

Salesforce CRM Project Documentation

WhatNext Vision Motors: Shaping the Future of Mobility with Innovation and Excellence

Project Overview:

The WhatsNext Vision Motors Salesforce CRM project is a comprehensive solution aimed at transforming the vehicle ordering and customer management processes within the automotive industry.

This CRM system is built to centralize and automate key business functions such as order tracking, stock management, test drive scheduling, and dealer assignment. **The platform enables customers to place orders only when vehicles are in stock and automatically maps their orders to the nearest dealer based on location, improving both accuracy and convenience.**

With powerful automation features like email reminders for test drives, real-time stock validation, and batch updates for pending orders, the system addresses the growing demand for operational efficiency and enhanced customer experience.

Objectives:

The main goal of building the WhatsNext Vision Motors CRM system is to create a streamlined, automated platform that enhances the customer journey and improves internal efficiency.

Enhance Customer Experience

The CRM system ensures that customers only place orders for vehicles that are currently in stock. This prevents delays, avoids confusion, and builds customer trust by offering a transparent and seamless ordering process.

Smart Dealer Assignment

Orders are automatically assigned to the nearest authorized dealer based on the customer's location. This reduces manual routing, speeds up service delivery, and ensures customers are always connected with the most relevant point of contact.

Improve Operational Efficiency

By digitizing key business functions, the CRM minimizes manual work, reduces errors, and enables faster order fulfillment. The system supports better customer management and provides insights that empower the business to make data-driven decisions.

Phase 1: Requirement Analysis & Planning

Understanding Business Requirements

The business needed a centralized CRM platform to manage vehicles, dealers, customers, orders, test drives, and service requests with real-time visibility and automation. Users also required the ability to restrict order creation when stock was unavailable and automate communication such as test drive reminders.

Defining Project Scope and Objectives

The project scope focused on creating a custom Salesforce CRM that:

- Stores and manages vehicle and dealer information.
- Tracks customer orders, test drives, and service requests.
- Automatically validates stock availability during order placement.
- Assigns orders to the nearest dealer based on customer location.
- Sends email reminders for scheduled test drives.

Design Data Model and Security Model

A custom data model was designed using six main custom objects:







- Vehicle__c
- Vehicle_Dealer__c
- Vehicle_Customer__c
- Vehicle_Order__c
- Vehicle_Test_Drive__c
- Vehicle_Service_Request__c

<div> <div>Setup</div> <div>Home</div> <div>Object Manager</div> </div>					
<div> <div> <div>Object Manager</div> <div>6 Items. Sorted by Label</div> </div> <div> <div>Q. veh</div> <div>Schema Builder</div> <div>Create</div> </div> </div>					
Label	API Name	Type	Description	Last Modified	Deployed
Vehicle	Vehicle__c	Custom Object		7/9/2025	✓
Vehicle Customer	Vehicle_Customer__c	Custom Object		7/9/2025	✓
Vehicle Dealer	Vehicle_Dealer__c	Custom Object		7/9/2025	✓
Vehicle Order	Vehicle_Order__c	Custom Object		7/9/2025	✓
Vehicle Service Request	Vehicle_Service_Request__c	Custom Object		7/9/2025	✓
Vehicle Test Drive	Vehicle_Test_Drive__c	Custom Object		7/9/2025	✓

Custom Tabs

You can create new custom tabs to extend Salesforce functionality or to build new application functionality.

Custom Object tabs look and behave like the standard tabs provided with Salesforce. Web tabs allow you to embed external Visualforce pages. Lightning Component tabs allow you to add Lightning components to the navigation menu in Lightning Experience and the mobile app.

Custom Object Tabs			New	What Is This?
Action	Label	Tab Style		
Edit Del	Vehicle Customers	 Bank		
Edit Del	Vehicle Dealers	 Books		
Edit Del	Vehicle Orders	 Building		
Edit Del	Vehicles	 Airplane		
Edit Del	Vehicle Service Requests	 Can		
Edit Del	Vehicle Test Drives	 Cell phone		

Phase 2: Salesforce Development – Backend & Configurations

Setup Environment Workflow

The development environment was set up using a Salesforce Developer Org, where all customizations and configurations were implemented.

Version control was maintained using GitHub to track code and configuration changes. Changes were deployed using Change Sets to ensure smooth movement from development to production environments.

Customization of Objects, Fields, Validation Rules, and Automation :

Custom Objects and Fields

The following custom objects were created and configured to support the business flow:

- **Vehicle** – Stores vehicle name, stock count, model, etc.
- **Dealer** – Stores dealer location and vehicle availability
- **Customer** – Stores customer details and address
- **Order** – Captures vehicle orders and order status

Relationships:

- Order → Vehicle: Lookup
- Order → Dealer: Lookup
- Order → Customer: Master-Detail or Lookup (based on implementation)

Vehicle

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

9 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE
Created By	CreatedById	Lookup(User)
Last Modified By	LastModifiedById	Lookup(User)
Owner	OwnerId	Lookup(User,Group)
Price	Price__c	Currency(18, 0)
Status	Status__c	Picklist
Stock Quantity	Stock_Quantity__c	Number(18, 0)
Vehicle Dealer	Vehicle_Dealer__c	Lookup(Vehicle Dealer)
Vehicle Model	Vehicle_Model__c	Picklist
Vehicle Name	Name	Text(80)

Vehicle Customer

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

8 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE
Address	Address__c	Text(18)
Created By	CreatedById	Lookup(User)
Email	Email__c	Email
Last Modified By	LastModifiedById	Lookup(User)
Owner	OwnerId	Lookup(User,Group)
Phone	Phone__c	Phone
Preferred Vehicle Type	Preferred_Vehicle_Type__c	Picklist
Vehicle Customer Name	Name	Text(80)

Vehicle Dealer

Details	Fields & Relationships 8 Items, Sorted by Field Label			Q Quick
Fields & Relationships	FIELD LABEL	FIELD NAME	DATA TYPE	
Page Layouts	Created By	CreatedById	Lookup(User)	
Lightning Record Pages	Dealer Code	Dealer_Code__c	Auto Number	
Buttons, Links, and Actions	Dealer Location	Dealer_Location__c	Text(18)	
Compact Layouts	Email	Email__c	Email	
Field Sets	Last Modified By	LastModifiedById	Lookup(User)	
Object Limits	Owner	OwnerId	Lookup(User,Group)	
Record Types	Phone	Phone__c	Phone	
Related Lookup Filters	Vehicle Dealer Name	Name	Text(80)	
Search Layouts				
List View Button Layout				

Vehicle Order

Details	Fields & Relationships 8 Items, Sorted by Field Label			Q Quick
Fields & Relationships	FIELD LABEL	FIELD NAME	DATA TYPE	
Page Layouts	Created By	CreatedById	Lookup(User)	
Lightning Record Pages	Last Modified By	LastModifiedById	Lookup(User)	
Buttons, Links, and Actions	Order Date	Order_Date__c	Date	
Compact Layouts	Owner	OwnerId	Lookup(User,Group)	
Field Sets	Status	Status__c	Picklist	
Object Limits	Vehicle	Vehicle__c	Lookup(Vehicle)	
Record Types	Vehicle Customer	Vehicle_Customer__c	Lookup(Vehicle Customer)	
Related Lookup Filters	Vehicle Order Name	Name	Text(80)	
Search Layouts				
List View Button Layout				

Vehicle Service Request

Details	Fields & Relationships 9 Items, Sorted by Field Label			Q Quick Find
Fields & Relationships	FIELD LABEL	FIELD NAME	DATA TYPE	
Page Layouts	Created By	CreatedById	Lookup(User)	
Lightning Record Pages	Issue Description	Issue_Description__c	Text(20)	
Buttons, Links, and Actions	Last Modified By	LastModifiedById	Lookup(User)	
Compact Layouts	Owner	OwnerId	Lookup(User,Group)	
Field Sets	Service Date	Service_Date__c	Date	
Object Limits	Status	Status__c	Picklist	
Record Types	Vehicle	Vehicle__c	Lookup(Vehicle)	
Related Lookup Filters	Vehicle Customer	Vehicle_Customer__c	Lookup(Vehicle Customer)	
Search Layouts	Vehicle Service Request Name	Name	Text(80)	
List View Button Layout				

Vehicle Test Drive

Details	Fields & Relationships 8 Items, Sorted by Field Label			Q Quick
Fields & Relationships	FIELD LABEL	FIELD NAME	DATA TYPE	
Page Layouts	Created By	CreatedById	Lookup(User)	
Lightning Record Pages	Last Modified By	LastModifiedById	Lookup(User)	
Buttons, Links, and Actions	Owner	OwnerId	Lookup(User,Group)	
Compact Layouts	Status	Status__c	Picklist	
Field Sets	Test Drive Date	Test_Drive_Date__c	Date	
Object Limits	Vehicle	Vehicle__c	Lookup(Vehicle)	
Record Types	Vehicle Customer	Vehicle_Customer__c	Lookup(Vehicle Customer)	
Related Lookup Filters	Vehicle Test Drive Name	Name	Text(80)	
Search Layouts				
List View Button Layout				

Automation -Workflow Tools :

Record-Triggered Flows

1. Auto-Assign Dealer Based on Customer Location

This record-triggered flow automatically assigns the nearest vehicle dealer to a customer's order based on the **City** field in the customer address.

Trigger Object: **Vehicle_Order__c**

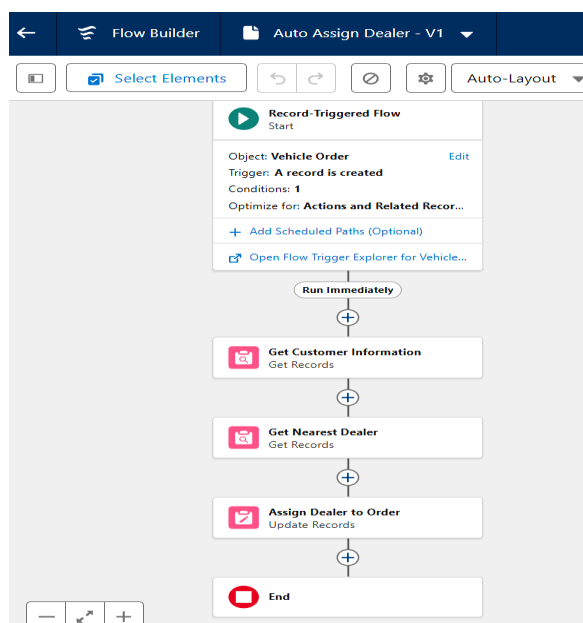
Trigger Condition: When a new Vehicle Order is created.

Criteria: The order must have a related customer and no dealer assigned yet.

Logic:

- Get the customer's city from the related **Customer__c** record.
- Use a Get Records element to find a matching **Vehicle_Dealer__c** in that city.
- Assign the found dealer to the **Vehicle_Order__c.Dealer__c** field.

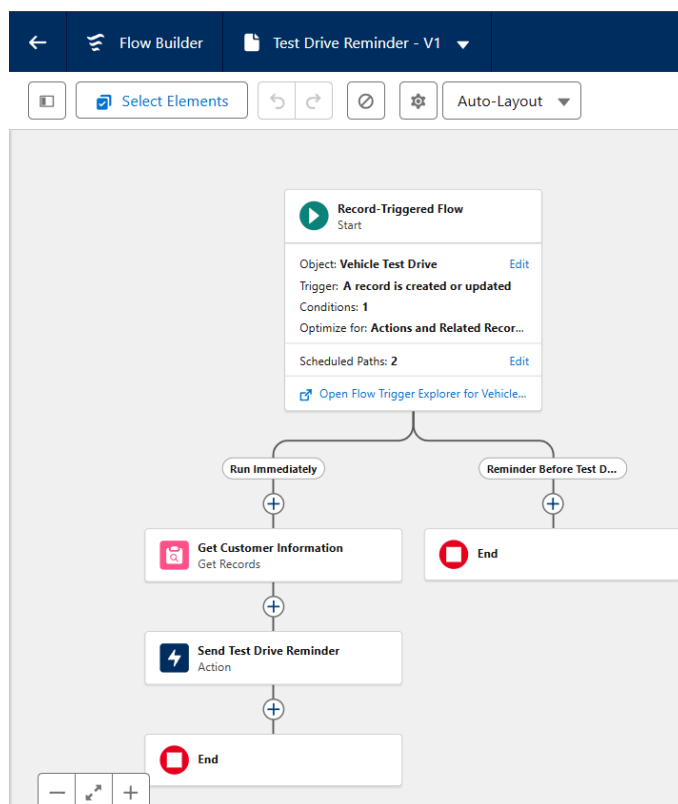
Action: Update the Vehicle Order record with the nearest dealer.



2. Test Drive Reminder Email Flow

This flow sends an automated email reminder to the customer one day before their scheduled test drive.

- **Trigger Object:** **Vehicle_Test_Drive__c**
- **Trigger Condition:** When a new test drive is scheduled (record is created or updated with a future date).
- **Scheduled Path:**
Runs 1 day before the **Test_Drive_Date__c** field value.
- **Logic:**
 - **Get the customer's email from the related record.**
 - **Send an email using a Send Email action.**
 - **Uses an Email Template or custom message body.**
- **Purpose:** Improves customer engagement and reduces missed appointments.



Apex Development- (Apex Classes and Triggers) :

Apex Classes:

Apex Classes were written to modularize the trigger logic and support backend automation:

Open		
Entity Type	Entities	
Entity Type	Name	Namespace ▲
Classes	VehicleOrderTriggerHa...	
Triggers	VehicleOrderBatch	
Pages	VehicleOrderBatchSch...	
Page Components		
Obiects		

Apex Trigger:

Order status update logic (Pending or Confirmed)

Open		
Entity Type	Entities	
Entity Type	Name	
Classes	VehicleOrderTrigger	
Triggers		

- **Trigger Handler Class:** VehicleOrderTriggerHandler

This Apex class contains reusable logic that is executed when a `Vehicle_Order__c` record is inserted or updated. It follows **best practices** by separating business logic from the trigger.

Key Responsibilities:

- Prevents order placement if the selected vehicle is **out of stock**.
- Automatically **reduces stock quantity** if an order is confirmed.


```
VehicleOrderTriggerHandler.apxc | VehicleOrderBatch.apxc | VehicleOrderBatchScheduler.apxc | VehicleOrderTrigger.apxt |
Code Coverage: None | API Version: 64
1 public class VehicleOrderTriggerHandler {
2
3     public static void handleTrigger(
4         List<Vehicle_Order__c> newOrders,
5         Map<Id, Vehicle_Order__c> oldOrders,
6         Boolean isBefore,
7         Boolean isAfter,
8         Boolean isInsert,
9         Boolean isUpdate
```

- **Trigger Class:** VehicleOrderTrigger

This is the actual **trigger** on the `Vehicle_Order__c` object.

Key Role:

- Calls the `VehicleOrderTriggerHandler` and passes context like `Trigger.new`, `isInsert`, `isUpdate`, etc.
- Responds to changes **before and after insert/update**.

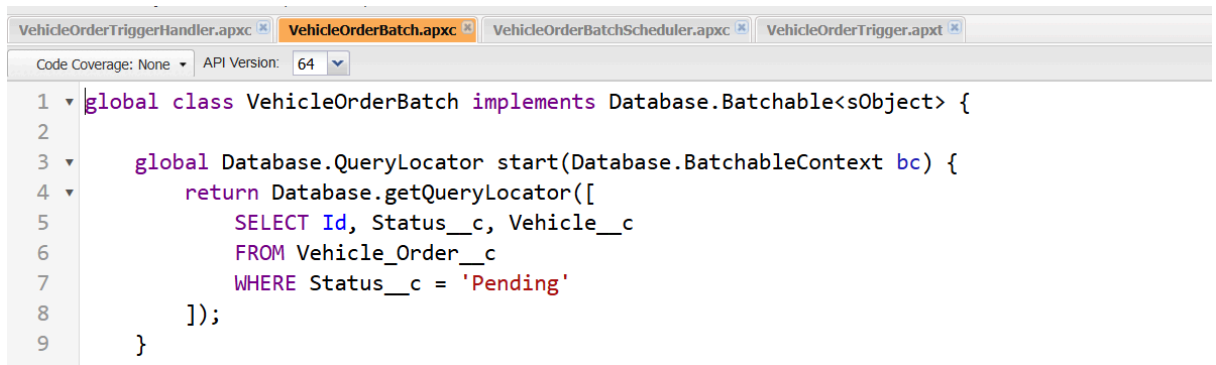
```
VehicleOrderTriggerHandler.apxc | VehicleOrderBatch.apxc | VehicleOrderBatchScheduler.apxc | VehicleOrderTrigger.apxt |
Code Coverage: None | API Version: 64
1 trigger VehicleOrderTrigger on Vehicle_Order__c (before insert, before update, after insert, after update) {
2     VehicleOrderTriggerHandler.handleTrigger(
3         Trigger.new,
4         Trigger.oldMap,
5         Trigger.isBefore,
6         Trigger.isAfter,
7         Trigger.isInsert,
8         Trigger.isUpdate
9     );
10 }
```

- **Batch Apex:** VehicleOrderBatch

A **batch job** that processes multiple vehicle orders in bulk.

Purpose:

- Scans all orders with status = **"Pending"**.
- If related vehicle stock is now available, it **updates the order status to "Confirmed"** and decreases the stock.



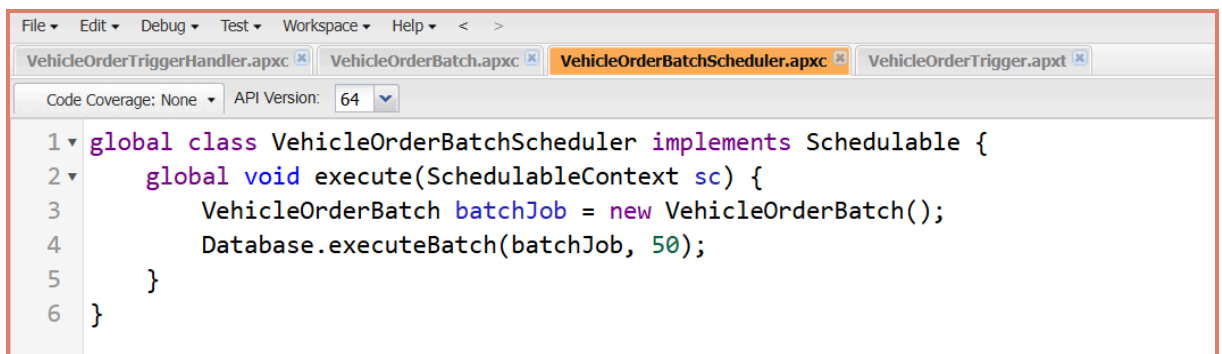
```
1 global class VehicleOrderBatch implements Database.Batchable<sObject> {
2
3     global Database.QueryLocator start(Database.BatchableContext bc) {
4         return Database.getQueryLocator([
5             SELECT Id, Status__c, Vehicle__c
6             FROM Vehicle_Order__c
7             WHERE Status__c = 'Pending'
8         ]);
9     }
}
```

- **Scheduler Class: VehicleOrderBatchScheduler**

This class schedules the **VehicleOrderBatch** to run automatically.

Key Functionality:

- Runs the batch job **daily at a fixed time** (e.g., 12 PM).
- Ensures orders are updated regularly without manual intervention.



```
1 global class VehicleOrderBatchScheduler implements Schedulable {
2     global void execute(SchedulableContext sc) {
3         VehicleOrderBatch batchJob = new VehicleOrderBatch();
4         Database.executeBatch(batchJob, 50);
5     }
6 }
```

Phase 3: UI/UX Development & Customization

Lightning App Setup via App Manager

A custom Lightning App named **“WhatNext Vision Motors”** was created using App Manager. This app includes relevant custom tabs like Vehicles, Dealers, Orders, Customers, Test Drives, and Service Requests for easy navigation.

←

Lightning App Builder

App Settings

Pages ▾

WhatNext Vision Motors

App Settings

App Details & Branding

App Options

Utility Items (Desktop Only)

Navigation Items

User Profiles

App Details & Branding

Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation

App Details

* App Name ⓘ

WhatNext Vision Motors

* Developer Name ⓘ


WhatNext_Vision_Motors

Description ⓘ

WhatNext Vision Motors is revolutionizing its customer experience and operational

App Branding

Image ⓘ



Clear

Primary Color Hex Value

#0070D2

Page Layouts and Dynamic Forms :

Page layouts were customized for key objects such as **Vehicle__c**, **Vehicle_Order__c**, and **Vehicle_Test_Drive__c** to ensure clean UI and contextual field visibility. Dynamic Forms were used to place fields directly on the Lightning Record Page and conditionally show fields based on values like order status or vehicle availability.

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

Section

Owner

Vehicle Dealer

Blank Space

Price

Vehicle Model

Created By

Status

Vehicle Name

Last Modified By

Stock Quantity

Vehicle Detail

Standard Buttons

Edit

Delete

Clone

Change Owner

Change Record Type

Printable View

Sharing

Share

Information (Header visible on edit only)

★

Vehicle Name

Sample Text

Vehicle Model

Sample Text

Stock Quantity

39,368

Vehicle Dealer

Sample Text

Price

\$123.45

Status

Sample Text

Owner

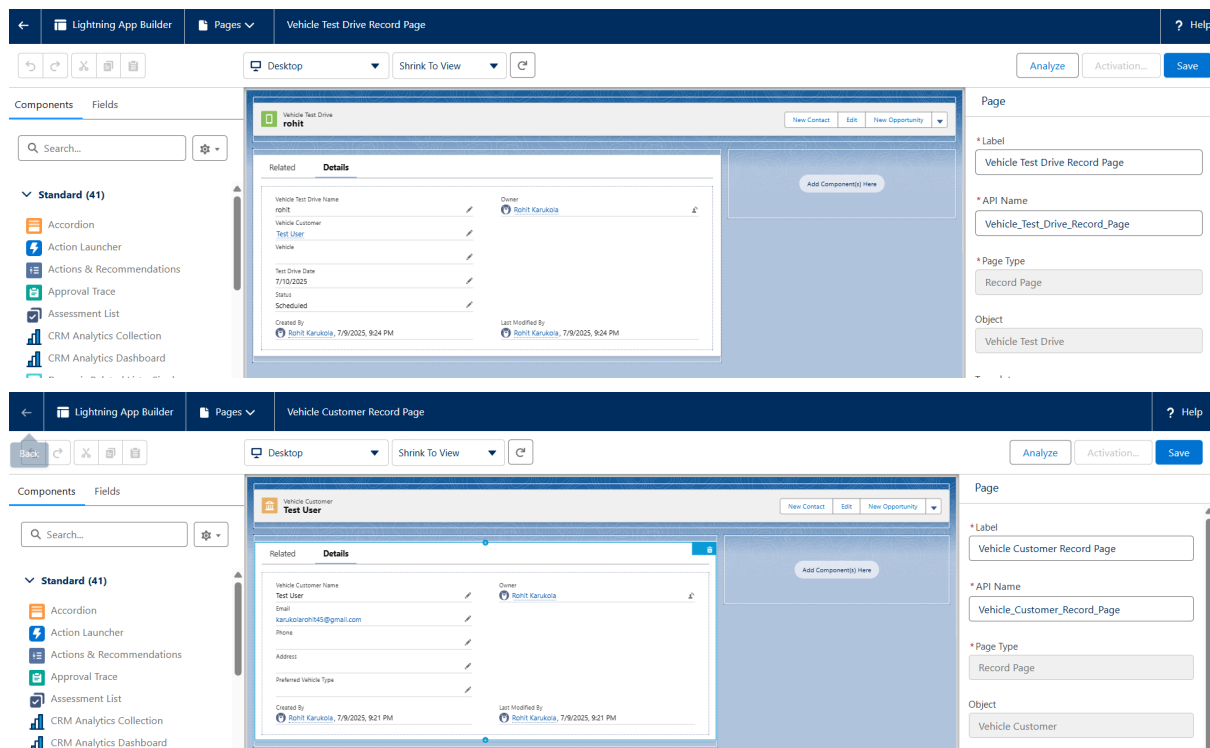
Sample Text

User Management

Standard user profiles were utilized, with permission sets configured to grant access to custom objects and tabs.

Lightning Pages:

Custom Lightning Pages were configured for each object using Lightning App Builder. Components like Related Lists, Highlights Panel, and Tabs were arranged for better user experience.



Phase 4: Data Migration, Testing & Security

Field History Tracking

- Enabled Field History Tracking on **Vehicle__c** (e.g., **Stock_Quantity__c**) and **Vehicle_Order__c** (**Status__c**).
- This allowed us to track changes for auditing and rollback if needed.

Vehicle Field History

This page allows you to select the fields you want to track on the Vehicle History related list. Whenever a user modifies any of the fields selected below, the old and new field values are added to the change log, and user making the change. Note that multi-select picklist and large text field values are tracked as edited, their old and new field values are not recorded.

Save

Cancel

Deselect all fields

Track old and new values

Owner

Status

Vehicle Dealer

Vehicle Name

Price

Stock Quantity

Vehicle Model

Save

Cancel

Preparation of test cases for each and every salesforce features like booking creation, Approval Process, Automatic Task creation, flows, triggers etc.

1. Create a Vehicle :

INPUT:

Vehicle Name: Brezza

Vehicle Model: EV


Stock Quantity: 2

Price: 1200000

Status: Available

Dealer: Select existing Vehicle Dealer

OUTPUT:



WhatNext Vision M...

Vehicle Customers

Vehicle Dealers

Vehicle Orders

Vehicle Service Requests

Vehicle Test Drives

Vehicles

Vehicle

four wheeler

Related

Details

Vehicle Name

four wheeler

Vehicle Model

Brezza

Stock Quantity

2

Vehicle Dealer

ramu


Price

\$1,200,000

Status

Available

Owner

 Rohit Karukola

2. Test Stock = 0 (Error Case):

INPUT:

Edit the Stock Quantity of the above vehicle → Set it to 0.

Go to Vehicle Orders tab → Click New.

- Vehicle: BREZZA
- Status: Confirmed
- Customer: Select any existing customer

OUTPUT:

The screenshot shows a web application interface for creating a new vehicle order. The form is titled 'New Vehicle Order' and includes a search bar at the top. The form fields are as follows:

- Vehicle Order Name:** hemanj
- Vehicle Customer:** Test User
- Vehicle:** four wheeler
- Order Date:** 8/1/2025
- Status:** Confirmed

A red error message box is displayed over the form, stating: 'We hit a snag. Review the errors on this page. This vehicle is out of stock. Order cannot be placed.' The form also includes a 'Save' button at the bottom.







3. Test Stock > 0 (Confirmed Order)

INPUT:

Steps:

1. Set vehicle Stock Quantity back to 2.
2. Create a Vehicle Order:
 - Status: Confirmed
 - Vehicle: BREZZA
 - Vehicle stock should reduce from 2 → 1 automatically.

OUTPUT:

Vehicle four wheeler		
Related	Details	
Vehicle Name	four wheeler	
Vehicle Model	Brezza	
Stock Quantity	1	
Vehicle Dealer	ramu	
Price	\$1,200,000	
Status	Available	

4. Test Drive Reminder Email :


Customer: Select any customer with email.[k****@[gmail.com](mailto:k****@gmail.com) (SAMPLE)]

Status: Scheduled

Test Drive Date: Tomorrow (pick tomorrow's date)

OUTPUT:

Reminder: Your Test Drive is Tomorrow! Inbox x

**Rohit Karukola** via [98fmqom2oqqe6i.gk-6tw2iuag.can96.bnc.salesforce.com](#)
to me ▾

Hi Test User

This is a friendly reminder that your test drive is scheduled for tomorrow. Please arrive 10 minutes early.

Thank you,
The Vehicle Team

Test Batch Job for Pending Orders :

INPUT:

Create a Pending Order when stock is 0:

1. Set BREZZA stock to 0.
2. Create a Vehicle Order:
 - Status: Pending

Update stock:

- Set Stock Quantity = 2

Run batch manually :

```
VehicleOrderBatch job = new VehicleOrderBatch();
```

```
Database.executeBatch(job, 50);
```

OUTPUT:

Expected Result:

- Your Pending Order should become Confirmed.
- Vehicle stock should reduce by 1.

Vehicle Order	
hemanj	
Related	Details
Vehicle Order Name	hemanj
Vehicle Customer	Test User
Vehicle	four wheeler
Order Date	
Status	Confirmed

Vehicle four wheeler	
Related	Details
Vehicle Name	four wheeler
Vehicle Model	Brezza
Stock Quantity	1
Vehicle Dealer	ramu
Price	\$1,200,000
Status	Available

Phase 5:Deployment, Documentation & Maintenance :

Scheduled Job Monitoring:

The scheduled batch job VehicleOrderBatchScheduler was successfully deployed and verified in the Scheduled Jobs section.

SETUP Scheduled Jobs	
All Scheduled Jobs Help for this Page ?	
The All Scheduled Jobs page lists all of the jobs scheduled by your users. Multiple job types may display on this page. You can delete scheduled jobs if you have the permission to do so.	
<div> Percentage of Scheduled Jobs Used: 1% You have currently used 1 scheduled Apex jobs out of an allowed organization limit of 100 active or scheduled jobs. To learn about how this limit is calculated and what contributes to it see the Lightning Platform Apex Limits topic. </div>	
View: All Scheduled Jobs Create New View	
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Other All	
Schedule Apex	
Action	Job Name ↑
Manage Del Pause Job	Daily Vehicle Order Processing
	Submitted By: Karukola_Rohit
	Submitted: 7/10/2025, 7:31 AM
	Started: 7/11/2025, 12:00 AM
	Next Scheduled Run: 7/11/2025, 12:00 AM
	Type: Scheduled Apex
	Cron Trigger ID: 08egK000007447Z

Deployment Strategy

For this project, deployment was performed using Change Sets, the native Salesforce tool that allows seamless movement of metadata components in production environments.

- Custom Objects (**Vehicle__c**, **Vehicle_Order__c**, **Test_Drive__c**, etc.)

- Custom Fields and Validation Rules
 - Apex Classes (`VehicleOrderTriggerHandler`, `VehicleOrderBatch`)
 - Flows (Auto Dealer Assignment, Test Drive Reminder)
 - Triggers (`VehicleOrderTrigger`)
- The change set was uploaded to production and deployed after validation.

System Maintenance & Monitoring

To ensure smooth operations post-deployment:

- Scheduled Jobs like `VehicleOrderBatchScheduler` were used to automate order status updates.
- Debug Logs and Flow Error Logs were monitored periodically to detect and resolve any runtime issues.
- Admins are responsible for monitoring Scheduled Jobs via Setup → Jobs → Scheduled Jobs.

Troubleshooting Approach

- Validation Errors were debugged using error messages in Flows and Apex exceptions.
- Flow Builder Debug Mode was used to test logic path during automation development.

Conclusion

The Salesforce CRM project for WhatsNext Vision Motors successfully modernized the vehicle ordering and customer management processes through automation and streamlined workflows.

Key automations like stock validation, test drive reminders, and batch job scheduling ensure operational efficiency and improved customer experience. The project aligns with real-world automotive challenges and sets a solid foundation for scalable future enhancements.

This project has significantly improved customer satisfaction, reduced manual effort, and increased operational efficiency.

Future Enhancements :

1.Chatbot Integration

Integrate a Salesforce-native chatbot (Einstein Bots) to assist customers with FAQs, vehicle availability, test drive bookings, and order status updates — available 24/7 on the website or mobile app.

2.Advanced Analytics & Reporting

Implement **Einstein Analytics (CRM Analytics)** to provide predictive dashboards, trend analysis, and dealer performance reports — enabling smarter, data-driven business decisions.

3.Service Automation

Automate **Vehicle_Service_Request__c** workflows — including auto-assigning service staff, sending service reminders, and tracking maintenance history — to enhance post-sales support.

