
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.



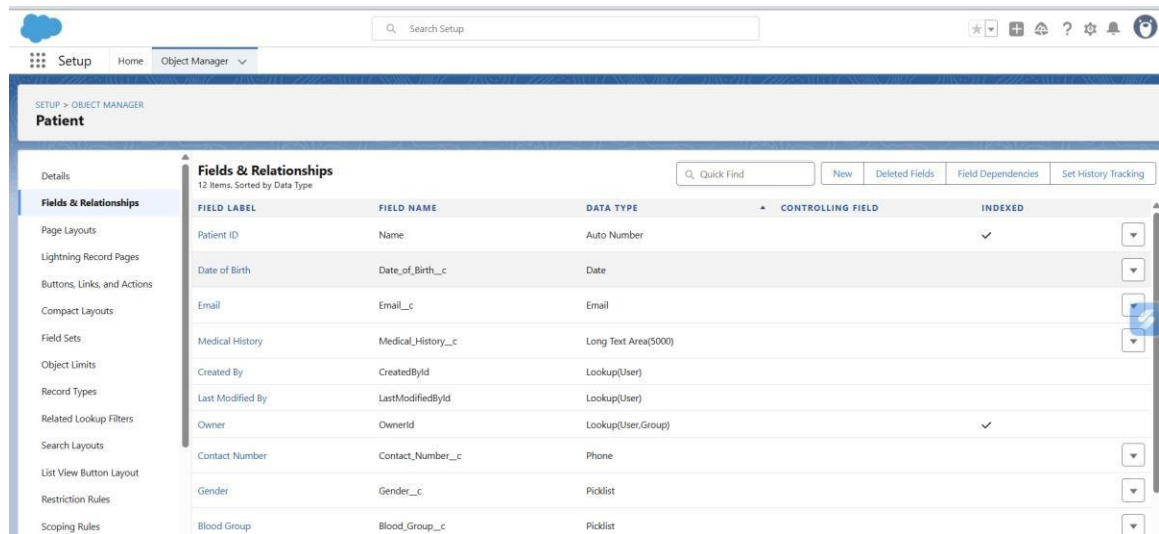
The screenshot shows the Salesforce Object Manager interface. At the top, there's a navigation bar with 'Setup', 'Home', and 'Object Manager' tabs. Below this, the 'Object Manager' section is active, displaying a table of custom objects. The table has columns for Label, API Name, Type, Description, Last Modified, and Deployed. Four custom objects are listed: Prescription_c, Appointment_c, Doctor_c, and Patient_c, all of which are Custom Objects and have been deployed. Each row also includes a dropdown menu for further actions.

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Prescription	Prescription_c	Custom Object	This 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:

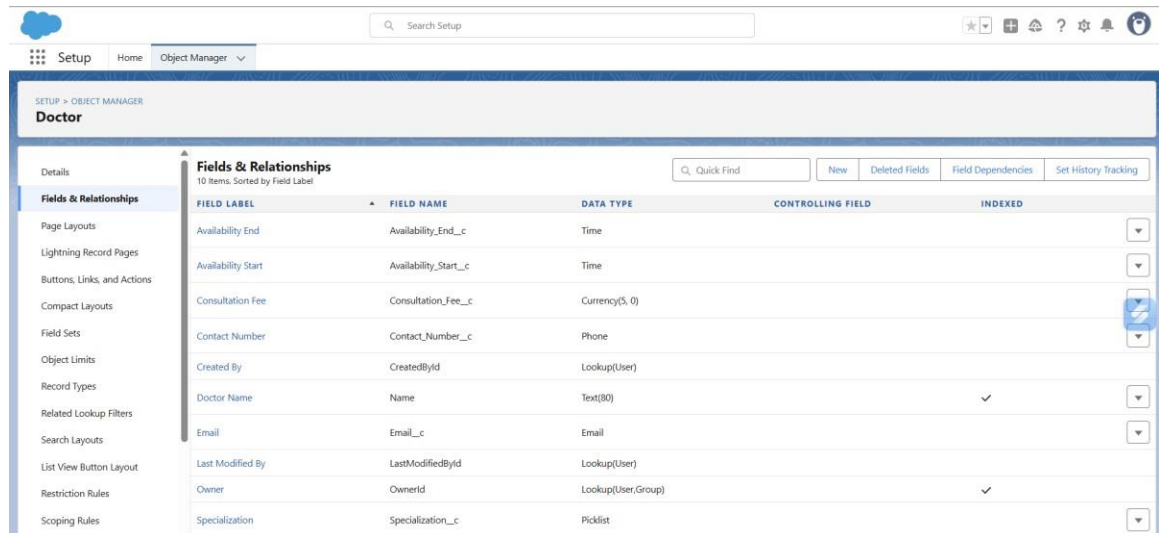
- Patient_c:



The screenshot shows the Salesforce Setup interface for the 'Patient' object. The 'Fields & Relationships' tab is selected, displaying a table of 12 fields. The table has columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed. The fields are sorted by Data Type.

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		

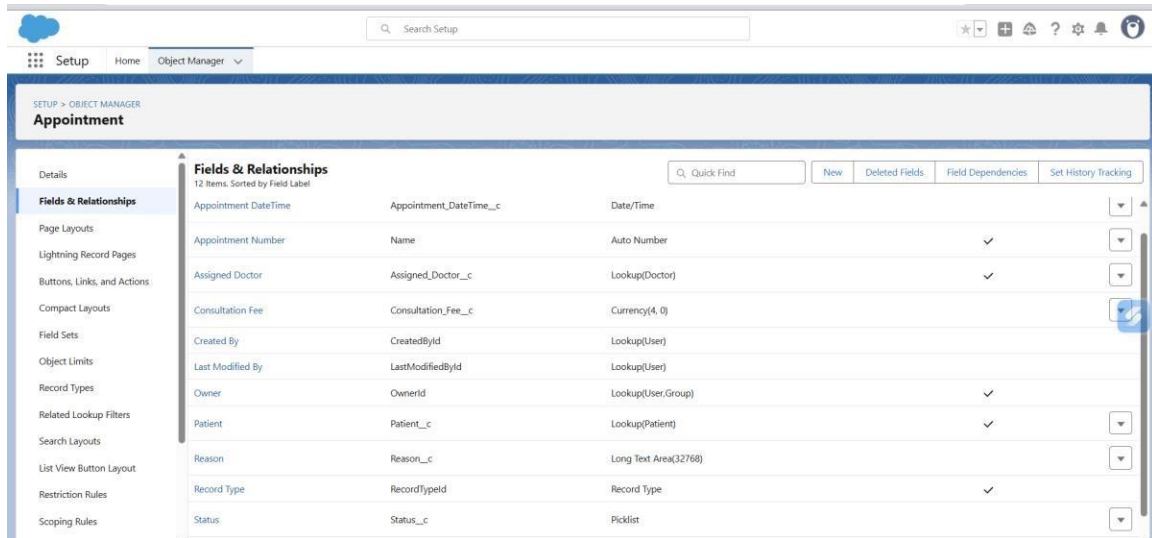
- Doctor_c: Specialization, Contact, Availability.



The screenshot shows the Salesforce Setup interface for the 'Doctor' object. The 'Fields & Relationships' tab is selected, displaying a table of 10 fields. The table has columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed. The fields are sorted by Field Label.

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		

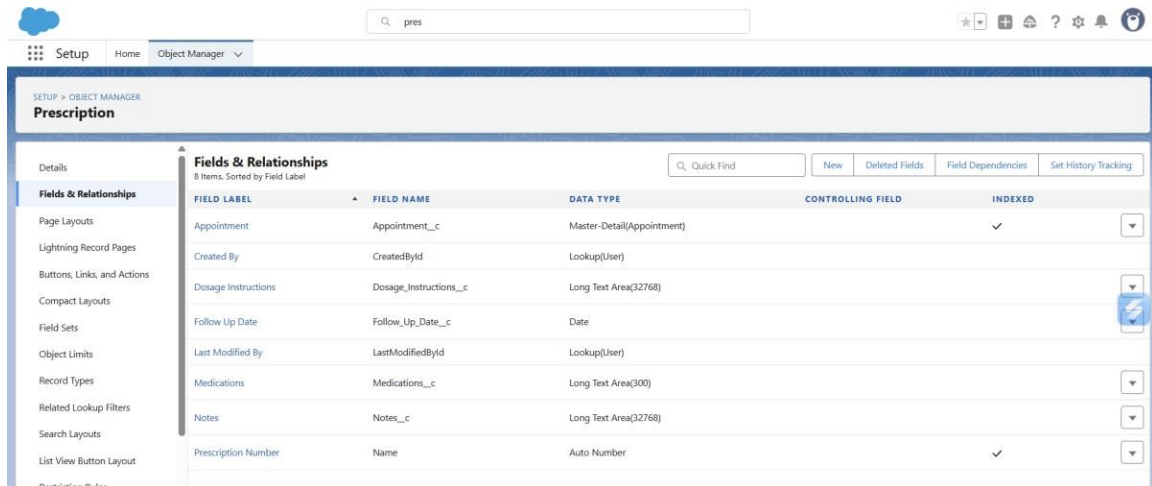
- **Appointment_c**: Appointment Date/Time, Status, Visit Type, Assigned Doctor.



The screenshot shows the 'Appointment' object configuration in Salesforce Setup. The 'Fields & Relationships' tab is active, displaying a list of 12 fields. The left sidebar contains navigation links for various configuration areas. The top navigation bar includes 'Setup', 'Home', and 'Object Manager'.

Field Label	Field Name	Data Type	Controlling Field	Indexed
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.

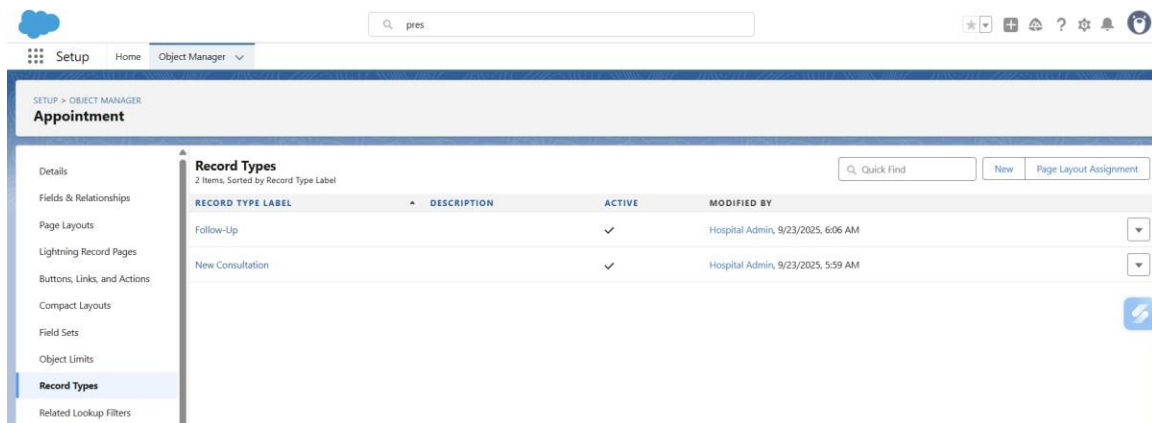


The screenshot shows the 'Prescription' object configuration in Salesforce Setup. The 'Fields & Relationships' tab is active, displaying a list of 8 fields. The left sidebar contains navigation links for various configuration areas. The top navigation bar includes 'Setup', 'Home', and 'Object Manager'.

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 'Appointment' object configuration in Salesforce Setup. The 'Record Types' tab is active, displaying a list of 2 record types. The left sidebar contains navigation links for various configuration areas. The top navigation bar includes 'Setup', 'Home', and 'Object Manager'.

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' layout configuration in the 'Object Manager'. The left sidebar lists various configuration options, with 'Page Layouts' selected. The main area displays a preview of the 'Patient Detail' layout. At the top, there's a 'Fields' section with a 'Quick Find' bar and a list of fields including Patient ID, Patient Name, Date of Birth, Gender, Blood Group, Contact Number, Emergency Contact, and Owner. Below this is a 'Patient Detail' section with tabs for 'Patient Information', 'Contact Information', and 'Medical Information'. The 'Patient Information' tab is active, showing fields like Patient ID (GEN-2004-001234), Patient Name (Sample Text), Date of Birth (9/25/2025), Gender (Sample Text), and Blood Group (Sample Text). The 'Contact Information' tab shows Contact Number (1-415-555-1212), Email (sarah.sample@company.com), and Emergency Contact (Sample Text). The 'Medical Information' tab shows Medical History (Sample Text). At the bottom, there's an 'Information' section with a note: 'Information (Header visible on edit only)'.

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

The screenshot shows the 'Appointment' layout configuration in the 'Object Manager'. The left sidebar lists various configuration options, with 'Page Layouts' selected. The main area displays a table of 'Page Layouts' with 3 items, sorted by 'Page Layout Name'. The table has columns for 'PAGE LAYOUT NAME', 'CREATED BY', and 'MODIFIED BY'. The 'Appointment Layout' is selected, showing details for 'Appointment — Follow-Up' and 'Appointment — New Consultation'.

PAGE LAYOUT NAME	CREATED BY	MODIFIED BY
Appointment Layout	Hospital Admin, 9/23/2025, 5:07 AM	Hospital Admin, 9/25/2025, 4:35 AM
Appointment — Follow-Up	Hospital Admin, 9/25/2025, 4:36 AM	Hospital Admin, 9/25/2025, 4:41 AM
Appointment — New Consultation	Hospital Admin, 9/25/2025, 4:31 AM	Hospital Admin, 9/25/2025, 4:35 AM

Prescription Layout: Prescription details + related Appointment.

E. Compact Layouts

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

The screenshot shows the 'Patient Compact Layout' configuration in the 'Object Manager'. The left sidebar lists various configuration options, with 'Compact Layouts' selected. The main area displays a preview of the 'Patient Compact Layout'. At the top, there's a 'Compact Layout Detail' section with a 'Label' field set to 'Patient'. Below this is a table of 'Included Fields' with columns for 'Label', 'API Name', and 'Included Fields'. The table has rows for 'Patient ID', 'Patient Name', and 'Contact Number'. At the bottom, there's a 'Created By' field set to 'Hospital Admin, 9/23/2025, 5:55 AM' and a 'Modified By' field set to 'Hospital Admin, 9/23/2025, 5:55 AM'.

F. Schema Builder

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

