

Phase 3 - Data Modeling & Relationships Project: Smart Lost & Found System

1. Introduction

In Phase 3, we designed and implemented the data model for the Smart Lost & Found System. This includes creating custom objects, fields, relationships, layouts, and schema. The goal is to allow students, staff, and security to log lost/found items and manage claim requests in Salesforce.

2. Standard & Custom Objects

Standard Object:

- **User** → Represents Students, Staff, Security, and Admin roles.

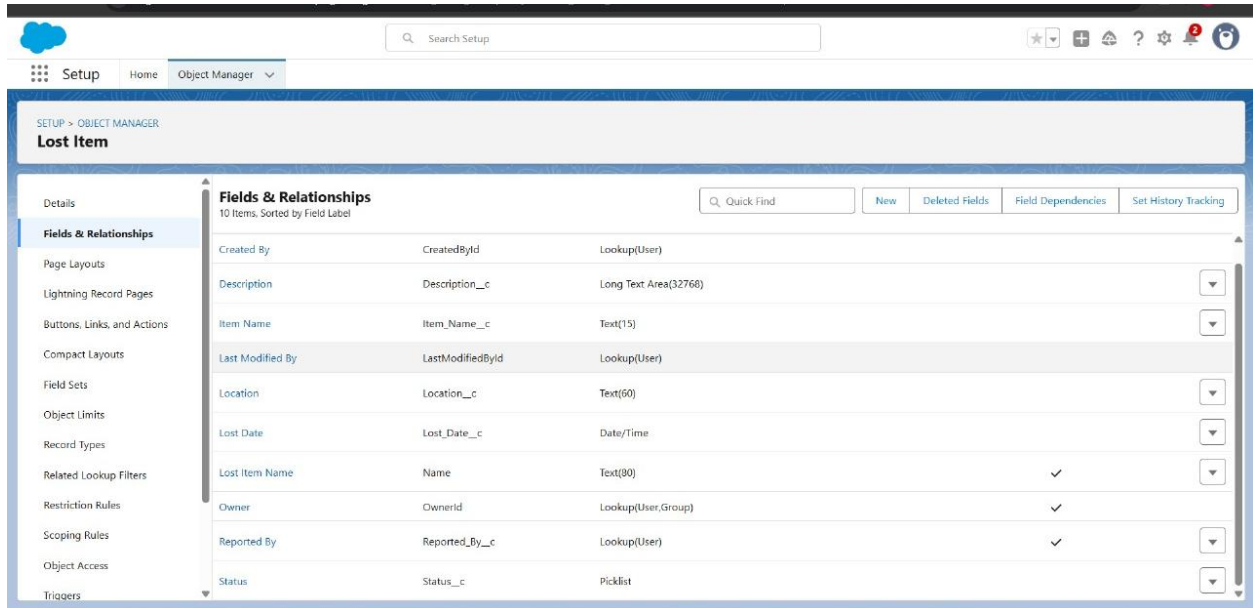
Custom Objects:

- **LostItem__c** → Tracks items reported as lost by students.
- **FoundItem__c** → Tracks items logged by staff/security.
- **ClaimRequest__c** → Manages student claims and approval workflows.

3. Fields

LostItem__c

- Item Name (Text)
- Description (Long Text Area)
- Lost Date (Date/Time)
- Location (Text)
- Status (Picklist: Pending, Recovered, Claimed)
- Reported By (Lookup → User)



FoundItem__c

- Item Name (Text)
- Description (Long Text Area)
- Found Date (Date/Time)
- Location (Text)
- Status (Picklist: Unclaimed, Matched, Returned)
- Found By (Lookup → User)
- Item Image URL (URL)

Setup Home Object Manager

SEARCH Setup

SETUP > OBJECT MANAGER

FoundItem

Details

Fields & Relationships

11 Items, Sorted by Field Label

Quick Find New Deleted Fields Field Dependencies Set History Tracking

Field Label	Field Name	Data Type	Controlling Field	Indexed
Description	Description__c	Long Text Area(32768)		
Found By	Found_By__c	Lookup(User)	✓	
Found Date	Found_Date__c	Date/Time		
FoundItem Name	Name	Text(80)	✓	
Item Image URL	Item_Image_URL__c	URL(255)		
Item Name	Item_Name__c	Text(60)		
Last Modified By	LastModifiedById	Lookup(User)		
Location	Location__c	Text(60)		
Owner	OwnerId	Lookup(User,Group)	✓	
Status	Status__c	Picklist		

ClaimRequest__c

- Request Date (Date/Time)
- Claimed By (Lookup → User)
- Related Lost Item (Lookup → LostItem__c)
- Related Found Item (Lookup → FoundItem__c)
- Approval Status (Picklist: Pending, Approved, Rejected)

Setup Home Object Manager

SEARCH Setup

SETUP > OBJECT MANAGER

ClaimRequest

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
Approval Status	Approval_Status__c	Picklist		
Claimed By	Claimed_By__c	Lookup(User)		✓
ClaimRequest Name	Name	Text(80)		✓
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Related Found Item	Related_Found_Item__c	Lookup(FoundItem)		✓
Related Lost Item	Related_Lost_Item__c	Lookup(Lost Item)		✓
Request Date	Request_Date__c	Date/Time		

4. Relationships

We created **Lookup Relationships** to connect objects:

Child Object	Parent Object	Relationship	Purpose
ClaimRequest__c	LostItem__c	Lookup	Links each claim request to a lost item.
ClaimRequest__c	FoundItem__c	Lookup	Links each claim request to a found item.
LostItem__c	User	Lookup	Tracks which student reported the lost item.
FoundItem__c	User	Lookup	Tracks which staff/security reported the found item.

This makes **ClaimRequest__c** the **junction object**, supporting many-to-many claims.

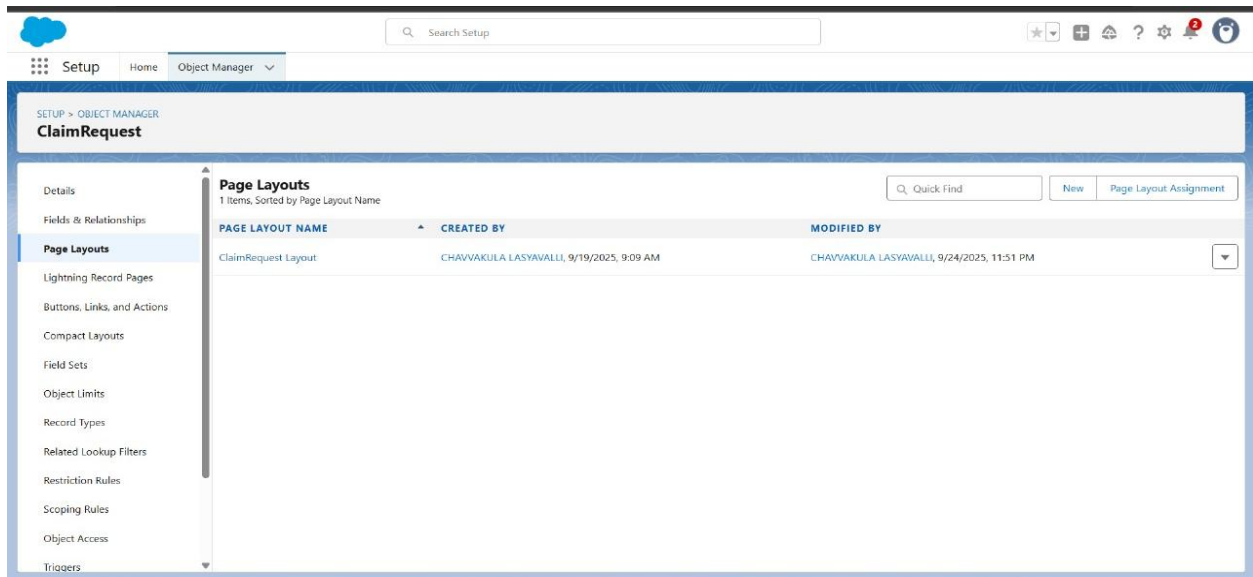
The screenshot shows the Salesforce Setup interface. The top navigation bar includes the Setup icon, a search bar, and various utility icons. The main navigation menu on the left shows 'Setup' selected, with 'Object Manager' expanded. The breadcrumb trail is 'SETUP > OBJECT MANAGER > ClaimRequest'. The 'Fields & Relationships' section is active, displaying a list of 9 fields for the 'ClaimRequest' object, sorted by field label. The fields are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Approval Status	Approval_Status__c	Picklist		
Claimed By	Claimed_By__c	Lookup(User)		✓
ClaimRequest Name	Name	Text(80)		✓
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Related Found Item	Related_Found_Item__c	Lookup(FoundItem)		✓
Related Lost Item	Related_Lost_Item__c	Lookup(Lost Item)		✓
Request Date	Request_Date__c	Date/Time		

5. Page Layouts (Minimum Setup)

Lost Item Layout

- Added fields: Item Name, Description, Lost Date, Location, Status, Reported By.
- Added related list: Claim Requests.



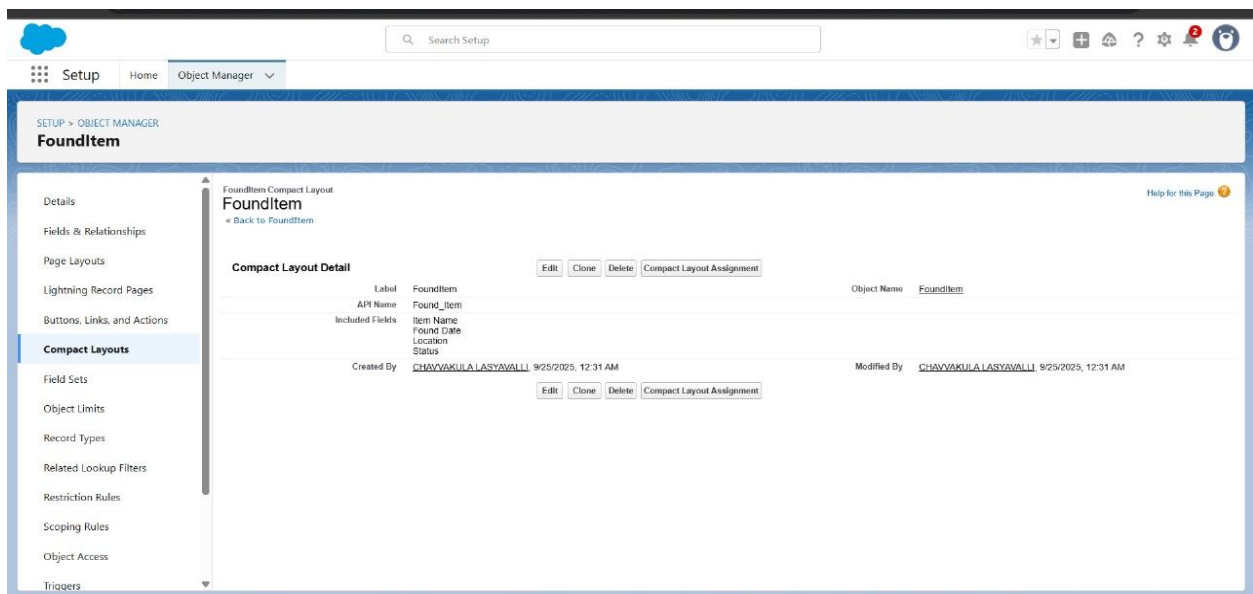
The screenshot shows the Salesforce Setup interface for the 'ClaimRequest' object. The left sidebar contains a navigation menu with options: Details, Fields & Relationships, Page Layouts (selected), Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Restriction Rules, Scoping Rules, Object Access, and Triggers. The main content area is titled 'Page Layouts' and shows '1 Items, Sorted by Page Layout Name'. A table lists the page layouts:

PAGE LAYOUT NAME	CREATED BY	MODIFIED BY
ClaimRequest Layout	CHAVVAKULA LASYWALLI, 9/19/2025, 9:09 AM	CHAVVAKULA LASYWALLI, 9/24/2025, 11:51 PM

Buttons for 'Quick Find', 'New', and 'Page Layout Assignment' are visible at the top right of the table.

Found Item Layout

- Added fields: Item Name, Description, Found Date, Location, Status, Found By, Item Image URL.
- Added related list: Claim Requests.



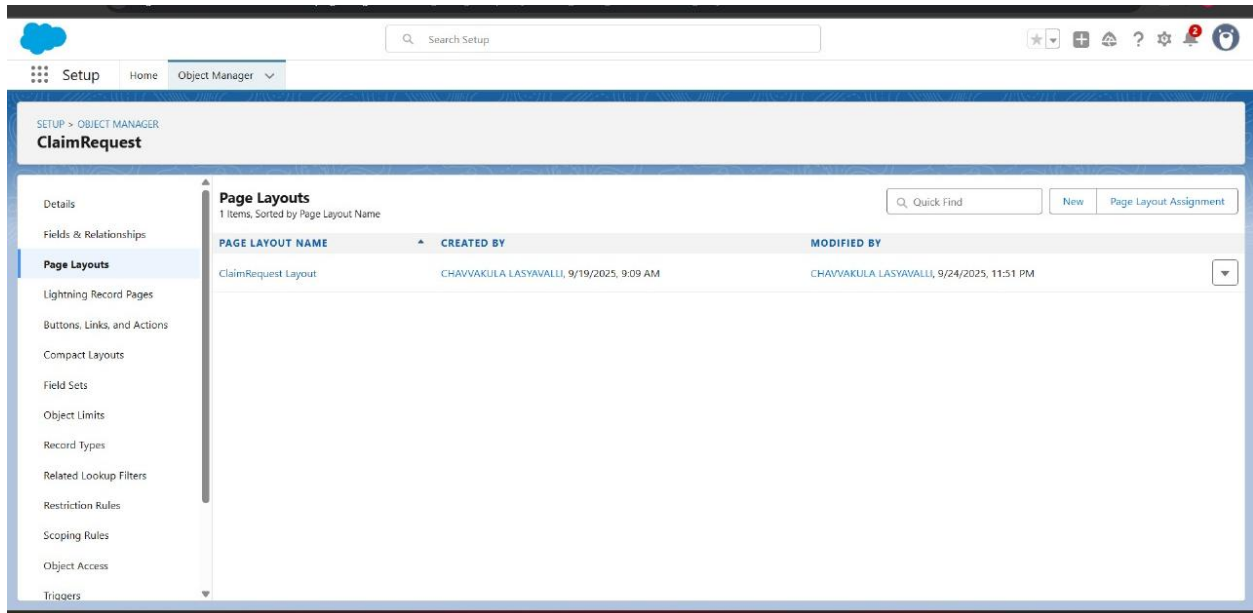
The screenshot shows the Salesforce Setup interface for the 'FoundItem' object, specifically the 'Compact Layout Detail' for the 'FoundItem Compact Layout'. The left sidebar is the same as the previous screenshot, with 'Compact Layouts' selected. The main content area shows the layout details for 'FoundItem Compact Layout' with a 'Back to FoundItem' link. The layout includes the following fields:

Label	FoundItem	Object Name	FoundItem
API Name	Found_Item		
Included Fields	Item Name Found Date Location Status		
Created By	CHAVVAKULA LASYWALLI, 9/25/2025, 12:31 AM	Modified By	CHAVVAKULA LASYWALLI, 9/25/2025, 12:31 AM

Buttons for 'Edit', 'Clone', 'Delete', and 'Compact Layout Assignment' are visible at the top and bottom of the layout details.

Claim Request Layout

- Added fields: Request Date, Claimed By, Related Lost Item, Related Found Item, Approval Status.



6. Compact Layouts

- Lost Item Compact Layout:** Item Name, Lost Date, Location, Status.
- Found Item Compact Layout:** Item Name, Found Date, Location, Status.
- Claim Request Compact Layout:** Request Date, Claimed By, Approval Status.

Setup

Home

Object Manager

Search Setup

Star

Plus

Home

Help

Settings

Notifications

User

SETUP > OBJECT MANAGER

Lost Item

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

Triggers

Lost Item Compact Layout

Lost Item

Back to Lost Item

Compact Layout Detail

Edit

Clone

Delete

Compact Layout Assignment

Label

Lost Item

Object Name

Lost Item

API Name

Lost_Item

Included Fields

Item Name

Lost Date

Location

Status

Created By

CHAVVAKULA LASYAVALLI

9/25/2025, 12:30 AM

Modified By

CHAVVAKULA LASYAVALLI

9/25/2025, 12:30 AM

Edit

Clone

Delete

Compact Layout Assignment

31°C

Mostly cloudy

Search

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13:00

25-09-2025

Setup

Home

Object Manager

Search Setup

Star

Plus

Home

Help

Settings

Notifications

User

SETUP > OBJECT MANAGER

FoundItem

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

Triggers

FoundItem Compact Layout

FoundItem

Back to FoundItem

Compact Layout Detail

Edit

Clone

Delete

Compact Layout Assignment

Label

FoundItem

Object Name

FoundItem

API Name

Found_Item

Included Fields

Item Name

Found Date

Location

Status

Created By

CHAVVAKULA LASYAVALLI

9/25/2025, 12:31 AM

Modified By

CHAVVAKULA LASYAVALLI

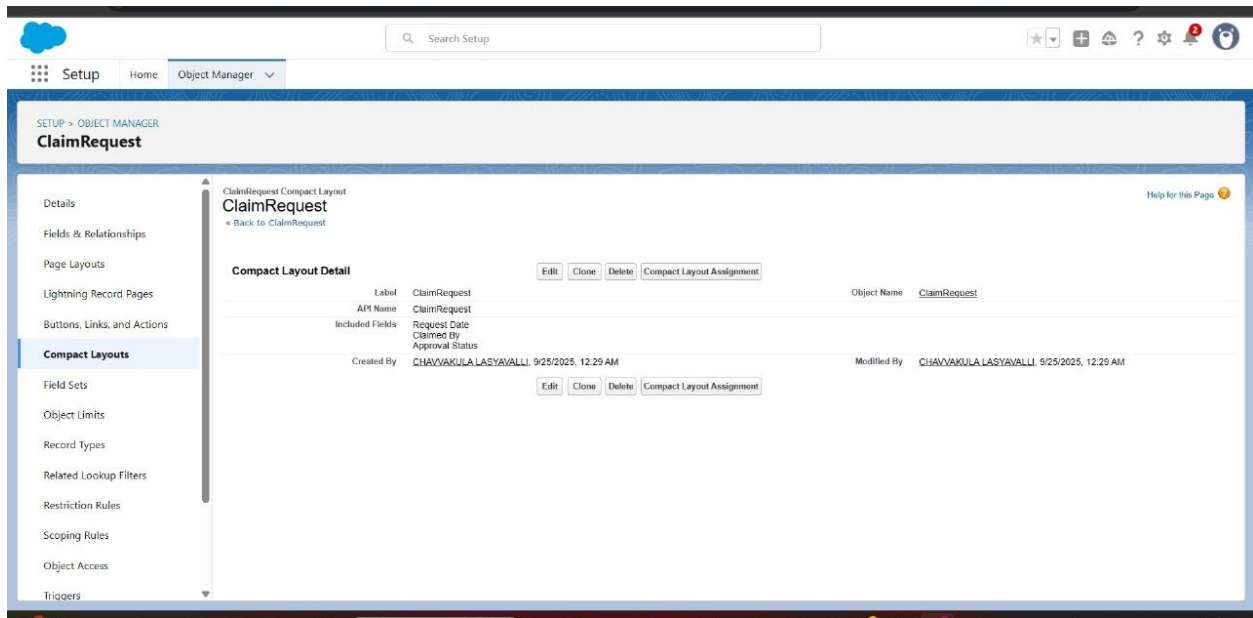
9/25/2025, 12:31 AM

Edit

Clone

Delete

Compact Layout Assignment



8. Security & Visibility

Student Profile:

- Can create Lost Items.
- Can create Claim Requests.
- Can view Found Items but not edit them.

Staff Reporter Profile:

- Can create Found Items.
- Can view Lost Items.

Security Staff Profile:

- Full access to Lost Items, Found Items, and Claim Requests.
- Can approve/reject Claim Requests.

Admin:

- Full access to all.

9. Sample Data & Testing

- **Student logs a Lost Item:** “Lost ID Card in Library.”
- **Staff logs a Found Item:** “Blue ID Card found in Library.”
- **Security creates a Claim Request** linking them, approves the request.
- **Admin verifies** all records are accessible.

The screenshot shows the Salesforce Lightning App Builder interface. The left sidebar contains navigation links for Setup, Home, and Object Manager. The main content area displays the Lightning App Builder header and a table of Lightning Pages. The table has columns for Action, Label, Name, Namespace Prefix, Description, Type, Created By, and Last Modified By. The table lists several Lightning Pages, including Claim Request - Security View, Claim Request - Student View, Found Item - Staff View, Found Item - Student View, Lost Item - Staff Security View, and Lost Item - Student View. The interface also includes a search bar at the top and a 'Quick Find' box on the left.

Action	Label	Name	Namespace Prefix	Description	Type	Created By	Last Modified By
Edit Clone Del	Claim Request - Security View	Claim_Request_Security_View			Record Page	22a, 9/25/2025, 12:49 AM	22a, 9/25/2025, 12:49 AM
Edit Clone Del	Claim Request - Student View	Claim_Request_Student_View			Record Page	22a, 9/25/2025, 12:50 AM	22a, 9/25/2025, 12:50 AM
Edit Clone Del	Found Item - Staff View	Found_Item_Staff_View			Record Page	22a, 9/25/2025, 12:42 AM	22a, 9/25/2025, 12:42 AM
Edit Clone Del	Found Item - Student View	Found_Item_Student_View			Record Page	22a, 9/25/2025, 12:48 AM	22a, 9/25/2025, 12:48 AM
Edit Clone Del	Lost Item - Staff Security View	Lost_Item_Staff_Security_View			Record Page	22a, 9/25/2025, 12:41 AM	22a, 9/25/2025, 12:41 AM
Edit Clone Del	Lost Item - Student View	Lost_Item_Student_View			Record Page	22a, 9/25/2025, 12:40 AM	22a, 9/25/2025, 12:40 AM

10. Use Cases

Use Case 1: Lost Item Reporting

- **Actor:** Student
- **Action:** Creates a Lost Item record.
- **Outcome:** Item is saved and linked to student.

Use Case 2: Found Item Logging

- **Actor:** Staff
- **Action:** Creates a Found Item record with details + Item Image URL.
- **Outcome:** Item stored and linked to staff member.

Use Case 3: Claim Request Submission

- **Actor:** Student
- **Action:** Submits a claim request linking their lost item to a found item.
- **Outcome:** Claim is pending review.

Use Case 4: Claim Approval by Security

- **Actor:** Security Officer
- **Action:** Reviews claim, sets Approval Status = Approved/Rejected.
- **Outcome:** Claim is closed with decision recorded.

Use Case 5: Admin Oversight

- **Actor:** Admin
- **Action:** Reviews all records in reports/dashboards.
- **Outcome:** Admin monitors claim trends and ensures transparency.

Conclusion

Phase 3 successfully delivered the **data modeling and relationships** for the Smart Lost & Found System. With objects, fields, layouts, and security in place, the system is now ready for workflows, automation, and reporting in later phases.