
Phase 3: Data Modeling & Relationships

Project Title: SmartCare CRM – Salesforce-Powered Healthcare Management & Patient Engagement Suite

1. Introduction

In this phase, we focused on building the data model for SmartCare CRM. This included creating standard and custom objects, defining fields, setting up relationships (Lookup, Master-Detail, Hierarchical, and Junction), and designing record types and layouts. Schema Builder was used to visually validate and refine relationships, ensuring the data structure supports key healthcare processes like patient management, appointments, and prescriptions.

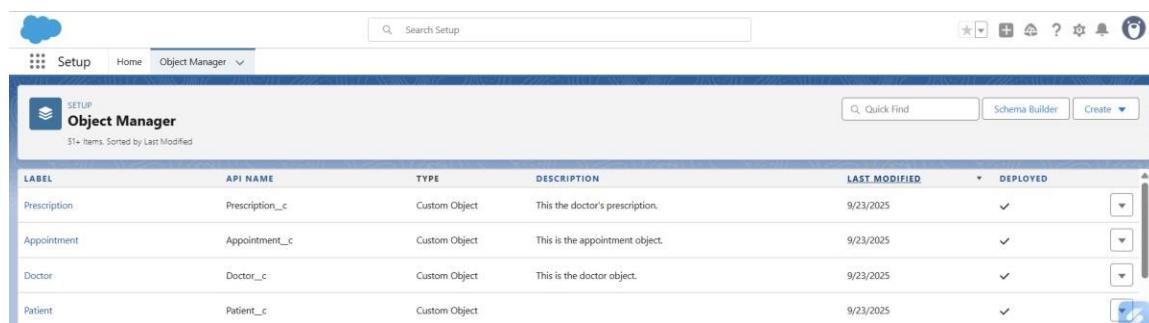
2. Objectives

- To design a scalable and normalized data model.
- To implement relationships between core entities (Patients, Doctors, Appointments, Prescriptions).
- To configure record types, page layouts, and compact layouts for role-specific usability.
- To explore and demonstrate use of junction objects and external objects.
- To validate the model using Schema Builder.

3. Implementation Steps

A. Standard & Custom Objects

- Standard Objects Used: User, Contact.
- Custom Objects Created: Patient_c, Appointment_c, Prescription_c, Doctor_c.



The screenshot shows the Salesforce Object Manager. At the top, there's a navigation bar with 'Setup', 'Home', and 'Object Manager'. A search bar says 'Search Setup' and a toolbar includes icons for 'Quick Find', 'Schema Builder', and 'Create'. Below the toolbar, a message says '\$1+ items. Sorted by Last Modified'. The main area is titled 'Object Manager' and lists four custom objects:

Label	API Name	Type	Description	Last Modified	Deployed
Prescription	Prescription_c	Custom Object	This is the doctor's prescription.	9/23/2025	✓
Appointment	Appointment_c	Custom Object	This is the appointment object.	9/23/2025	✓
Doctor	Doctor_c	Custom Object	This is the doctor object.	9/23/2025	✓
Patient	Patient_c	Custom Object		9/23/2025	✓

B. Fields

Each object was enriched with fields:

- Patient_c:

The screenshot shows the Salesforce Object Manager interface for the 'Patient' object. The left sidebar contains navigation links for 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 lists 12 items sorted by Data Type. The table includes columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Patient ID	Name	Auto Number		✓
Date of Birth	Date_of_Birth__c	Date		✗
Email	Email__c	Email		✗
Medical History	Medical_History__c	Long Text Area(5000)		✗
Created By	CreatedById	Lookup(User)		✗
Last Modified By	LastModifiedById	Lookup(User)		✗
Owner	OwnerId	Lookup(User,Group)		✓
Contact Number	Contact_Number__c	Phone		✗
Gender	Gender__c	Picklist		✗
Blood Group	Blood_Group__c	Picklist		✗

- Doctor_c: Specialization, Contact, Availability.

The screenshot shows the Salesforce Object Manager interface for the 'Doctor' object. The left sidebar contains navigation links for 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 lists 10 items sorted by Field Label. The table includes columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Availability End	Availability_End__c	Time		✗
Availability Start	Availability_Start__c	Time		✗
Consultation Fee	Consultation_Fee__c	Currency(5, 0)		✗
Contact Number	Contact_Number__c	Phone		✗
Created By	CreatedById	Lookup(User)		✗
Doctor Name	Name	Text(80)		✓
Email	Email__c	Email		✗
Last Modified By	LastModifiedById	Lookup(User)		✗
Owner	OwnerId	Lookup(User,Group)		✓
Specialization	Specialization__c	Picklist		✗

- **Appointment_c**: Appointment Date/Time, Status, Visit Type, Assigned Doctor.

The screenshot shows the Salesforce Object Manager for the **Appointment** object. The left sidebar lists various setup options like Details, Fields & Relationships, Page Layouts, etc. The main area displays the **Fields & Relationships** section with 12 items. The fields listed are:

Field Label	Field Name	Data Type
Appointment DateTime	Appointment_DateTime_c	Date/Time
Appointment Number	Name	Auto Number
Assigned Doctor	Assigned_Doctor_c	Lookup(Doctor)
Consultation Fee	Consultation_Fee_c	Currency(4, 0)
Created By	CreatedById	Lookup(User)
Last Modified By	LastModifiedById	Lookup(User)
Owner	OwnerId	Lookup(User/Group)
Patient	Patient_c	Lookup(Patient)
Reason	Reason_c	Long Text Area(32768)
Record Type	RecordTypeId	Record Type
Status	Status_c	Picklist

- **Prescription_c**: Medications, Dosage, Linked Appointment.

The screenshot shows the Salesforce Object Manager for the **Prescription** object. The left sidebar lists various setup options like Details, Fields & Relationships, Page Layouts, etc. The main area displays the **Fields & Relationships** section with 8 items. The fields listed are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Appointment	Appointment_c	Master-Detail(Appointment)		✓
Created By	CreatedById	Lookup(User)		✓
Dosage Instructions	Dosage_Instructions_c	Long Text Area(32768)		✓
Follow Up Date	Follow_Up_Date_c	Date		✓
Last Modified By	LastModifiedById	Lookup(User)		✓
Medications	Medications_c	Long Text Area(300)		✓
Notes	Notes_c	Long Text Area(32768)		✓
Prescription Number	Name	Auto Number		✓

C. Record Types

Appointment_c Record Types: New Consultation, Follow-Up

The screenshot shows the Salesforce Object Manager for the **Appointment** object. The left sidebar lists various setup options like Details, Fields & Relationships, Page Layouts, etc. The main area displays the **Record Types** section with 2 items. The record types listed are:

RECORD TYPE LABEL	DESCRIPTION	ACTIVE	MODIFIED BY
Follow-Up		✓	Hospital Admin, 9/23/2025, 6:06 AM
New Consultation		✓	Hospital Admin, 9/23/2025, 5:59 AM

D. Page Layouts

Patient Layout: Patient Info, Contact Info, Medical History, Related Lists.

The screenshot shows the 'Patient' object in the Object Manager. The 'Page Layouts' tab is selected. On the right, the 'Patient Detail' page layout is being edited. It includes sections for 'Patient Information' (with fields like Patient ID, Name, Date of Birth, Gender, Blood Group), 'Contact Information' (with fields like Contact Number, Email, Emergency Contact), and 'Medical History'. A 'Buttons' section at the top contains standard buttons like Edit, Delete, Clone, Change Owner, Change Record Type, Printable View, Sharing, and Edit Labels. A 'Layout Properties' bar is at the top right.

Appointment Layouts: New Consultation (fee, reason, doctor), Follow-Up (notes).

The screenshot shows the 'Appointment' object in the Object Manager. The 'Page Layouts' tab is selected. A list of three page layouts is displayed: 'Appointment Layout', 'Appointment — Follow-Up', and 'Appointment — New Consultation'. Each entry shows the 'Created By' and 'Modified By' information. The interface includes a search bar and various navigation buttons at the top.

Prescription Layout: Prescription details + related Appointment.

E. Compact Layouts

- **Patient Compact Layout:** Patient Name, Age, Gender, Assigned Doctor.

The screenshot shows the 'Patient' object in the Object Manager. The 'Compact Layouts' tab is selected. A compact layout named 'Patient Compact Layout' is being edited. It includes a 'Patient' section with fields like Patient ID, Patient Name, and Contact Number. A 'Buttons' section at the bottom right contains Edit, Clone, Delete, and Compact Layout Assignment buttons. A 'Help for this Page' link is at the top right.

F. Schema Builder

Schema Builder was used to visualize and validate relationships between Patient, Appointment, Prescription, Doctor, and Hospital objects.

