

Phase 3: Data Modeling & Relationships

In this phase, we designed and implemented the data model for the Smart Healthcare CRM project. The focus was on creating the necessary custom objects, fields, and relationships to support appointments, providers, visits, prescriptions, and notifications.

1. Objects and Fields

The following custom objects were configured with essential fields:

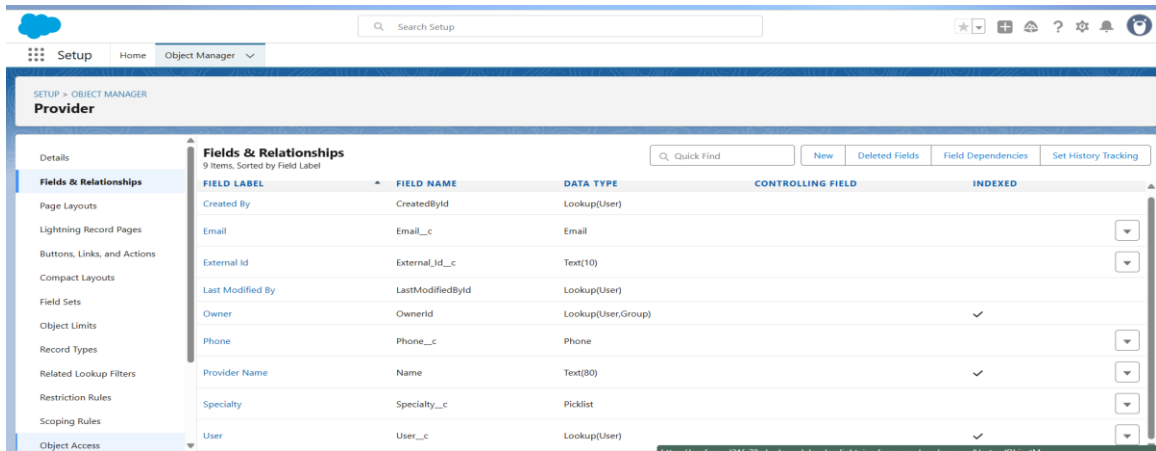
- Appointment__c
- Provider__c
- Visit__c
- Prescription__c
- Notification_Log__c

Below is the screenshot of fields created for Appointment__c:

The screenshot shows the Salesforce Setup interface for the 'Appointment' object. The 'Fields & Relationships' tab is selected, displaying a list of 13 fields. The fields are sorted by Field Label. The table below represents the data shown in the screenshot:

Field Label	Name	Field Type	Required
Appointment Name	Name	Text(80)	✓
Appointment_End	Appointment_End__c	Date/Time	
Appointment_Start	Appointment_Start__c	Date/Time	
Created By	CreatedById	Lookup(User)	
Duration Minutes	Duration_Minutes__c	Formula (Number)	
Last Modified By	LastModifiedById	Lookup(User)	
Owner	OwnerId	Lookup(User,Group)	✓
Patient	Patient__c	Lookup(Contact)	✓
Provider	Provider__c	Lookup(Provider)	✓
Reason for Visit	Reason_for_Visit__c	Long Text Area(32768)	

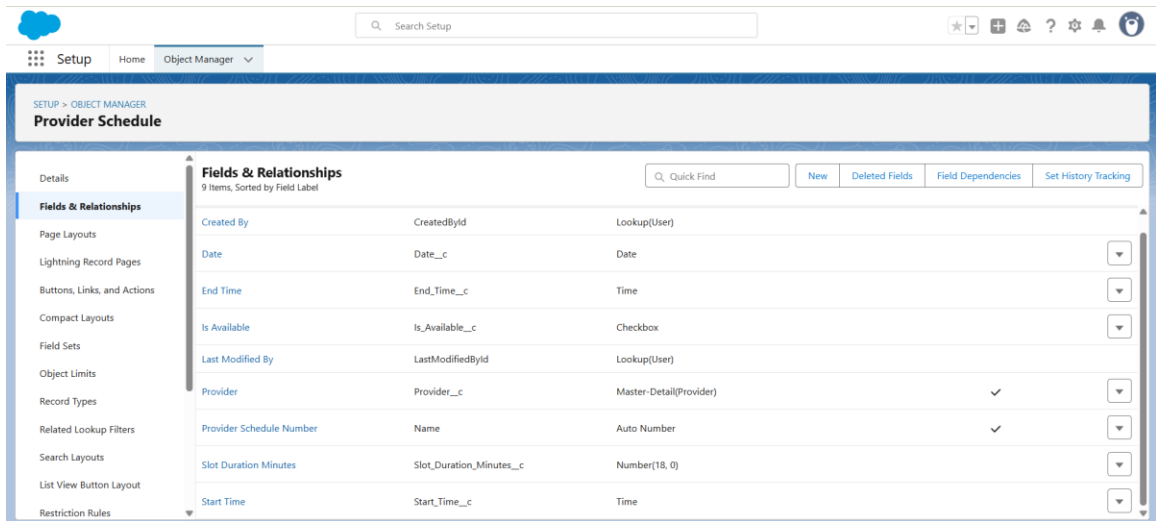
Below is the screenshot of fields created for Provider__c:



Below is the screenshot of fields created for Provider_Schedule__c:

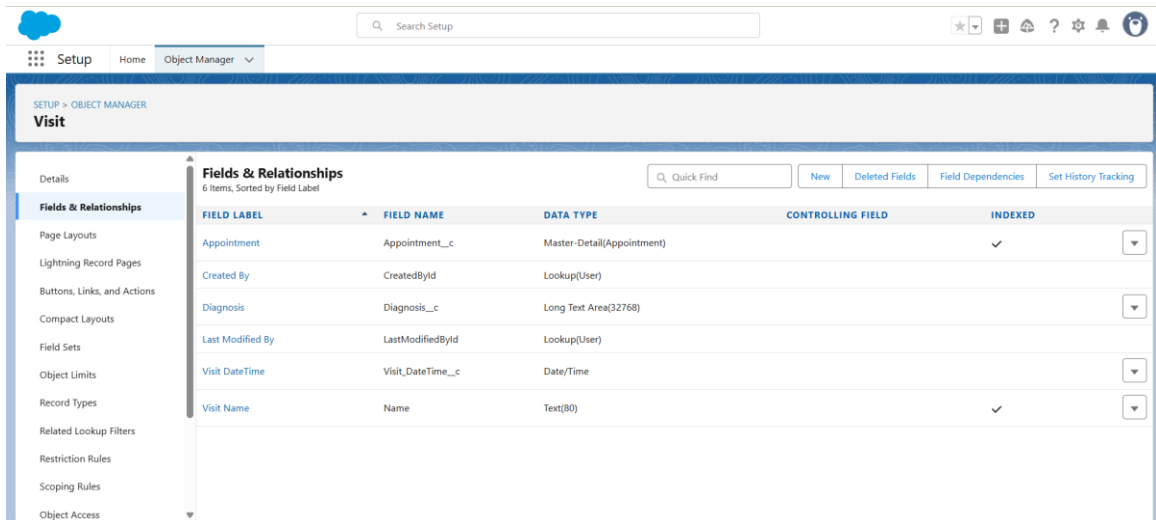
FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Email	Email__c	Email		
External Id	External_Id__c	Text(10)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Phone	Phone__c	Phone		
Provider Name	Name	Text(80)		✓
Specialty	Specialty__c	Picklist		
User	User__c	Lookup(User)		✓

Below is the screenshot of fields created for Provider_Schedule__c:



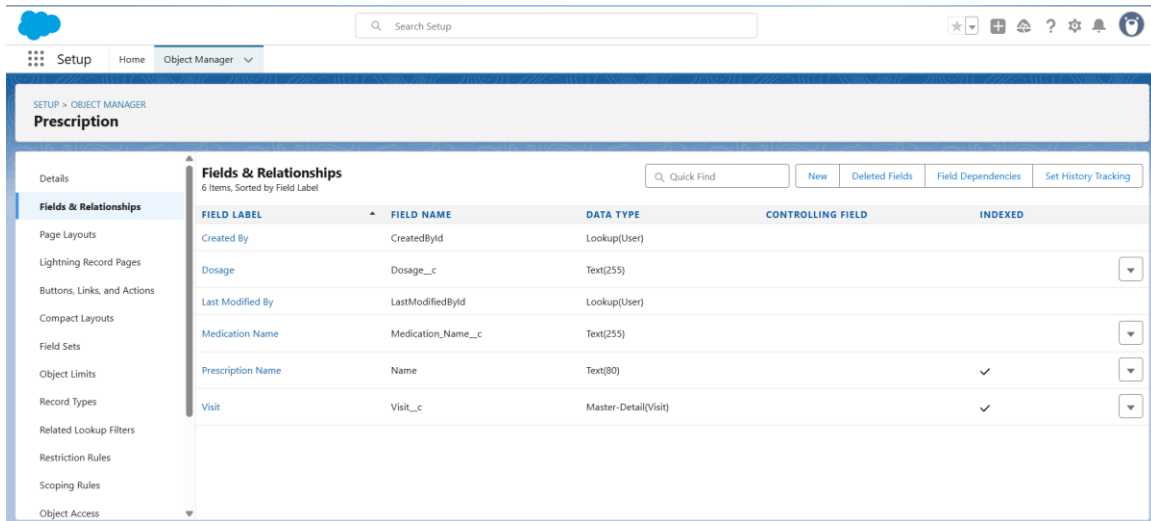
FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Date	Date__c	Date		
End Time	End_Time__c	Time		
Is Available	Is_Available__c	Checkbox		
Last Modified By	LastModifiedById	Lookup(User)		
Provider	Provider__c	Master-Detail(Provider)		✓
Provider Schedule Number	Name	Auto Number		✓
Slot Duration Minutes	Slot_Duration_Minutes__c	Number(18, 0)		
Start Time	Start_Time__c	Time		

Below is the screenshot of fields created for Visit__c:



FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Appointment	Appointment__c	Master-Detail(Appointment)		✓
Created By	CreatedById	Lookup(User)		
Diagnosis	Diagnosis__c	Long Text Area(32768)		
Last Modified By	LastModifiedById	Lookup(User)		
Visit DateTime	Visit_DateTime__c	Date/Time		
Visit Name	Name	Text(80)		✓

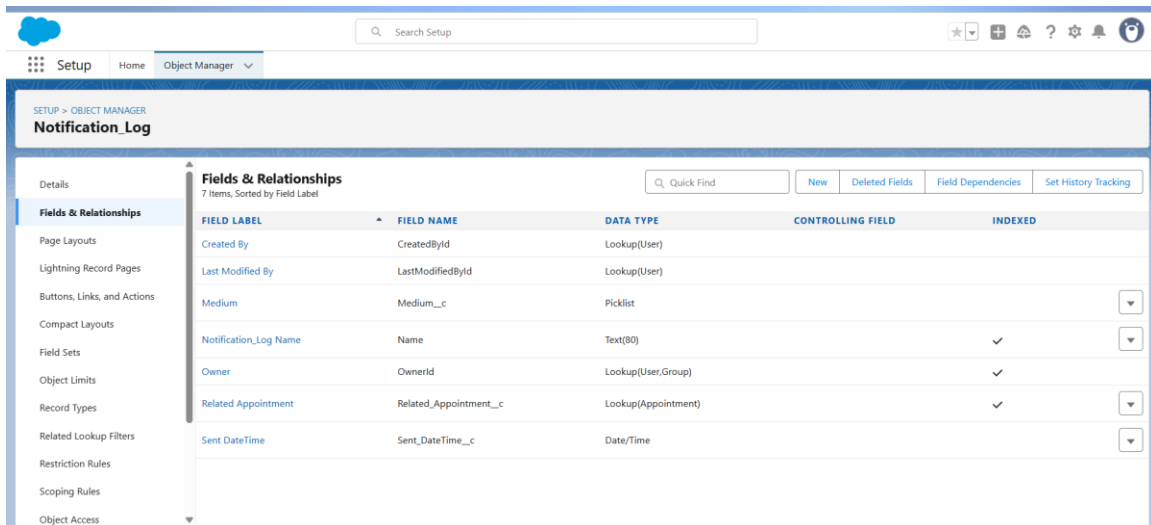
Below is the screenshot of fields created for Prescription__c:



Below is the screenshot of fields created for Notification_Log_c:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Dosage	Dosage__c	Text(255)		
Last Modified By	LastModifiedById	Lookup(User)		
Medication Name	Medication_Name__c	Text(255)		
Prescription Name	Name	Text(80)		✓
Visit	Visit__c	Master-Detail(Visit)		✓

Below is the screenshot of fields created for Notification_Log_c:



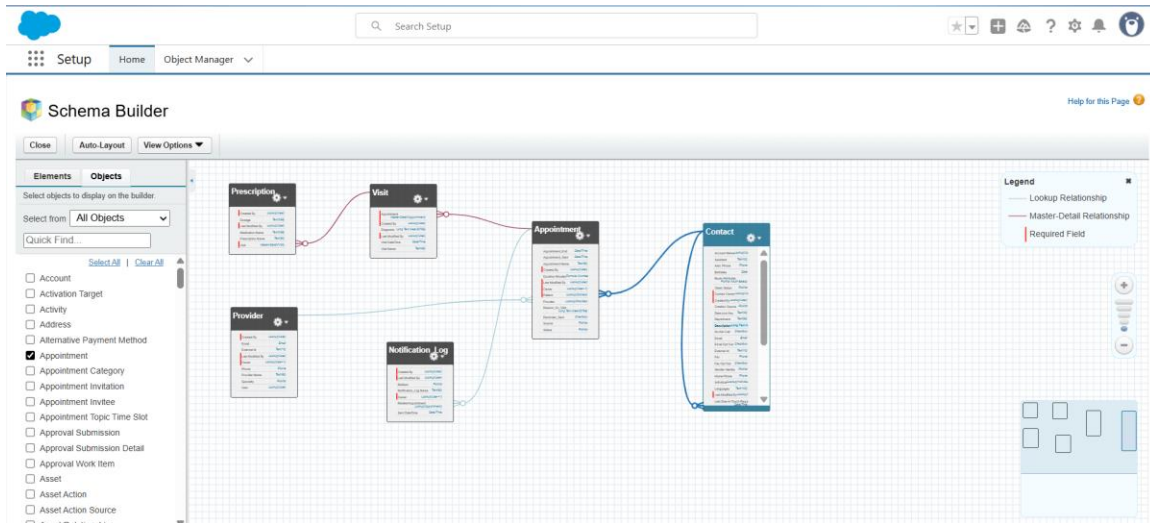
FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Medium	Medium__c	Picklist		
Notification_Log Name	Name	Text(80)		✓
Owner	OwnerId	Lookup(User,Group)		✓
Related Appointment	Related_Appointment__c	Lookup(Appointment)		✓
Sent DateTime	Sent_DateTime__c	Date/Time		

2. Relationships

The following relationships were implemented:

- Appointment__c → Provider__c (Lookup)
- Appointment__c → Patient__c (Lookup)
- Visit__c → Appointment__c (Master-Detail)
- Prescription__c → Visit__c (Master-Detail)
- Notification_Log__c → Appointment__c (Lookup)

Below is the screenshot of Schema Builder showing the relationships:



3. Validation Rules

Validation rules were added to maintain data quality. For example, to ensure that the Appointment End time is always after the Start time:

Rule Name: EndAfterStart

Formula:

```
AND(  
  NOT(ISBLANK(Appointment_End_c)),  
  Appointment_End_c <= Appointment_Start_c  
)
```

Error Message: "End time must be after start time."

Below is the screenshot of the validation rule:

SetupHomeObject Manager

Object Manager

Appointment Validation Rule

Back to Appointment

Help for this Page

Validation Rule Detail

Rule Name

EndAfterStart

Active

✓

Error Condition Formula

AND(
NOT(ISBLANK(Appointment_End__c)),
Appointment_End__c > Appointment_Start__c
)

Error Message

End time must be after start time.

Error Location

Top of Page

Description

Created By

Srujana Balam, 9/23/2025, 10:21 PM

Modified By

Srujana Balam, 9/23/2025, 10:21 PM

4. Testing

Sample records were created to verify the relationships and rules:

- Providers
- Patients
- Appointments

Smart Healthcare C...HomeContactsAccountsReportsDashboardsAppointmentsNotification_LogsPrescriptionsProvidersVisits

Provider

Dr. Ramesh Kumar

New ContactNew OpportunityEdit

Related

Details

Provider Name

Dr. Ramesh Kumar

Specialty

Cardiologist

User

Phone

(987) 654-3210

Email

ramesh.kumar@example.com

External Id

PROV-001

Created By

Srujana Balam, 9/23/2025, 10:36 PM

Owner

Srujana Balam

Last Modified By

Srujana Balam, 9/23/2025, 10:36 PM

Smart Healthcare C...

HomeContactsAccountsReportsDashboardsAppointmentsNotification_LogsPrescriptionsProvidersVisits

Search...

Star

Plus

Home

Help

Settings

Notifications

Profile

Appointment

Check-up Anita Sharma

New ContactNew OpportunityEdit

RelatedDetails

Appointment Name

Check-up Anita Sharma

Appointment_Start

9/24/2025, 10:00 AM

Appointment_End

9/24/2025, 10:45 AM

Patient

Anita Sharma

Provider

Dr. Ramesh Kumar

Status

Scheduled

Source

Web

Reason_for_Visit

Regular health check-up

Reminder_Sent

Owner

Srujana Balam