

Salesforce Project Phase-3

Smart Education & E-Learning Management System

Phase 3: Data Modeling & Relationships

❖ Standard & Custom Objects

To support the e-learning system, both **standard** and **custom objects** were used.

- **Standard Object:**
 - **User** → Represents all system users (Admins, Teachers, Students).
- **Custom Objects:**
 - **Student__c** → Stores student details such as name, email, DOB, and academic info.
 - **Course__c** → Represents courses offered by the institution.
 - **Enrollment__c** → A **junction object** connecting Students and Courses to track enrollment status.
 - **Assignment__c** → Holds assignment information related to each course.
 - **Submission__c** → Captures assignment submissions by students.
 - **Progress__c** → Tracks learning progress and performance of each student.

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Fields & Relationships
10 Items, Sorted by Field Label

Field Label	Field Name	Data Type	Required
Created By	CreatedById	Lookup(User)	
DOB	DOB__c	Date	
Email	Email__c	Email	
Grade	Grade__c	Picklist	
Last Modified By	LastModifiedById	Lookup(User)	
Name	Name__c	Text(80)	
Owner	OwnerId	Lookup(User,Group)	✓
Phone	Phone__c	Phone	
student Email	student_Email__c	Email	
student Name	Name	Text(80)	✓

❖ Fields

Fields were created to capture required details for each custom object.

- Used **Text, Number, Email, Date, Picklist, Lookup, Master-Detail** fields.
- Examples:
 - **Student__c**: Email, DOB, Contact Number, Grade (Picklist).
 - **Course__c**: Course Code, Duration, Mode (Picklist: Online / Offline).
 - **Assignment__c**: Assignment Title, Due Date.
 - **Submission__c**: Submission Date, File Upload, Status.
 - **Progress__c**: Completion Percentage, Feedback Notes.

Field-level security was applied so that **Students, Teachers, and Admins** only see or edit what is relevant to their roles.

❖ Record Types

Different record types were created to handle varying business processes.

- **Course__c**:
 - OnlineCourse (for virtual classes)
 - ClassroomCourse (for offline classes)
- **Submission__c**:
 - OnTime (submitted before due date)
 - Late (submitted after due date)

Each record type has its own **page layout and picklist values** to streamline workflows.

❖ Page Layouts

Customized page layouts were designed for better usability.

- **Student Layout** → Personal details, academic info, skills.
- **Course Layout** → Course title, duration, type, related assignments.
- **Enrollment Layout** → Student, Course, Enrollment Date, Status.
- **Assignment Layout** → Assignment details, due date, linked course.
- **Submission Layout** → Student, Assignment, Submission Status, File Upload.
- **Progress Layout** → Completion %, Feedback, Linked Student.

Layouts were assigned based on roles (Students, Teachers, Admins).

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Save Quick Save Preview As... Cancel Undo Redo Layout Properties

Fields

Quick Find Field Name

Section

Blank Space

Created By

DOB

Email

Grade

Last Modified By

Name

Owner

Phone

student Email

student Name

student Sample

Highlights Panel

Customize the highlights panel for this page layout.

Quick Actions in the Salesforce Classic Publisher

Actions in this section are currently inherited from the global publisher layout. You can override the global publisher layout to set a customized list of actions for the publisher on pages that use this layout.

Salesforce Mobile and Lightning Experience Actions

Actions in this section are predefined by Salesforce. You can override the predefined actions to set a customized list of actions on Lightning Experience and mobile app pages that use this layout. If you customize the actions in the Quick Actions in the Salesforce Classic Publisher section, and have saved the layout, then this section inherits that set of actions by default when you click to override.

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1 Items, Sorted by Page Layout Name

Quick Find New Page Layout Assignment

PAGE LAYOUT NAME	CREATED BY	MODIFIED BY
student Layout	Chithra S, 7/29/2025, 6:18 AM	Chithra S, 9/24/2025, 12:40 PM

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10 Items, Sorted by Field Label

Q Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Category	Category__c	Picklist		
Course name	Course_name__c	Text(80)		
Courses Name	Name	Text(80)		✓
Created By	CreatedById	Lookup(User)		
Credits	Credits__c	Number(3, 0)		
Duration	Duration__c	Text(50)		
Last Modified By	LastModifiedById	Lookup(User)		
Mode	Mode__c	Picklist		
Name	Name__c	Text(80)		

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Fields & Relationships
8 Items, Sorted by Field Label

Q Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Course	Course__c	Lookup(Course)		✓
Created By	CreatedById	Lookup(User)		
Date	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)		✓

❖ Compact Layouts

Compact layouts were created for quick record previews and mobile users.

- **Student__c** → Student Name, Email, Contact Number, Grade.
- **Course__c** → Course Name, Duration, Mode.
- **Assignment__c** → Title, Due Date, Linked Course.
- **Submission__c** → Assignment, Student, Status, Date.

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Quick Find

New

Deleted Fields

Field Dependencies

Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Category	Category__c	Picklist		
Course name	Course_name__c	Text(80)		
Courses Name	Name	Text(80)		✓
Created By	CreatedById	Lookup(User)		
Credits	Credits__c	Number(3, 0)		
Duration	Duration__c	Text(50)		
Last Modified By	LastModifiedById	Lookup(User)		
Mode	Mode__c	Picklist		
Name	Name__c	Text(80)		

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Quick Find

New

Deleted Fields

Field Dependencies

Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Course	Course__c	Lookup(Course)		✓
Created By	CreatedById	Lookup(User)		
Date	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)		✓

Setup Home Object Manager

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Assignment

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Fields & Relationships
8 Items, Sorted by Field Label

Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Assignment title	Assignment_title__c	Text(90)		
Course	Course__c	Lookup(Course)		✓
Created By	CreatedById	Lookup(User)		
Due Date	Due_Date__c	Date		
Last Modified By	LastModifiedById	Lookup(User)		
Max Marks	Max_Marks__c	Number(3, 0)		
Owner	OwnerId	Lookup(User,Group)		✓
Student Name	Name	Text(90)		✓

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Setup Home Object Manager

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Submission

Details

Fields & Relationships
9 Items, Sorted by Field Label

Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Assignment	Assignment__c	Lookup(Assignment)		✓
Created By	CreatedById	Lookup(User)		
File Link	File_Link__c	URL(255)		
Last Modified By	LastModifiedById	Lookup(User)		
Marks Given	Marks_Given__c	Number(3, 0)		
Owner	OwnerId	Lookup(User,Group)		✓
Status	Status__c	Picklist		
student	student__c	Lookup(student)		✓
Submission Name	Name	Text(80)		✓

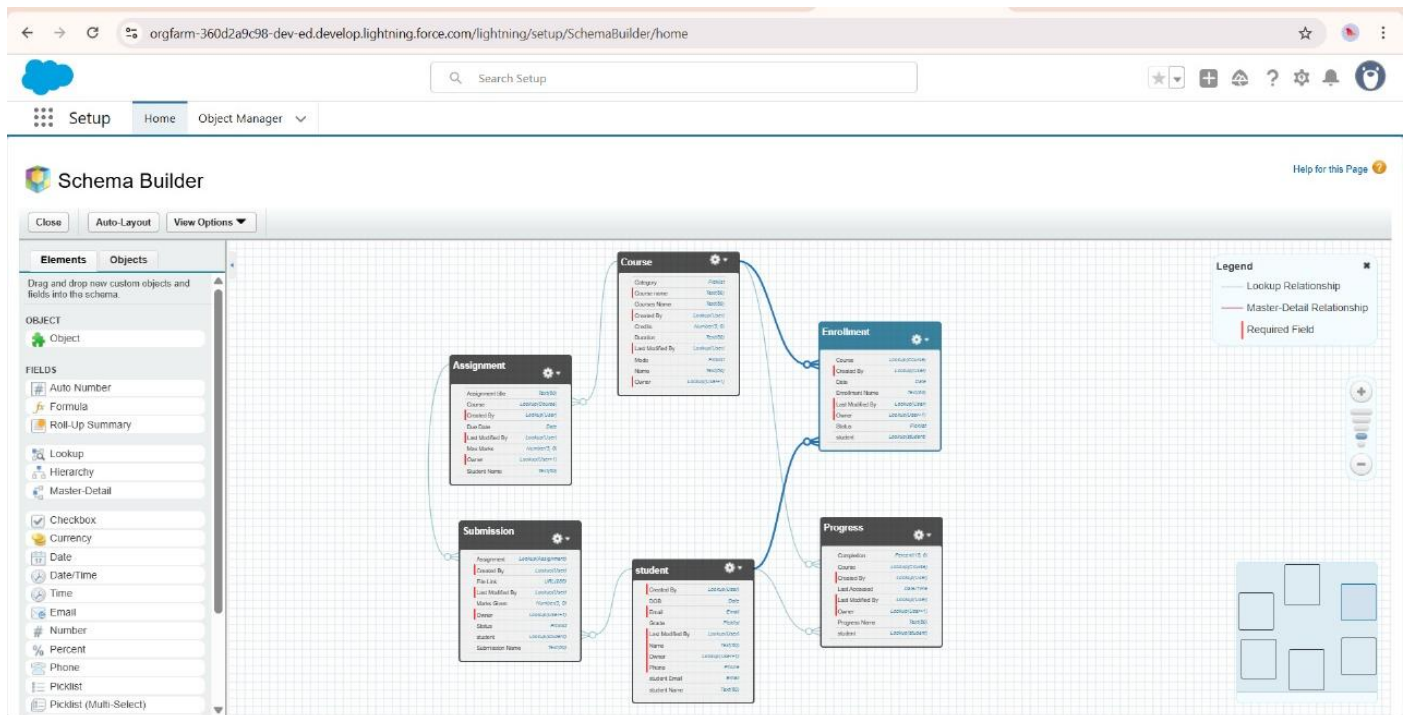
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❖ Schema Builder

Schema Builder was used to visualize all objects and their relationships.

- Objects included: Student, Course, Enrollment, Assignment, Submission, Progress.
- **Auto-layout** arranged objects clearly on the canvas.
- Relationships:
 - Student ↔ Enrollment ↔ Course
 - Course ↔ Assignment ↔ Submission
 - Student ↔ Progress

This visualization confirmed that the data model meets project requirements.



❖ Relationships

Different types of relationships were implemented:

- **Lookup Relationship:**
 - Submission ↔ Student (each submission linked to a student).
- **Master–Detail Relationship:**
 - Enrollment ↔ Student and Course (junction object).
 - Assignment ↔ Course.
 - Submission ↔ Assignment.
- **Hierarchical Relationship:**
 - Within the User object for Admin supervising Teachers and Students.

❖ Junction Object

To manage **many-to-many relationships**, the **Enrollment__c** object was created.

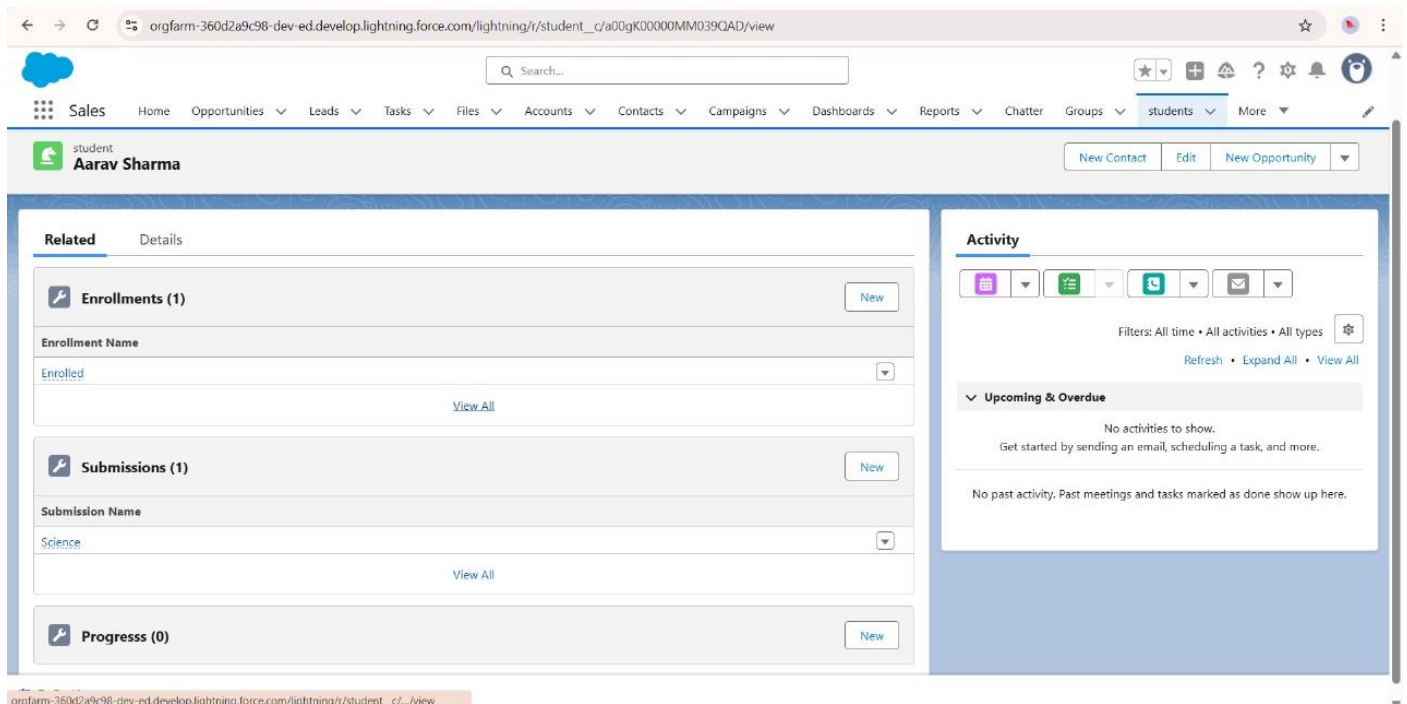
- Master–Detail with **Student__c**.
- Master–Detail with **Course__c**.
- Fields included: Enrollment Date, Status (Active/Completed/Withdrawn).

This allows a single student to enroll in multiple courses, and a course to have many students.

❖ External Objects (Optional)

Salesforce Connect was configured to link with an external **Learning Management System (LMS)** if required.

- Example: Import external grade reports or e-learning content metadata without storing them in Salesforce.
- Benefits: Data is always **up-to-date** and does not duplicate records.



The screenshot displays the Salesforce Lightning interface for a student record. The top navigation bar includes tabs for Sales, Home, Opportunities, Leads, Tasks, Files, Accounts, Contacts, Campaigns, Dashboards, Reports, Chatter, Groups, and students. The main content area is divided into 'Related' and 'Details' sections. The 'Related' section shows three related records: Enrollments (1), Submissions (1), and Progress (0). The 'Details' section shows the student's name, Aarav Sharma, and a 'New' button. The 'Activity' section on the right shows a list of activities, including 'Upcoming & Overdue' and 'No activities to show.'