

## **Phase 1: Problem Understanding & Industry Analysis**

### **1. Industry Overview – Healthcare**

The healthcare industry is one of the most dynamic and essential sectors globally, providing critical medical services, patient care, and wellness solutions. Hospitals and clinics handle thousands of patients daily, generating large volumes of data related to appointments, treatments, billing, and insurance. The industry faces constant challenges in patient engagement, service delivery, and efficient management of resources.

In the modern era, digital transformation is reshaping healthcare, with hospitals adopting CRM systems to centralize data, automate workflows, and improve patient-doctor communication. Salesforce, as the world's leading CRM platform, offers tools to address inefficiencies, enhance patient experiences, and enable data-driven decision-making.

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### **2. Business Problem Statement**

A multi-specialty hospital receives numerous patient inquiries and appointment requests daily via website, mobile apps, and call centers. The current manual process for appointment scheduling often leads to:

- Double bookings and scheduling conflicts
- Missed follow-ups due to lack of reminders
- Fragmented patient records across different systems
- Difficulty for doctors to access complete medical history during consultations
- Lack of real-time dashboards for administrators to track hospital performance

As a result, patients experience delayed services, poor communication, and lower satisfaction levels, while hospitals face inefficiencies and revenue leakage.

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### **3. Objectives of the Salesforce Solution**

The aim of this project is to leverage Salesforce CRM to streamline patient engagement and appointment management by:

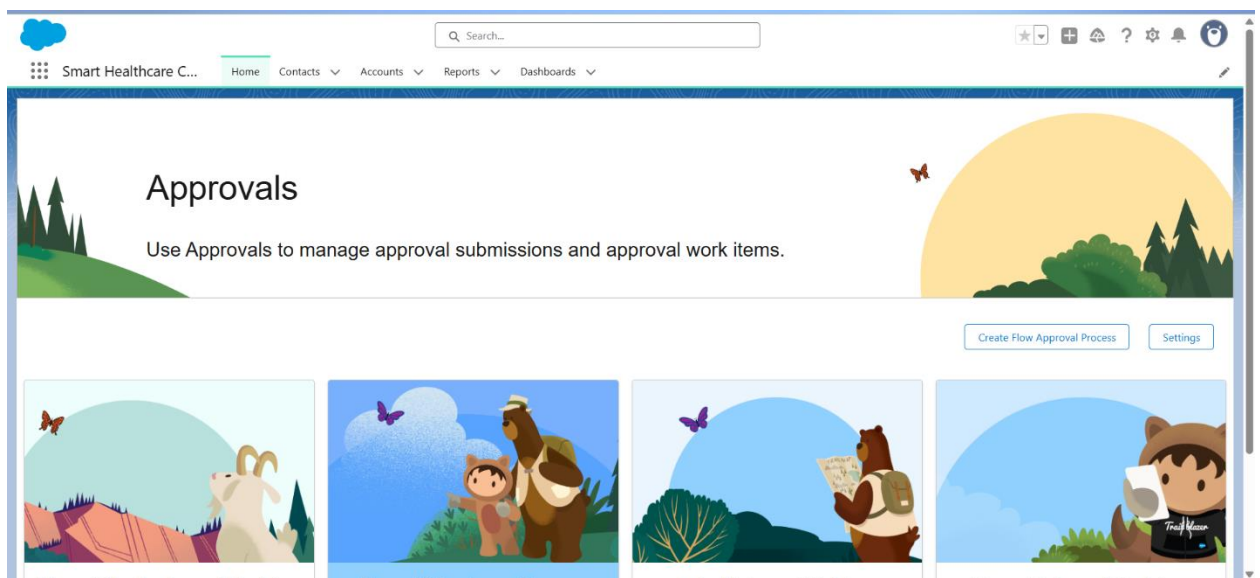
- Automating appointment booking, reminders, and follow-ups
- Centralizing patient data (demographics, medical history, prescriptions, billing)

- Enabling doctors to view complete patient profiles in real-time
- Providing hospital administrators with reports and dashboards on appointments, revenue, and doctor utilization
- Improving patient satisfaction and retention through personalized care and communication

## Phase 2: Org Setup & Configuration (Healthcare Project)

### Create a New Lightning App

- **App Manager → New Lightning App.**
- **Smart Healthcare CRM**
- *“A Salesforce solution for Patient Engagement & Appointment Management.”*



### Custom Objects

1. **Patient\_\_c**
2. **Appointment\_\_c**
3. **Visit\_\_c**
4. **Prescription\_\_c**
5. **Provider\_\_c** (Doctors)
6. **Notification\_Log\_\_c**

Setup

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SETUP > OBJECT MANAGER

Appointment

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Restriction Rules

Scoping Rules

Object Access

Details

Description

API Name  
Appointment\_c

Custom

✓

Singular Label  
Appointment

Plural Label  
Appointments

Enable Reports

Track Activities

Track Field History

Deployment Status  
Deployed

Help Settings  
Standard salesforce.com Help Window

EditDelete

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Description

API Name  
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Custom

✓

Singular Label  
Provider

Plural Label  
Providers

Enable Reports

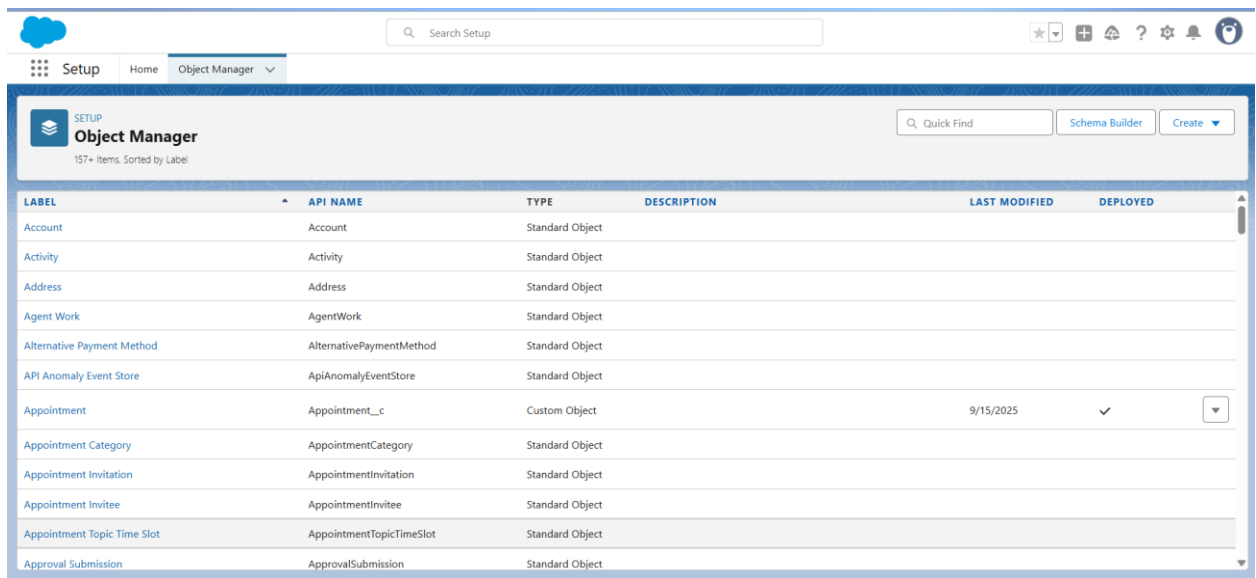
Track Activities

Track Field History

Deployment Status  
Deployed

Help Settings  
Standard salesforce.com Help Window

EditDelete

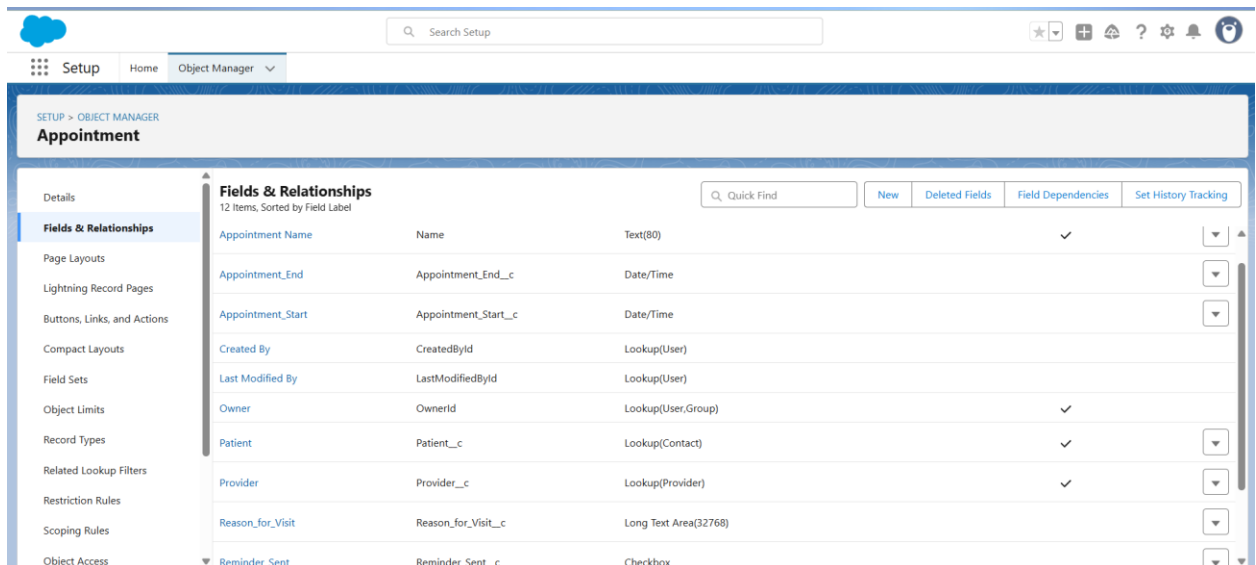


LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Account	Account	Standard Object			
Activity	Activity	Standard Object			
Address	Address	Standard Object			
Agent Work	AgentWork	Standard Object			
Alternative Payment Method	AlternativePaymentMethod	Standard Object			
API Anomaly Event Store	ApiAnomalyEventStore	Standard Object			
Appointment	Appointment__c	Custom Object		9/15/2025	✓
Appointment Category	AppointmentCategory	Standard Object			
Appointment Invitation	AppointmentInvitation	Standard Object			
Appointment Invitee	AppointmentInvitee	Standard Object			
Appointment Topic Time Slot	AppointmentTopicTimeSlot	Standard Object			
Approval Submission	ApprovalSubmission	Standard Object			

## Custom Fields

### Appointment\_\_c

- Appointment\_Start\_\_c (Date/Time)
- Appointment\_End\_\_c (Date/Time)
- Status\_\_c (Picklist: Scheduled, Completed, Cancelled)
- Patient\_\_c (Lookup → Patient/Contact)
- Provider\_\_c (Lookup → Provider\_\_c)
- Reason\_for\_Visit\_\_c (Text Area)



Field Label	Field Name	Field Type	Required	Field Format
Appointment Name	Name	Text(80)	✓	
Appointment End	Appointment_End__c	Date/Time		
Appointment Start	Appointment_Start__c	Date/Time		
Created By	CreatedById	Lookup(User)		
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)		
Reminder Sent	Reminder_Sent__c	Checkbox		

SetupHomeObject Manager

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Star Plus Cloud ? Settings Profile

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8 Items, Sorted by Field Label

Q Quick Find

NewDeleted FieldsField DependenciesSet History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Email	Email__c	Email		
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)		✓

## Tabs for Custom Objects

SetupHomeObject Manager

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Q tabs

User Interface

Rename Tabs and Labels

Tabs

Didn't find what you're looking for?  
Try using Global Search.

SETUP

Tabs

Custom Tabs

Help for this Page

You can create new custom tabs to extend Salesforce functionality or to build new application functionality.

Custom Object tabs look and behave like the standard tabs provided with Salesforce. Web tabs allow you to embed external web applications and content within the Salesforce window. Visualforce tabs allow you to embed Visualforce pages. Lightning Component tabs allow you to add Lightning components to the navigation menu in Lightning Experience and the mobile app. Lightning Page tabs allow you to add Lightning Pages to Lightning Experience and the mobile app.

Custom Object Tabs

New What Is This?

Action	Label	Tab Style	Description
<a href="#">Edit</a>   <a href="#">Del</a>	Appointments	Pencil	
<a href="#">Edit</a>   <a href="#">Del</a>	Mentors	Hexagon	
<a href="#">Edit</a>   <a href="#">Del</a>	Notification_Logs	Globe	
<a href="#">Edit</a>   <a href="#">Del</a>	Prescriptions	Box	
<a href="#">Edit</a>   <a href="#">Del</a>	Providers	Computer	
<a href="#">Edit</a>   <a href="#">Del</a>	Student	Desk	
<a href="#">Edit</a>   <a href="#">Del</a>	Visits	Lightning	

Web Tabs

New What Is This?

No Web Tabs have been defined

## Phase 3: Data Modeling & Relationships

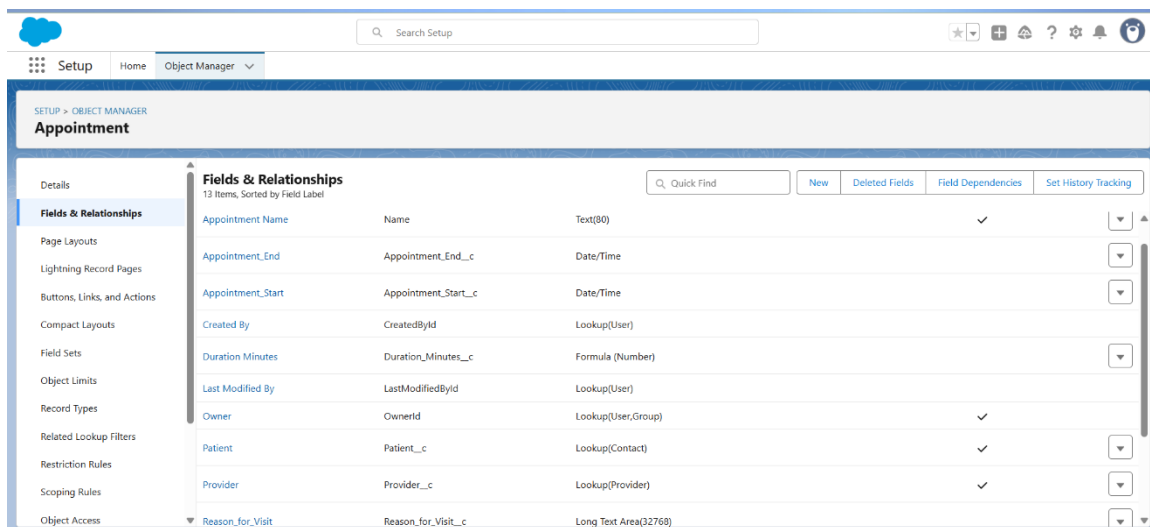
In this phase, we designed and implemented the data model for the Smart Healthcare CRM project. The focus was on creating the necessary custom objects, fields, and relationships to support appointments, providers, visits, prescriptions, and notifications.

### 1. Objects and Fields

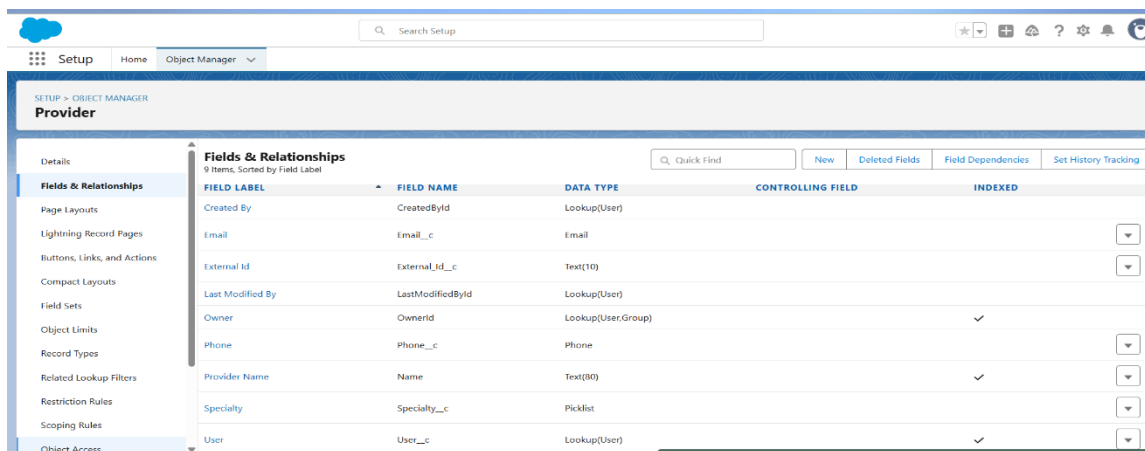
The following custom objects were configured with essential fields:

- Appointment\_\_c
- Provider\_\_c
- Visit\_\_c
- Prescription\_\_c
- Notification\_Log\_\_c

Below is the screenshot of fields created for Appointment\_\_c:



Below is the screenshot of fields created for Provider\_\_c:



Setup > OBJECT MANAGER

**Provider**

Details

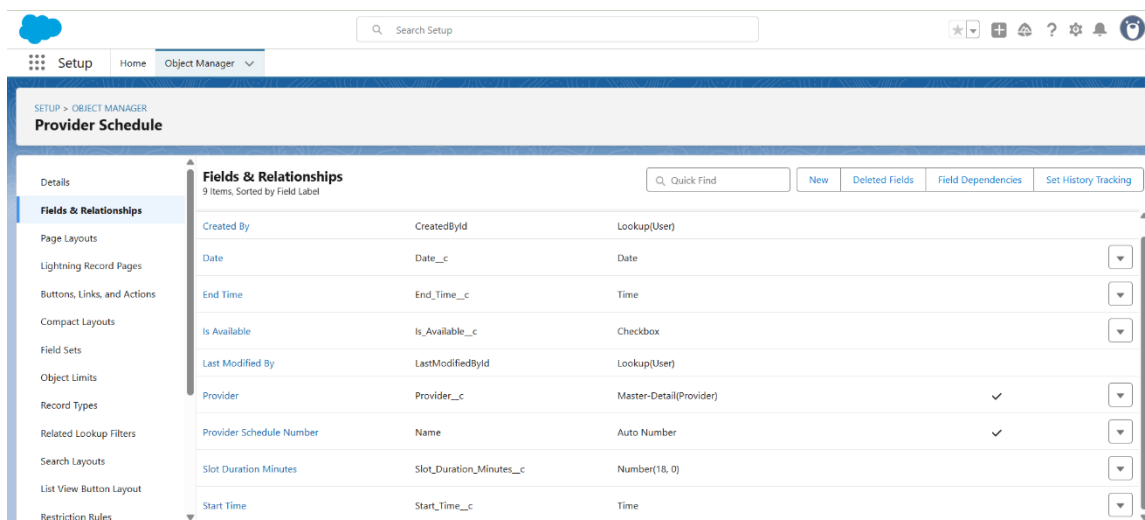
**Fields & Relationships**  
9 Items, Sorted by Field Label

Quick Find

New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Email	Email__c	Email		
External Id	ExternalId__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:



Setup > OBJECT MANAGER

**Provider Schedule**

Details

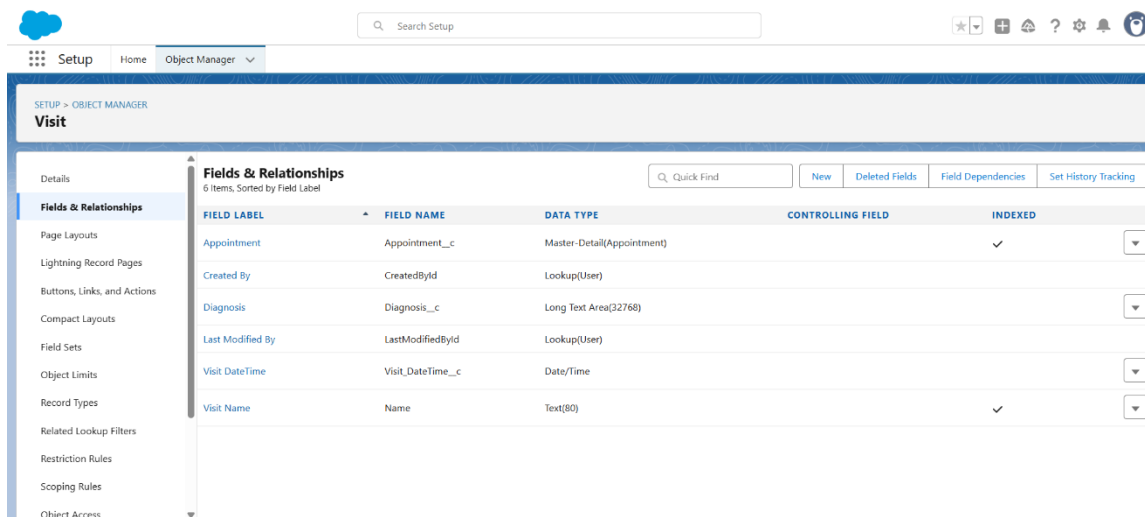
**Fields & Relationships**  
9 Items, Sorted by Field Label

Quick Find

New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
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:



Setup > OBJECT MANAGER

**Visit**

Details

**Fields & Relationships**  
6 Items, Sorted by Field Label

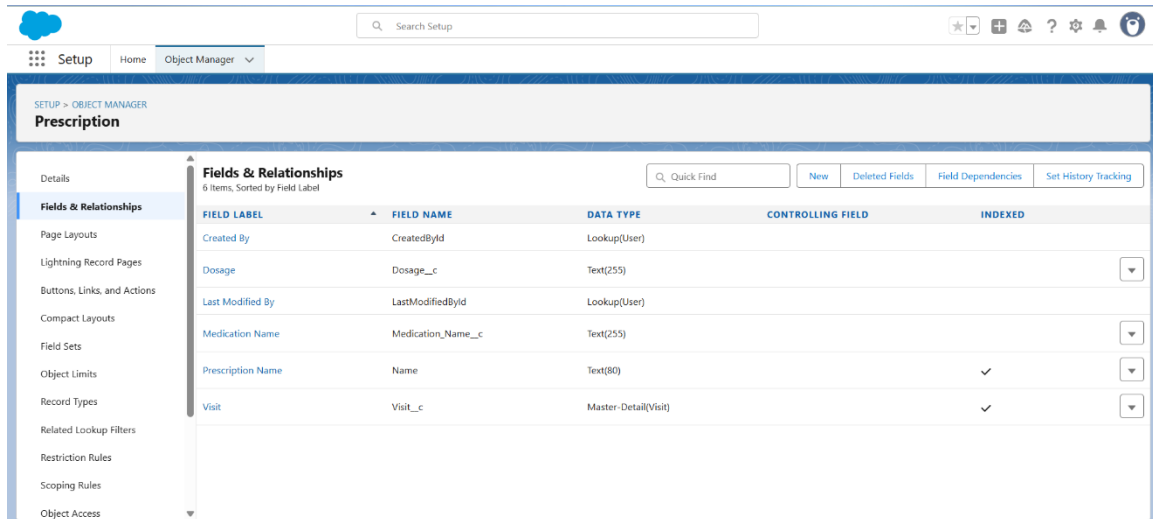
Quick Find

New Deleted Fields Field Dependencies Set History Tracking

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:



SETUP > OBJECT MANAGER  
**Prescription**

Details

**Fields & Relationships**  
6 Items, Sorted by Field Label

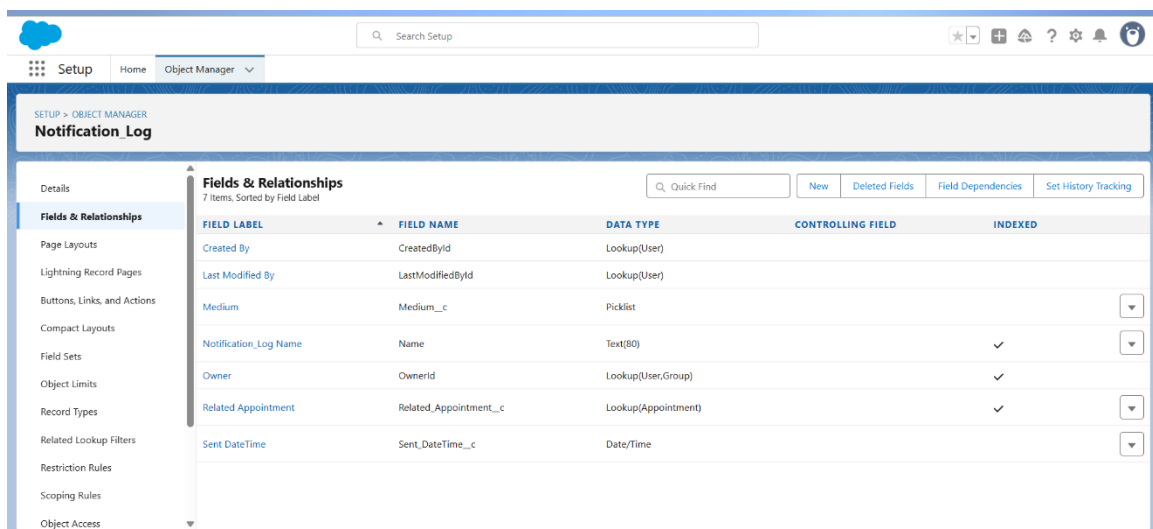
Quick Find

New Deleted Fields Field Dependencies Set History Tracking

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:



SETUP > OBJECT MANAGER  
**Notification Log**

Details

**Fields & Relationships**  
7 Items, Sorted by Field Label

Quick Find

New Deleted Fields Field Dependencies Set History Tracking

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.

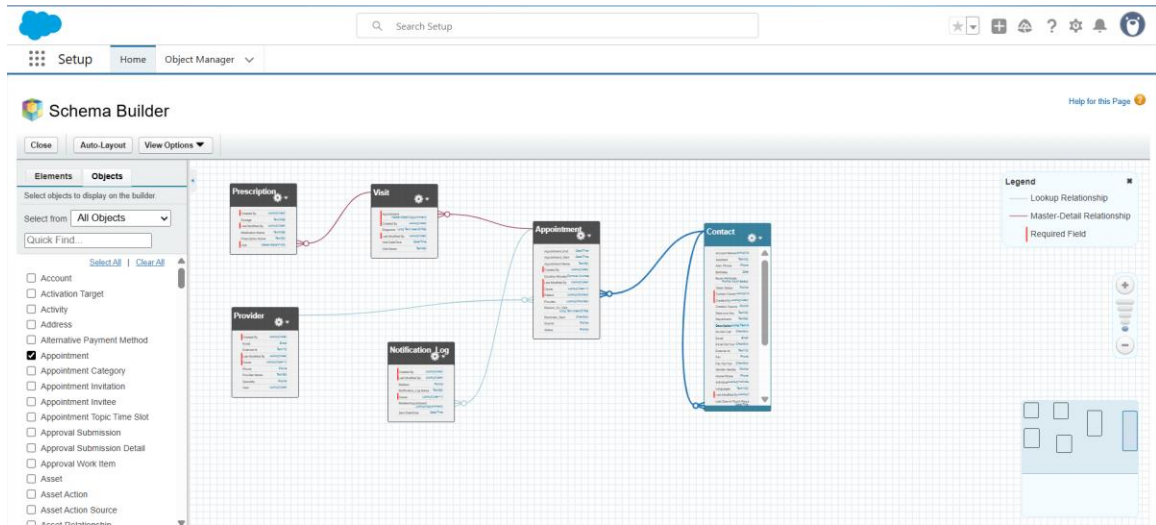
## Relationships

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:

Cloud logo

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Setup Home Object Manager

### Object Manager

#### Appointment Validation Rule

[Back to Appointment](#) [Help for this Page](#)

**Validation Rule Detail** [Edit](#) [Clone](#)

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

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4.

## Testing

Sample records were created to verify the relationships and rules:

- Providers
- Patients
- Appointments

Cloud logo

Search...


Smart Healthcare C... Home Contacts Accounts Reports Dashboards Appointments Notification\_Logs Prescriptions Providers Visits

### Provider Dr. Ramesh Kumar

[New Contact](#) [New Opportunity](#) [Edit](#)

**Related Details**

Provider Name	Dr. Ramesh Kumar	Owner	Srujana Balam
Specialty	Cardiologist		
User			
Phone	(987) 654-3210		
Email	ramesh.kumar@example.com		
External Id	PRCV-001		
Created By	Srujana Balam 9/23/2025, 10:36 PM	Last Modified By	Srujana Balam 9/23/2025, 10:36 PM



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Smart Healthcare C...

Home

Contacts

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Reports

Dashboards

Appointments

Notification\_Logs

Prescriptions

Providers

Visits

Appointment

Check-up Anita Sharma

New Contact

New Opportunity

Edit

Related

Details

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