📘 Phase 3: Data Modeling & Relationships

🔷 1. Standard & Custom Objects

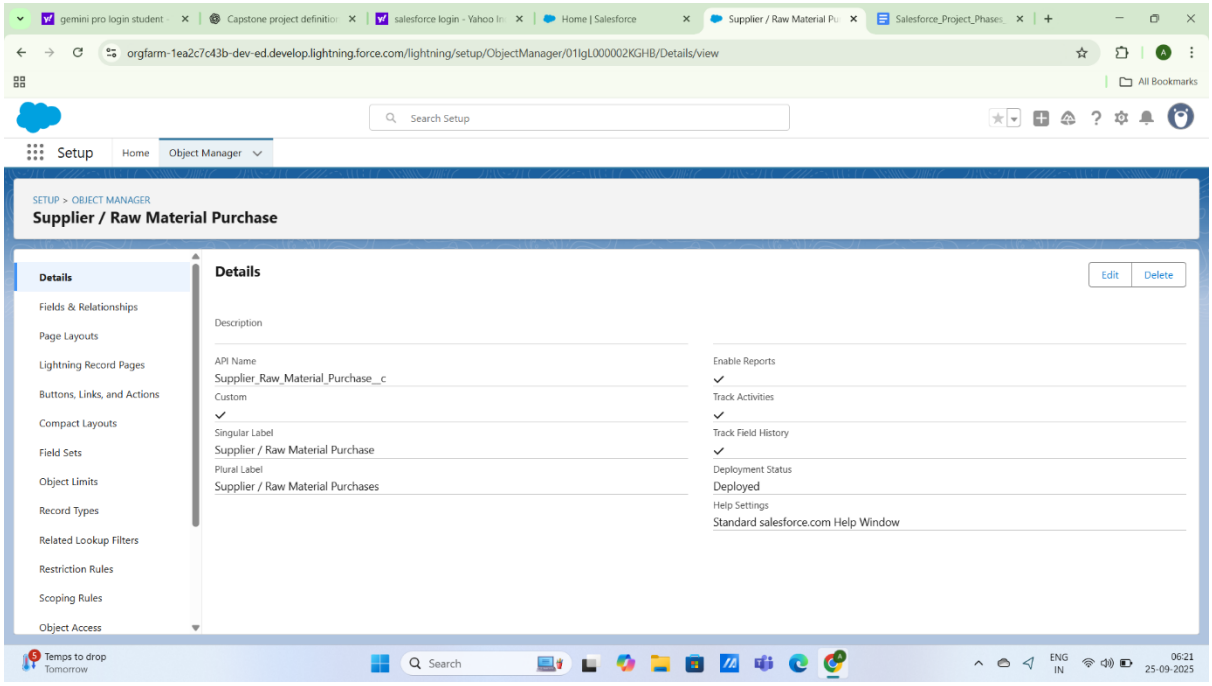
In this project, we use both **standard** (already provided by Salesforce) and **custom objects** (created for our groundnut oil business).

Standard Objects Used:

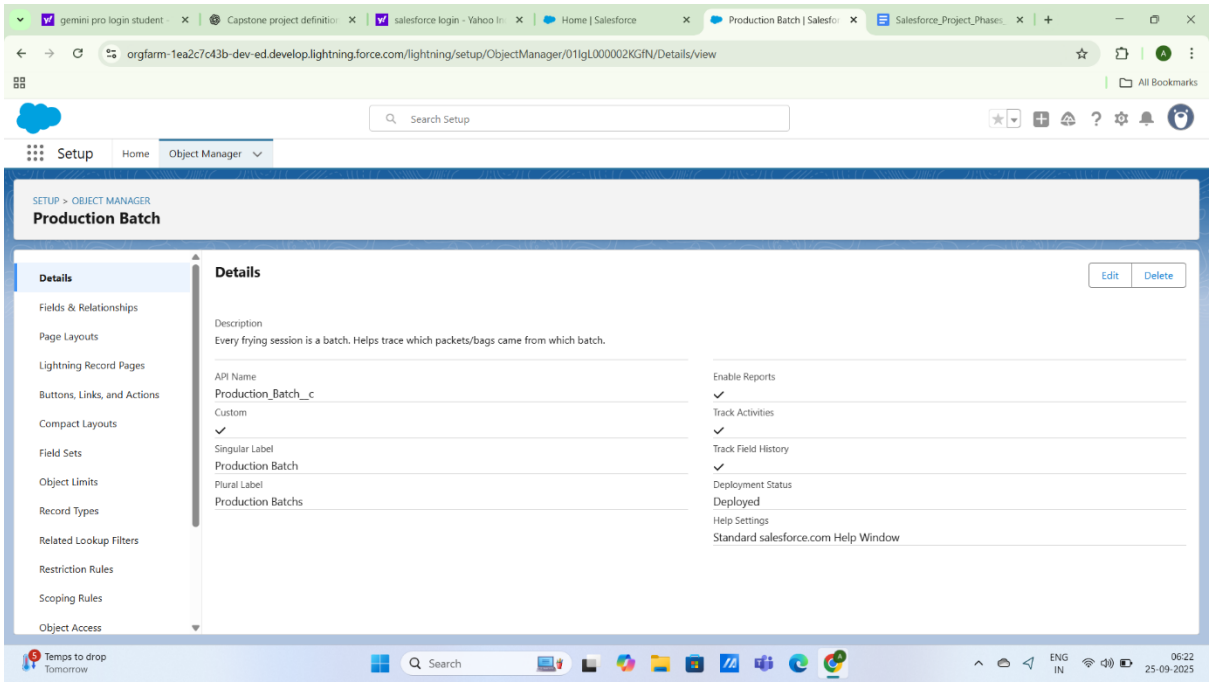
- **User** → Represents system users (Owner, Supervisor, Worker, Sales Clerk).
- **Account/Contact (optional)** → Can be used if we need customer hierarchy.

Custom Objects Created:

1. **Supplier / Raw Material Purchase**
    - To track groundnut sourcing (quantity, cost, supplier details).

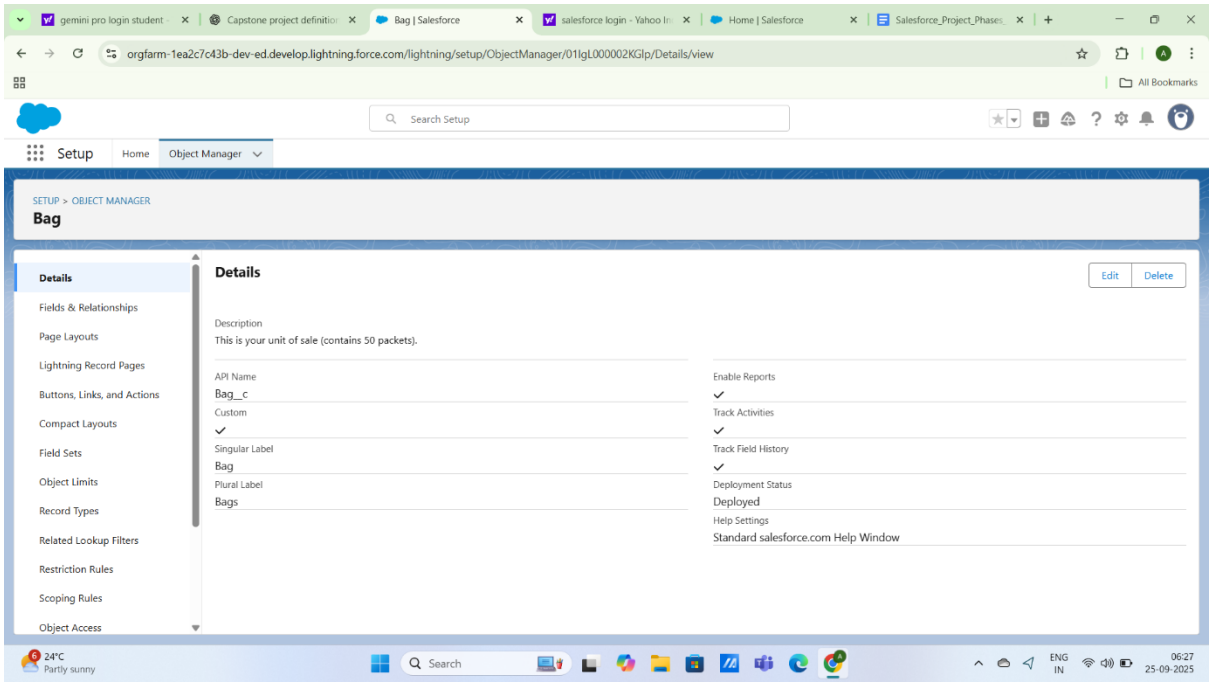


2. **Production Batch**
    - Each frying session is a batch. Helps trace which packets/bags came from which batch.



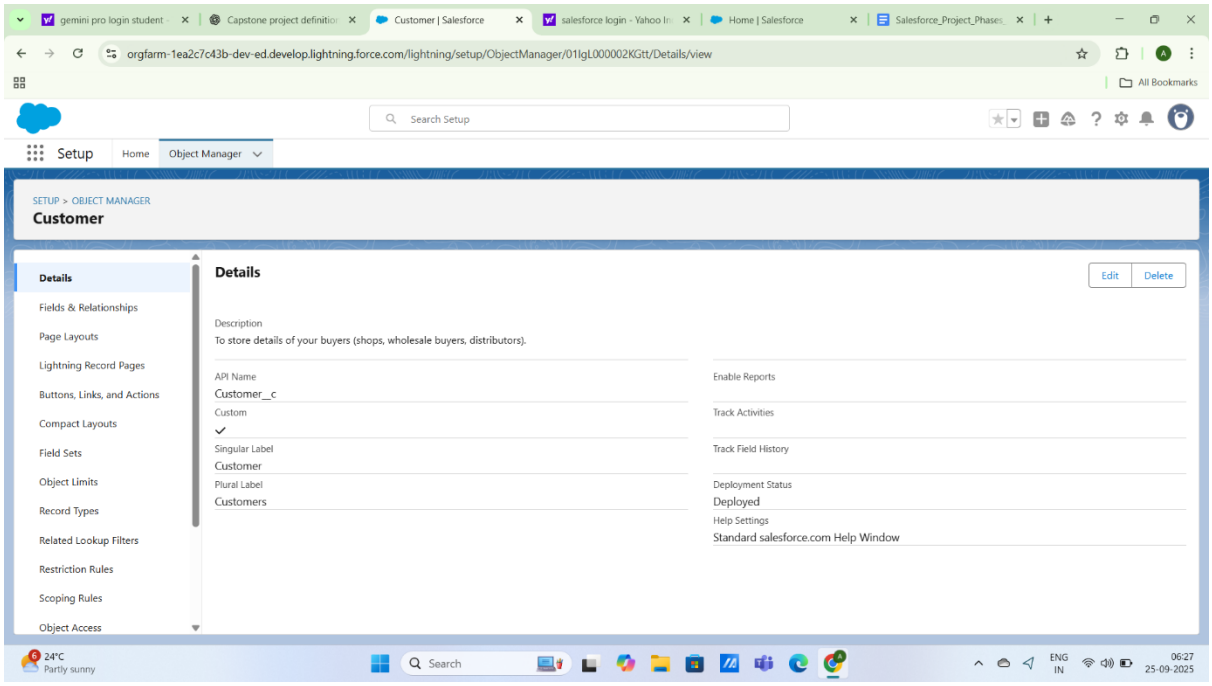
3. **Bag**

   - Represents the unit of sale (contains 50 packets).



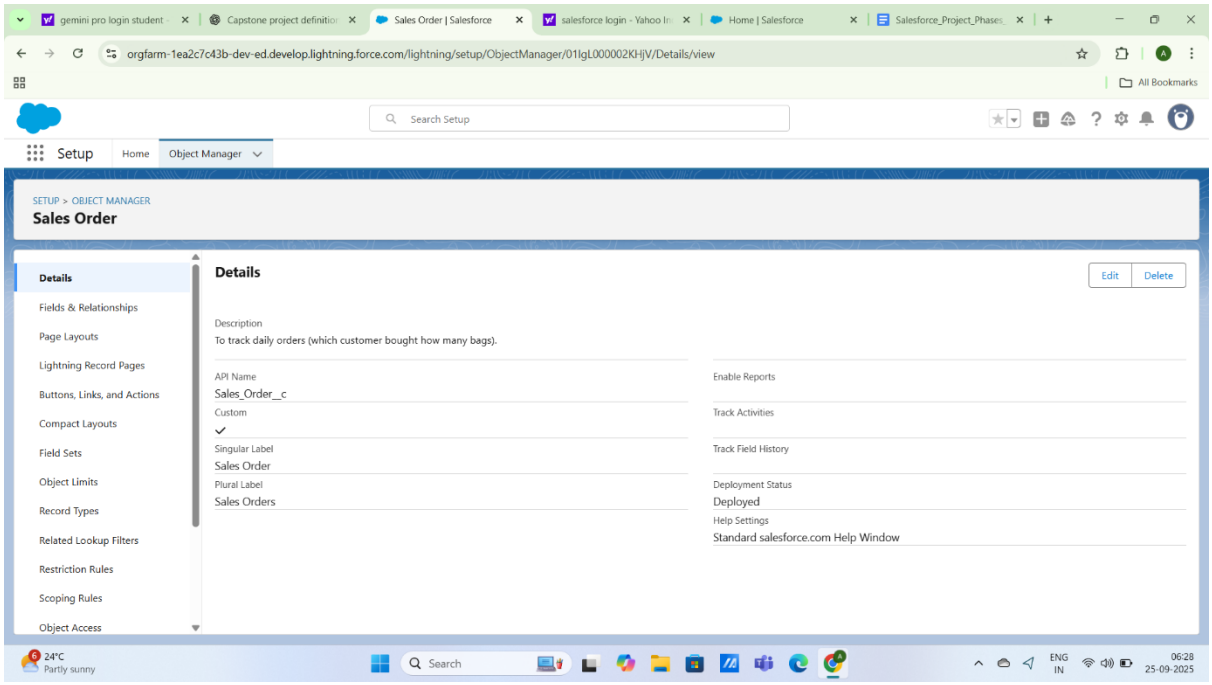
4. **Customer**

   - Stores details of buyers (shops, wholesale buyers, distributors).



5. **Sales Order**

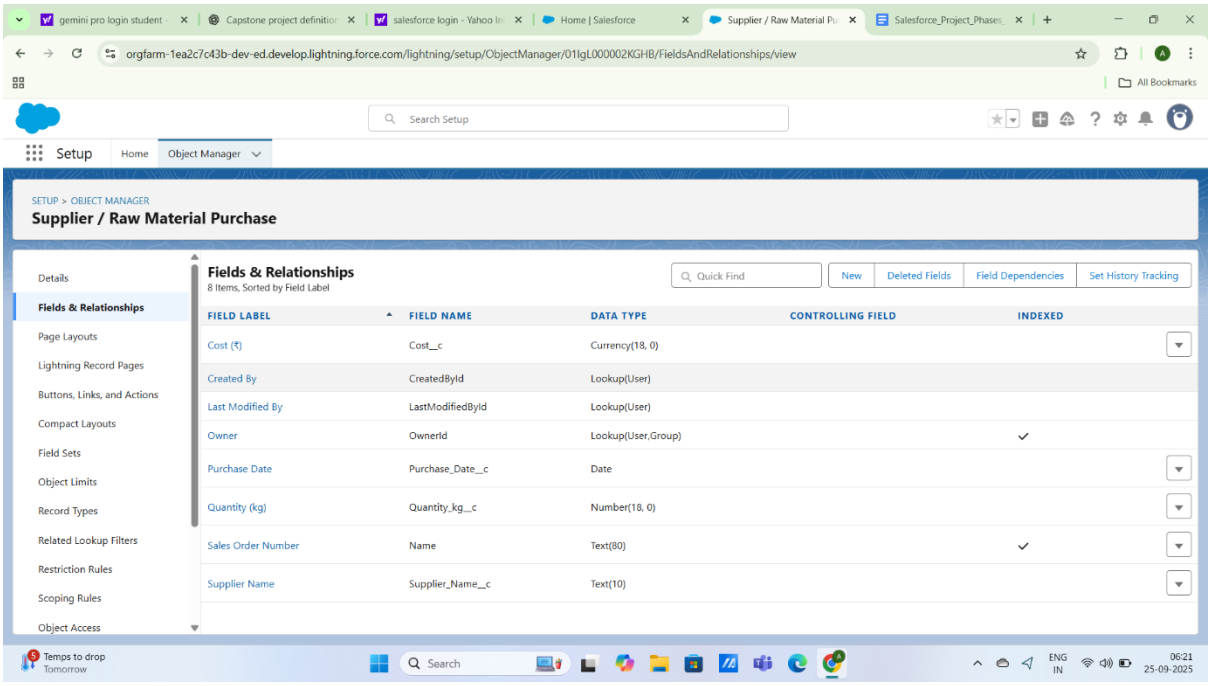
   - To track daily sales orders placed by customers.



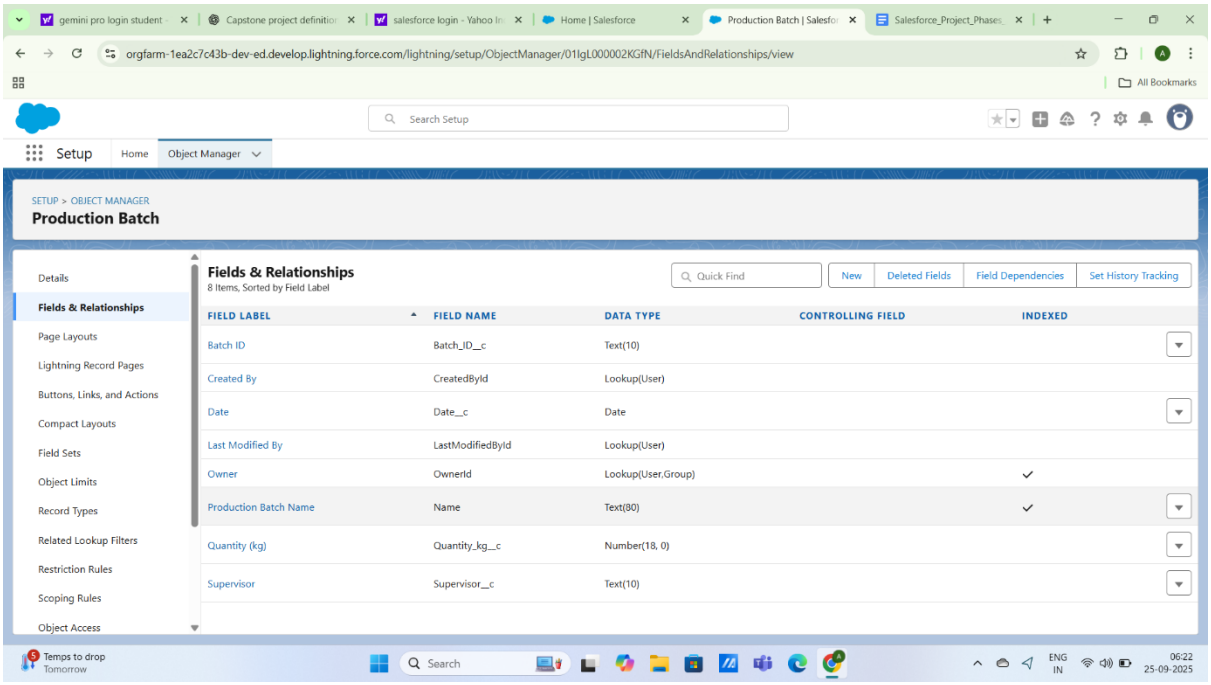
◈ 2. Fields

Each custom object has specific fields:

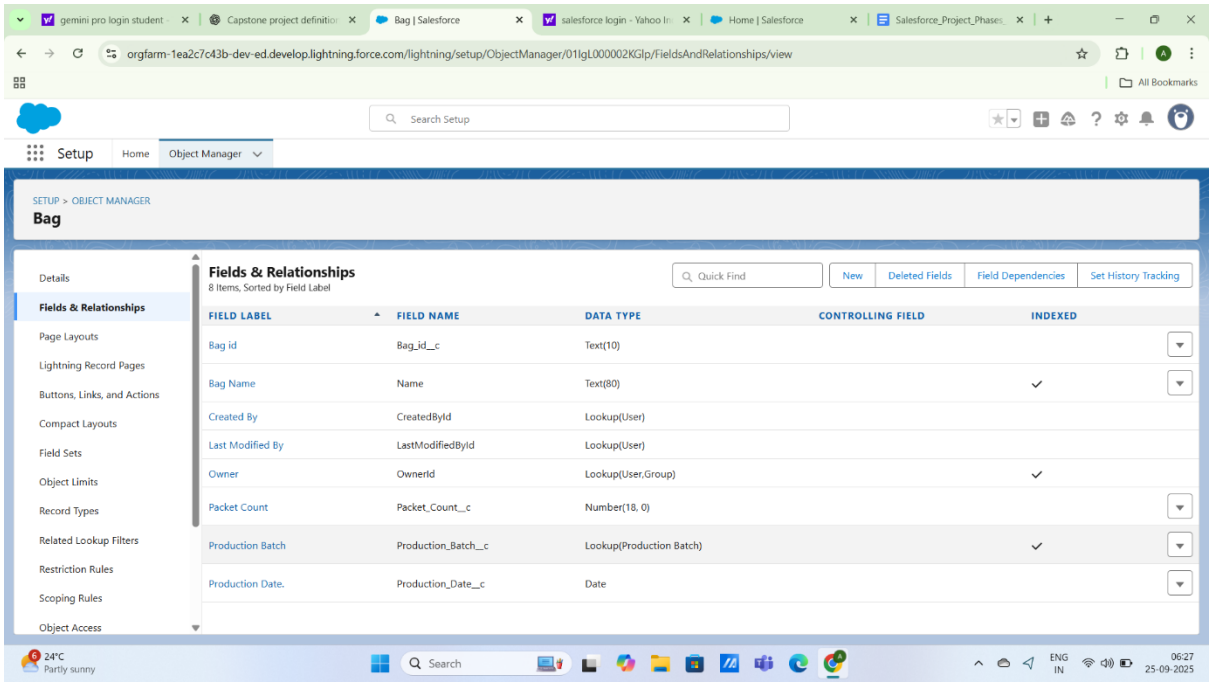
- **Supplier** → Supplier Name, Purchase Date, Quantity, Cost, Sales Order Number.



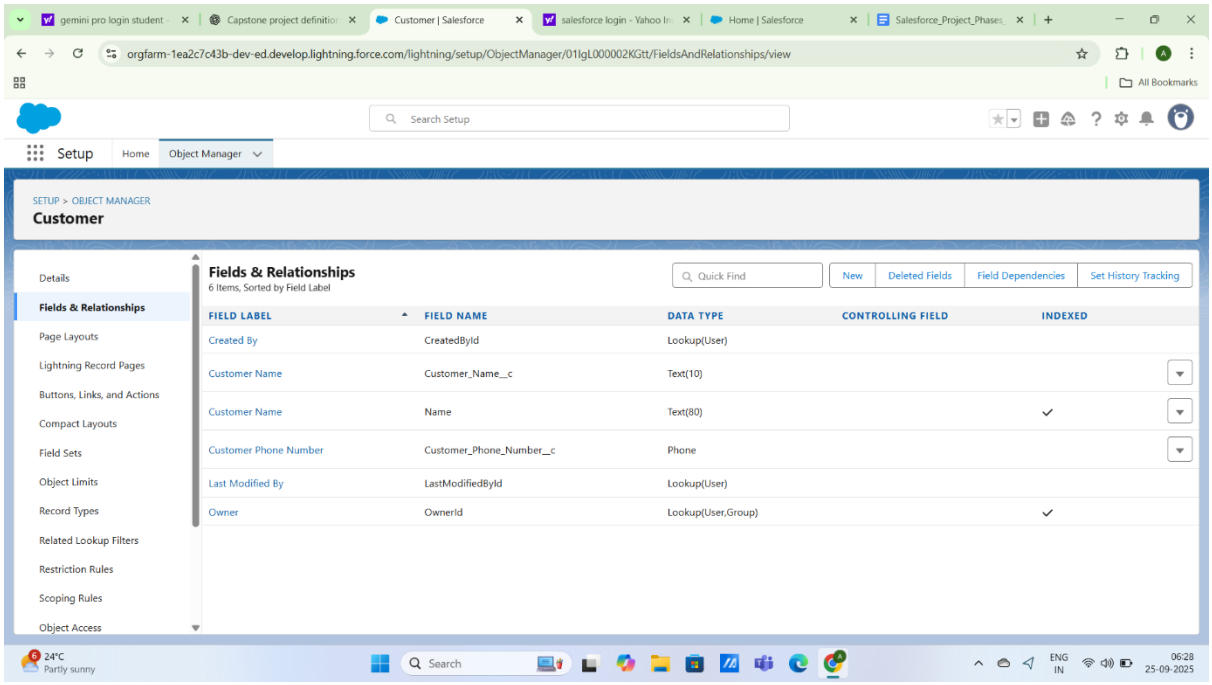
- **Production Batch** → Batch ID, Production Date, Quantity, Supervisor.



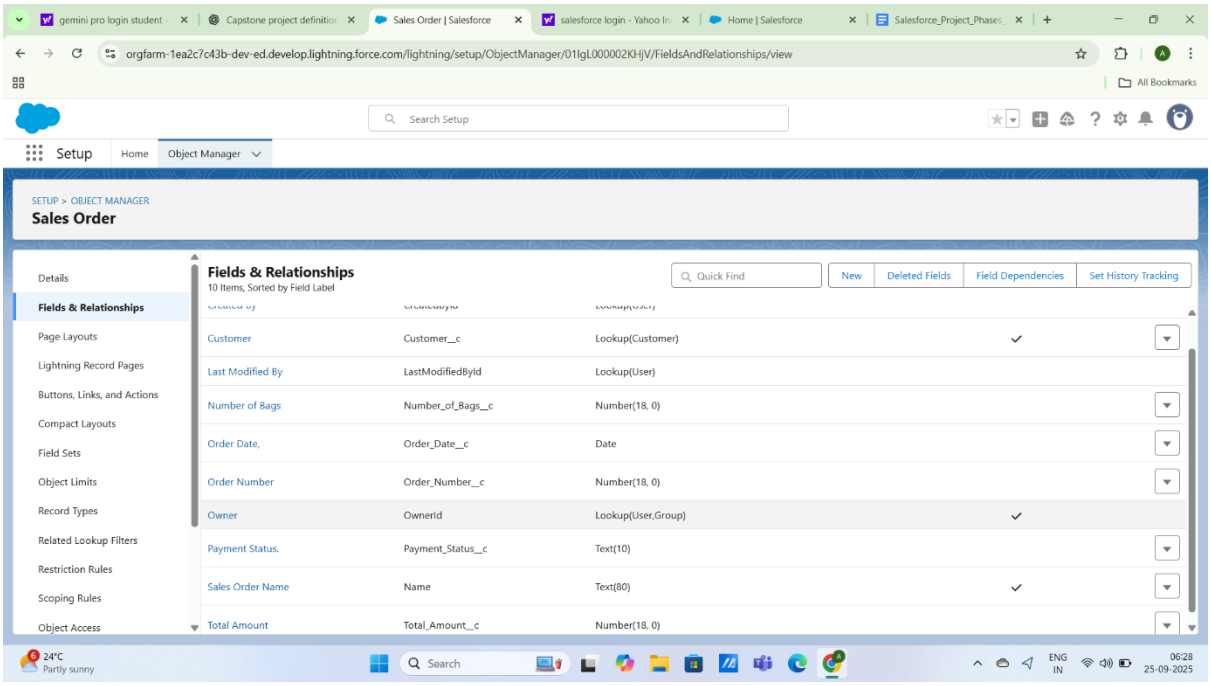
- **Bag** → Bag ID, Packet Count, Batch (Lookup), Production Date.



- **Customer** → Customer Name, Contact Person.



- **Sales Order** → Order Number, Customer (Lookup), Order Date, Number of Bags, Total Amount, Payment Status.



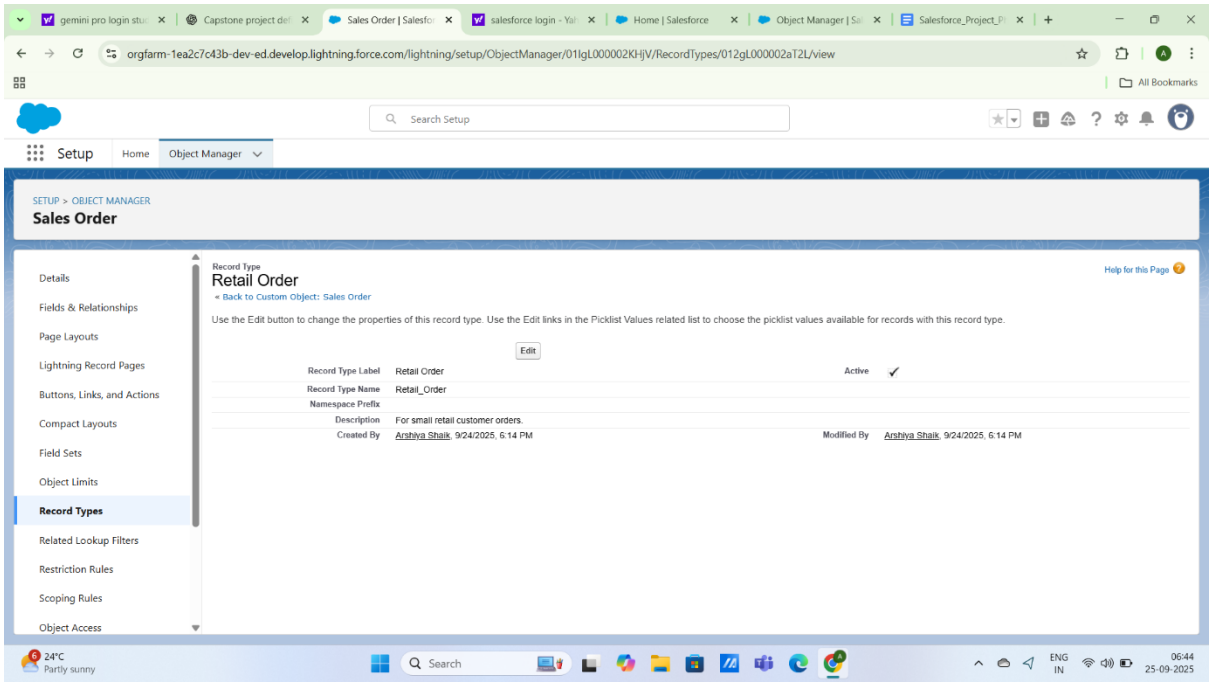
🔷 3. Record Types

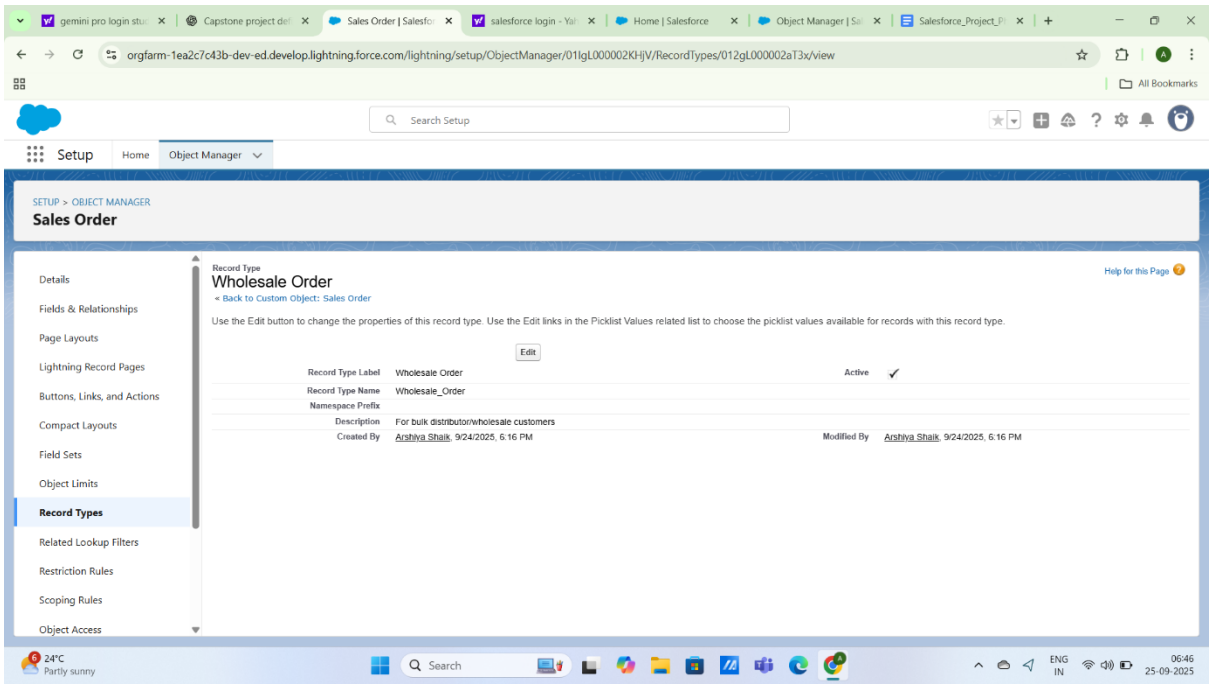
Why? To manage different kinds of records in the same object.

Example in this project:

- **Sales Order Object →**
    - Record Type 1: **Retail Sales Order** (small orders, direct customers).
    - Record Type 2: **Wholesale Sales Order** (large orders from distributors).

Each record type can have its own **page layout**.





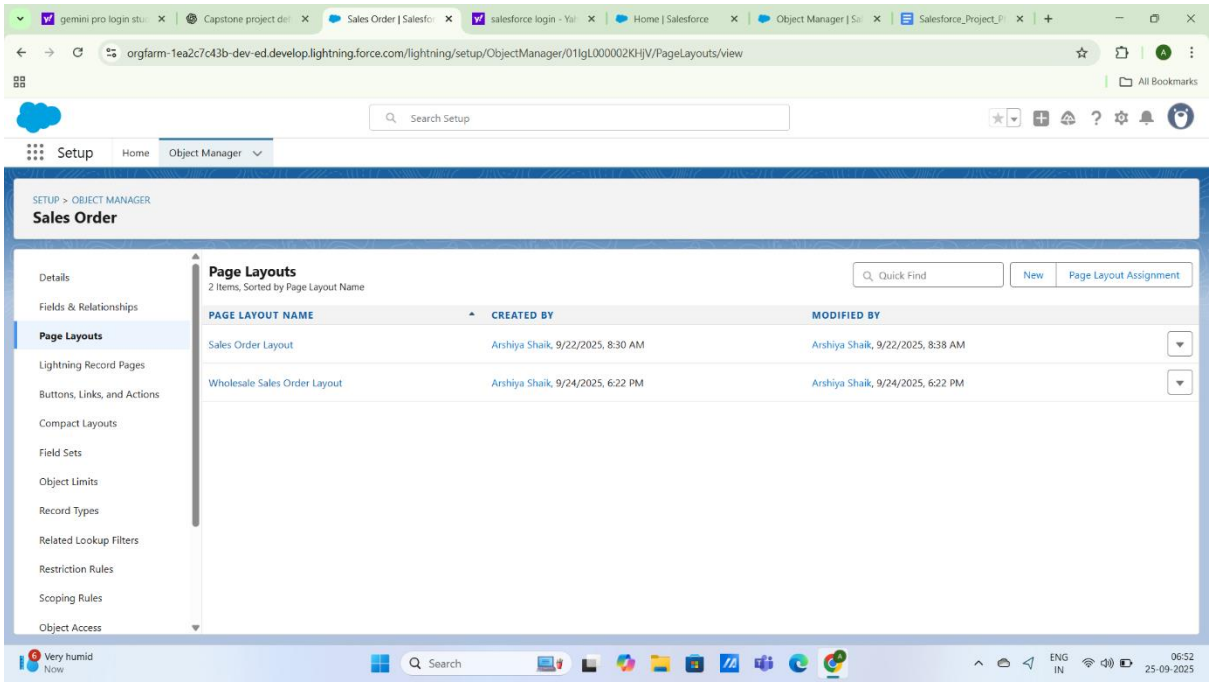
🔷 4. Page Layouts

Page Layouts control what fields, related lists, and sections appear on the record page.

Example:

- **Retail Sales Order Layout** → Show fields like Order Number, Customer, Order Date, Payment Status.

- **Wholesale Sales Order Layout** → Add fields like Discount %, Delivery Date, Special Notes.

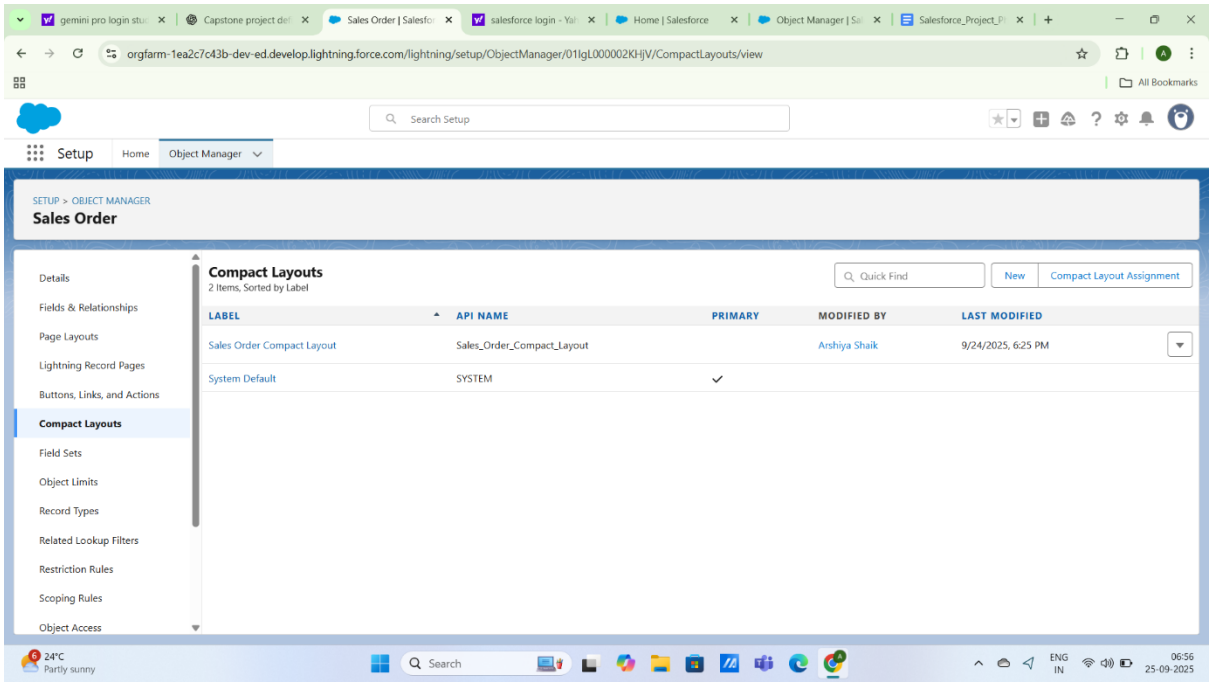


◈ 5. Compact Layouts

Compact Layouts are used in the **Highlights Panel** (top of record page).

Example:

- **Sales Order Compact Layout** → Order Number, Customer, Order Date, Number of Bags, Payment Status.
- **Customer Compact Layout** → Customer Name, Phone, Address.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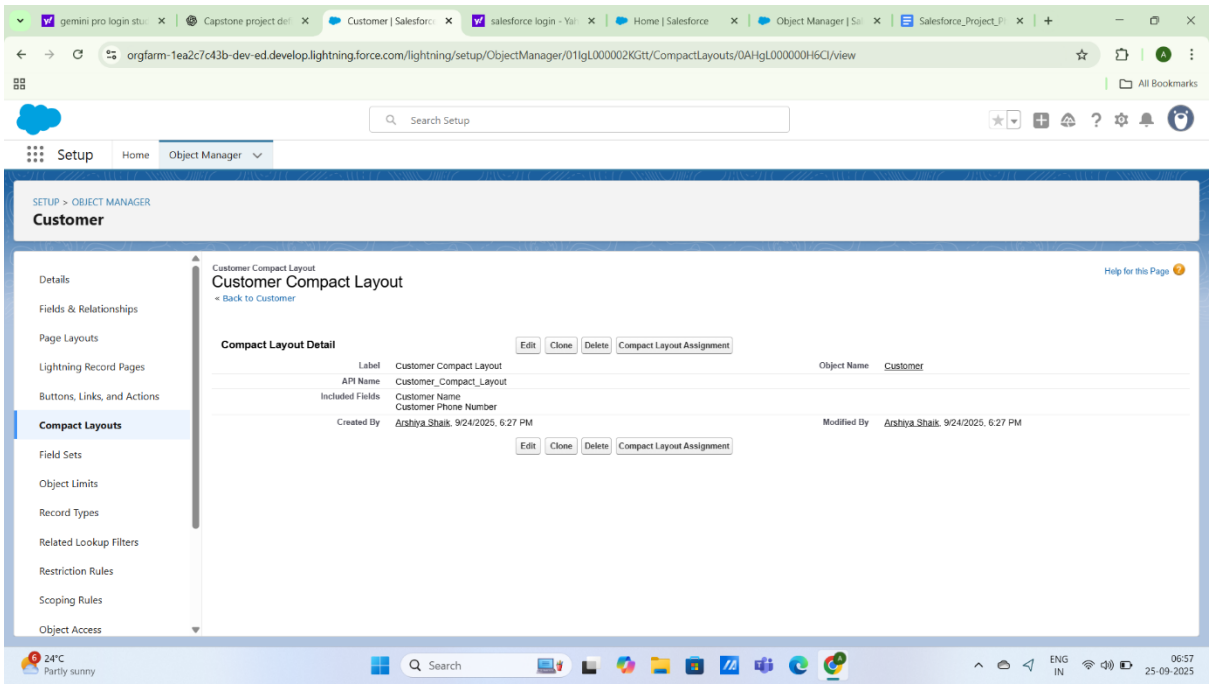
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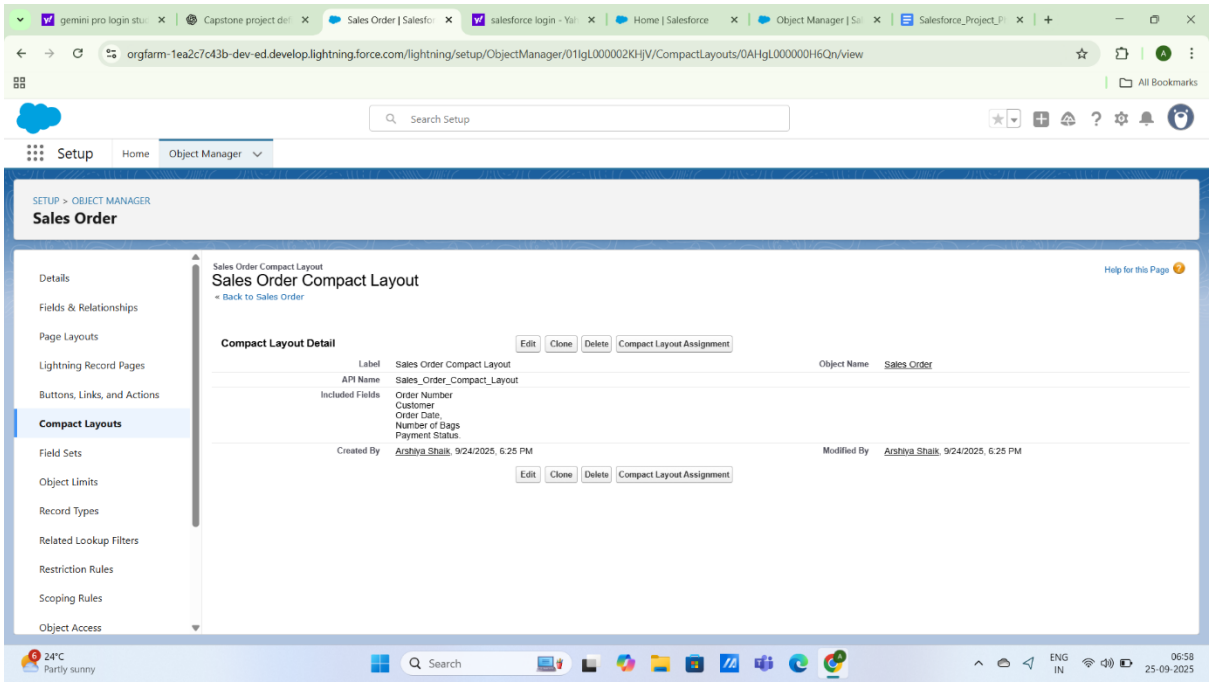
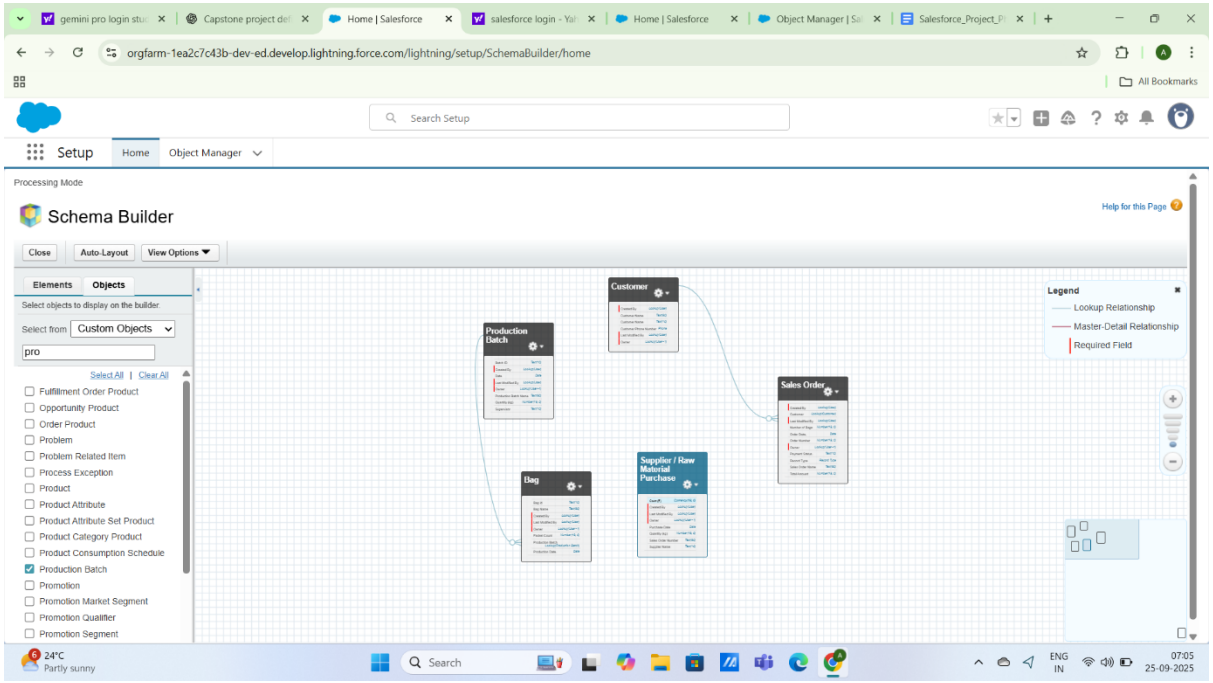


🔷 6. Schema Builder

Schema Builder provides a **visual diagram** of all objects and their relationships.

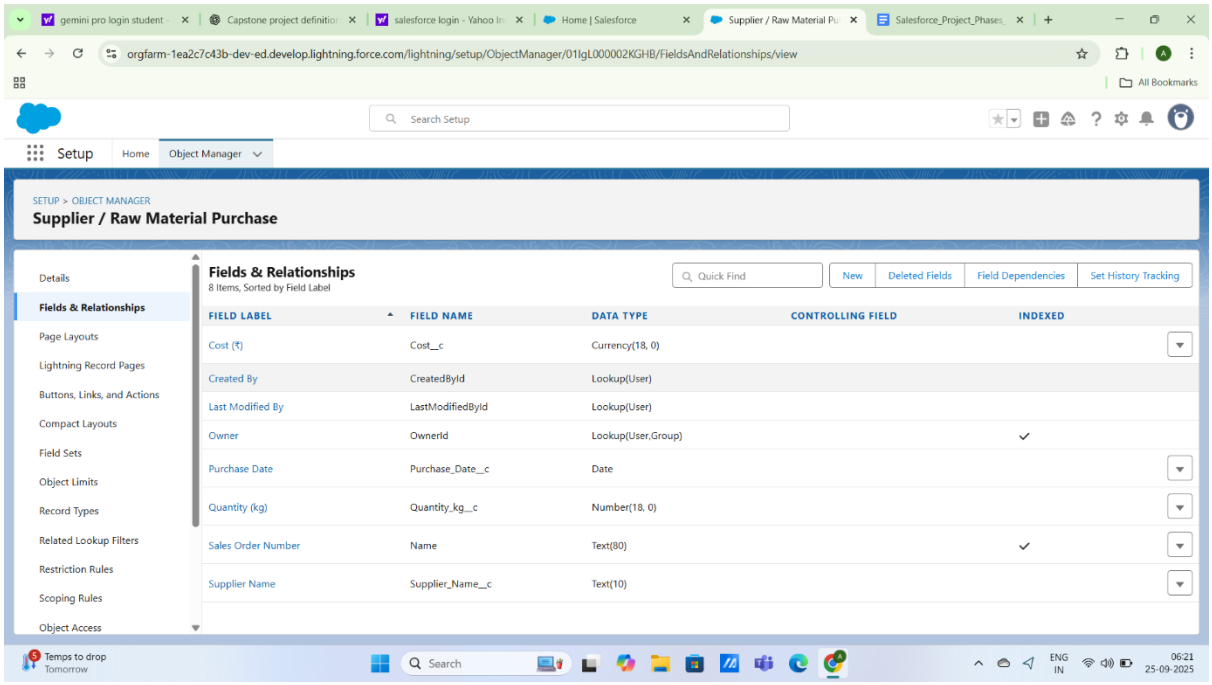
- Shows **Production Batch** linked with **Bag**.
- Shows **Sales Order** linked with **Customer**.
- Shows **BatchSupplier** junction object linking Supplier ↔ Production Batch.

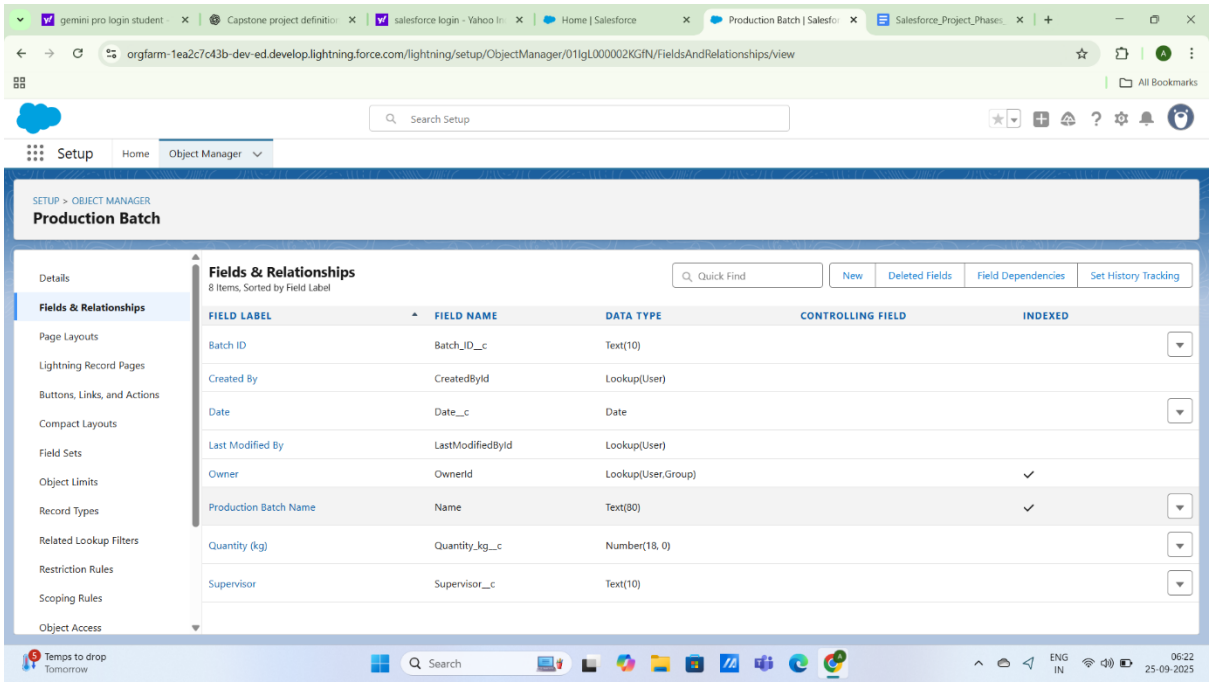


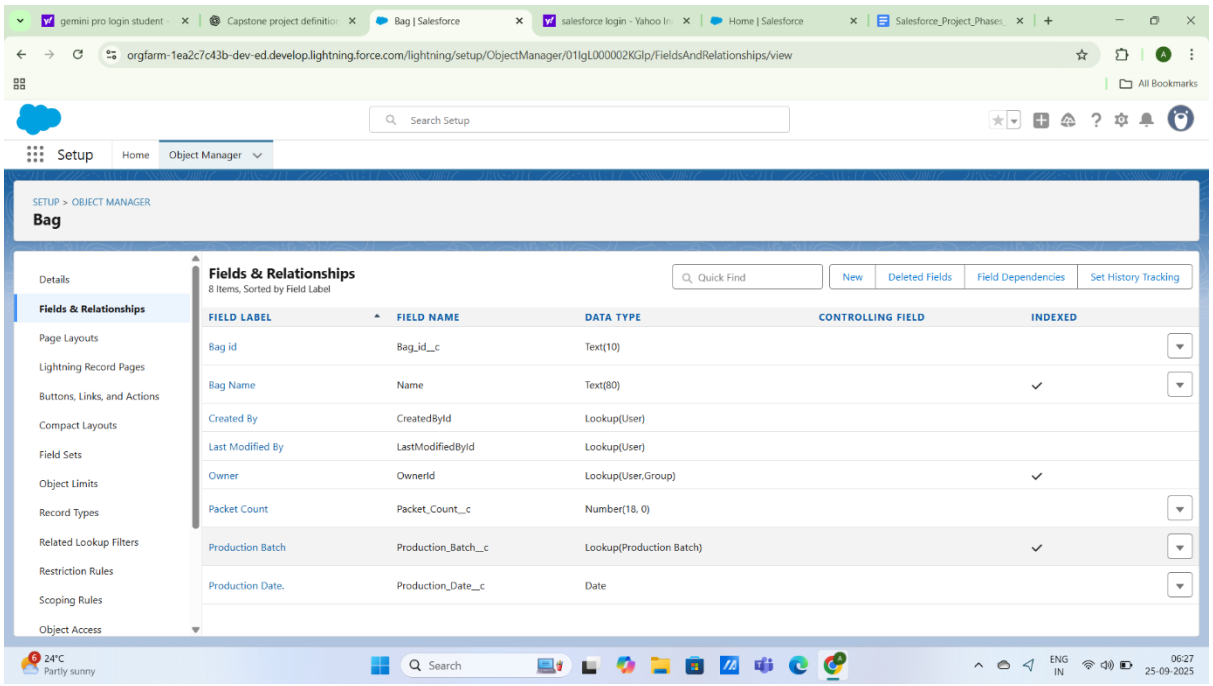
🔷 7. Relationships

There are 3 main relationship types in Salesforce:

1. **Lookup Relationship**
    - A loose link, records are independent.
    - Example: Sales Order → Customer.
2. **Master-Detail Relationship**
    - Strong dependency, child cannot exist without parent.
    - Example: Bag → Production Batch.
3. **Hierarchical Relationship**
    - Special lookup only available for the **User object**.
    - Example: Supervisor managing Worker.







🔷 8. Junction Objects

Junction Objects are used for **many-to-many relationships**.

Example in this project:

- One Supplier can provide raw material for many Production Batches.
- One Production Batch can use raw material from many Suppliers.

✅ Solution → Create a junction object: **BatchSupplier**.

- Fields: Lookup to Production Batch, Lookup to Supplier.

◈ 9. External Objects

External Objects represent data stored outside Salesforce (via Salesforce Connect).

- Example: If raw material invoices are stored in an ERP system or Google Sheets, they can be linked to Salesforce as **External Objects**.
- Data is not stored inside Salesforce but displayed as if it's native.