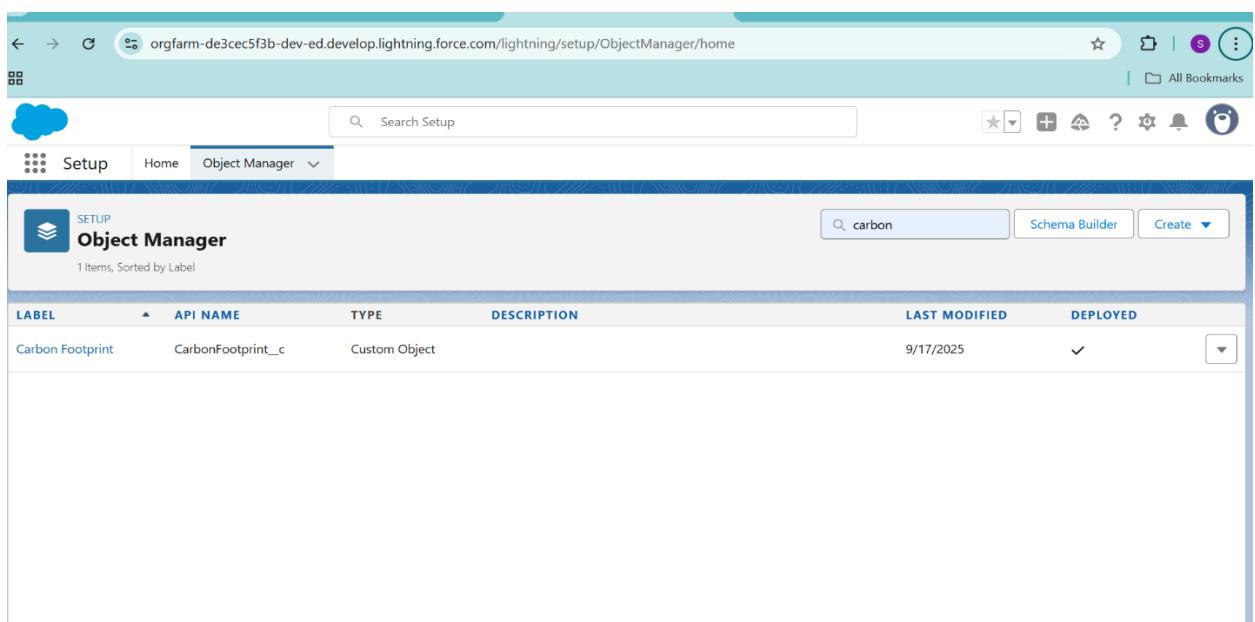


Phase 3: Data Modeling & Relationships

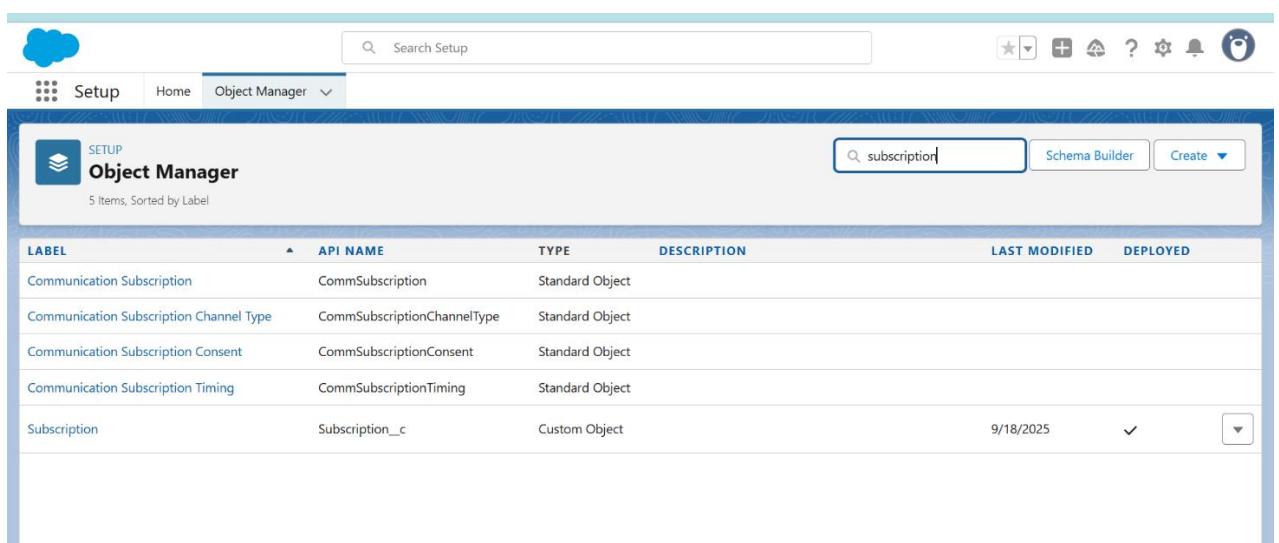
Step 1: Standard & Custom Objects

- Confirm in Object Manager that you have:
 - CarbonFootprint__c
 - Subscription__c



The screenshot shows the Salesforce Object Manager interface. The search bar at the top contains the text "carbon". A table below lists one item:

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Carbon Footprint	CarbonFootprint__c	Custom Object		9/17/2025	✓



The screenshot shows the Salesforce Object Manager interface with the search bar containing "subscription". A table below lists five items:

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Communication Subscription	CommSubscription	Standard Object			
Communication Subscription Channel Type	CommSubscriptionChannelType	Standard Object			
Communication Subscription Consent	CommSubscriptionConsent	Standard Object			
Communication Subscription Timing	CommSubscriptionTiming	Standard Object			
Subscription	Subscription__c	Custom Object		9/18/2025	✓

Step 2: Fields

- Create fields for each object.

CarbonFootprint_c

- CO2_Saved_c → Number(16,2), Required ✓
- CO2_Reduced_c → Number(16,2) ✓
- Energy_Type_c → Picklist (Solar, Wind) ✓
- Entry_Date_c → Date/Time, Required ✓
- Subscription_c → Lookup(Subscription_c), Required ✓
- User_c → Lookup(User), Optional ✓

Subscription_c

- Start_Date_c → Date, Required ✓
- End_Date_c → Date, Required ✓
- Plan_Type_c → Picklist (Basic, Premium, Enterprise) ✓
- Cost_c → Currency(16,2), Required ✓
- Contact_c → Lookup(Contact), Required ✓
- Total_CO2_Saved_c → Formula (SUM from CarbonFootprint_c trigger/flow) ✓

The screenshot shows the Salesforce Object Manager interface for the 'Carbon Footprint' object. The top navigation bar includes 'Setup', 'Home', and 'Object Manager'. The main area displays the 'Fields & Relationships' section for the 'Carbon Footprint' object. The table lists the following fields:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Carbon Footprint Name	Name	Text(80)		✓
CO2 Reduced (kg)	CO2_Reduced_c	Number(8, 2)		✓
CO2 Saved	CO2_Saved_c	Number(16, 2)		✓
Created By	CreatedById	Lookup(User)		✓
Energy Type	Energy_Type_c	Picklist		✓
Entry Date	Entry_Date_c	Date/Time		✓
Last Modified By	LastModifiedById	Lookup(User)		✓
Owner	OwnerId	Lookup(User,Group)		✓
Subscription	Subscription_c	Lookup(Subscription)		✓
User	User_c	Lookup(User)		✓

The left sidebar contains links for 'Details', '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', 'Triggers', and 'Flow Triggers'.

SETUP > OBJECT MANAGER

Subscription

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	IN USE
Contact	Contact__c	Lookup(Contact)		✓
Cost	Cost__c	Currency(8, 2)		✓
Created By	CreatedById	Lookup(User)		✓
End Date	End_Date__c	Date		✓
Last Modified By	LastModifiedById	Lookup(User)		✓
Owner	OwnerId	Lookup(User,Group)		✓
Plan Type	Plan_Type__c	Picklist		✓
Start Date	Start_Date__c	Date		✓
Status	Status__c	Picklist		✓
Subscription Name	Name	Text(80)		✓
Total CO2 Saved	Total_CO2_Saved__c	Number(16, 2)		✓

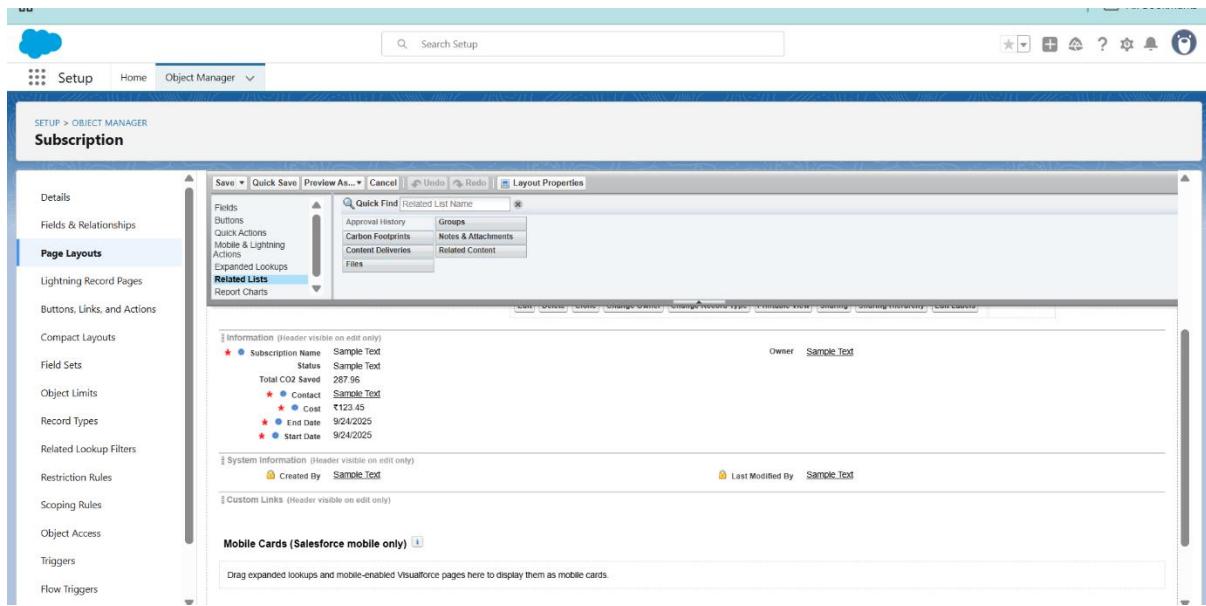
Step 3: Page Layouts

- CarbonFootprint__c Layout → Add related list: Subscription.
- Subscription__c Layout → Add related list: CarbonFootprints.

SETUP > OBJECT MANAGER

Carbon Footprint

Fields	Field Name
Buttons	CO2 Saved
Quick Actions	Created By
Mobile & Lightning Actions	Owner
Expanded Lookups	Carbon Footprint ...
Related Lists	Energy Type
Report Charts	Subscription
CO2 Reduced (kg)	Entry Date



Step 4: Junction Objects

A Junction Object in Salesforce is a custom object with two Master-Detail relationships used to model a many-to-many relationship between two objects.

For example:

If a CarbonFootprint record could be linked to multiple Subscriptions, and each Subscription could also be linked to multiple CarbonFootprint records, then we would create a junction object called `Subscription_CarbonFootprint__c` with:

- Master-Detail to `Subscription__c`
- Master-Detail to `CarbonFootprint__c`

In our GreenEnergyTracker project, we do not require junction objects because our relationships are strictly one-to-many:

- A Subscription can have many CarbonFootprint records.
- But each CarbonFootprint record belongs to only one Subscription.

Hence, junction objects were not created but are explained here for completeness.

Step 5: Hierarchical Relationships

Salesforce also supports a special type of relationship called Hierarchical Relationship, which is only available on the User object.

It allows users to be related in a parent-child way, such as showing reporting structures (e.g., Manager → Agent).

In our GreenEnergyTracker project, hierarchical relationships are not required, because we are focusing on CarbonFootprints, Subscriptions, and Contacts.

However, hierarchical relationships are often used in real-life scenarios such as:

- Approval flows (e.g., manager must approve a subscription over ₹50,000).
- Reporting managers (e.g., each energy consultant reports to a team leader).

For now, we are not using hierarchical relationships, but the concept is explained here for completeness