

# **Dynamic Route Optimization**

## **Salesforce-Based Delivery Management System**

### **Phase 2: Org Setup & Configuration**

**Academic Project Report**

## Step 1: Salesforce Editions

Checked the Salesforce Edition by navigating to Setup → Company Settings → Company Information. The org used for this project is a Developer Edition suitable for custom app development and testing.

The screenshot shows the Salesforce Setup interface for the 'Route' object. The left sidebar contains a list of setup categories: 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, and Triggers. The 'Details' section is selected, showing the following information:

- Description: A planned route (sequence) for a vehicle
- API Name: Route\_\_c
- Custom: Custom
- Singular Label: Route
- Plural Label: Routes
- Enable Reports: [checkbox]
- Track Activities: [checkbox]
- Track Field History: [checkbox]
- Deployment Status: Deployed
- Help Settings: Standard salesforce.com Help Window

The top navigation bar shows 'Setup' and 'Object Manager'. The bottom status bar displays the temperature (26°C), weather (Partly cloudy), and the time (20:30 on 18-10-2025).

## Step 2: Company Profile Setup

Configured company profile under Setup → Company Settings → Company Information. Details entered include organization name, address, primary contact, timezone, locale (English - India), and currency (INR).

The screenshot shows the Salesforce Setup interface for the 'Route' object, specifically the 'Fields & Relationships' section. The left sidebar contains a list of setup categories: 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, and Triggers. The 'Fields & Relationships' section is selected, showing the following information:

- Route Custom Field: Actual End Time
- Field Information:

Field Label	Actual End Time	Object Name	Route
Field Name	Actual_End_Time	Data Type	Date/Time
API Name	Actual_End_Time__c		
Description	Real end time after execution		
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	KORAPALA ARHINAYASRI, 10/18/2025, 7:31 AM	Modified By	KORAPALA ARHINAYASRI, 10/18/2025, 7:31 AM

- General Options:

  - Required: [checkbox]
  - Default Value: [text box]

- Validation Rules: [New button]

The top navigation bar shows 'Setup' and 'Object Manager'. The bottom status bar displays the temperature (26°C), weather (Partly cloudy), and the time (20:31 on 18-10-2025).

## Step 3: Business Hours & Holidays

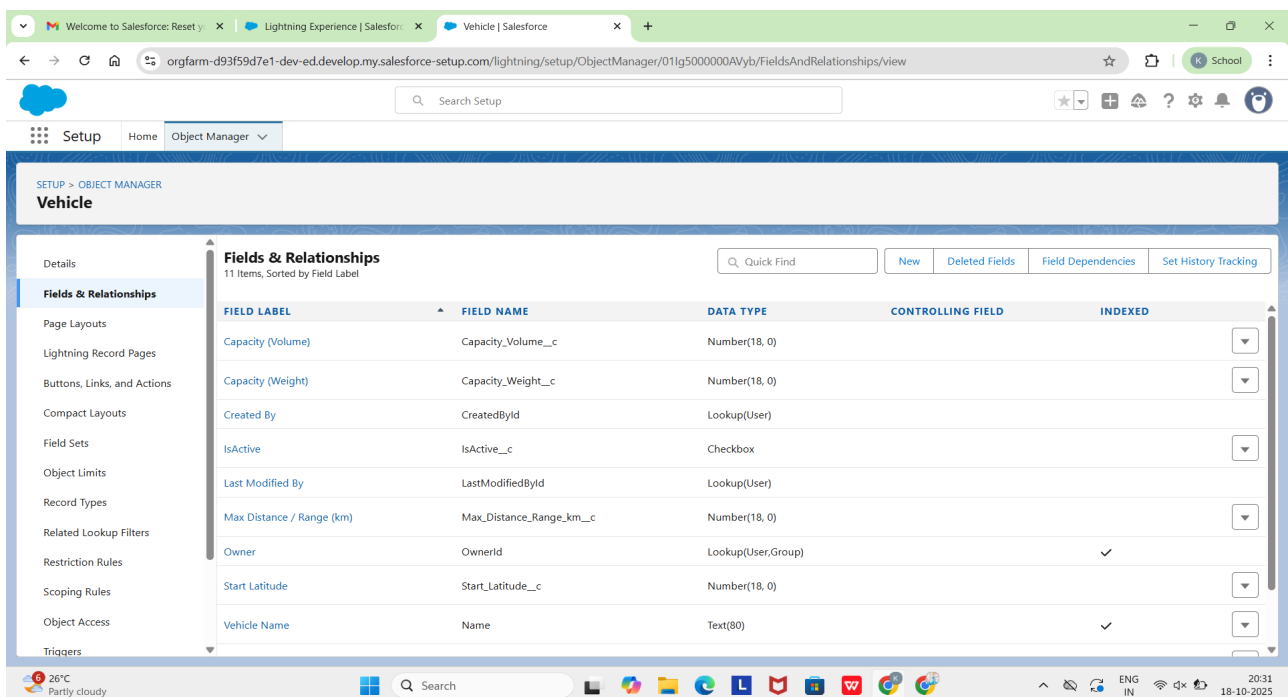
Set business hours as 9:00 AM to 6:00 PM and added standard holidays such as Republic Day, Independence Day, and Diwali under Setup → Holidays.

## Step 4: Fiscal Year Settings

Used Standard Fiscal Year (April to March) to align with general financial reporting. Custom fiscal year was not enabled.

## Step 5: User Setup & Licenses

Created different users like Admin, Dispatcher, Driver, and Manager with Salesforce or Platform licenses. Assigned profiles and roles to ensure proper access based on responsibility.



The screenshot displays the Salesforce Setup interface for the 'Vehicle' object. The left sidebar shows the 'Setup' menu with 'Object Manager' selected. The main content area is titled 'Vehicle' and shows the 'Fields & Relationships' section. A table lists 11 fields, sorted by Field Label. The fields are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Capacity (Volume)	Capacity_Volume__c	Number(18, 0)		
Capacity (Weight)	Capacity_Weight__c	Number(18, 0)		
Created By	CreatedById	Lookup(User)		
IsActive	IsActive__c	Checkbox		
Last Modified By	LastModifiedById	Lookup(User)		
Max Distance / Range (km)	Max_Distance_Range_km__c	Number(18, 0)		
Owner	OwnerId	Lookup(User,Group)		✓
Start Latitude	Start_Latitude__c	Number(18, 0)		
Vehicle Name	Name	Text(80)		✓

## Step 6: Profiles

Configured custom profiles for Admin, Dispatcher, and Driver. Admin has full system access, Dispatcher can manage deliveries and routes, and Drivers can view assigned deliveries only.

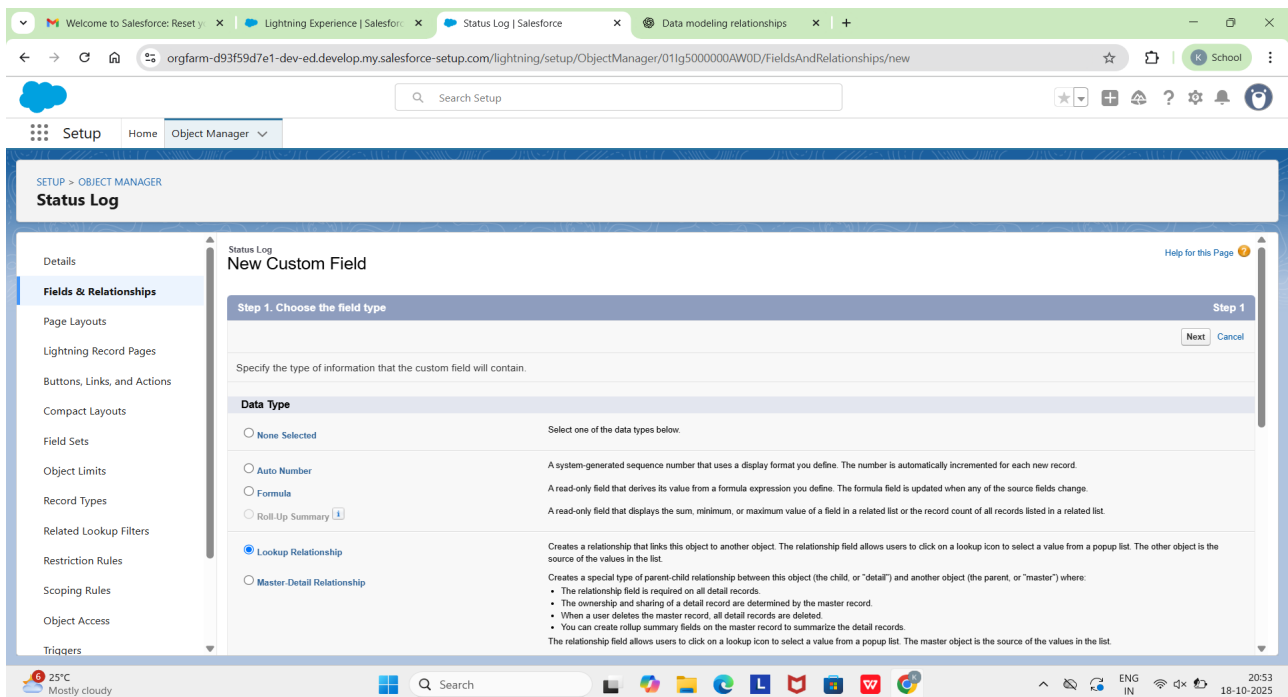
## Step 7: Roles

Set up role hierarchy: System Admin (top) → Dispatcher (reports to Admin) → Driver (lowest level). Managers can view records of the users reporting to them, ensuring visibility control.

## Step 8: Permission Sets

Created permission sets: ps\_RoutingAccess (for additional access to route objects) and ps\_DriverTracking (for delivery status update permissions). Assigned to selected users in addition

to their profiles.



## Step 9: Organization-Wide Defaults (OWD)

Set OWDs under Setup → Security → Sharing Settings. DeliveryOrder and Vehicle objects are Private, while Route and StatusLog are Public Read/Write to allow coordination between dispatchers and drivers.

## Step 10: Sharing Rules

Configured sharing rules to share Delivery Orders with Dispatchers and Drivers in the same route region. Also shared route records with Managers for tracking and reporting.

## Step 11: Login Access Policies

Enabled admin login access for troubleshooting and delegated admin access for dispatchers when required.

## Step 12: Dev Org Setup

Created and configured the Salesforce Developer Org (free edition) for the Dynamic Route Optimization project. All customization and configurations were tested in this org before deployment.

## Step 13: Sandbox Usage

Created Developer Sandbox for testing automation rules and triggers such as workflow updates and validation rules. Ensured proper isolation of development and production environments.

## Step 14: Deployment Basics

Used outbound Change Sets to migrate metadata from sandbox to production. Additionally, explored Salesforce CLI (SFDX) for automated deployments.

The screenshot displays the Salesforce Setup interface. The browser address bar shows the URL: `orgfarm-d93f59d7e1-dev-ed.develop.my.salesforce-setup.com/lightning/setup/ObjectManager/01lg5000000AW0D/FieldsAndRelationships/new`. The page title is "Status Log". The left sidebar contains a navigation menu with the following items: 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, Scoping Rules, Object Access, and Triggers. The main content area is titled "New Relationship" and shows "Step 2. Choose the related object". Below this, it says "Select the other object to which this object is related." and displays a dropdown menu with "Route Stop" selected. At the bottom of the page, there is a status bar showing "25°C Mostly cloudy", a search bar, and system information including "ENG IN", "18-10-2025", and "20:53".

# Custom Objects and Relationships

The following custom objects were created in Salesforce to support route planning, delivery tracking, and vehicle management.

Object Label	Object API Name	Description / Purpose
Delivery Order	DeliveryOrder__c	Represents delivery orders to be routed and fulfilled.
Route	Route__c	A planned route assigned to a vehicle and driver.
Route Stop	RouteStop__c	Stops within a route linked to delivery orders.
Vehicle	Vehicle__c	Details of vehicles used for deliveries.
Driver	Driver__c	Information about drivers and assigned vehicles.
Status Log	StatusLog__c	Logs route and stop-level events and status changes.
Traffic Alert	TrafficAlert__c	Optional object for tracking external traffic or delay alerts.

## Relationships Between Objects

- Route → RouteStop (One-to-Many)
- RouteStop → DeliveryOrder (Lookup)
- Route → Vehicle (Lookup)
- Route → Driver (Lookup)
- StatusLog → Route / RouteStop (Lookup)
- TrafficAlert → Route / RouteStop (Optional Lookup)

## Conclusion

In Phase 2 of the Dynamic Route Optimization project, the Salesforce Org was successfully configured with core administrative, security, and data components. Custom objects such as Delivery Order, Route, Route Stop, and Vehicle were developed to establish a comprehensive routing model. Role hierarchies, profiles, permission sets, and OWD ensured secure and efficient collaboration between dispatchers and drivers. Finally, deployment and sandbox configurations were implemented for a structured development lifecycle.