

# Phase - 3 (RetailHub)

## Phase 3.1: Standard & Custom Objects

This phase focused on designing the **data architecture** of the RetailHub CRM application. The foundation of any Salesforce solution is its **data model**, which is built using **Standard Objects** and **Custom Objects**.

Objects in Salesforce function as **database tables**, providing a structured way to store, organize, and manage specific types of business information.

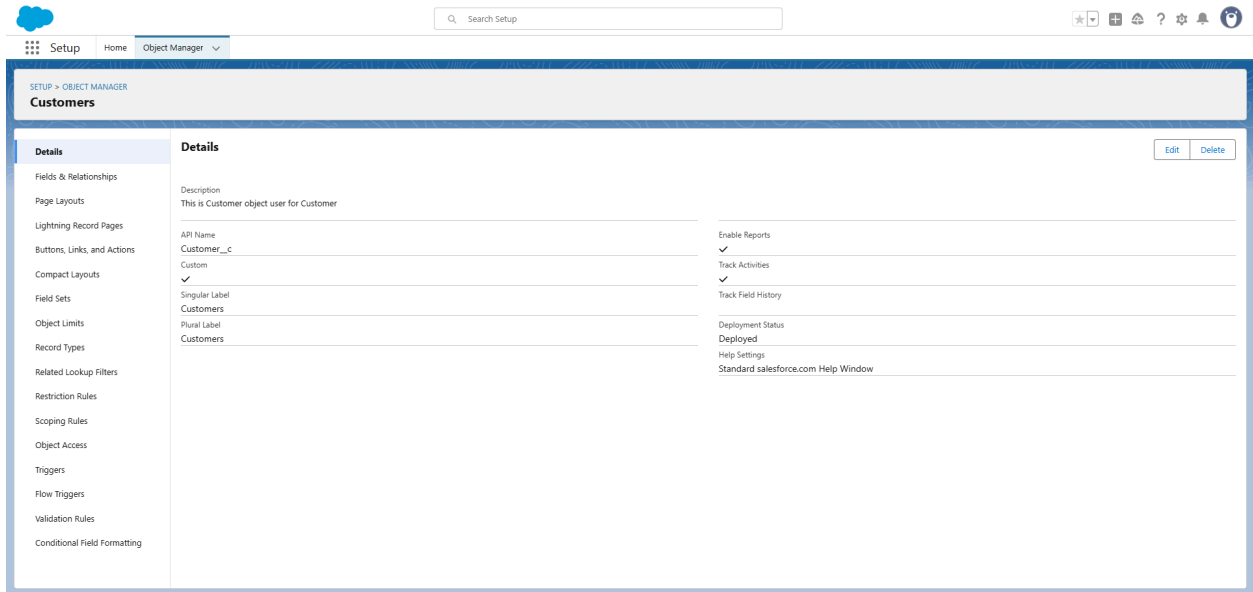
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### Standard vs. Custom Objects

- **Standard Objects:** Salesforce provides prebuilt objects (e.g., Account, Contact, Opportunity, Product2) to cover common CRM needs.
  - **Custom Objects:** To meet the **unique requirements of the retail business process**, the RetailHub project primarily relied on custom objects tailored to its operations.
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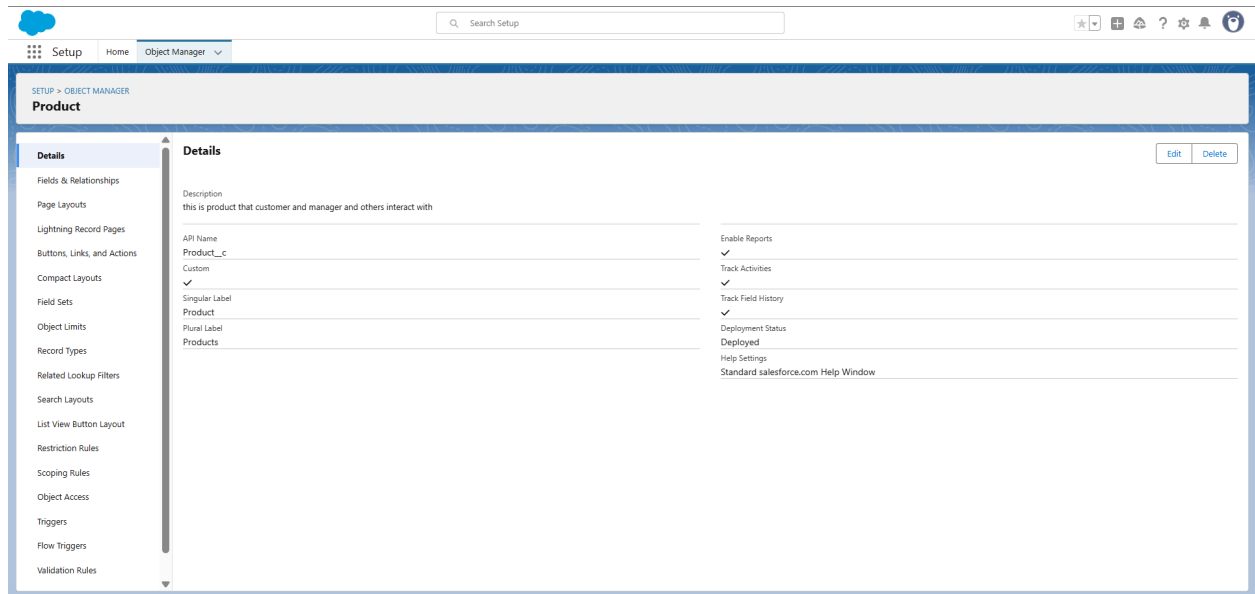
### Custom Objects Designed for RetailHub CRM

1. **Customer\_\_c**
  - Serves as the central repository for all shopper information.
  - Consolidates **contact details, purchase history, and loyalty status**.
  - Provides a **360-degree customer view**, enabling personalized engagement.



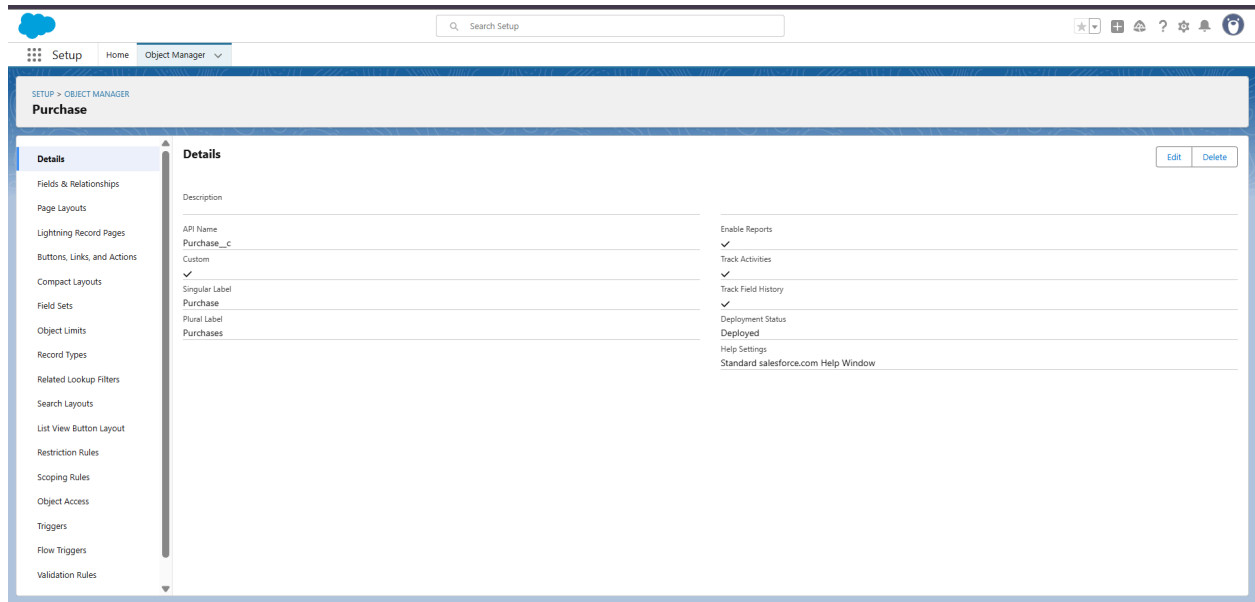
## 2. Product\_\_c

- Acts as the master catalog of items available for sale.
- Stores critical inventory attributes, including:
  - Product Name
  - Price
  - SKU
  - Real-time Quantity on Hand



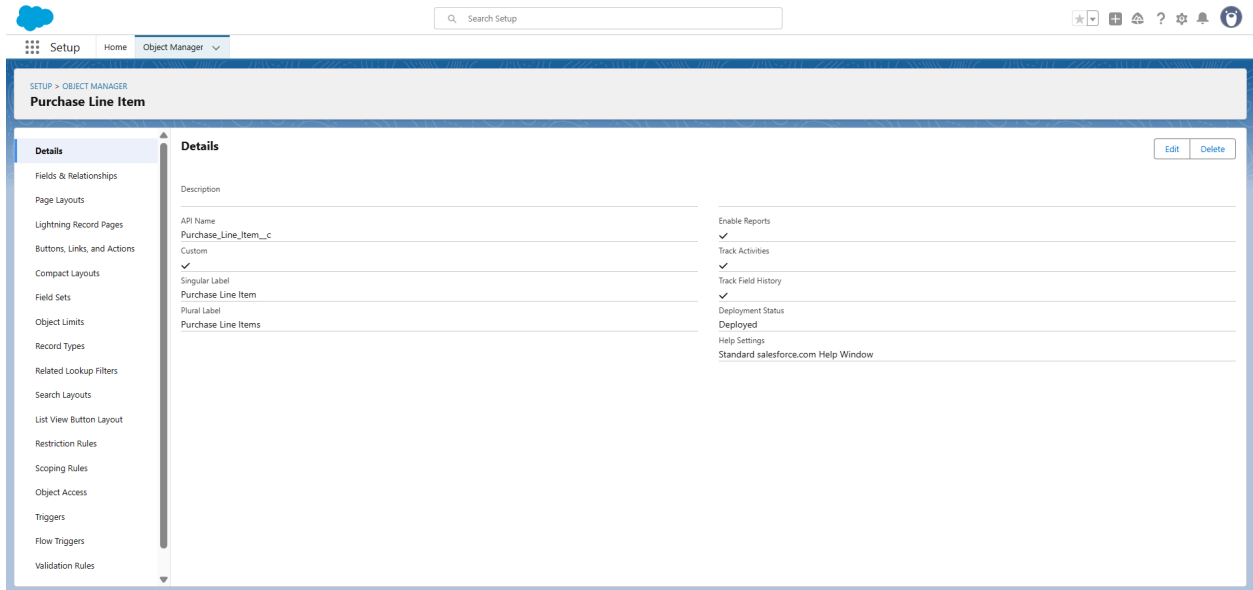
### 3. Purchase\_\_c

- Represents the **primary transactional object** for recording sales.
- Each record corresponds to a single sale or “shopping cart.”
- Links **Customer\_\_c** with the collection of purchased products.
- Captures **billing details**, including applied discounts and total payable amount.



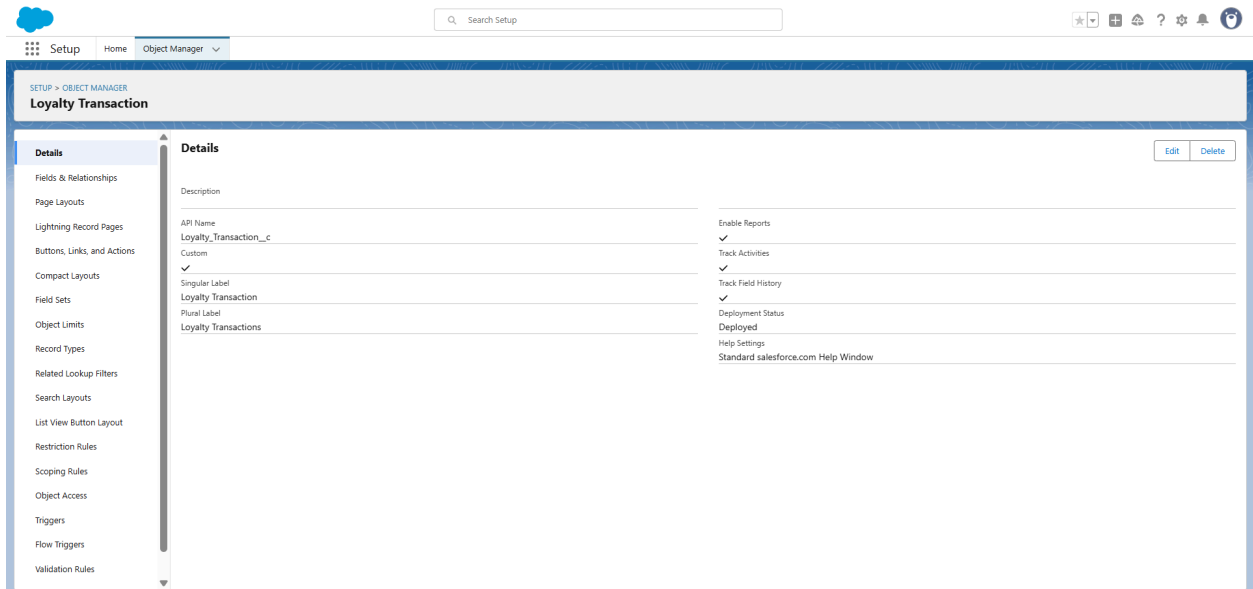
#### 4. **Purchase\_Line\_Item\_\_c** (*Junction Object*)

- Resolves the **many-to-many relationship** between **Purchases** and **Products**.
- Each record corresponds to a **single line item on a receipt**.
- Contains:
  - Reference to the parent **Purchase\_\_c**
  - Reference to a **Product\_\_c**
  - **Quantity\_\_c** (number of units purchased)



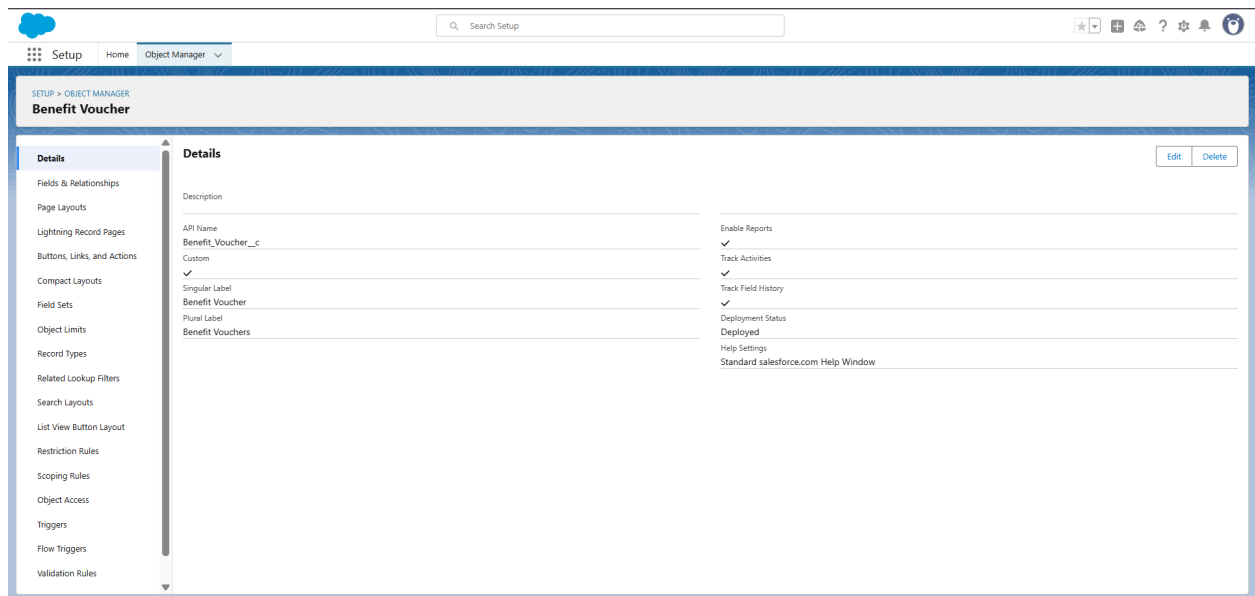
## 5. Loyalty\_Transaction\_\_c

- Functions as a **ledger for loyalty program activities**.
- Records every event that impacts a customer's **loyalty point balance**.
- Ensures a **transparent and auditable history** of points earned and redeemed.



## 6. Benefit\_Voucher\_\_c

- Manages **redeemable, one-time customer benefits**.
- Each record represents a **coupon or voucher** issued to a customer.
- Tracks attributes such as:
  - Voucher Status (Issued, Redeemed, Expired)
  - Discount Value
  - Associated Customer\_\_c



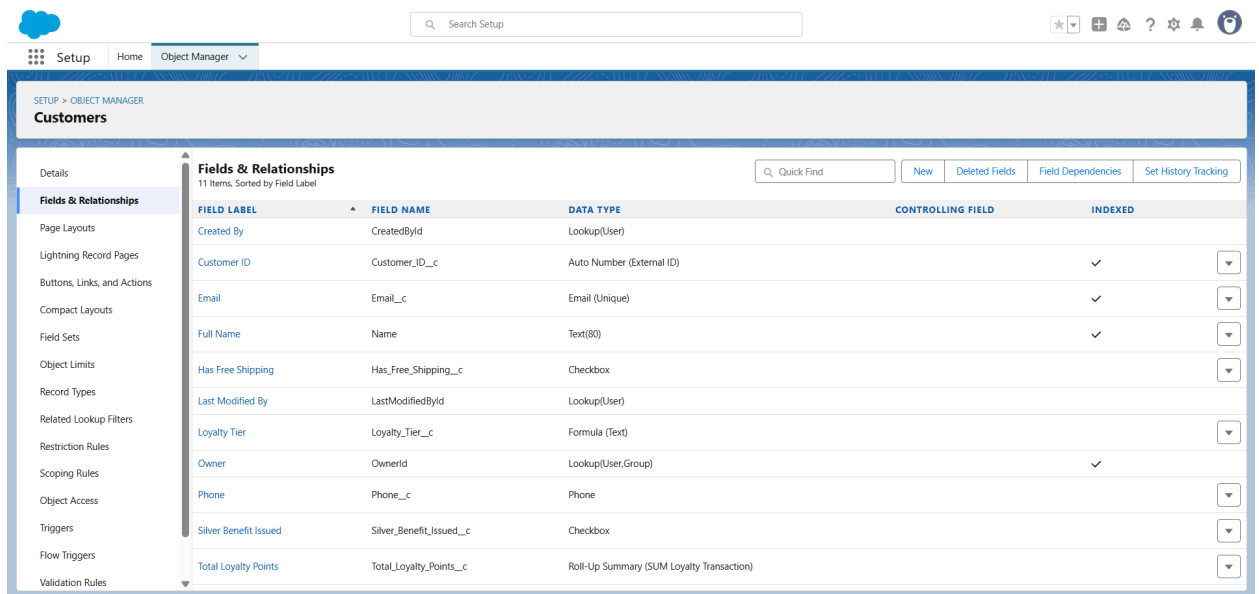
## Phase 3.2: Field Dictionary

After defining the custom objects, a comprehensive set of custom fields was created to support the RetailHub CRM's business processes, automation, and reporting needs. This Field Dictionary outlines the purpose and configuration of each field within the custom objects.

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### Customer Object (Customer\_\_c)

- **Name (Text)** – Standard field to store the customer's full name.
- **Email (Email)** – Customer's primary email address for communication.
- **Phone (Phone)** – Customer's primary contact number.
- **Total Loyalty Points (Roll-Up Summary)** – Automatically sums points from related Loyalty Transaction records.
- **Loyalty Tier (Formula)** – Categorizes customers into Bronze, Silver, or Gold tiers based on points.
- **Has Free Shipping (Checkbox)** – Checked automatically when a customer reaches Gold tier.
- **Silver Benefit Issued (Checkbox)** – Ensures the Silver tier benefit is only issued once per customer.



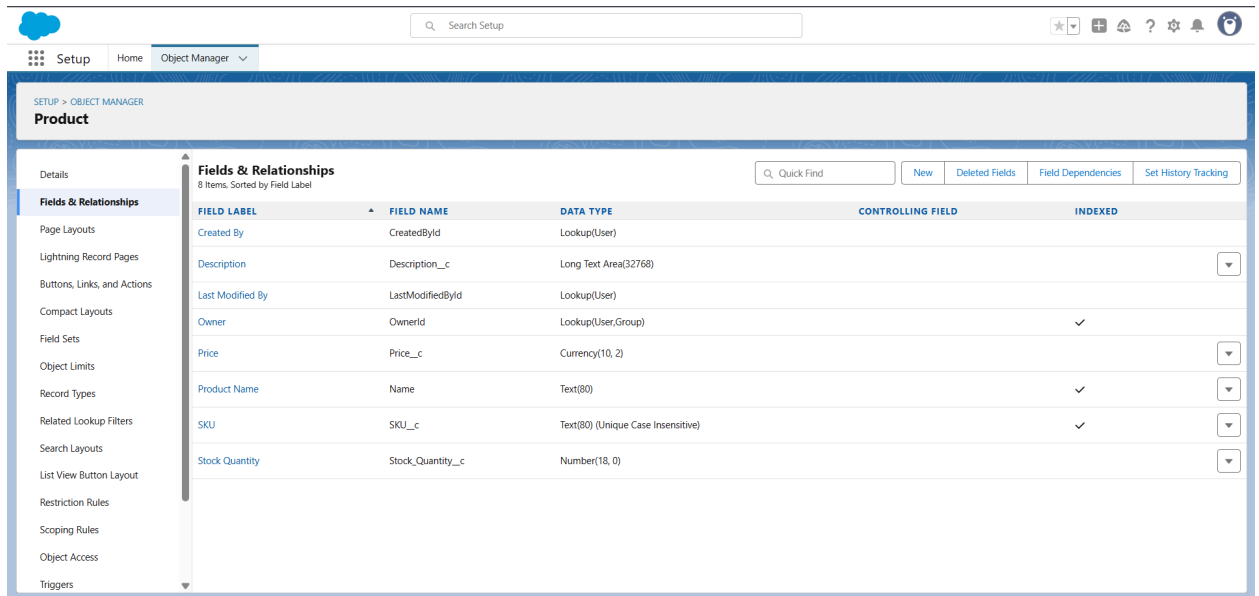
The screenshot shows the Salesforce Setup interface for the 'Customers' object. The 'Fields & Relationships' tab is selected, displaying a list of 11 fields. The fields are sorted by Field Label. The table includes columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed status. Each field has a dropdown arrow for further actions.

| FIELD LABEL           | FIELD NAME               | DATA TYPE                                 | CONTROLLING FIELD | INDEXED |
|-----------------------|--------------------------|---|-------------------|---------|
| Created By            | CreatedById              | Lookup(User)                              |                   |         |
| Customer ID           | Customer_ID__c           | Auto Number (External ID)                 |                   | ✓       |
| Email                 | Email__c                 | Email (Unique)                            |                   | ✓       |
| Full Name             | Name                     | Text(80)                                  |                   | ✓       |
| Has Free Shipping     | Has_Free_Shipping__c     | Checkbox                                  |                   |         |
| Last Modified By      | LastModifiedById         | Lookup(User)                              |                   |         |
| Loyalty Tier          | Loyalty_Tier__c          | Formula (Text)                            |                   |         |
| Owner                 | OwnerId                  | Lookup(User,Group)                        |                   | ✓       |
| Phone                 | Phone__c                 | Phone                                     |                   |         |
| Silver Benefit Issued | Silver_Benefit_Issued__c | Checkbox                                  |                   |         |
| Total Loyalty Points  | Total_Loyalty_Points__c  | Roll-Up Summary (SUM Loyalty Transaction) |                   |         |

## Product Object (Product\_\_c)

- **Product Name (Text)** – Standard field for the product's name.
- **SKU (Text, Unique, External ID)** – Unique identifier for inventory tracking.

- **Price (Currency)** – The retail price of the product.
- **Stock Quantity (Number)** – Real-time stock availability.
- **Low-Stock Threshold (Number)** – Triggers alerts when stock falls below this level.
- **Description (Long Text Area)** – Detailed description of the product.



SETUP > OBJECT MANAGER  
**Product**

Details  
**Fields & Relationships**  
8 Items, Sorted by Field Label

Q, Quick Find   New   Deleted Fields   Field Dependencies   Set History Tracking

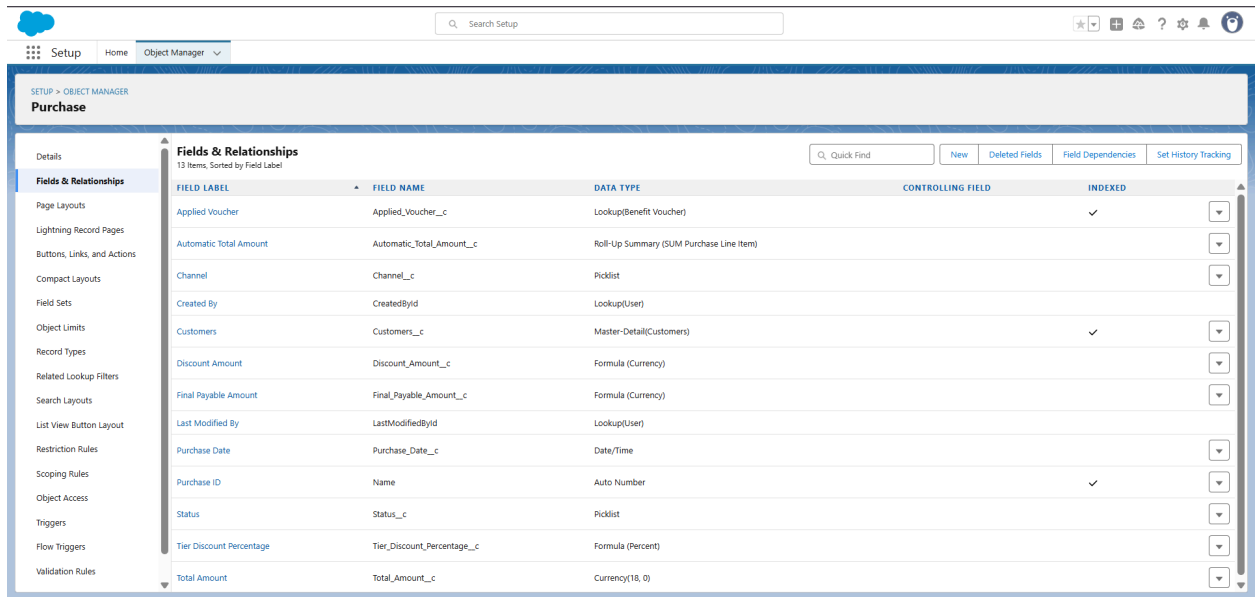
| FIELD LABEL      | FIELD NAME       | DATA TYPE                          | CONTROLLING FIELD | INDEXED |
|------------------|------------------|------------------------------------|-------------------|---------|
| Created By       | CreatedById      | Lookup(User)                       |                   |         |
| Description      | Description_c    | Long Text Area(32768)              |                   |         |
| Last Modified By | LastModifiedById | Lookup(User)                       |                   |         |
| Owner            | OwnerId          | Lookup(User,Group)                 |                   | ✓       |
| Price            | Price_c          | Currency(10, 2)                    |                   |         |
| Product Name     | Name             | Text(80)                           |                   | ✓       |
| SKU              | SKU_c            | Text(80) (Unique Case Insensitive) |                   | ✓       |
| Stock Quantity   | Stock_Quantity_c | Number(18, 0)                      |                   |         |

## Purchase Object (Purchase\_\_c)

- **Purchase ID (Auto Number)** – System-generated unique transaction ID.
- **Customer (Master-Detail to Customer)** – Links the purchase to the buying customer.
- **Purchase Date (Date/Time)** – Date and time of purchase.
- **Channel (Picklist)** – Purchase source (e.g., "In-Store," "Online").
- **Status (Picklist)** – Transaction state (Draft, Completed).
- **Automatic Total Amount (Roll-Up Summary)** – Total of all Purchase Line Item records.
- **Applied Voucher (Lookup to Benefit Voucher)** – Optional field for discount vouchers.



- **Tier Discount Percentage (Formula)** – Determines discount rate based on customer loyalty tier.
- **Discount Amount (Formula)** – Calculates applicable discount (voucher vs. tier-based).
- **Final Payable Amount (Formula)** – Final amount after all discounts are applied.



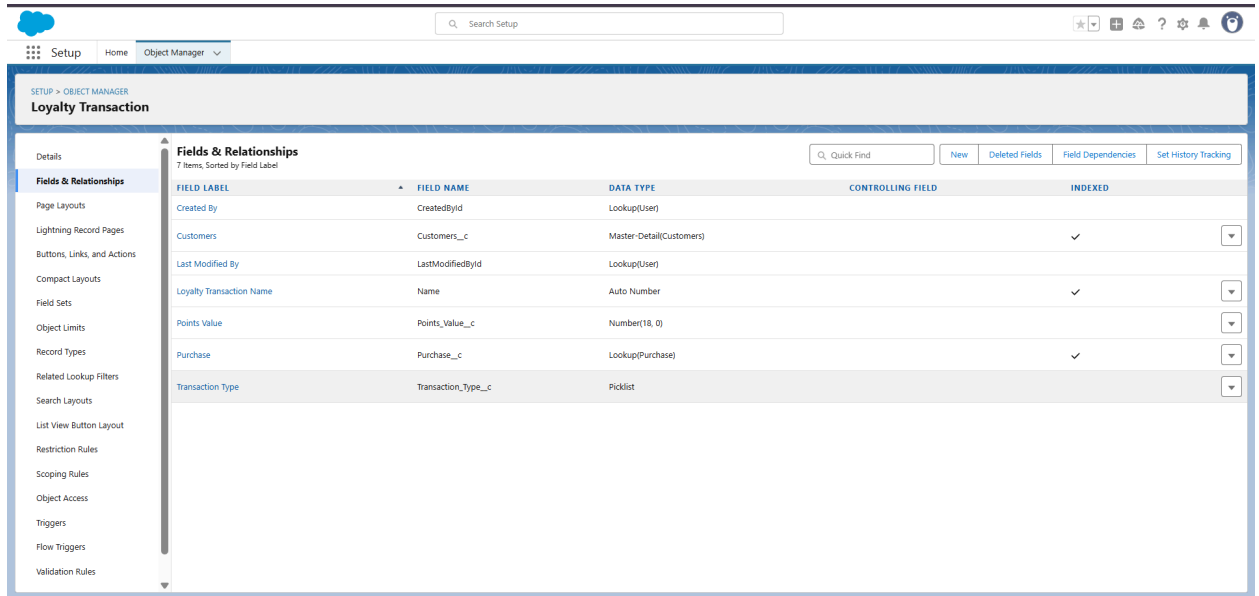
The screenshot shows the Salesforce Setup interface, specifically the Object Manager for the 'Purchase' object. The 'Fields & Relationships' tab is selected, displaying a table of 13 fields. The table columns are FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are: Applied Voucher, Automatic Total Amount, Channel, Created By, Customers, Discount Amount, Final Payable Amount, Last Modified By, Purchase Date, Purchase ID, Status, Tier Discount Percentage, and Total Amount.

| FIELD LABEL              | FIELD NAME                  | DATA TYPE                                | CONTROLLING FIELD | INDEXED |
|--------------------------|-----------------------------|--|-------------------|---------|
| Applied Voucher          | Applied_Voucher__c          | Lookup(Benefit Voucher)                  |                   | ✓       |
| Automatic Total Amount   | Automatic_Total_Amount__c   | Roll-Up Summary (SUM Purchase Line Item) |                   |         |
| Channel                  | Channel__c                  | Picklist                                 |                   |         |
| Created By               | CreatedById                 | Lookup(User)                             |                   |         |
| Customers                | Customers__c                | Master-Detail(Customers)                 |                   | ✓       |
| Discount Amount          | Discount_Amount__c          | Formula (Currency)                       |                   |         |
| Final Payable Amount     | Final_Payable_Amount__c     | Formula (Currency)                       |                   |         |
| Last Modified By         | LastModifiedById            | Lookup(User)                             |                   |         |
| Purchase Date            | Purchase_Date__c            | Date/Time                                |                   |         |
| Purchase ID              | Name                        | Auto Number                              |                   | ✓       |
| Status                   | Status__c                   | Picklist                                 |                   |         |
| Tier Discount Percentage | Tier_Discount_Percentage__c | Formula (Percent)                        |                   |         |
| Total Amount             | Total_Amount__c             | Currency(18, 0)                          |                   |         |

## Purchase Line Item Object (Purchase\_Line\_Item\_\_c)

- **Line Item ID (Auto Number)** – Unique identifier for the line item.
- **Purchase (Master-Detail to Purchase)** – Parent purchase record.
- **Product (Lookup to Product)** – Associated product.
- **Quantity (Number)** – Number of units sold.
- **Unit Price (Currency)** – Pulled automatically from Product object.
- **Line Total (Formula)** – (Quantity × Unit Price).





## Benefit Voucher Object (Benefit\_Voucher\_\_c)

- **Voucher ID (Auto Number)** – Unique identifier for the voucher.
- **Customer (Master-Detail to Customer)** – Customer who owns the voucher.
- **Type (Picklist)** – Voucher type (e.g., "Silver Tier Welcome," "Diwali Special").
- **Discount Percentage (Percent)** – Percentage discount value.
- **Status (Picklist)** – Issued, Redeemed, or Expired.
- **Date Issued (Date)** – Voucher creation date.
- **Date Redeemed (Date)** – Date voucher was redeemed.

| FIELD LABEL          | FIELD NAME             | DATA TYPE                | CONTROLLING FIELD | INDEXED |
|----------------------|------------------------|--------------------------|-------------------|---------|
| Benefit Voucher Name | Name                   | Text(80)                 |                   | ✓       |
| Created By           | CreatedById            | Lookup(User)             |                   |         |
| Customers            | Customers__c           | Master-Detail(Customers) |                   | ✓       |
| Date Issued          | Date_Issued__c         | Date                     |                   |         |
| Date Redeemed        | Date_Redeemed__c       | Date                     |                   |         |
| Discount Percentage  | Discount_Percentage__c | Percent(2, 0)            |                   |         |
| Last Modified By     | LastModifiedById       | Lookup(User)             |                   |         |
| Status               | Status__c              | Picklist                 |                   |         |
| Type                 | Type__c                | Picklist                 |                   |         |
| Voucher ID           | Voucher_ID__c          | Auto Number              |                   |         |

Summary Points

- **Customer\_\_c** manages customer info + loyalty system.
- **Product\_\_c** manages inventory + pricing.
- **Purchase\_\_c** captures sales transactions and discounts.
- **Purchase\_Line\_Item\_\_c** resolves many-to-many between Purchase and Product.
- **Loyalty\_Transaction\_\_c** tracks earn/redeem history of points.
- **Benefit\_Voucher\_\_c** manages vouchers and special offers.

Phase 3.3: Data Modeling & Relationships

To design a connected and relational application, relationships were established between the custom objects. These relationships are essential for maintaining data integrity, enabling roll-up summaries, and ensuring seamless navigation across related records.

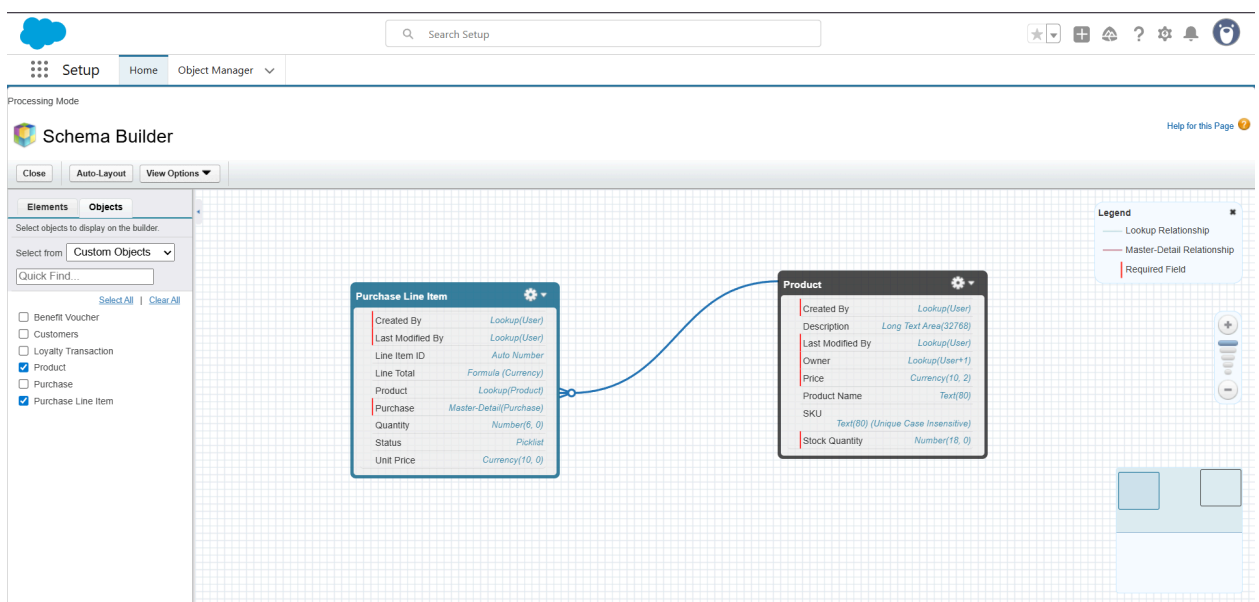
Salesforce provides multiple types of relationships, but for the **RetailHub CRM** project, the focus was primarily on **Master-Detail** and **Lookup** relationships.

## Master-Detail Relationships

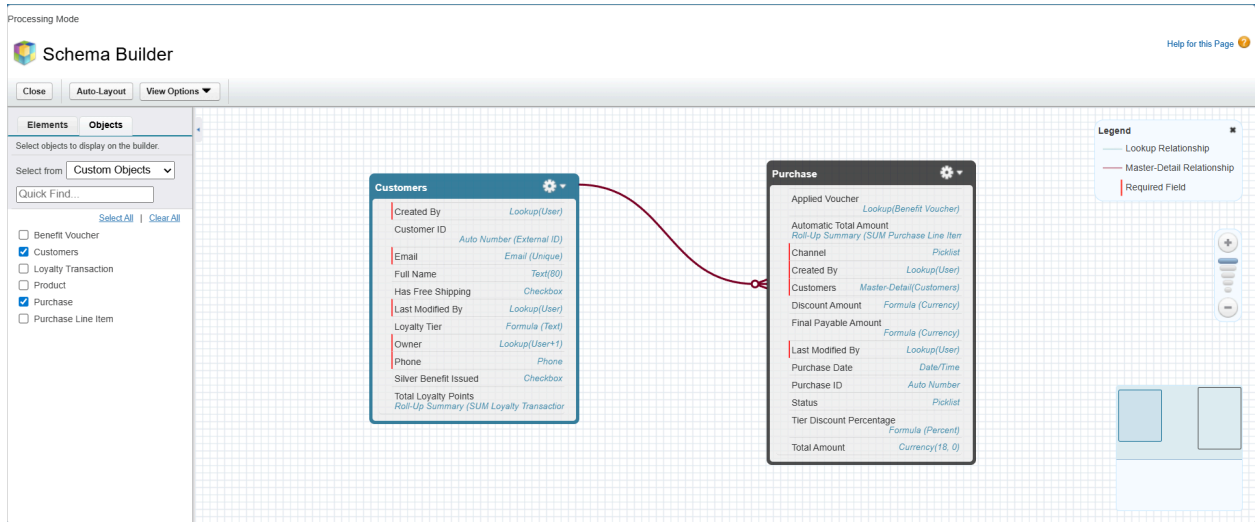
A **Master-Detail relationship** enforces a strong parent-child dependency. The child record cannot exist independently, and its security, ownership, and lifecycle are inherited from the parent. This structure ensures no orphaned records exist.

The following Master-Detail relationships were created:

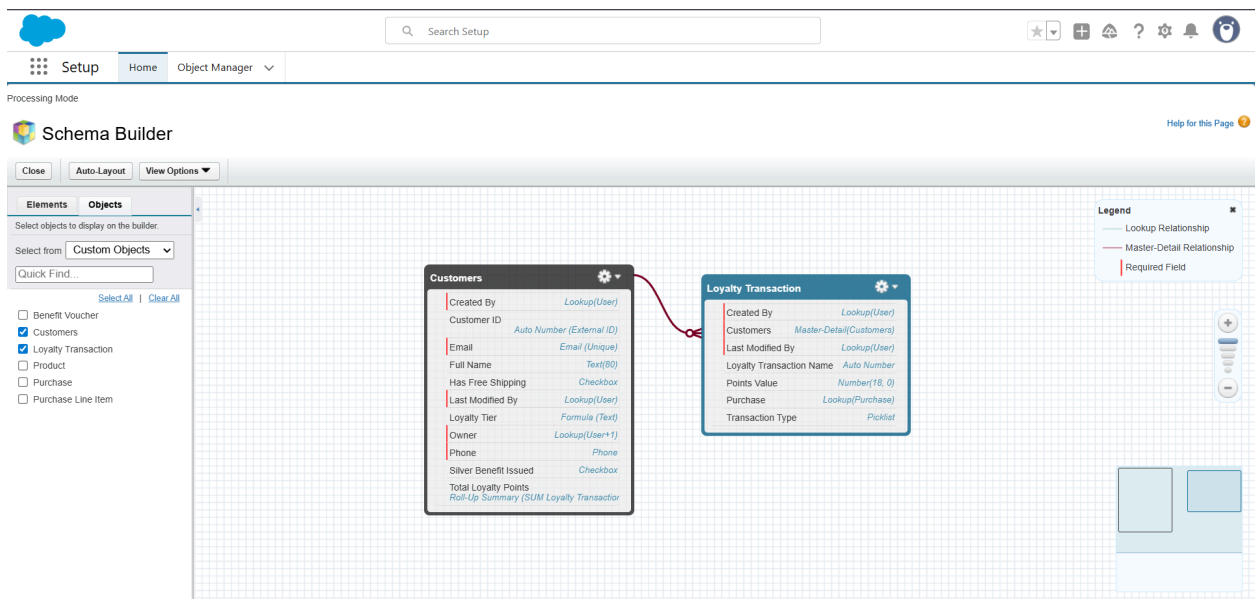
- **Purchase\_Line\_Item\_\_c → Purchase\_\_c**  
Every line item is required to be associated with a single purchase.



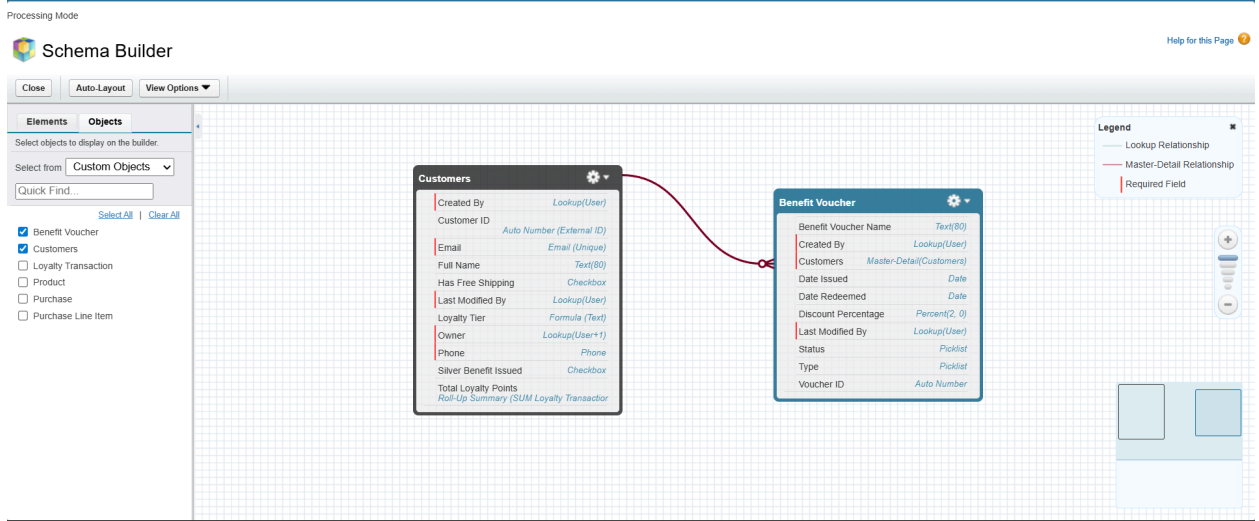
- **Purchase\_\_c → Customer\_\_c**  
Ensures every purchase is tied to one customer.



- Loyalty\_Transaction\_\_c → Customer\_\_c**  
 Every loyalty transaction must be linked to a customer account.



- Benefit\_Voucher\_\_c → Customer\_\_c**  
 Every voucher must belong to a specific customer.

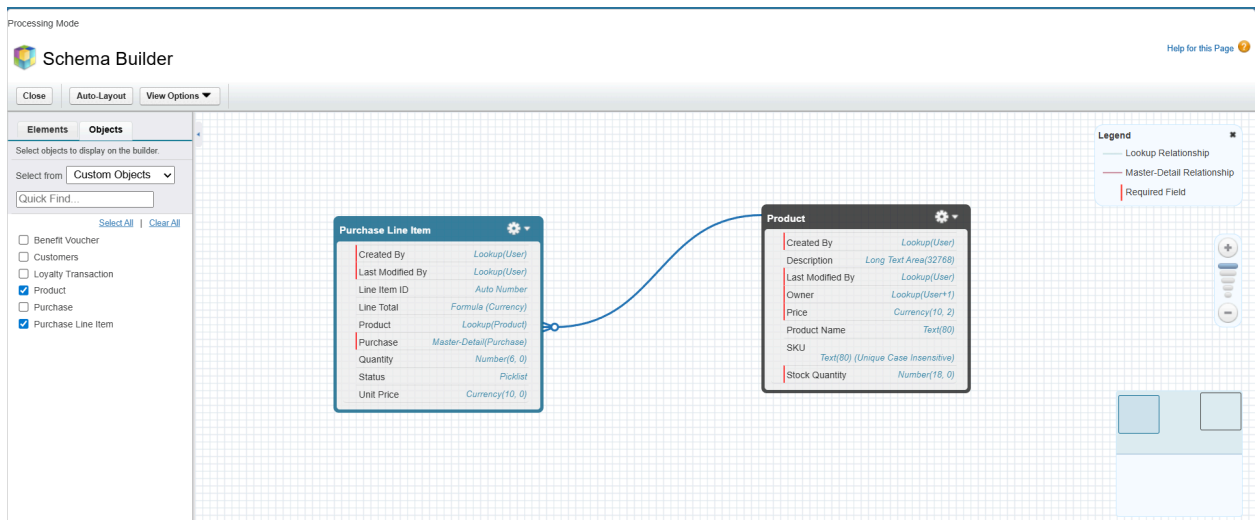


## Lookup Relationships

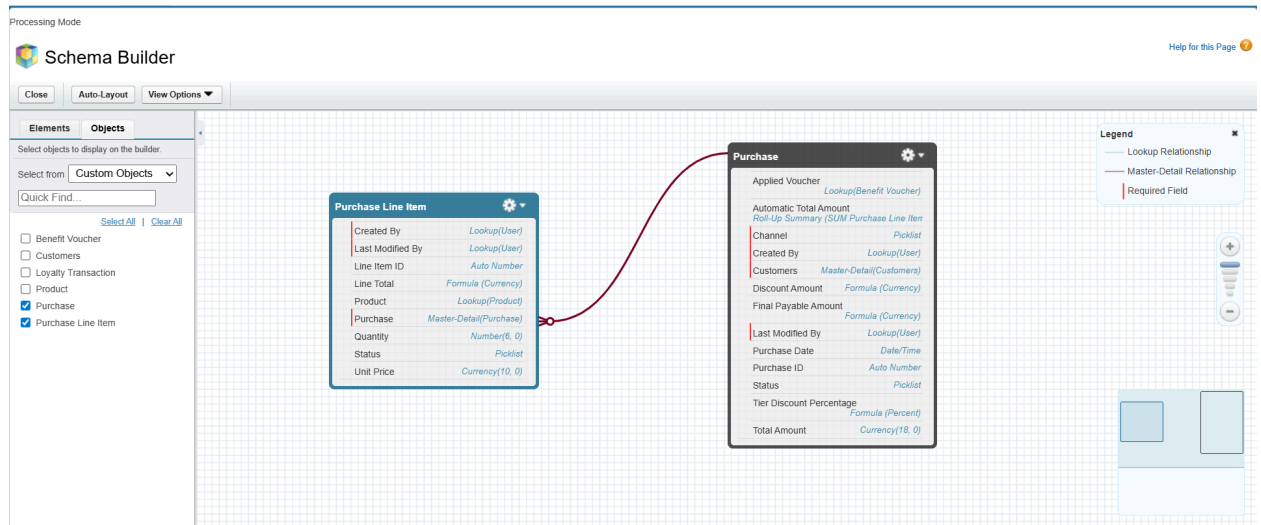
A **Lookup relationship** provides a more flexible association between objects. Records remain independent, with their own ownership and security, but can be optionally linked to another record for contextual reference.

The following Lookup relationships were created:

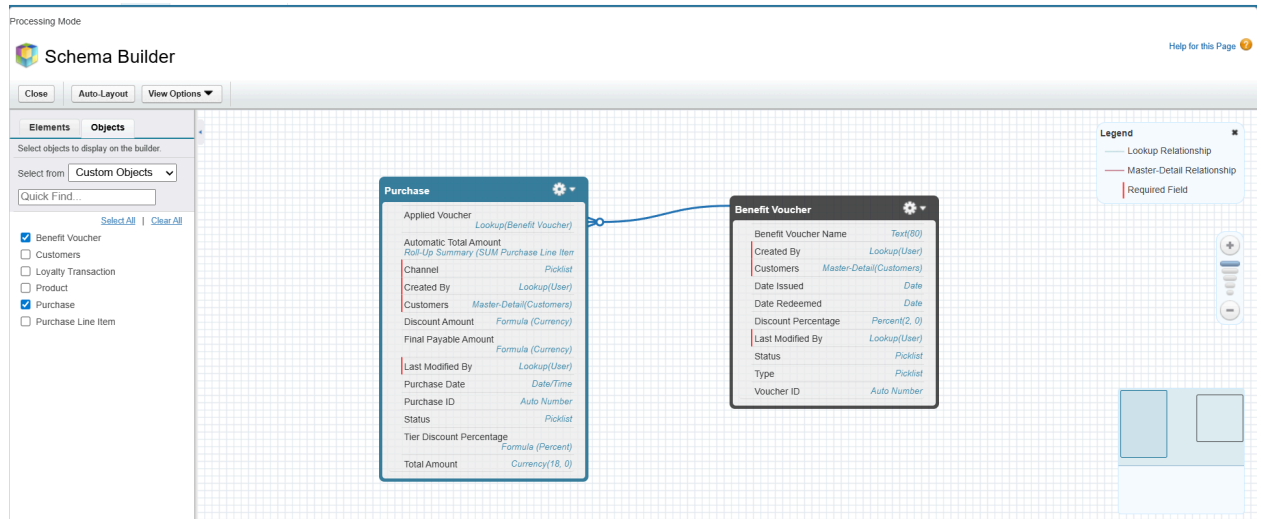
- **Purchase\_Line\_Item\_\_c → Product\_\_c**  
Links each line item to a product from the catalog.



- **Loyalty\_Transaction\_\_c → Purchase\_\_c**  
Optionally connects loyalty transactions to the sale that generated them.



- **Purchase\_\_c → Benefit\_Voucher\_\_c**  
Allows sales reps to apply a voucher to a transaction if available.



## Key Benefits of This Data Model



- Maintains **data integrity** by ensuring no orphaned records.
- Enables **roll-up summaries** (e.g., total loyalty points, total purchase amounts).
- Supports **flexible business processes** by combining strict Master-Detail dependencies with optional Lookup links.
- Provides a **360-degree customer view**, connecting customers to purchases, loyalty history, and vouchers.

## Phase 3.4: Page Layouts

Salesforce **Page Layouts** control the organization of **fields, buttons, actions, and related lists** on record detail pages. They are a key tool for **customizing the user interface**, ensuring that users see **relevant information** in a logical, efficient, and user-friendly manner.

For the **RetailHub CRM project**, page layouts were configured for all custom objects to provide a **tailored experience** for different user roles. The **Purchase\_\_c** page layout received the most significant customization to streamline the sales process for sales representatives.

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### Key Customizations

#### 1. Field Organization

- Fields on the Purchase layout were **logically grouped** under the “Information” section.
- This grouping provides a **clear overview** of the transaction, from the subtotal to the final payable amount.

#### 2. Related Lists

- The **Purchase Line Items** related list was added to the layout.
- This allows sales reps to **view and add products** to an active sale directly from the Purchase record.

#### 3. Custom Actions

- The layout's action panel was customized to include the “**Add Products**” custom action.
  - This action launches a **Screen Flow**, providing a **powerful, efficiency-boosting tool** in a prominent and easily accessible position for users.
- 

## Benefits of These Page Layouts

- Ensures that **sales representatives can complete transactions quickly** and with fewer errors.
- Improves **user experience** by displaying only relevant fields and actions.
- Supports **role-based customization**, so managers and sales reps see information appropriate to their responsibilities.

SETUP > OBJECT MANAGER

Purchase

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

List View Button Layout

Restriction Rules

Scoping Rules

Object Access

Triggers

Flow Triggers

Validation Rules

Save Quick Save Preview As... Cancel Undo Redo Layout Properties

Fields

Buttons

Quick Actions

Mobile & Lightning Actions

Expanded Lookups

Related Lists

Report Charts

Quick Find

Field Name

SectionChannelFinal Payable AmountStatus

Blank SpaceCreated ByLast Modified ByTier Discount Per...

Applied VoucherCustomersPurchase DateTotal Amount

Automatic Total A...Discount AmountPurchase ID

ADD PRODUCTS

Purchase Detail

Edit>DeleteCloneChange OwnerChange Record TypePrintable ViewEdit LabelsCustom Buttons

Information (header visible on edit only)

Purchase ID

OEN-2004-001234

Purchase Date

9/25/2025 6:39 AM

Channel

Sample Text

Customers

Sample Text

Automatic Total Amount

£123.45

Status

Sample Text

Tier Discount Percentage

124.57%

Discount Amount

£123.45

Final Payable Amount

£123.45

Applied Voucher

Sample Text

System Information (header visible on edit only)

Created By

Sample Text

Last Modified By

Sample Text

Custom Links (header visible on edit only)

Mobile Cards (Salesforce mobile only)

Drag expanded lookups and mobile-enabled Visualforce pages here to display them as mobile cards.

SETUP > OBJECT MANAGER

Purchase

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

List View Button Layout

Restriction Rules

Scoping Rules

Object Access

Triggers

Flow Triggers

Validation Rules

Save Quick Save Preview As... Cancel Undo Redo Layout Properties

Fields

Buttons

Quick Actions

Mobile & Lightning Actions

Expanded Lookups

Related Lists

Report Charts

Quick Find

Field Name

SectionChannelFinal Payable AmountStatus

Blank SpaceCreated ByLast Modified ByTier Discount Per...

Applied VoucherCustomersPurchase DateTotal Amount

Automatic Total A...Discount AmountPurchase ID

Percentage

Discount Amount

£123.45

Final Payable Amount

£123.45

Applied Voucher

Sample Text

System Information (header visible on edit only)

Created By

Sample Text

Last Modified By

Sample Text

Custom Links (header visible on edit only)

Mobile Cards (Salesforce mobile only)

Drag expanded lookups and mobile-enabled Visualforce pages here to display them as mobile cards.

Related Lists

Loyalty Transactions

NewChange Owner

Loyalty Transaction Name

Sample Text

Purchase Line Items

NewChange Owner

Line Item IDProductQuantityLine Total

Sample TextSample Text65.162£123.45

SETUP > OBJECT MANAGER

Purchase

Details

Fields & Relationships

Page Layouts

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Save Quick Save Preview As... Cancel Undo Redo Layout Properties

Fields

Buttons

Quick Actions

Mobile & Lightning Actions

Expanded Lookups

Related Lists

Report Charts

Quick Find

Mobile Action Name

Add ProductsDeleteFileNew AccountNew GroupNew TaskQuestion

Change OwnerEditLinkNew CaseNew LeadPullSend Survey

Change Record TypeEdit LabelsLog a CallNew ContactNew NotePostSubmit for Approval

CloneEmailMobile Smart ActionsNew EventNew OpportunityPrintable View

Purchase Sample

Highlights Panel

Customize the highlights panel for this page layout.

Quick Actions in the Salesforce Classic Publisher

Actions in this section are currently inherited from the global publisher layout. You can override the global publisher layout to set a customized list of actions for the publisher on pages that use this layout.

Salesforce Mobile and Lightning Experience Actions

Add Products

Purchase Detail

Edit>DeleteCloneChange OwnerChange Record TypePrintable ViewEdit LabelsCustom Buttons