

Student Attendance & Performance Tracker

Phase 3: Data Modeling & Relationships

Introduction

Phase 3 focuses on designing the data model required for the **Student Attendance & Performance Tracker**. This phase defines how academic data is structured, related, and displayed within Salesforce to ensure accuracy, scalability, and efficient reporting.

3.1 Standard & Custom Objects

Use Case Explanation

Salesforce standard objects were evaluated; however, due to the academic-specific requirements, **custom objects** were created to accurately represent students, courses, attendance, and performance data.

Objects Implemented

Standard Objects

- User (for Admins, Faculty, Students, Parents)

Custom Objects

- **Student** – Stores student personal and academic details
- **Course** – Represents academic courses
- **Enrollment** – Links students with courses
- **Attendance** – Stores daily attendance records
- **Exam** – Defines exams such as Midterm and Final
- **Result** – Stores exam performance data

LABEL ^	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED	
Student	Student__c	Custom Object		12/12/2025	✓	<div>▼</div>

LABEL ▲	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED	
Course	Course__c	Custom Object		12/12/2025	✓	▼

LABEL ▲	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED	
Enrollment	ENROLLMENT__c	Custom Object		19/12/2025	✓	▼

LABEL ▲	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED	
Exam	Exam__c	Custom Object		12/12/2025	✓	▼

LABEL ▲	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED	
Attendance	Attendance__c	Custom Object		18/12/2025	✓	▼

LABEL ▲	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED	
Result	Result__c	Custom Object		12/12/2025	✓	▼

3.2 Fields

Use Case Explanation

Fields capture detailed academic information. Both standard and custom fields were created to store attendance, performance, and course-related data.

Field Configuration Performed

Standard Fields

- Record Name
- Created Date
- Last Modified Date

Custom Fields (Examples)

- Attendance Status (Picklist: Present, Absent)
- Attendance Date (Date)
- Exam Score (Number)
- Grade (Text)

- Course Code (Text)

SETUP > OBJECT MANAGER

Result

Details	Fields & Relationships 10 Items. Sorted by Field Label					Q Quick Find	New	Deleted Fields	Field Dependencies	Set History Tracking
Fields & Relationships	FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED					
Page Layouts	Course	Course__c	Lookup(Course)		✓					
Lightning Record Pages	Created By	CreatedById	Lookup(User)							
Buttons, Links, and Actions	Exam	Exam__c	Lookup(Exam)		✓					
Compact Layouts	Grade	Grade__c	Formula (Text)							
Field Sets	Last Modified By	LastModifiedById	Lookup(User)							
Object Limits	Owner	OwnerId	Lookup(User,Group)		✓					
Record Types	Record Type	RecordTypeId	Record Type		✓					
Related Lookup Filters	Result Name	Name	Auto Number		✓					
Restriction Rules	Score	Score__c	Number(5, 2)							
Scoping Rules	Student	Student__c	Lookup(Student)		✓					
Object Access										
Triggers										

3.3 Record Types

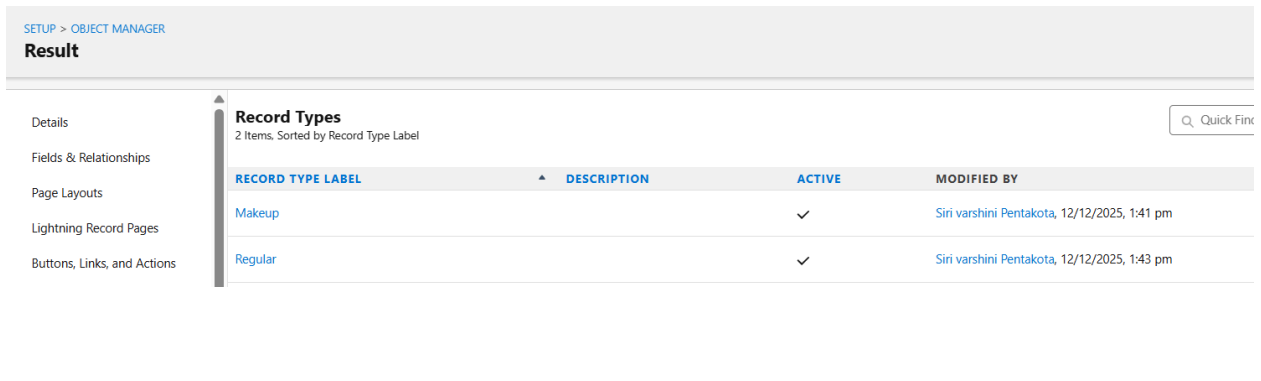
Use Case Explanation

Record Types were created to support different academic processes within the same object.

Record Types Implemented

- Exam Object
 - Midterm
 - Final
- Result Object
 - Regular Exam
 - Makeup Exam

This allows tailored page layouts and processes for each exam type.



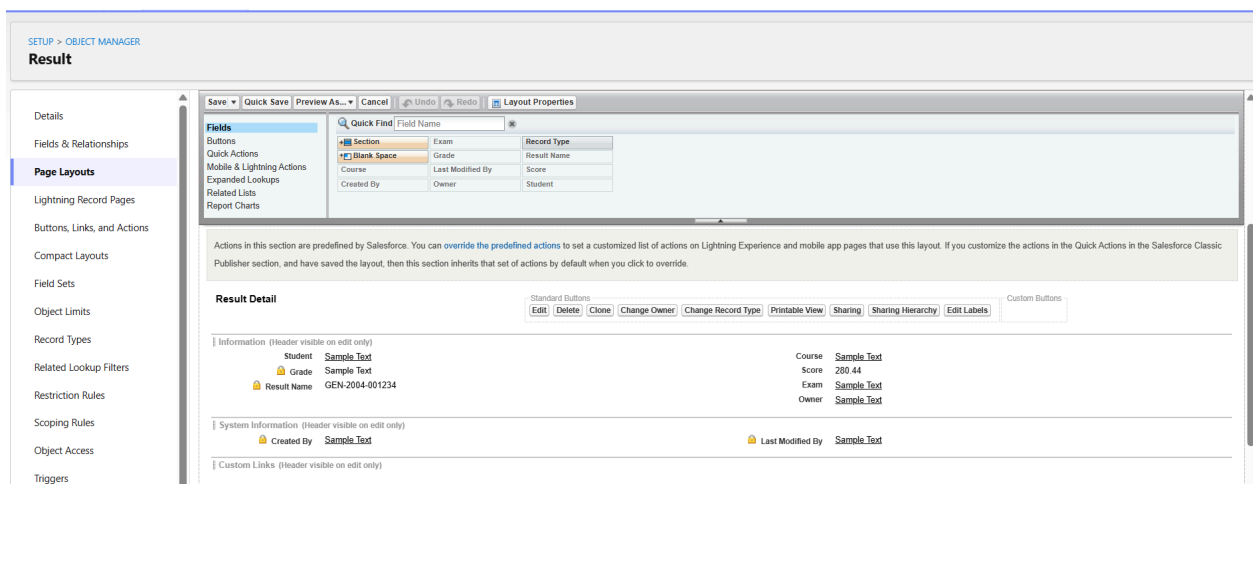
3.4 Page Layouts

Use Case Explanation

Page layouts control how fields appear to users, ensuring clear and efficient data entry.

Layouts Designed

- Attendance Layout: Date, Status, Student, Course
- Result Layout: Exam Type, Marks, Grade
- Student Layout: Personal Info, Enrollment Details



3.5 Compact Layouts

Use Case Explanation

Compact layouts define the key fields displayed in highlights panels and mobile views.

Compact Layout Configuration

- Attendance: Student Name, Date, Status
- Result: Exam Name, Score, Grade

Setup

Home

Object Manager

SETUP > OBJECT MANAGER

Attendance

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Attendance Compact Layout

Attendance Compact

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Help for this Page

Compact Layout Detail

EditCloneDeleteCompact Layout Assignment

Label	Attendance Compact	Object Name	Attendance
API Name	Attendance_Compact		
Included Fields	Student Attendance Date Course Status		
Created By	Siri varshini Pentakota. 12/12/2025, 2:10 pm	Modified By	Siri varshini Pentakota. 12/12/2025, 2:10 pm

EditCloneDeleteCompact Layout Assignment

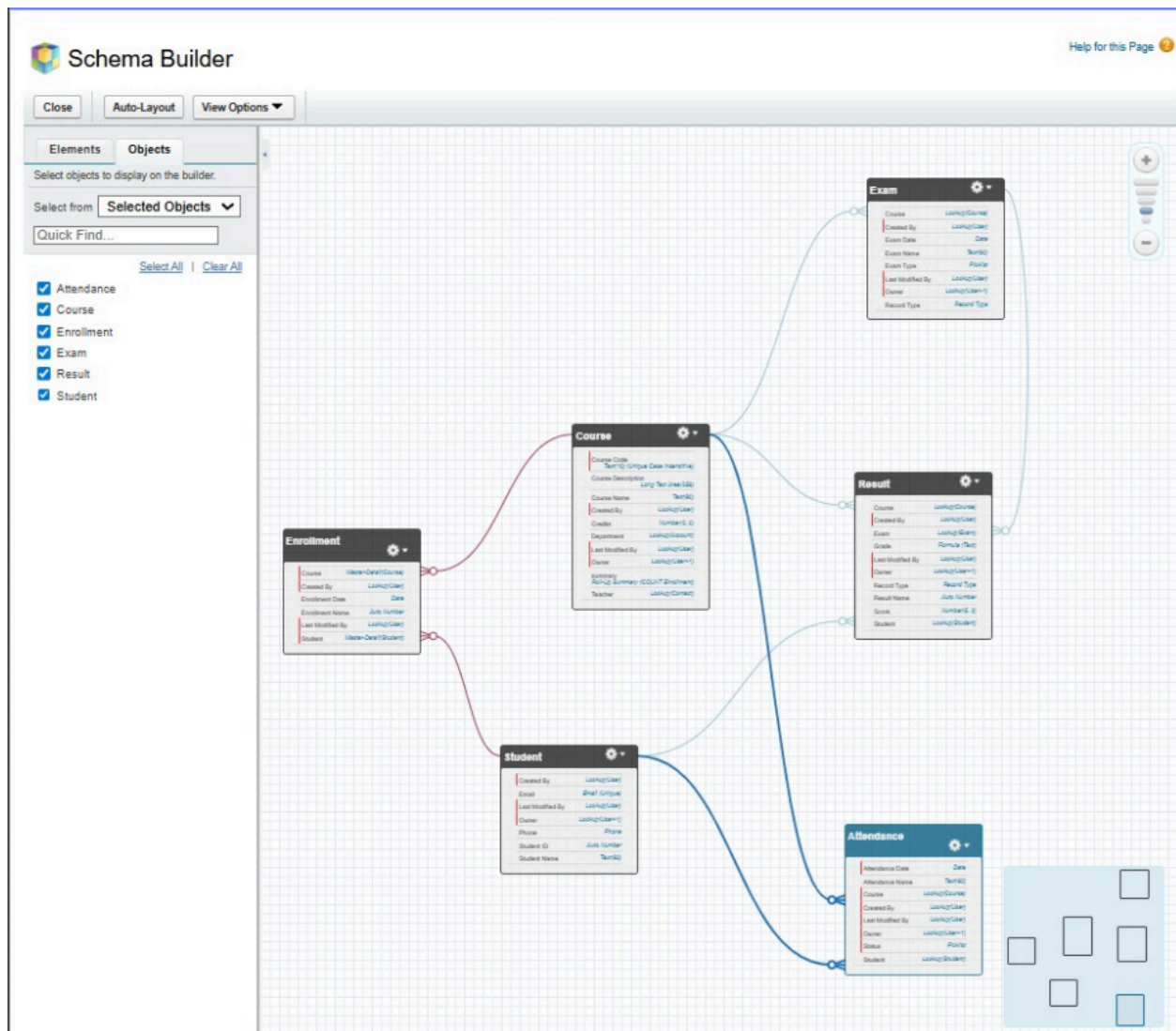
3.6 Schema Builder

Use Case Explanation

Schema Builder provides a visual representation of objects and their relationships, ensuring data integrity and clarity.

Usage

- Verified relationships between Student, Course, Enrollment, Attendance, and Result
- Confirmed correct relationship types



3.7 Lookup vs Master-Detail vs Hierarchical Relationships

Use Case Explanation

Different relationship types were chosen based on data dependency and reporting needs.

Relationships Implemented

- **Lookup Relationship**
 - Attendance → Student
 - Result → Exam
- **Master-Detail Relationship**

- Enrollment → Student
 - Enrollment → Course
 - **Hierarchical Relationship**
 - Evaluated for user hierarchy (Admin → Faculty), but not core to this project
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3.8 Junction Objects

Use Case Explanation

Educational systems require many-to-many relationships between students and courses.

Implementation

- **Enrollment Object** created as a junction object
- Uses Master-Detail relationships with:
 - Student
 - Course

This enables:

- One student to enroll in multiple courses
 - One course to have multiple students
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Conclusion

Phase 3 establishes a robust and scalable data foundation for the Student Attendance & Performance Tracker.

Well-defined objects, relationships, and layouts ensure accurate data capture, easy navigation, and meaningful reporting in later phases.