Intelligent Last Mile Delivery Orchestration System

# Phase 3: Data Modeling & Relationships

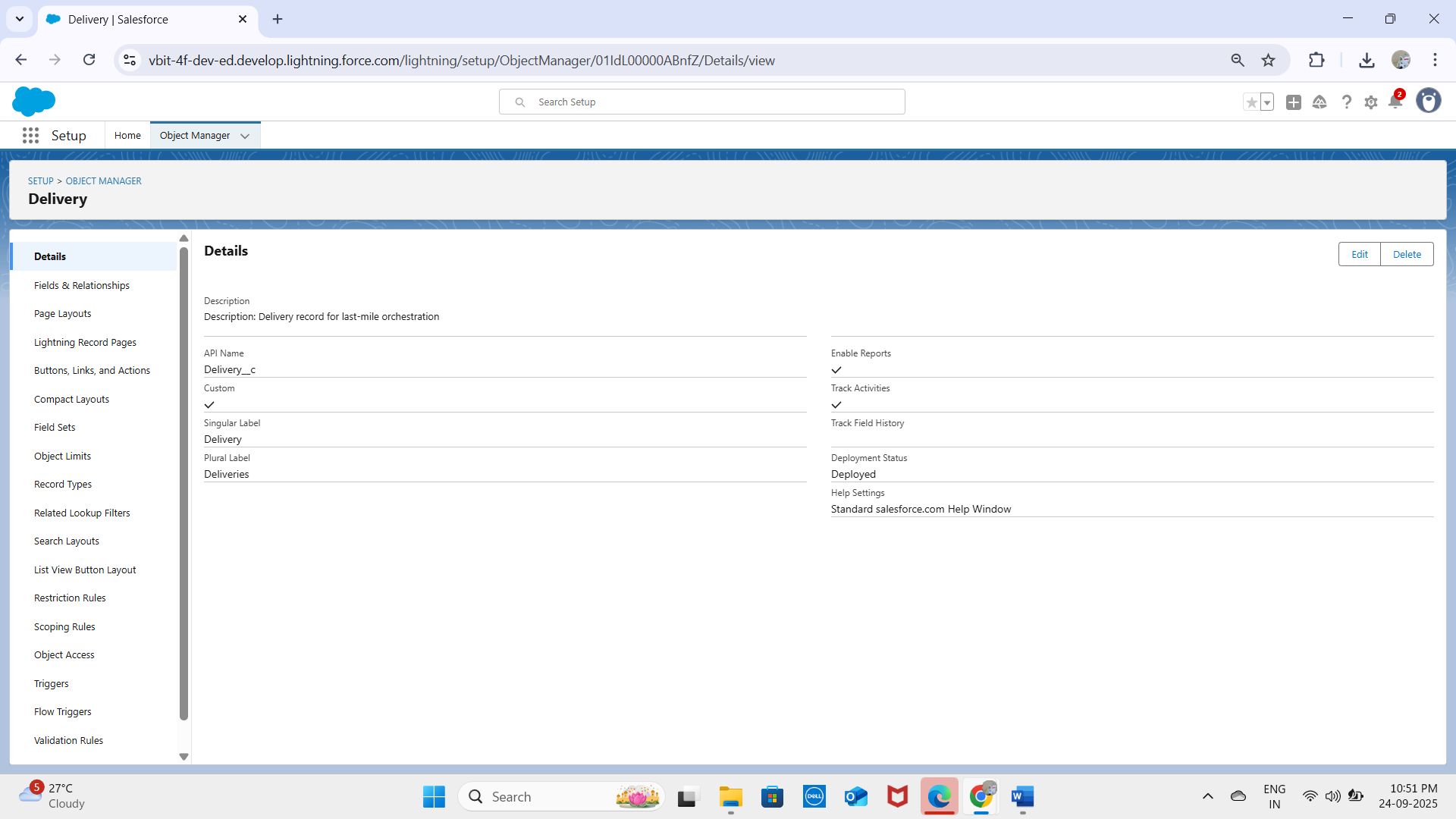
## Standard & Custom Objects

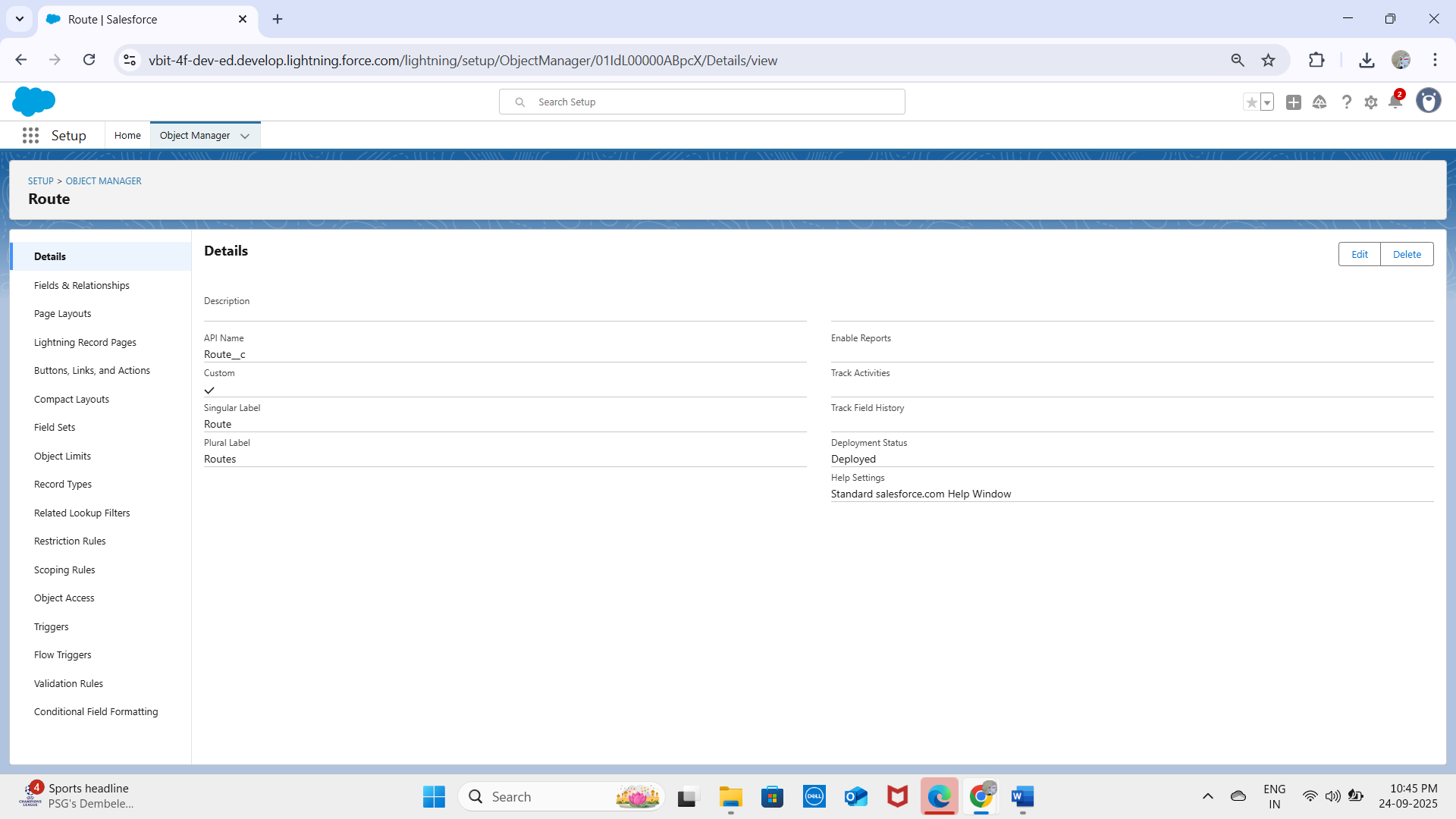
The data model for the Intelligent Last Mile Delivery Orchestration System combines standard Salesforce objects with newly created custom objects to support delivery operations, routing, and customer communication.

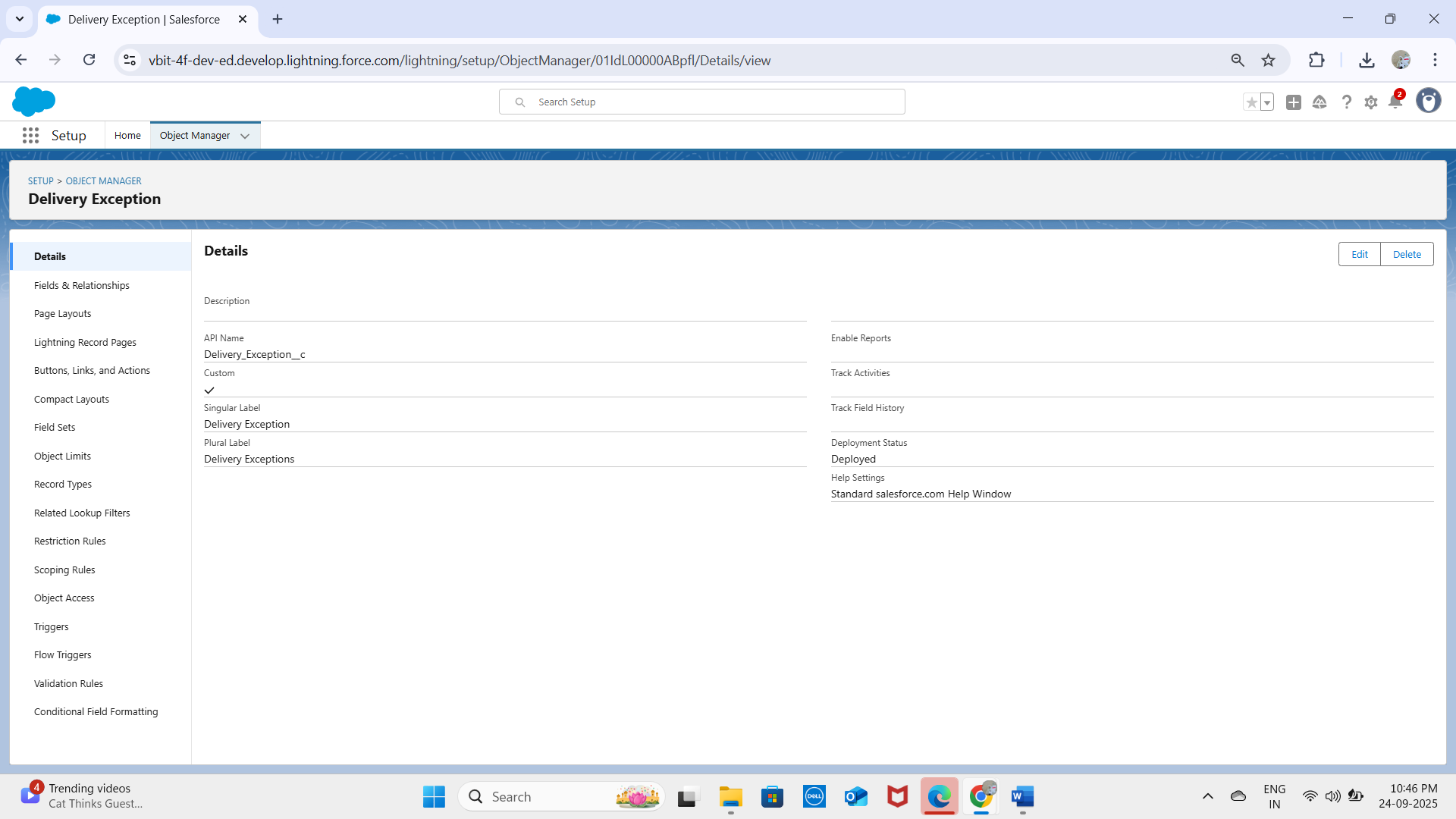
* **Standard Objects:**

- Account: Represents the business customers or clients associated with deliveries.  
- Contact: Represents individual customers receiving deliveries.  
- User: Represents delivery agents, managers, and customer service staff.

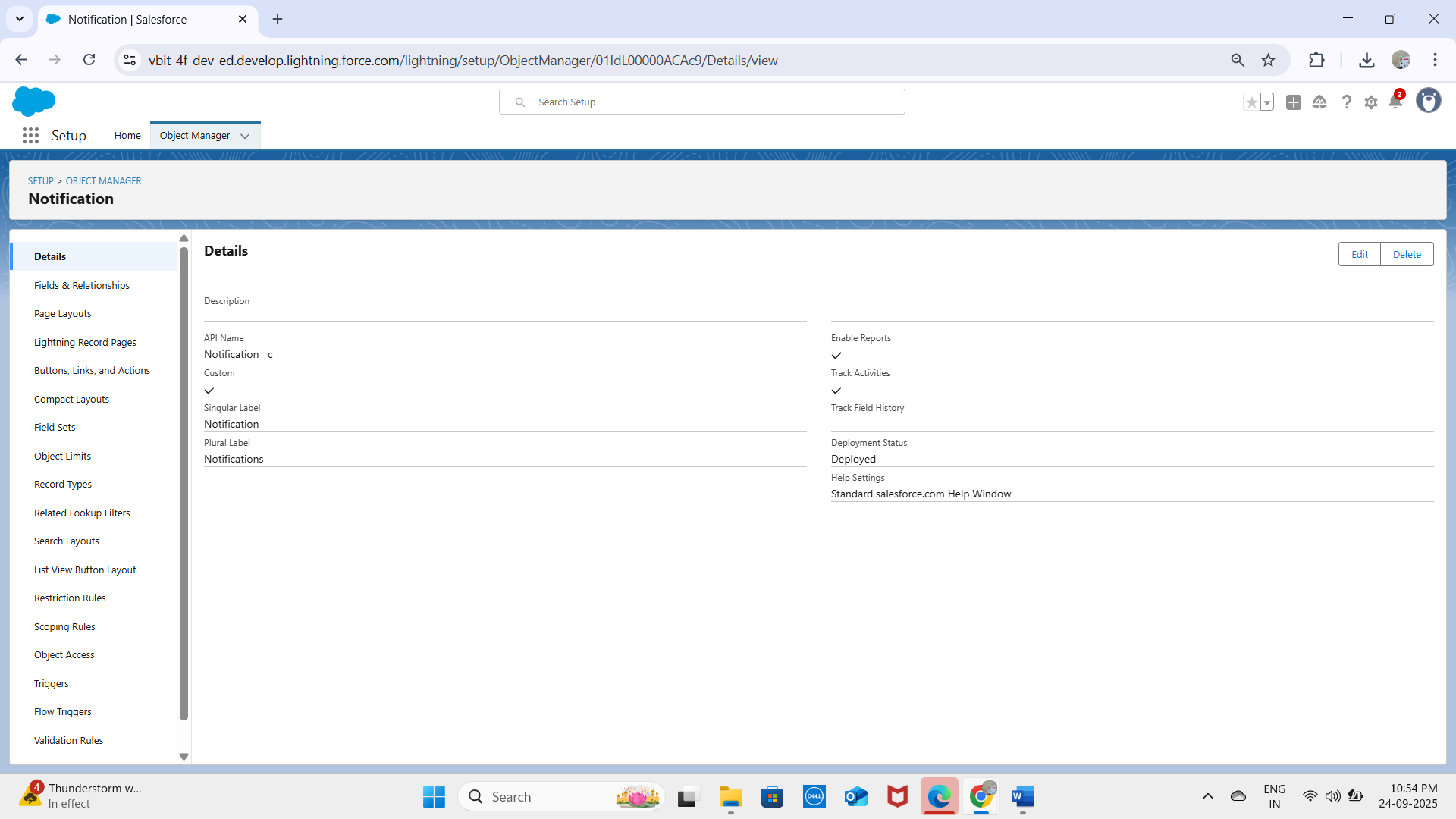
* **Custom Objects:**
* **Delivery\_\_c:** Tracks each delivery record with status, scheduling, and completion details.

  
**- Route\_\_c:** Holds optimized route details for delivery assignments.

  
- **Delivery\_Exception\_\_c:** Captures failed or delayed deliveries and rescheduling information.



**- Notifications\_\_c:** Stores automated communication alerts sent to customers.



## Fields & Relationships

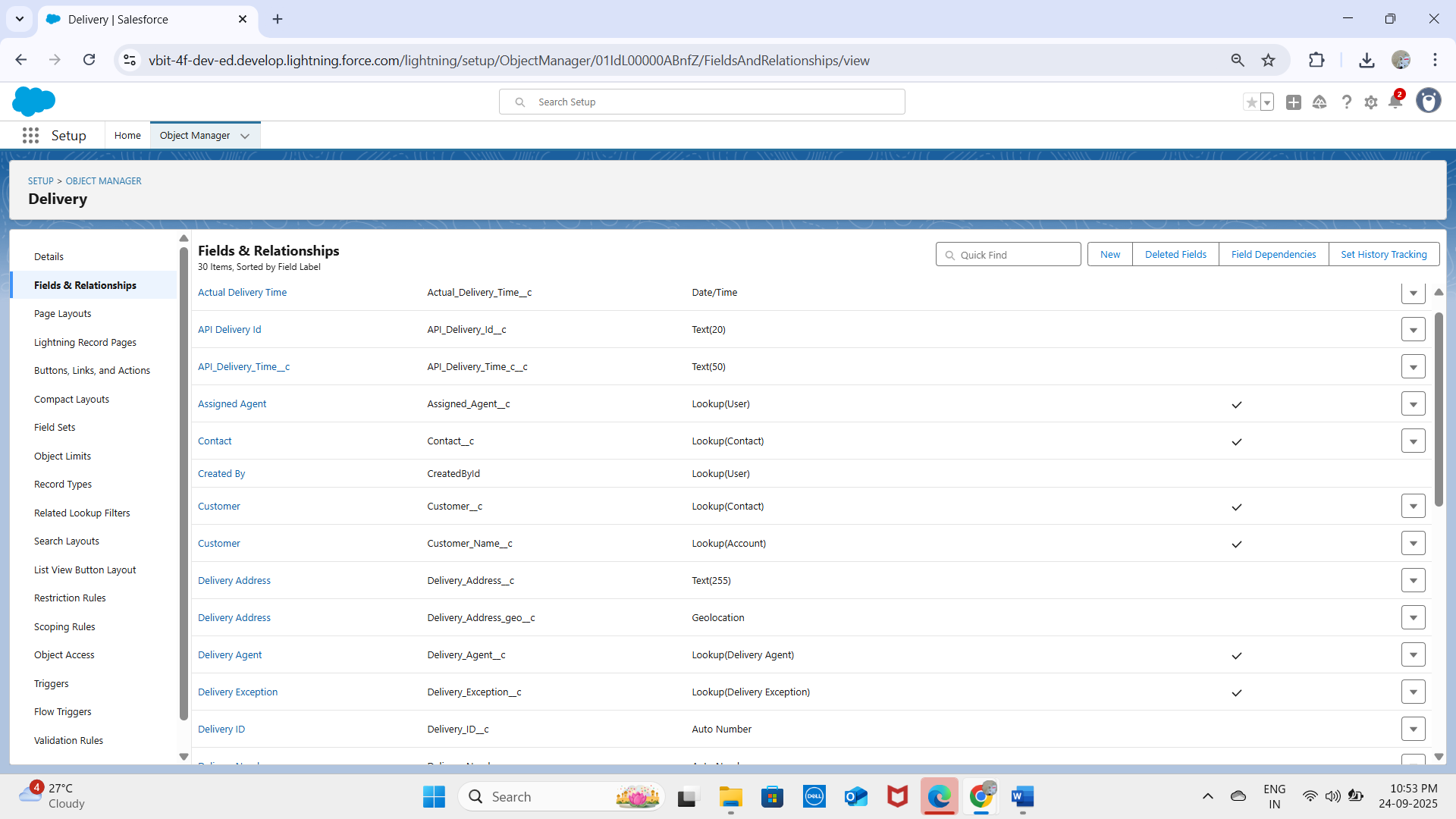
Custom fields capture the logistics data required to manage deliveries, while relationships link the objects together.

* **Relationships:**

- Delivery\_\_c → Lookup to Account (Customer placing the delivery).  
- Delivery\_\_c → Lookup to User (Assigned Delivery Agent).  
- Route\_\_c → Master-Detail with Delivery\_\_c (one route may cover multiple deliveries).  
- Delivery\_Exception\_\_c → Lookup to Delivery\_\_c (each exception tied to a specific delivery).  
- Notifications\_\_c → Lookup to Delivery\_\_c (notifications linked to delivery record).

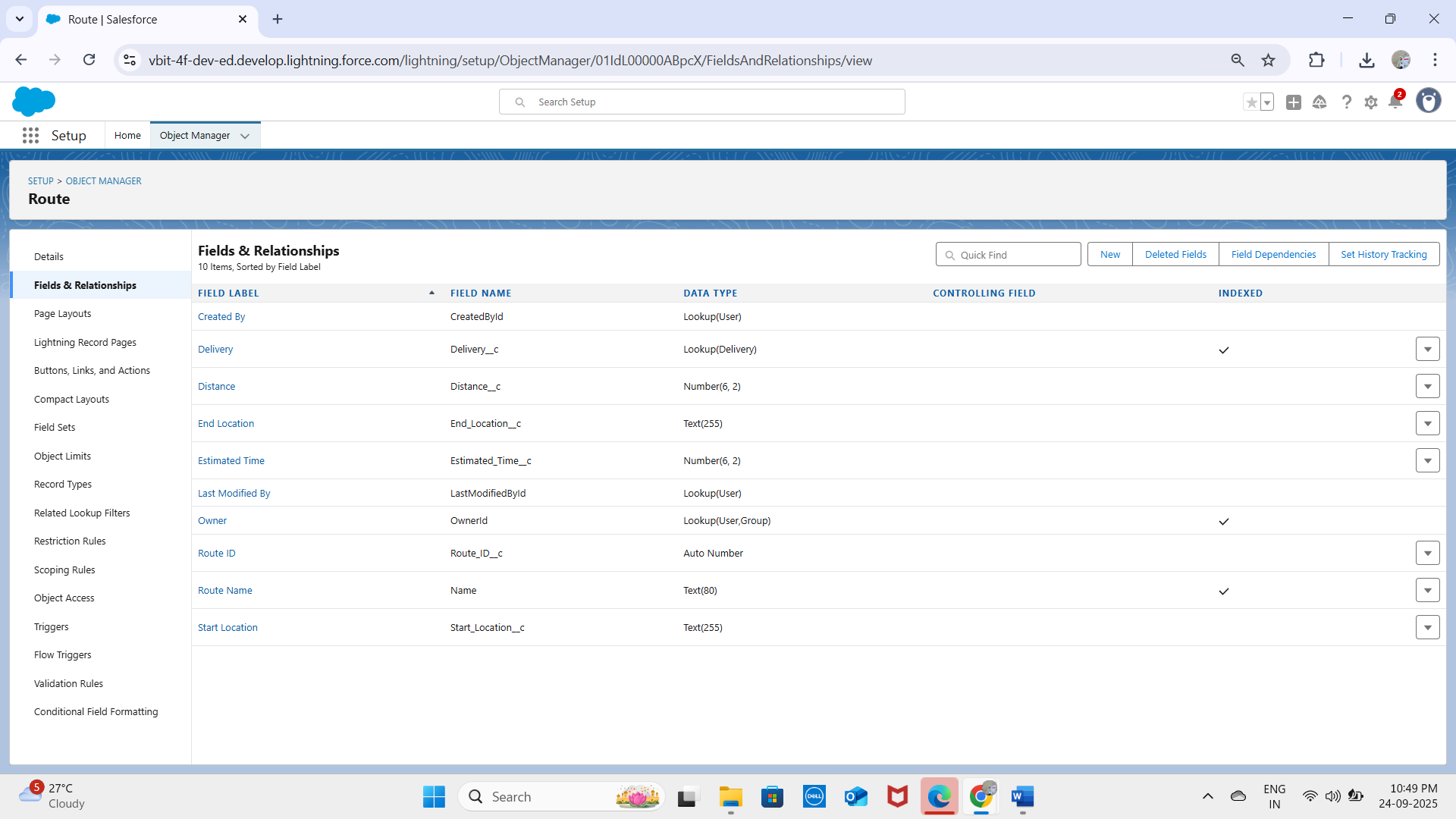
* **Custom Fields:**

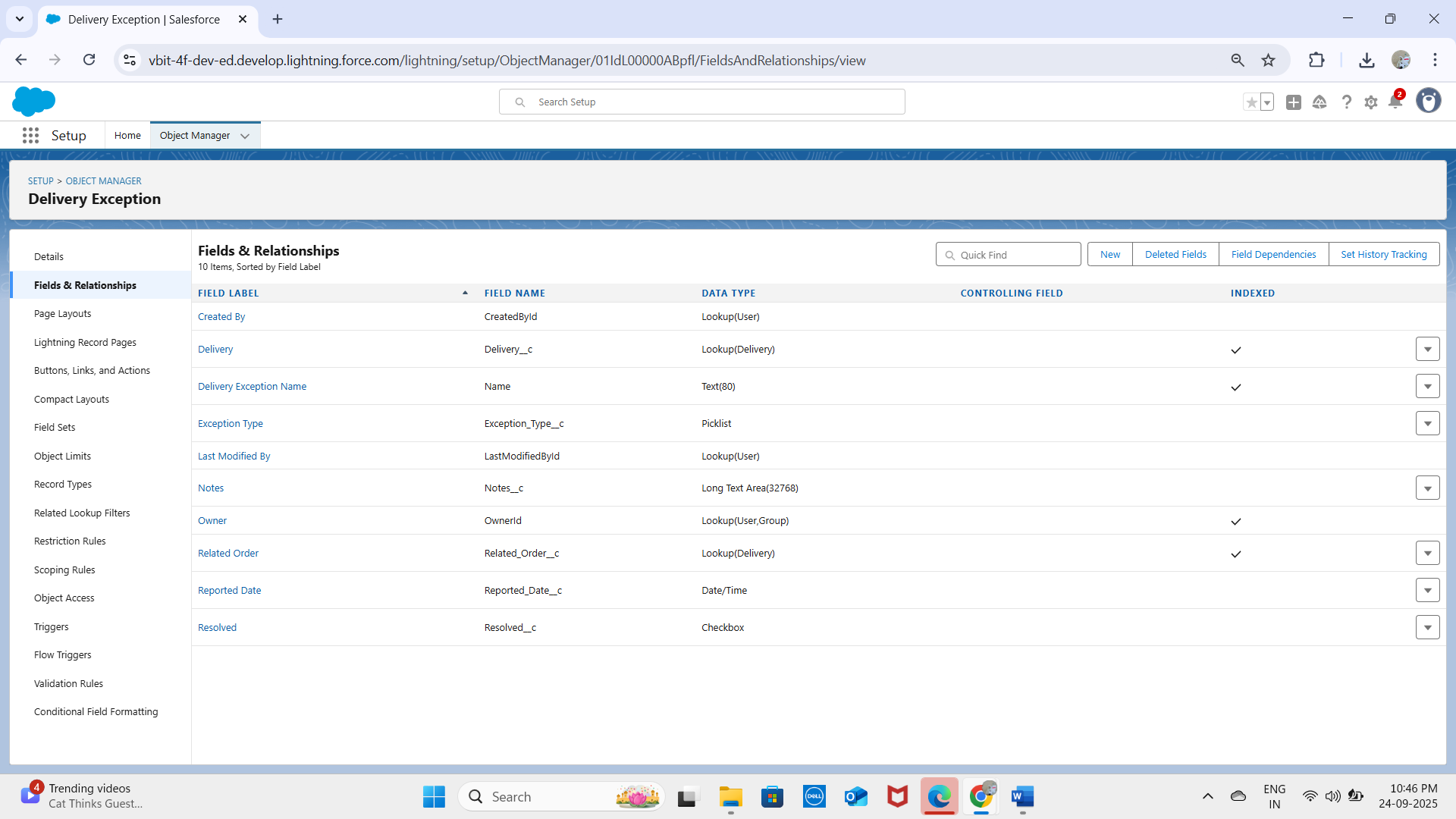
**On Delivery\_\_c:**  
- Delivery\_Number\_\_c (Auto Number)  
- Delivery\_Status\_\_c (Picklist: Scheduled, In Transit, Delivered, Failed)  
- Scheduled\_Time\_\_c (Date/Time)  
- Actual\_Delivery\_Time\_\_c (Date/Time)  
- Customer\_\_c (Lookup to Account)  
- Assigned\_Agent\_\_c (Lookup to User)

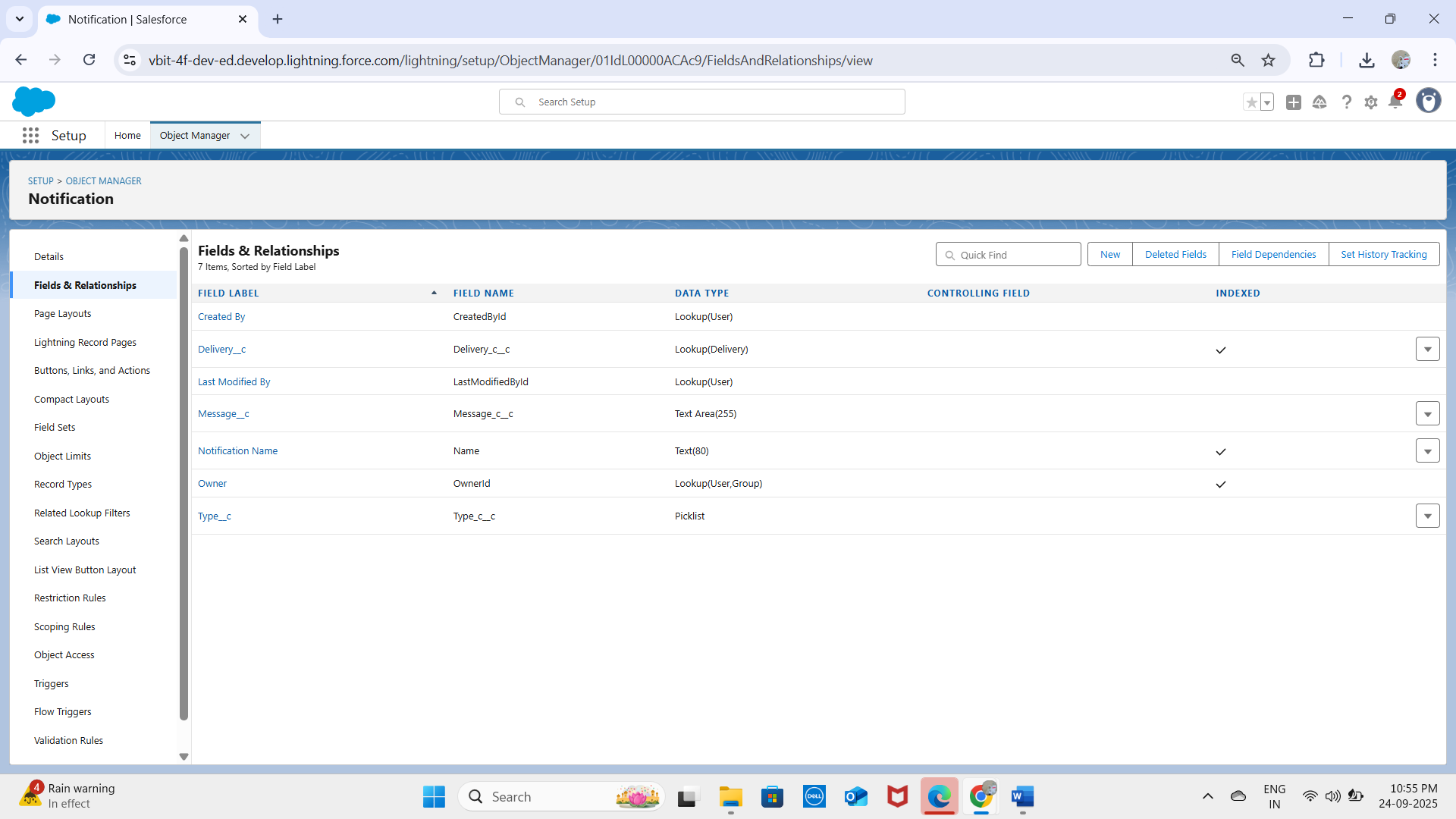
  
**On Route\_\_c:**  
- Route\_Name\_\_c (Text)  
- Distance\_\_c (Number)  
- Estimated\_Time\_\_c (Number)

**-**Start\_Location\_\_c(Text)

-End\_Location\_\_c(Text)

  
**On Delivery\_Exception\_\_c:**  
- Exception\_Type\_\_c (Picklist: Delay, Customer Not Available, Traffic, Weather)  
- Notes\_\_c (Text Area)  
- Reported\_Date\_\_c (Date/Time)

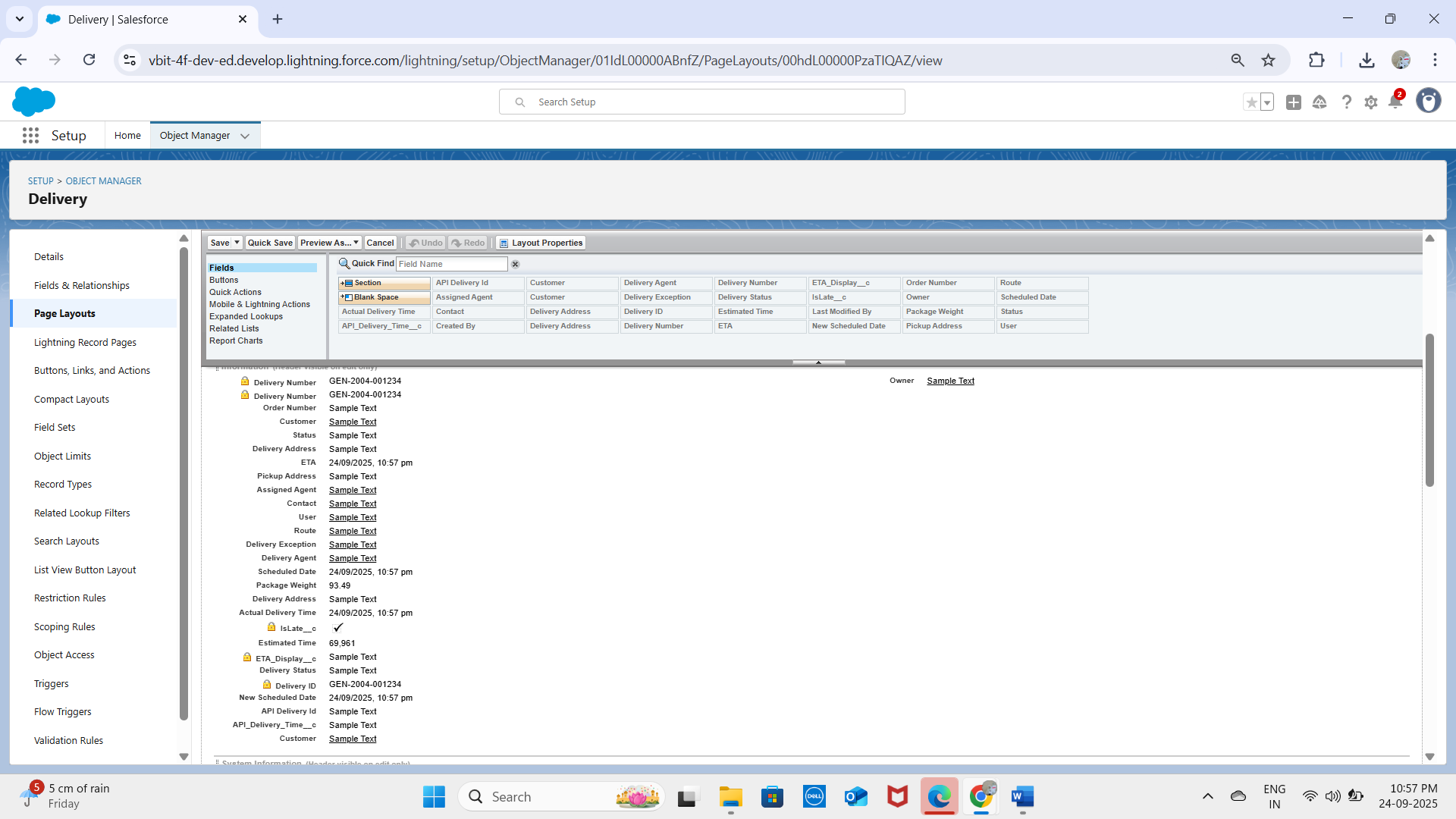
  
  
**On Notifications\_\_c:**  
- Type\_\_c (Picklist: SMS, Email, In-App)  
- Message\_c\_\_c (Text Area)  
- Name (Text)



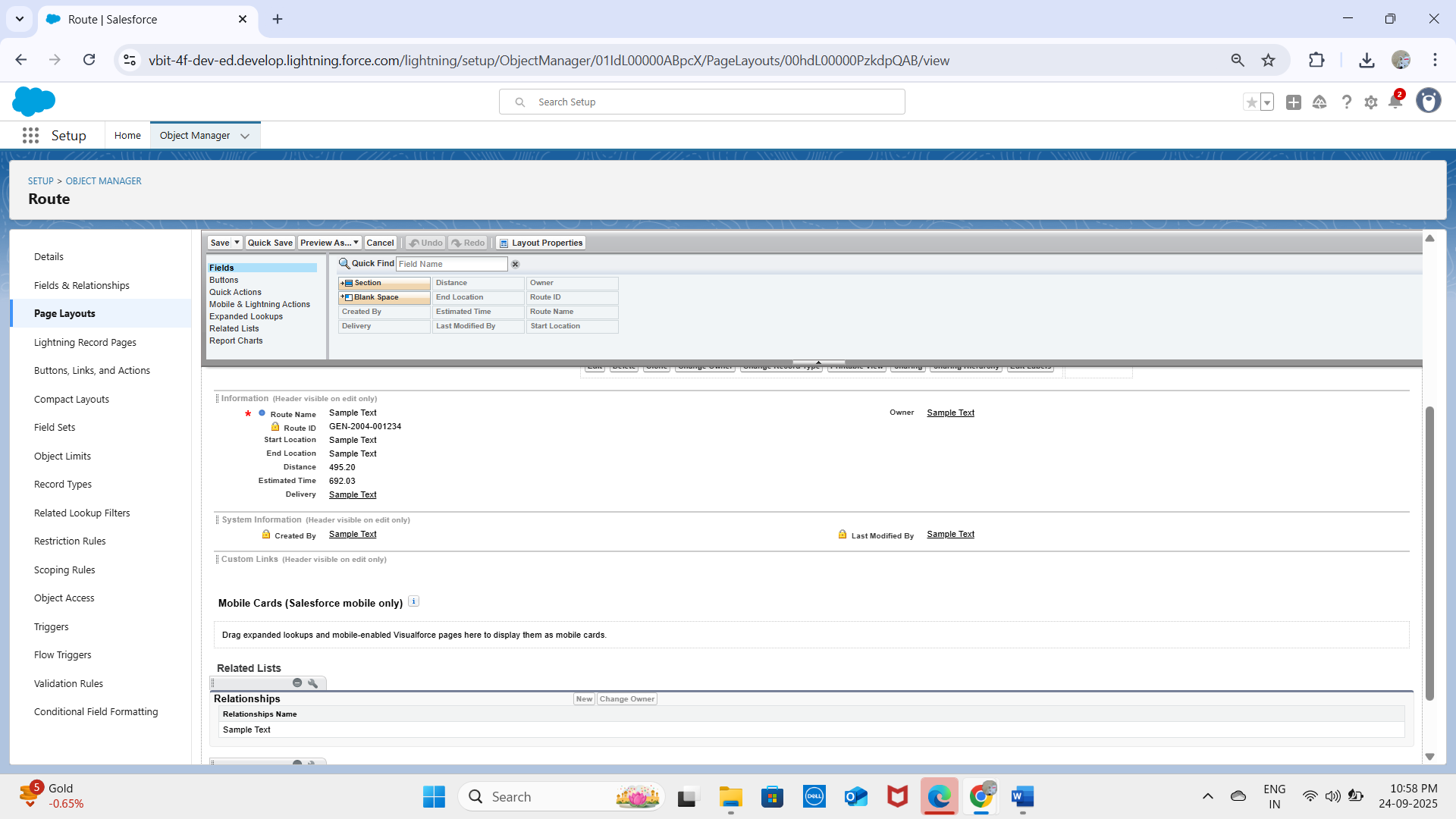
## User Interface & Layouts

**Page Layouts:** Custom layouts were created for Delivery, Route, Exception, and Notifications to display relevant fields and related lists clearly for different roles (Agents, Managers, Service Staff).

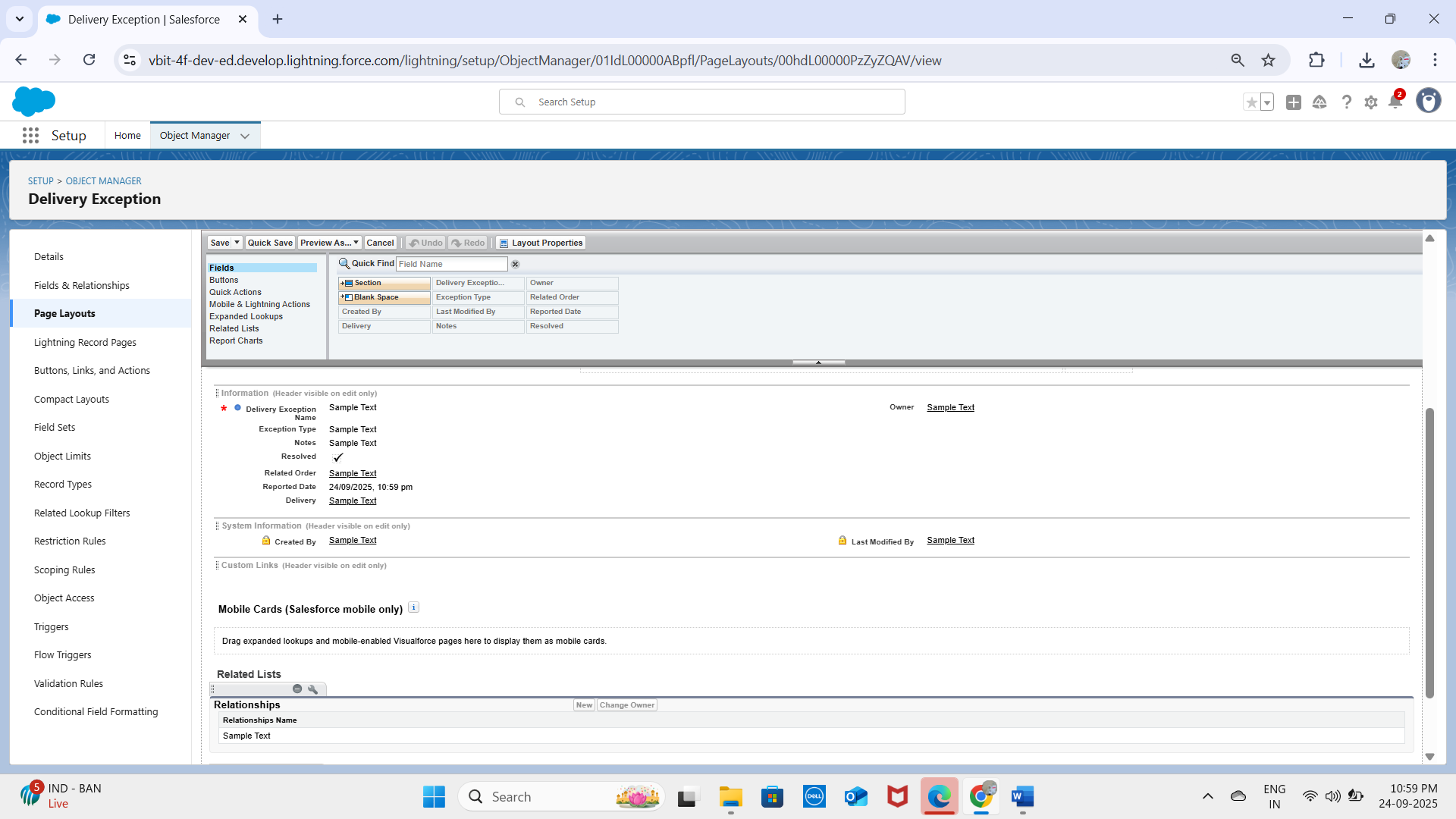
* **Delivery Layout:**



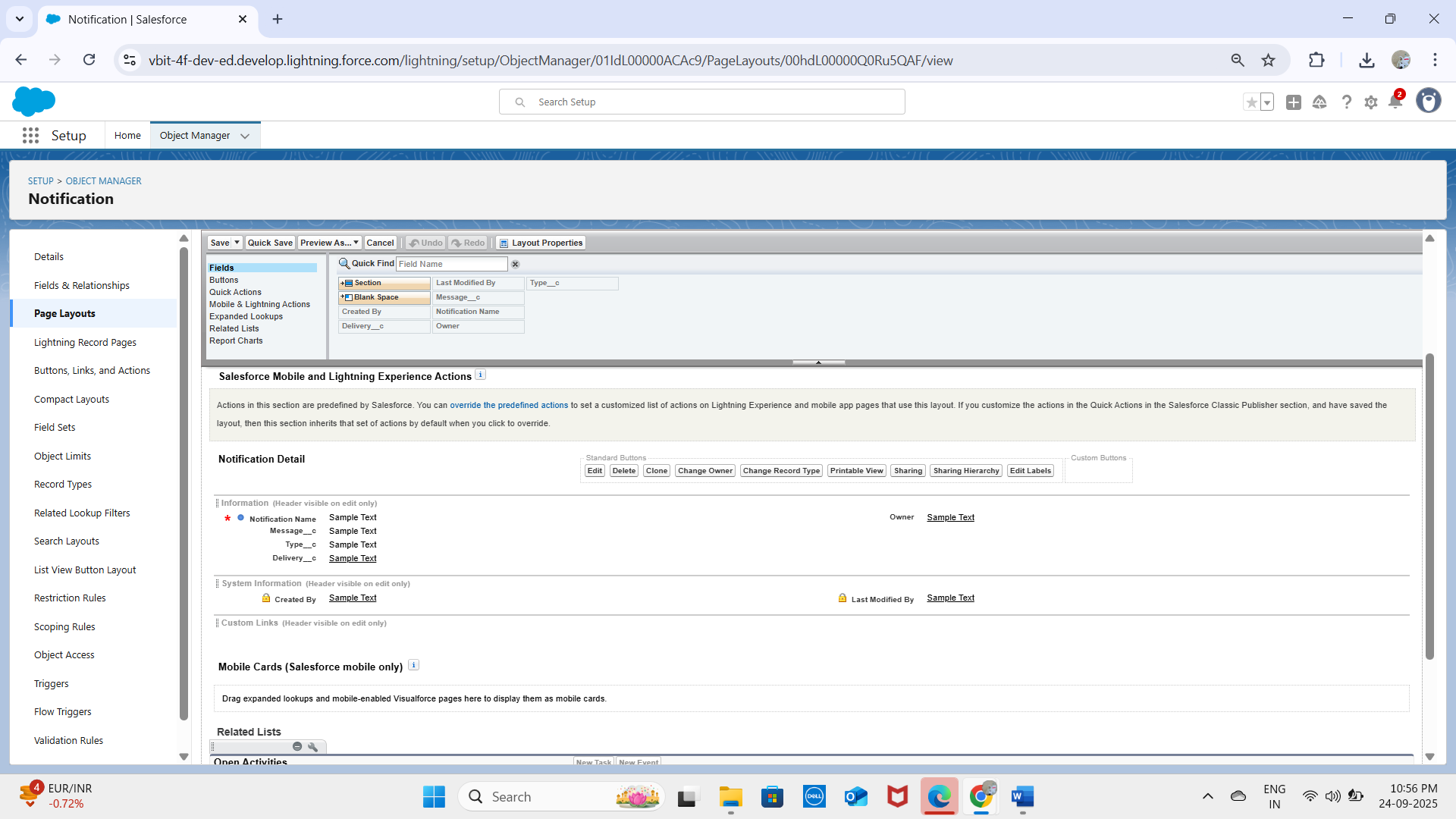
* **Route Layout:**

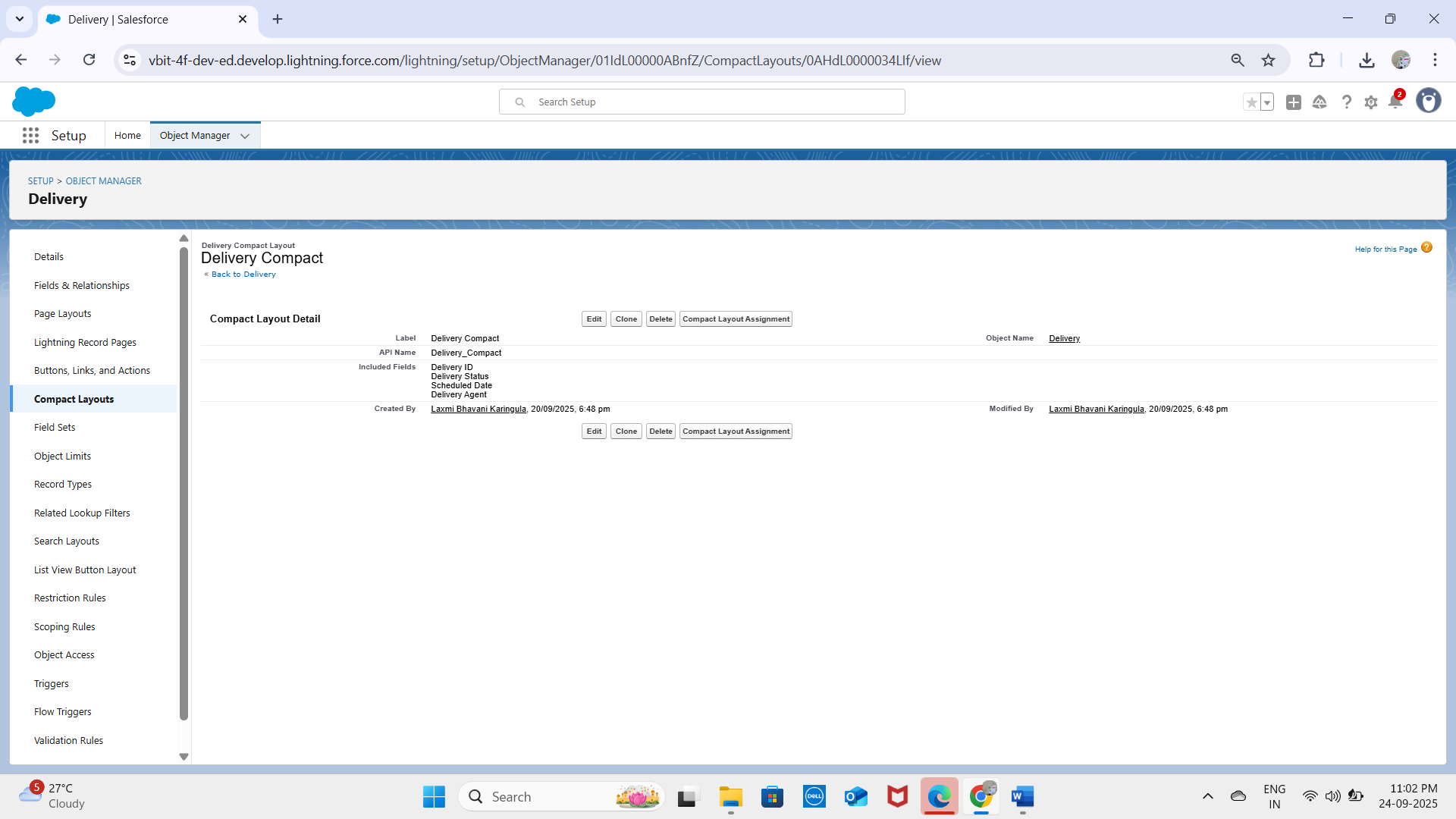


* **Delivery Exception Layout:**



**Notification Layout:**

  
  
**Compact Layouts:** Configured for Delivery\_\_c to show Delivery Number, Status, and Scheduled Time in highlights panel. Other compact layouts created for Route\_\_c and Delivery\_Exception\_\_c.

  
  
**Record Types:** Not required in the initial phase but can be added later to distinguish different delivery types (e.g., Standard Delivery, Express Delivery).

## Data Architecture

Schema Builder: Used to visualize all objects and their relationships, showing Account and User at the center with custom objects linked for deliveries, routes, and notifications.  
  
Junction Objects: Not required for the current design. However, if a Delivery\_\_c could belong to multiple routes, a junction object such as Delivery\_Route\_Assignment\_\_c would be created with master-detail relationships to both Delivery\_\_c and Route\_\_c.