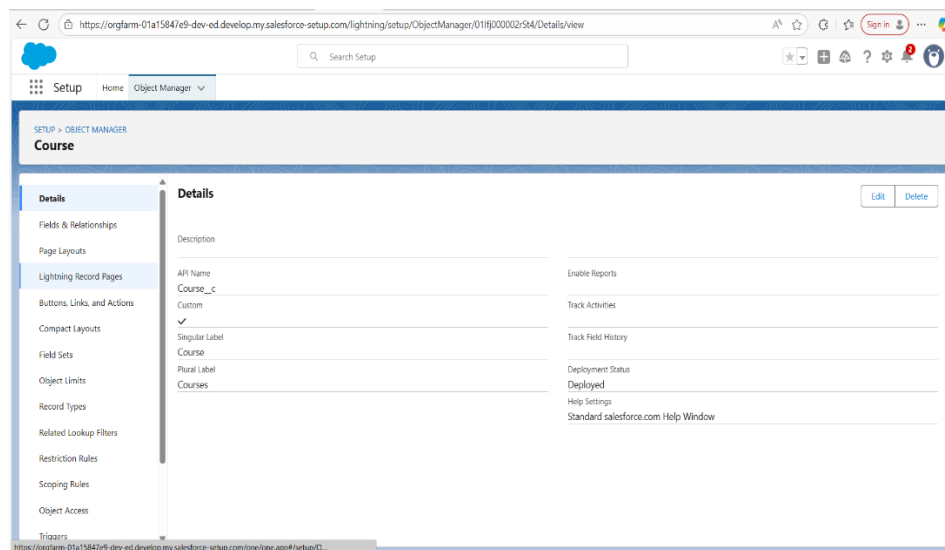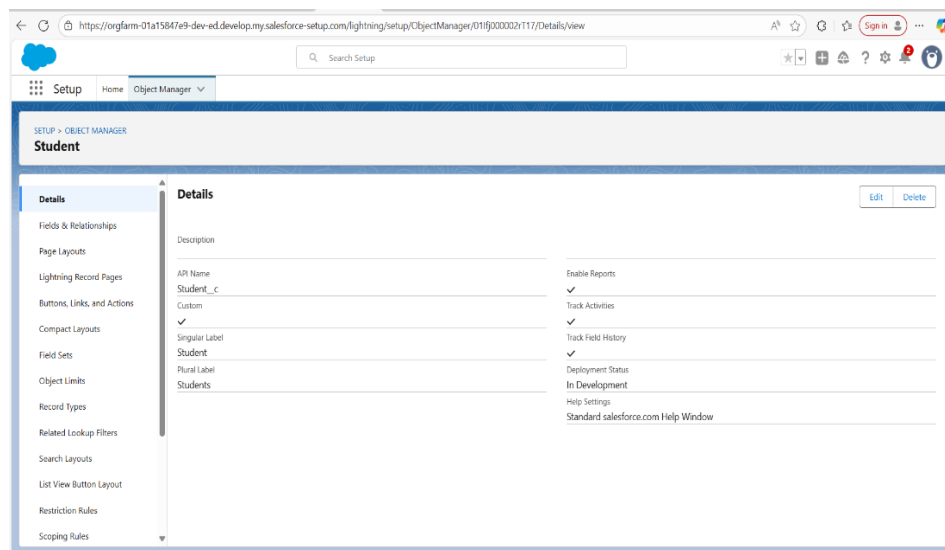# Phase 3: Data Modeling & Relationships

1. Standard & Custom Objects

In this project, we used standard objects like Account and Contact, and created custom objects such as Student, Course, and Enrollment.

Custom objects were designed to represent our business data model, where Students can enroll in multiple Courses through the Enrollment object.

Enrollment — SETUP > OBJECT MANAGER

Details

Description	
API Name: Enrollment__c	Enable Reports
Custom: ✓	Track Activities
Singular Label: Enrollment	Track Field History
Plural Label: Enrollments	Deployment Status: Deployed
	Help Settings: Standard salesforce.com Help Window

Sidebar: 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, Triggers

Attendance — SETUP > OBJECT MANAGER

Details

Description	
API Name: Attendance__c	Enable Reports: ✓
Custom: ✓	Track Activities
Singular Label: Attendance	Track Field History
Plural Label: Attendances	Deployment Status: Deployed
	Help Settings: Standard salesforce.com Help Window

Sidebar: 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, Scoping Rules

Grade — SETUP > OBJECT MANAGER

Details

Description	
API Name: Grade__c	Enable Reports: ✓
Custom: ✓	Track Activities
Singular Label: Grade	Track Field History
Plural Label: Grades	Deployment Status: Deployed
	Help Settings: Standard salesforce.com Help Window

Sidebar: 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, Scoping Rules
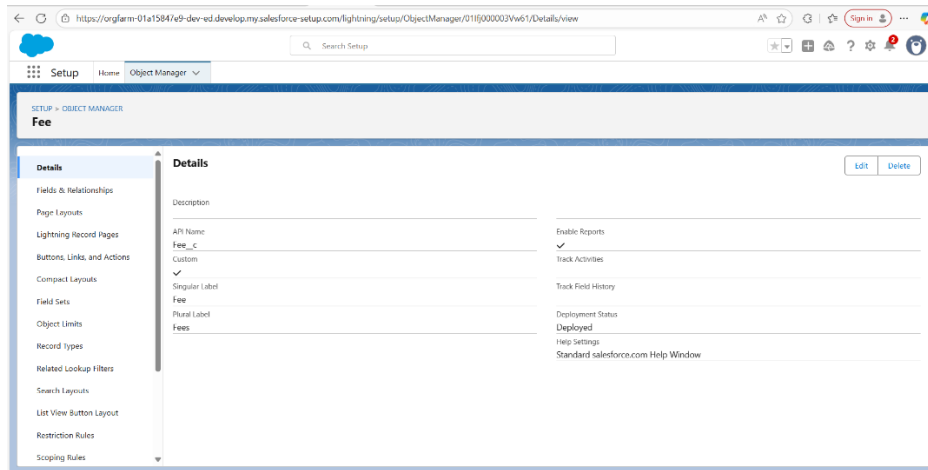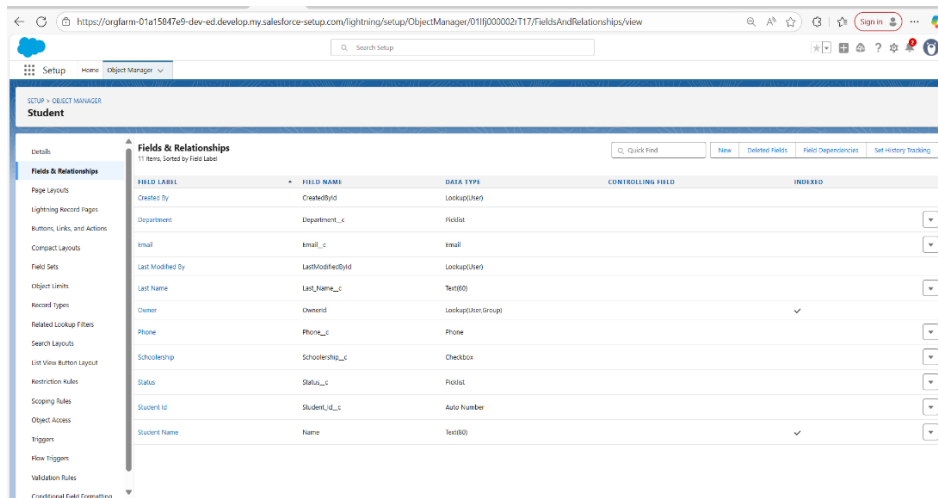
2. Fields

Custom fields were added to capture additional data for each object. Examples include:

- Student: Student Name, Last Name, Email, Phone, Department (Picklist), Student Id, Schoolership, Status(Picklist).
- Course: Course Name, Course Code, Duration. –
- Enrollment: Enrollment Date, Status.
- Attendence: Date, Attendence Name.
- Fee: Fee Id, Mode Of Transaction, Payment date, Payment Status.
- Grade: CGPA, Grade, Marks.

SETUP > OBJECT MANAGER
Course

Fields & Relationships
11 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED	
Course Code	Course_Code__c	Text(50)			▾
Course Name	Course_Name__c	Text(20)			▾
Course Name	Name	Text(80)		✓	▾
Created By	CreatedById	Lookup(User)			
Credits	Credits__c	Number(2, 0)			▾
Duration	Duration__c	Number(3, 0)			▾
End Date	End_Date__c	Date			▾
Instructor	Instructor__c	Lookup(User)		✓	▾
Last Modified By	LastModifiedById	Lookup(User)			
Owner	OwnerId	Lookup(User,Group)		✓	
Start Date	Start_Date__c	Date			▾

SETUP > OBJECT MANAGER
Enrollment

Fields & Relationships
9 Items, Sorted by Field Label

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)		✓	
Grade	Grade__c	Text(2)			▾
Last Modified By	LastModifiedById	Lookup(User)			
Owner	OwnerId	Lookup(User,Group)		✓	
Status	Status__c	Picklist			▾
Student	Student__c	Lookup(Student)		✓	▾

SETUP > OBJECT MANAGER
Attendance

Fields & Relationships
9 Items, Sorted by Field Label

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

SETUP > OBJECT MANAGER
Fee

Fields & Relationships
10 Items, Sorted by Field Label

| FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED	
Created By	CreatedById	Lookup(User)			
Fee Id	Fee_Id__c	Auto Number			▾
Fee Name	Name	Text(80)		✓	▾
Last Modified By	LastModifiedById	Lookup(User)			
Mode Of Transaction	Mode_Of_Transaction__c	Picklist			▾
Owner	OwnerId	Lookup(User,Group)		✓	
Payment Date	Payment_Date__c	Date			▾
Payment Status	Payment_Status__c	Picklist			▾
Pending Balance	Pending_Balance__c	Currency(16, 0)			▾
Student	Student__c	Lookup(Student)		✓	▾
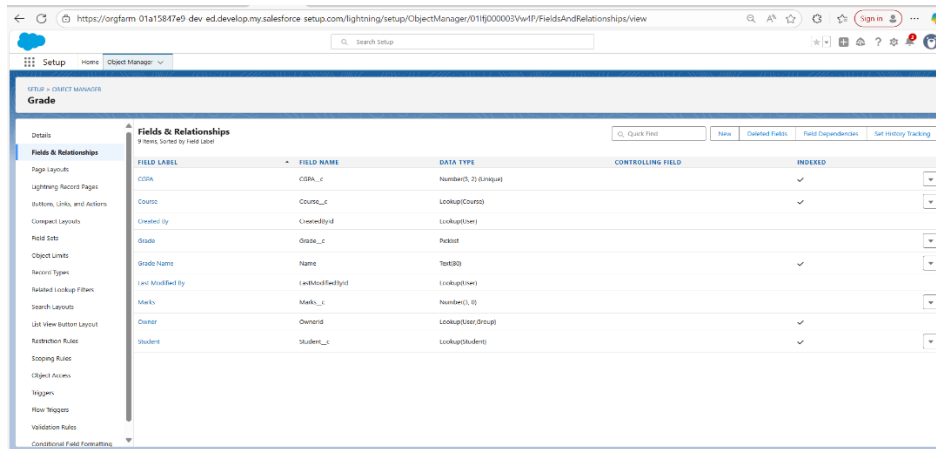
3. Record Types

- Record types were created on the Course object to differentiate between Online and Offline courses. Each record type uses a specific page layout to show relevant fields.
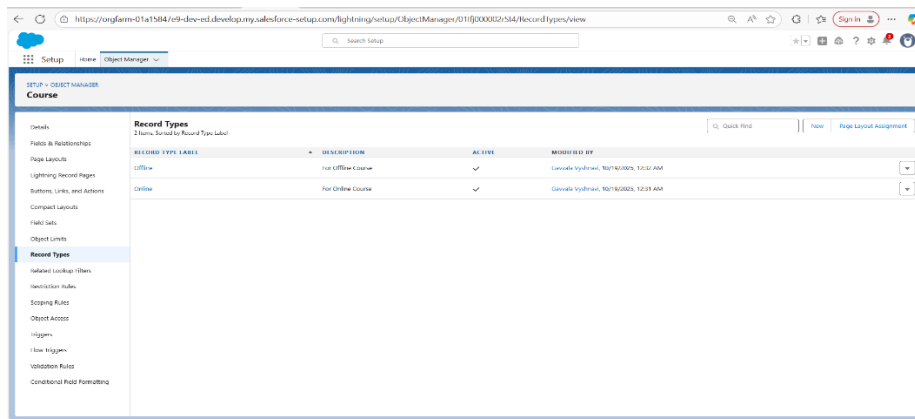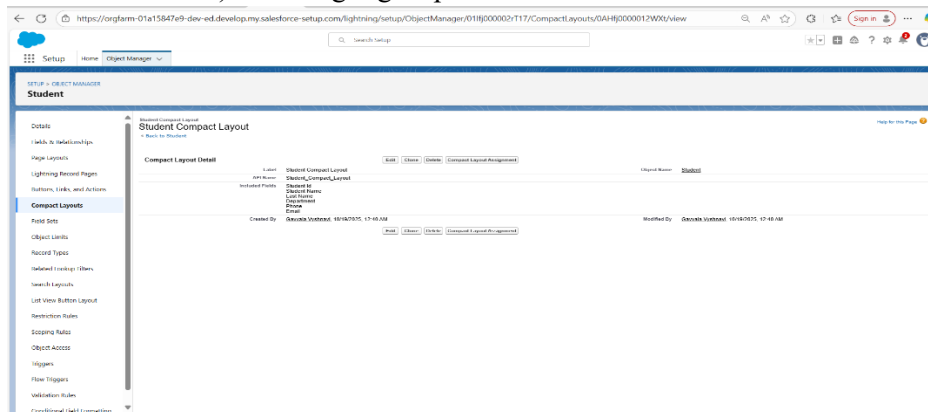

4. Page Layouts

- Page layouts were customized to organize fields and related lists in a user-friendly way. Different page layouts were assigned based on record type.
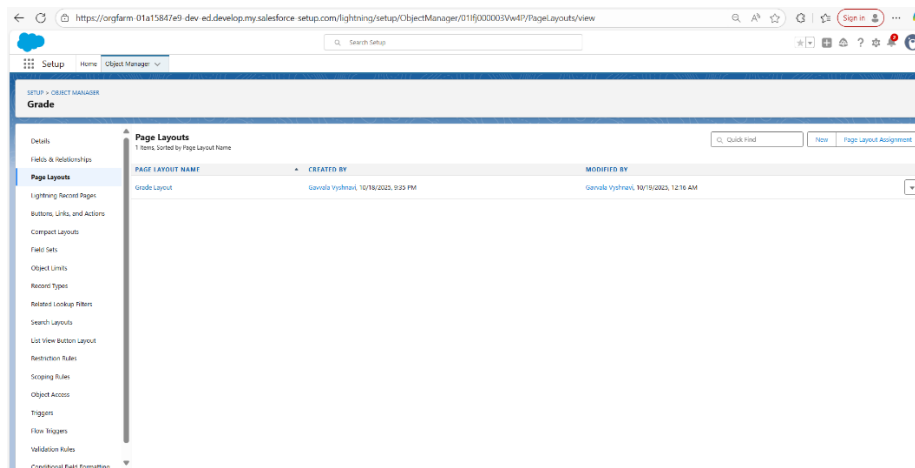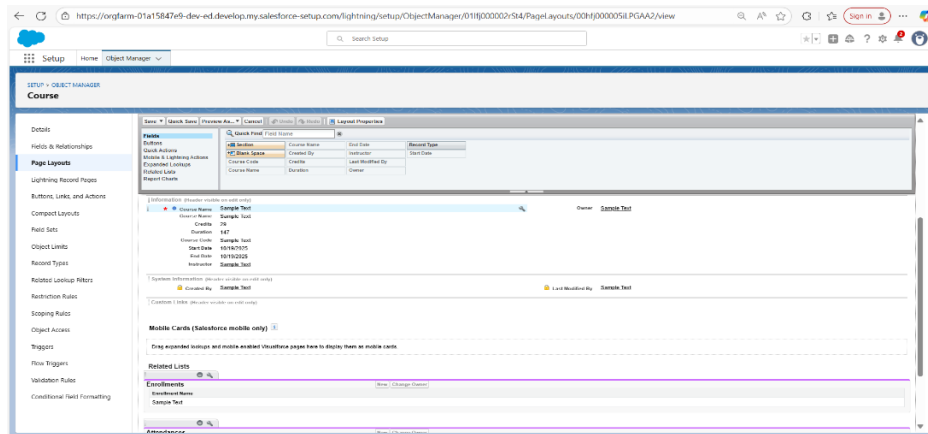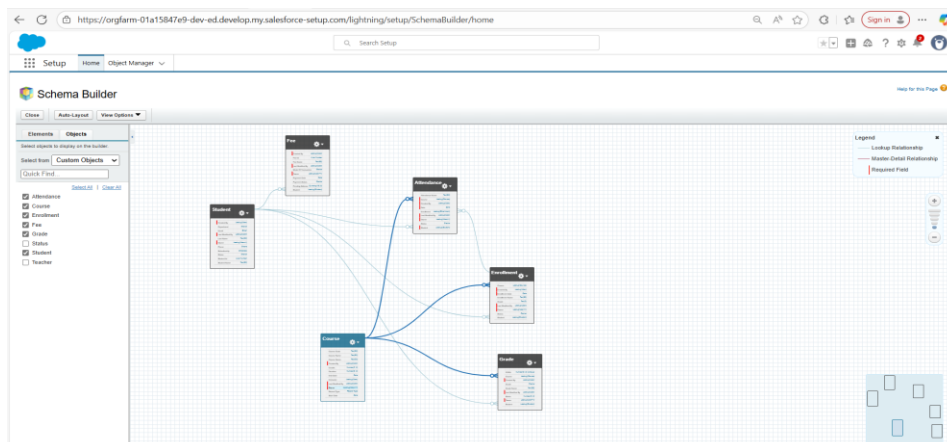
5. Compact Layouts

- Compact layouts were configured to display key information (Name, Email, Department, Phone for Student) in the highlights panel.

6. Schema Builder

- Schema Builder was used to visualize relationships between Student, Course, and Enrollment objects, making it easier to validate the data model.

7. Lookup vs Master-Detail vs Hierarchical Relationships

Relationships were created as follows:

- Student ↔ Course: Many-to-Many relationship implemented using the Enrollment junction object.
- Lookup relationships were used where child records can exist independently.
- Master-Detail relationships were used for Enrollment to ensure cascading delete behavior and roll-up summary fields.

8. Junction Objects

Enrollment object was created as a junction object with two master-detail fields:

- Student (Master-Detail)
- Course (Master-Detail)

9. External Objects

- An external object was configured to fetch reference data about available training materials from an external system, allowing real-time access without data duplication.