

## PHASE -3 Data Modelling & Relationships

In this phase of my Expense Tracker project, I focused on setting up the core data model in Salesforce. I created the custom objects, fields, relationships, layouts, and basic permissions needed for the system to function properly. Below, I have documented each step that I performed.

### 1. Creation of Custom Objects

The first step was to create two custom objects: ET Budget and ET Expense.

- **ET Budget:**  
This object is used to store budget information.
- **ET Expense:**  
This object is used to store each expense entry under a budget.

### 2. Creation of Fields

After creating the objects, I added the necessary custom fields.

#### Fields on ET Budget

- Threshold Amount, Start Date, End Date, Total Expenses, Total Expenses (Apex), ET Alert Sent

#### Fields on ET Expense

- Amount, Expense Date, Category, Notes, Approved and Budget

Setup

Home

Object Manager

Setup

SETUP > OBJECT MANAGER

ET Budget

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

Fields & Relationships

10 Items, Sorted by Field Label

Q Quick Find

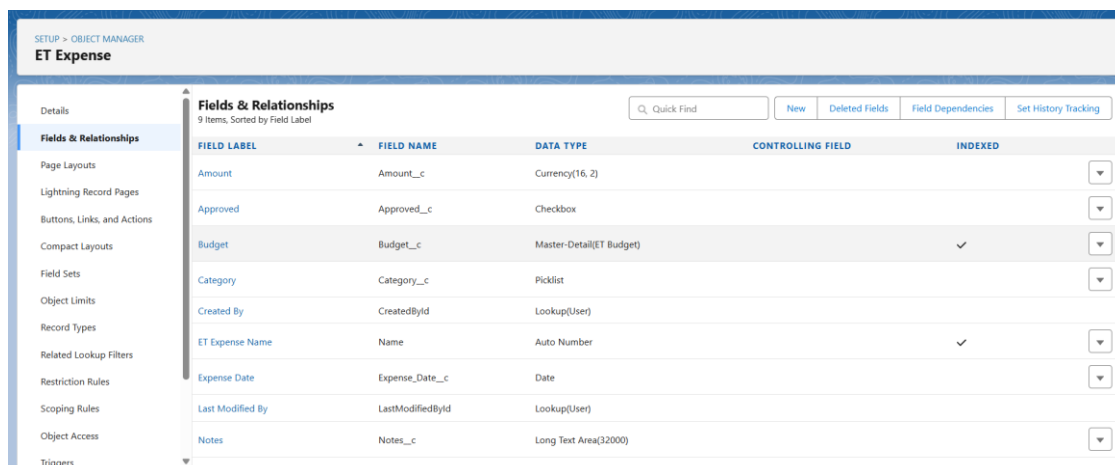
New

Deleted Fields

Field Dependencies

Set History Tracking

|                       |                        |                                  |   |  |
|-----------------------|------------------------|----------------------------------|---|--|
| Budget Name           | Name                   | Text(80)                         | ✓ |  |
| Created By            | CreatedById            | Lookup(User)                     |   |  |
| End Date              | End_Date__c            | Date                             |   |  |
| ET_Alert_Sent__c      | ET_Alert_Sent__c       | Checkbox                         |   |  |
| Last Modified By      | LastModifiedById       | Lookup(User)                     |   |  |
| Owner                 | OwnerId                | Lookup(User,Group)               | ✓ |  |
| Start Date            | Start_Date__c          | Date                             |   |  |
| Threshold Amount      | Threshold_Amount__c    | Currency(16, 2)                  |   |  |
| Total Expenses        | Total_Expenses__c      | Roll-Up Summary (SUM ET Expense) |   |  |
| Total Expenses (Apex) | Total_Expenses_Apex__c | Currency(16, 2)                  |   |  |



The screenshot shows the Salesforce Setup interface for the 'ET Expense' object. The left sidebar contains a navigation menu with options like 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, and Triggers. The main content area is titled 'Fields & Relationships' and shows a list of 9 fields. Each field row includes the field name, data type, and a checkbox for indexing. The fields are: Amount (Currency(16, 2)), Approved (Checkbox), Budget (Master-Detail(ET Budget)), Category (Picklist), Created By (Lookup(User)), ET Expense Name (Auto Number), Expense Date (Date), Last Modified By (Lookup(User)), and Notes (Long Text Area(32000)).

| Field Label      | Field Name       | Data Type                | Controlling Field | Indexed |
|------------------|------------------|--------------------------|-------------------|---------|
| Amount           | Amount__c        | Currency(16, 2)          |                   |         |
| Approved         | Approved__c      | Checkbox                 |                   |         |
| Budget           | Budget__c        | Master-Detail(ET Budget) |                   | ✓       |
| Category         | Category__c      | Picklist                 |                   |         |
| Created By       | CreatedById      | Lookup(User)             |                   |         |
| ET Expense Name  | Name             | Auto Number              |                   | ✓       |
| Expense Date     | Expense_Date__c  | Date                     |                   |         |
| Last Modified By | LastModifiedById | Lookup(User)             |                   |         |
| Notes            | Notes__c         | Long Text Area(32000)    |                   |         |

### 3. Establishing Relationships

To link expenses with budgets, I created a **Master-Detail relationship** between *ET Expense* and *ET Budget*. This ensures that each expense is always tied to a budget and also allows roll-up summaries to work. The parent is ET Budget and the child is ET Expense.

### 4. Roll-Up Summary Field

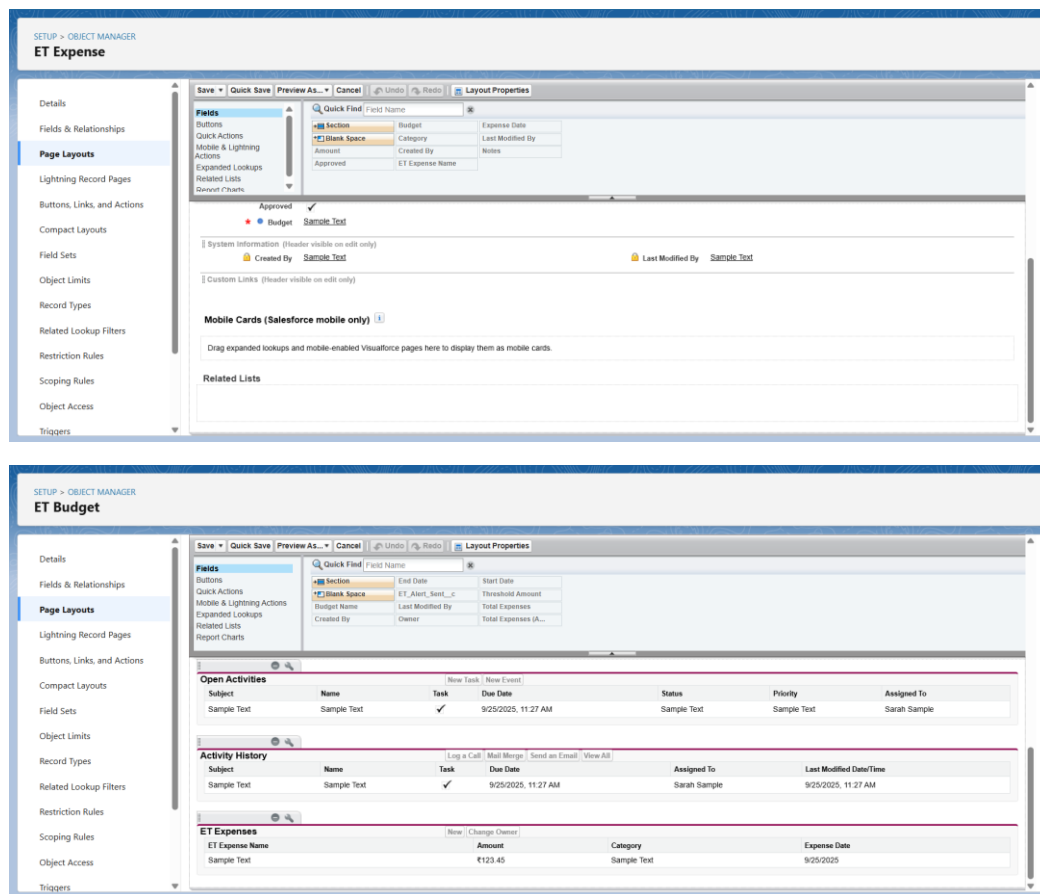
On the **ET Budget** object, I created a roll-up summary field:

- **Total Expenses:** This field automatically sums up all the *Amount* values from the related ET Expense records.

### 5. Page Layouts

I customized the layouts for both objects.

- ET Expense Layout, ET Budget Layout



### 6. Field-Level Security and Page Layout Assignment

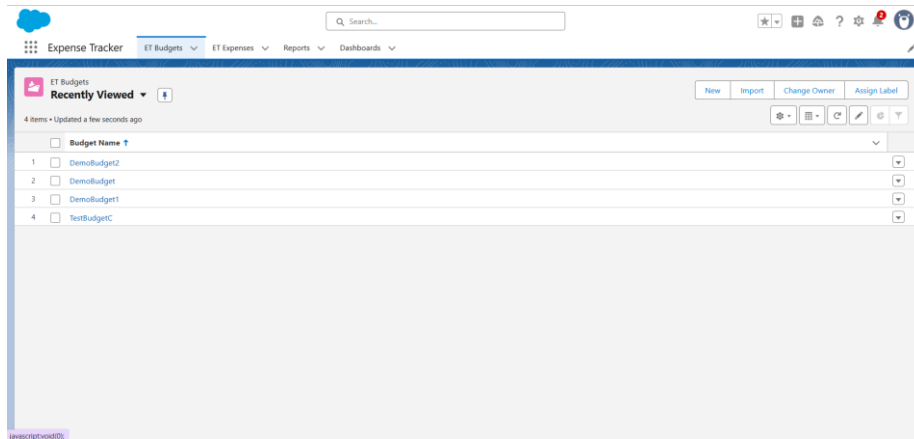
I configured field visibility for different profiles.

- **ET Manager Profile:** Full access to both ET Budget and ET Expense, including roll-up fields.
- **ET Employee Profile:** Read-only access to budgets, but permission to create and manage their own expenses.

## 7. Tabs and Lightning App

I created **Custom Tabs** for both ET Budget and ET Expense so they are easily accessible in the app. Then, I created a **Lightning App** called *expense-tracker*.

- The app includes navigation items for ET Budgets, ET Expenses, Reports, and Dashboards.
- The app was assigned to both manager and employee profiles.



## 8. Lightning Record Page

For ET Budget, I designed a **Lightning Record Page** with a header and tabs layout.

- In the header, I displayed important fields like Name, Threshold Amount and Total Expenses.
- In the Details tab, I placed the record details.
- In the Related tab, I added related lists for ET Expenses.

## 9. Profiles and Object Permissions

I updated the **profiles** to ensure proper access:

- **Managers** can create, read, update, and delete both budgets and expenses.
- **Employees** can create and manage their own expenses but only view budgets.

## 10. Org-Wide Defaults and Sharing

In the **Sharing Settings**, I set:

- **ET Budget:** Private.
- **ET Expense:** Controlled by Parent (because of master-detail relationship).

