

Phase 3: Data Modeling & Relationships – Instructions

Objective:

To design and implement the data structure for LearnSmart CRM by creating objects, fields, record types, and relationships that enable efficient data management and reporting.

1 Standard & Custom Objects

Objects store records in Salesforce. Standard objects come pre-built (e.g., Account, Contact, Lead), while custom objects are project-specific (e.g., Student, Course, Enrollment).

Step-by-Step:

1. Go to **Setup → Object Manager**.
2. To create a Custom Object:
 - Click Create → Custom Object.
 - Enter Label & Plural Label (e.g., Student / Students).
 - Enter Object Name (API Name).
 - Choose Record Name (Text or Auto Number).
 - Enable optional features: Allow Reports, Activities, Track Field History.
3. Save the object.

The screenshot shows the Salesforce Setup interface with the 'Object Manager' selected. Under the 'Student' object, the 'Fields & Relationships' tab is active. A table lists the following fields:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedBy	Lookup(User)		
Date of Birth	Date_of_Birth_c	Date		
Email	Email_c	Email (Unique)		
Gender	Gender_c	Picklist		
Grade	Grade_c	Picklist		
Last Modified By	LastModifiedBy	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		
Phone	Phone_c	Phone		
Student Admission Number	Student_Admission_Number_c	Number(10, 0)		
Student Name	Name	Text(80)		
Student Status	Student_Status_c	Picklist		

2 Fields

Fields store specific data within an object.

Step-by-Step:

1. Go to Object Manager → [Object] → Fields & Relationships → New.
2. Select Field Type: Text, Number, Date, Picklist, Checkbox, Lookup, Formula, etc.
3. Enter Field Details:
 - Label
 - Length / Values
 - Required or Optional
4. Set Field-Level Security for profiles.
5. Add the field to Page Layouts.

Example (Student Object):

- First Name → Text
- Last Name → Text
- Email → Email
- Enrollment Date → Date
- Status → Picklist (Active, Inactive, Graduated)

The screenshot shows the Salesforce Setup interface for creating a new field. The URL in the browser is <https://orgfarm-fa05d12a34-dev-ed.develop.my.salesforce-setup.com/lightning/setup/ObjectManager/01lg500000AFYr/FieldsAndRelationships/Name/view>. The main content area displays the 'Student Name' field details, including its label, data type, and validation rules. The sidebar on the left lists various configuration options for the 'Student' object.

3 Record Types

Record Types allow different business processes for the same object (e.g., Individual vs Corporate Student).

Step-by-Step:

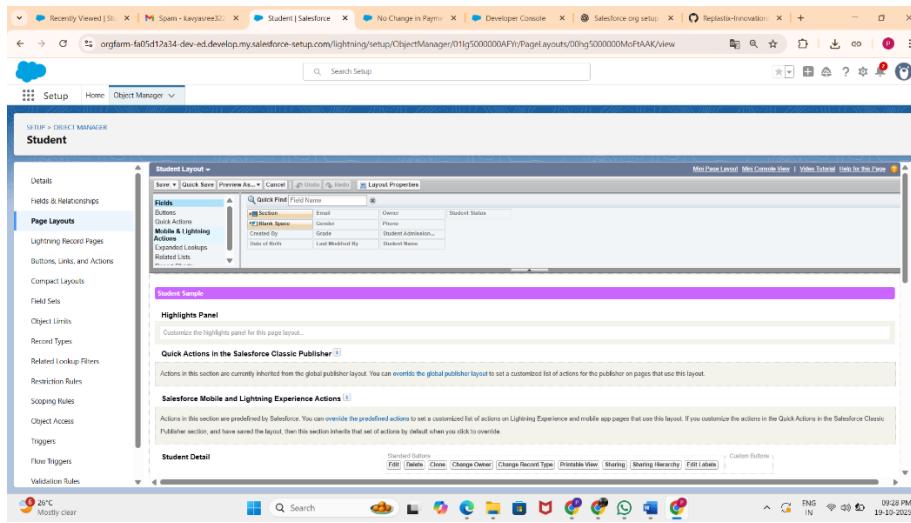
1. Go to Object Manager → [Object] → Record Types → New.
2. Enter Record Type Label & Active Status.
3. Assign to Profiles.
4. Select which Page Layout to use for each record type.
5. Save.

4 Page Layouts

Page Layouts control the arrangement of fields, sections, and related lists on a record page.

Step-by-Step:

1. Go to Object Manager → Student
2. Page Layouts → New/Edit.
3. Drag and drop:
 - Email
 - Gender
 - Grade
 - Phone
 - Student Admission number
 - Student Name
 - Student Status
4. Assign layout to profiles or record types.
5. Save.



5 Compact Layouts

Display key fields in mobile or highlights panel for quick access.

Step-by-Step:

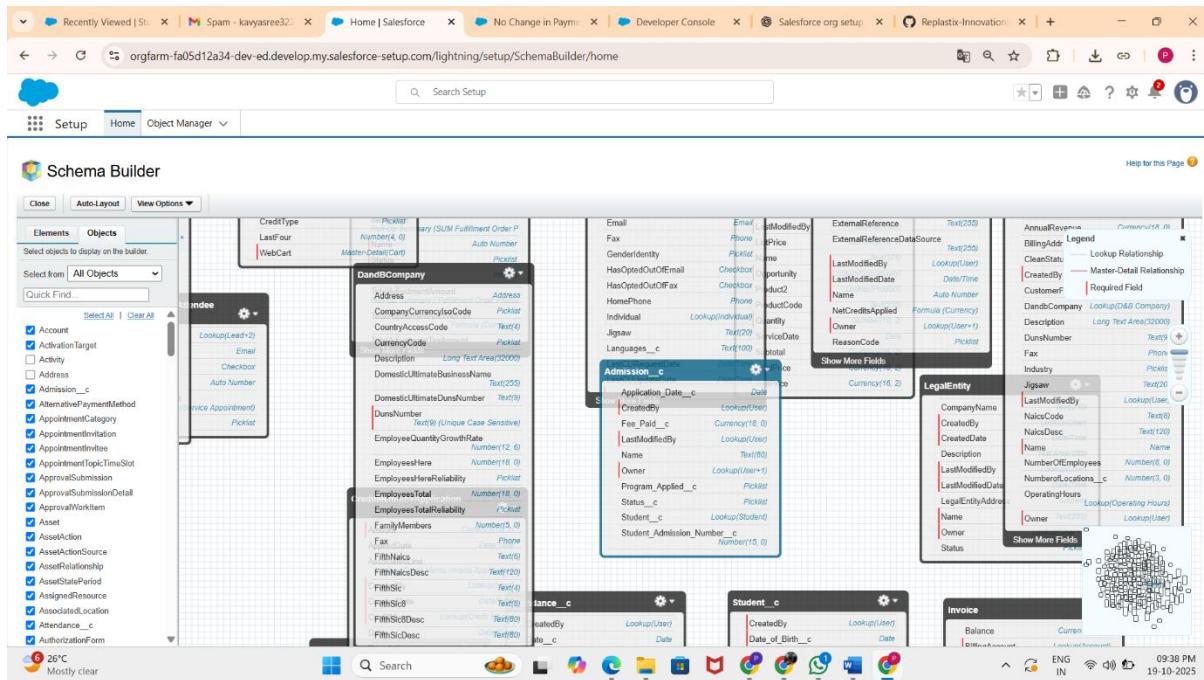
1. Go to Object Manager → [Object] → Compact Layouts → New.
2. Select the fields to display.
3. Set as Primary Compact Layout.
4. Save.

6 Schema Builder

Visual tool to design and understand objects and relationships.

Step-by-Step:

1. Go to Setup → Schema Builder.
2. Add objects to the canvas.
3. Drag to view relationships between objects.
 - Admission Number
 - Attendance
 - Student
4. Use this for planning and validating your data model.



7 Relationships

Relationships link objects to reflect real-world associations.

Step-by-Step:

1. Go to Object Manager → [Object] → Fields & Relationships → New.
 2. Choose relationship type:
 - Lookup: Loose connection; child can exist independently.
 - Master-Detail: Strong parent-child; supports roll-up summary fields.
 - Hierarchical: Only for User object (manager-subordinate).
 3. Define Related Object and settings.
 4. Save.

Example:

- Student → Course (Lookup)
 - Enrollment → Student & Course (Master-Detail)

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Course Fee	Course_Fee_c	Currency(16, 2)		
Created By	CreatedById	Lookup(User)		
Enrollment Date	Enrollment_Date_c	Date		
Enrollment Name	Name	Text(80)		
Enrollment Status	Enrollment_Status_c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		
Payment Status	Payment_Status_c	Picklist		
Student	Student_c	Lookup(Student)		

8 Junction Objects

Enable many-to-many relationships between two objects.

Step-by-Step:

1. Create a custom object (e.g., Enrollment).
2. Add two Master-Detail relationships linking the related objects (Student, Course).
3. Configure Page Layouts and Related Lists.
4. Save.

9 External Objects

Allow Salesforce to access data stored outside the platform without copying it into Salesforce.

Step-by-Step:

1. Go to Setup → External Data Sources → New.
2. Choose Data Source Type (e.g., OData).
3. Configure Authentication.

4. Create External Objects that map to external tables.

5. Save and validate access.

The screenshot shows the Salesforce Object Manager interface for the 'Enrollment' object. The left sidebar lists various setup options like Page Layouts, Lightning Record Pages, and Field Sets. The main content area is titled 'Fields & Relationships' and displays a table of fields. The columns are: FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Course Fee	Course_Fee__c	Currency(16, 2)		
Created By	CreatedById	Lookup(User)		
Enrollment Date	Enrollment_Date__c	Date		
Enrollment Name	Name	Text(80)		
Enrollment Status	Enrollment_Status__c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Payment Status	Payment_Status__c	Picklist		
Student	Student__c	Lookup(Student)		✓