

Phase 3 Report: Data Modeling & Relationships

Project: Hyper-Local 'Barter & Skill-Share' Network Management

Batch: [Your Batch Number]

Program: TCS Last Mile SmartBridge

Prepared by: [Your Name]

1. Introduction

This phase details the creation of the custom data model for the "NeighborNet" Barter & Skill-Share Management System. The data model serves as the architectural foundation of the application, defining the objects, fields, and relationships necessary to store and manage all community-related data. A well-designed data model is critical for ensuring data integrity, scalability, and the successful implementation of business logic in subsequent phases.

2. Objectives

The primary objectives for this phase were to:

- Design and create the necessary custom objects to represent the core entities of the barter network: Skill, Offer, Request, Exchange, and Member Skill.
- Define the appropriate fields for each object to capture essential information.
- Establish the correct relationships (Lookup and Master-Detail) between objects to link related data and enforce data integrity.
- Create custom tabs for user-facing objects to ensure they are accessible in the user interface.

3. Data Model Schema

The following custom objects and their relationships were created to form the application's data structure:

codeCode

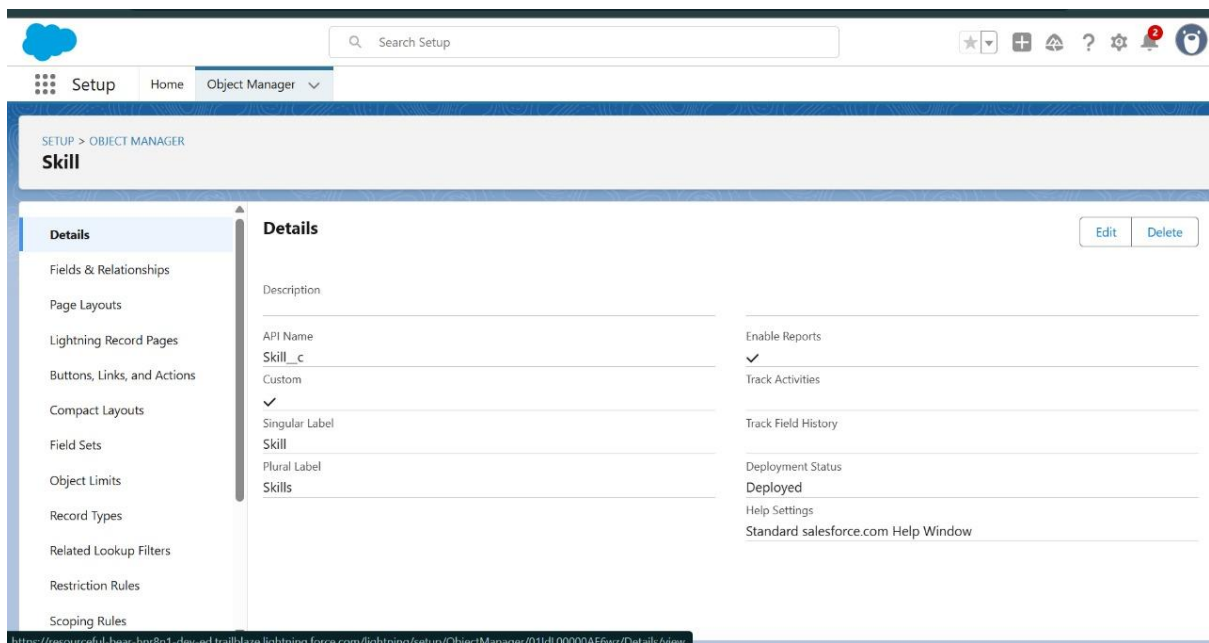
- Skill__c (Master list of all skills)
- Contact (Standard object for members)
- Member_Skill__c (Junction object connecting Contact and Skill)

- Offer__c (Records of services offered by members)
- Request__c (Records of services requested by members)
- Exchange__c (Records tracking the barter transaction between members)

4. Steps Performed

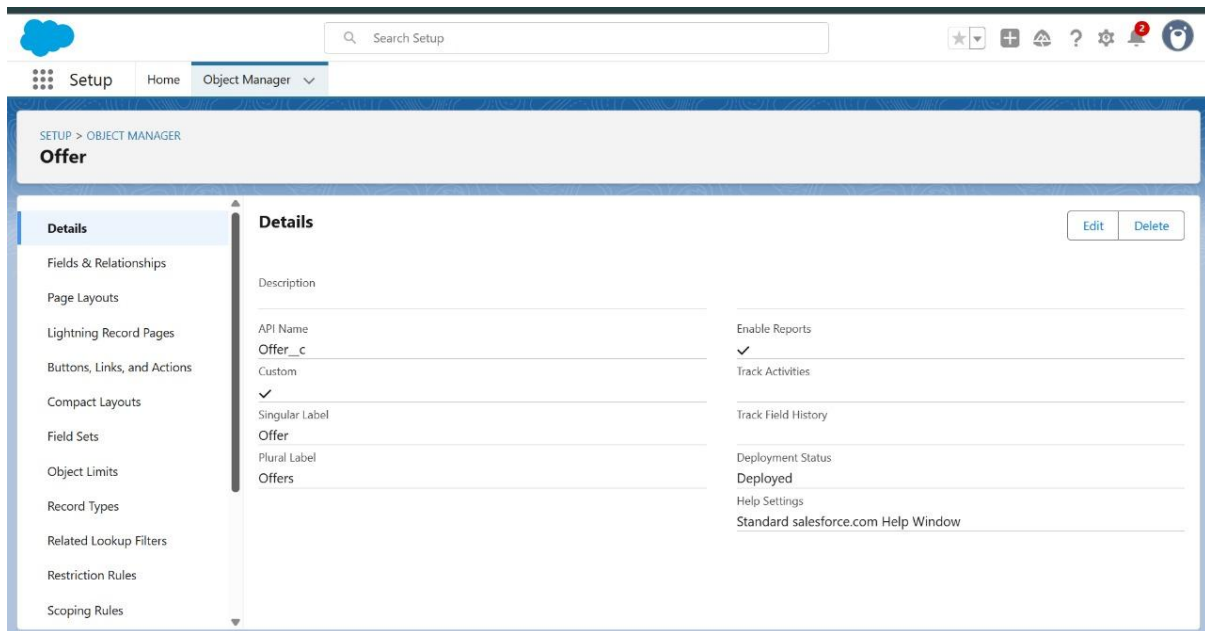
4.1 Skill__c Custom Object

A custom object named Skill__c was created to act as a master repository for all skills available within the community (e.g., Gardening, Web Design). This allows for standardized skill selection and reporting. The record name is "Skill Name" (Text).



4.2 Offer__c Custom Object

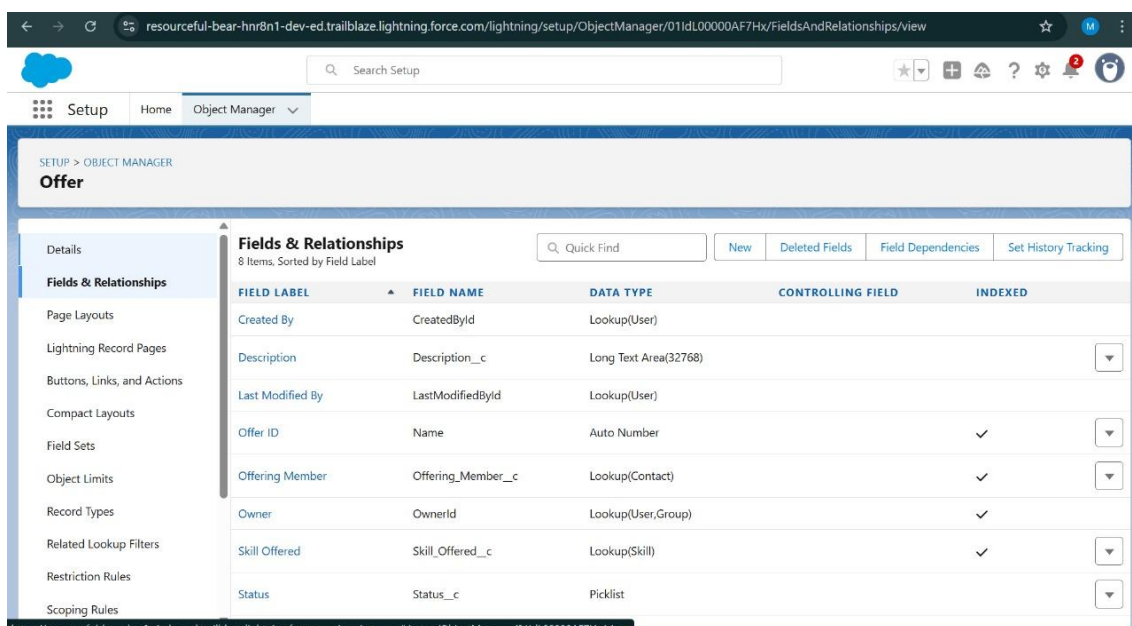
The Offer__c custom object was created to allow members to post services they are willing to provide. It uses an Auto-Number field (O-0000) for the record name to ensure a unique ID for each offer.



Fields and Relationships for Offer__c:

The following fields were added to capture the necessary details for each offer:

- Offering Member__c: A Lookup relationship to the Contact object to link the offer to the member who created it.
- Skill Offered__c: A Lookup relationship to the Skill__c object to standardize the skill being offered.
- Status__c: A Picklist field with values (Active, Fulfilled, Canceled) to track the offer's lifecycle.
- Description__c: A Long Text Area field for members to provide more details about their offer.

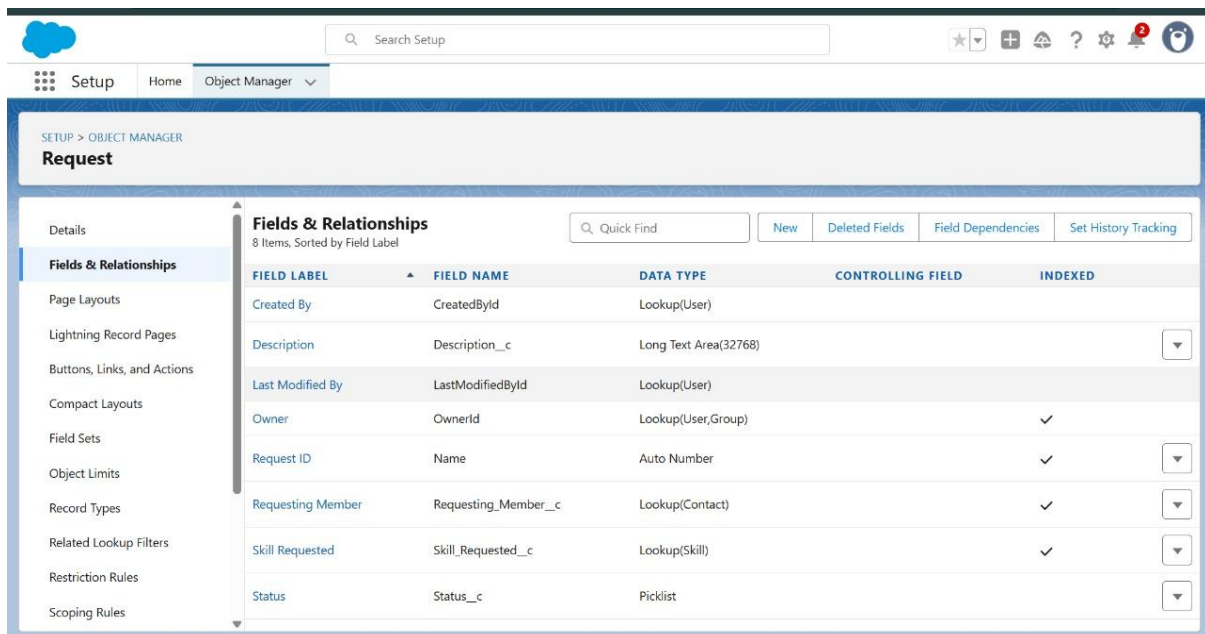


4.3 Request__c Custom Object

Similar to the Offer__c object, the Request__c custom object was created for members to post services they need. It also uses an Auto-Number field (R-{0000}) and contains a parallel set of fields.

Fields and Relationships for Request__c:

- Requesting Member__c (Lookup to Contact)
- Skill Requested__c (Lookup to Skill)
- Status__c (Picklist: Active, Fulfilled, Canceled)
- Description__c (Text Area Long)



The screenshot shows the Salesforce Setup interface. 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, and Scoping Rules. The main content area is titled 'Request' and displays the 'Fields & Relationships' section for the Request__c object. It shows 8 items, sorted by Field Label. The table lists the following fields:

| FIELD LABEL | FIELD NAME | DATA TYPE | CONTROLLING FIELD | INDEXED |
|-------------------|----------------------|-----------------------|-------------------|---------|
| Created By | CreatedById | Lookup(User) | | |
| Description | Description__c | Long Text Area(32768) | | |
| Last Modified By | LastModifiedById | Lookup(User) | | |
| Owner | OwnerId | Lookup(User,Group) | | ✓ |
| Request ID | Name | Auto Number | | ✓ |
| Requesting Member | Requesting_Member__c | Lookup(Contact) | | ✓ |
| Skill Requested | Skill_Requested__c | Lookup(Skill) | | ✓ |
| Status | Status__c | Picklist | | |

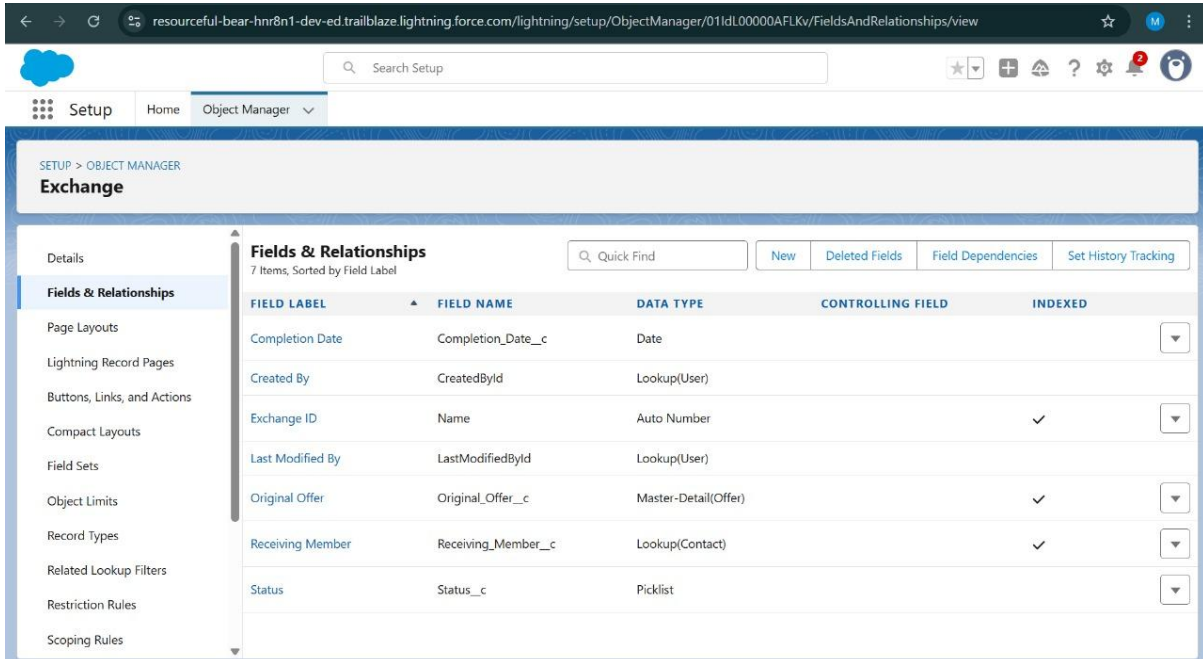
4.4 Exchange__c Custom Object

The Exchange__c object is the transactional object used to track the agreement and completion of a barter between two members. It uses an Auto-Number (E-{0000}) for its record name.

Fields and Relationships for Exchange__c:

- Original Offer__c: A **Master-Detail** relationship to the Offer__c object. This creates a strong parent-child link, ensuring that an Exchange cannot exist without a parent Offer.
- Receiving Member__c: A Lookup relationship to the Contact object to identify the member receiving the service.

- **Status__c:** A Picklist field (Proposed, Accepted, Completed, Rejected) to manage the state of the exchange.
- **Completion Date__c:** A Date field to record when the exchange was completed.



| FIELD LABEL | FIELD NAME | DATA TYPE | CONTROLLING FIELD | INDEXED |
|------------------|---------------------|----------------------|-------------------|---------|
| Completion Date | Completion_Date__c | Date | | |
| Created By | CreatedById | Lookup(User) | | |
| Exchange ID | Name | Auto Number | | ✓ |
| Last Modified By | LastModifiedById | Lookup(User) | | |
| Original Offer | Original_Offer__c | Master-Detail(Offer) | | ✓ |
| Receiving Member | Receiving_Member__c | Lookup(Contact) | | ✓ |
| Status | Status__c | Picklist | | |

4.5 Member_Skill__c Junction Object

To create a many-to-many relationship between Contacts (Members) and Skills, a junction object named **Member_Skill__c** was created. This allows a single member to be associated with multiple skills, and a single skill to be associated with multiple members.

Relationships for Member_Skill__c:

This object's primary purpose is to connect two other objects. It contains two Master-Detail relationship fields:

- **Member__c:** A Master-Detail relationship to the Contact object.
- **Skill__c:** A Master-Detail relationship to the Skill__c object.

The screenshot shows the Salesforce Setup interface for the 'Member Skill' object. The left sidebar contains a navigation menu with options: Details, Fields & Relationships (selected), Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Restriction Rules, and Scoping Rules. The main content area is titled 'Fields & Relationships' and shows a list of 5 items, sorted by Field Label. The table below represents the data shown in the screenshot.

| FIELD LABEL | FIELD NAME | DATA TYPE | CONTROLLING FIELD | INDEXED |
|------------------|------------------|------------------------|-------------------|---------|
| Created By | CreatedById | Lookup(User) | | |
| Last Modified By | LastModifiedById | Lookup(User) | | |
| Member | Member__c | Master-Detail(Contact) | | ✓ |
| Member Skill ID | Name | Auto Number | | ✓ |
| Skill | Skill__c | Master-Detail(Skill) | | ✓ |

5. Expected Outcomes

- A robust and scalable data model is now in place, ready to store application data.
- The defined relationships ensure data integrity and allow for the creation of related lists on page layouts.
- The application schema is prepared for the next phases of development, including process automation, UI development, and reporting.

6. Conclusion

Phase 3 has successfully established the foundational data architecture for the NeighborNet application. By creating all necessary custom objects, defining their fields, and establishing the correct relationships, we have built a logical and coherent structure. This data model will directly support all future development efforts and ensure the application can function as intended. The project is now ready to proceed to **Phase 4: Process Automation**.