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

ABSTRACT

The automotive industry is rapidly evolving, and customer expectations demand faster service, real-time communication, and personalized experiences. WhatNext Vision Motors, a forward-thinking mobility brand, recognized the need for digital transformation to scale operations and enhance customer satisfaction. This Salesforce CRM solution focuses on automating the vehicle ordering process, enabling real-time inventory tracking, and integrating intelligent logic for dealer assignment and order validation. Built on the robust Salesforce platform, the project combines low-code tools like Flows with Apex-driven automation to deliver a scalable, secure, and customer-first CRM infrastructure.

OBJECTIVE

The primary goal of this project is to build a scalable and intelligent Salesforce CRM tailored to the operations of WhatNext Vision Motors, with the following key objectives:

- **Smart Order Management**: Prevent out-of-stock orders with real-time stock validation.
- **Automated Dealer Assignment**: Suggest the nearest dealer based on the customer's location.
- **Order Status Automation**: Update order records using scheduled batch processes.
- **Test Drive Reminder System**: Send automated email reminders to customers before test drives.
- **Enhanced UX with Lightning**: Provide a clean, fast, and mobile-friendly CRM experience.

TECHNOLOGY DESCRIPTION

This solution was built using a combination of declarative and programmatic Salesforce tools:

- **Custom Objects**: Vehicle, Customer, Dealer, Orders, Test Drives, Services.
- **Flow Builder**: Record-triggered flows for dealer assignment and email reminders.
- **Apex Triggers**: Real-time validations for stock checks and auto stock reduction.
- **Batch Apex & Scheduler**: Scheduled job to confirm orders if inventory is available.
- **Validation Rules**: Enforces clean data (e.g., status rules, required fields).
- **Lightning App Builder**: Custom navigation with relevant tabs and role-specific layouts.
- **Permission Sets & Profiles**: Secure access based on roles (Admin, Dealer, Service Rep).

PROJECT EXECUTION PHASES

1. Developer Org Setup

- Created a Developer Edition org.
- Enabled Lightning Experience and APIs.
- Configured security roles and profiles for Admins and Dealers.
- Visualized schema using Schema Builder.

2. Lightning App & UI Setup

- Created a Lightning App: WhatNext Vision Motors *CRM*.
- Added custom tabs: Vehicle, Dealer, Customer, Orders, Test Drives, Service Requests.

- Customized layouts with dynamic forms, quick actions, and compact layouts.

3. Custom Object Configuration

Each object was defined with relationships and automation:

- **Vehicle__c**: Stores vehicle details, price, status, and stock quantity.
- **Vehicle_Customer__c**: Stores personal info, address, and preferred vehicle type.
- **Vehicle_Dealer__c**: Stores dealership data and location.
- **Vehicle_Order__c**: Linked to customer and vehicle, includes order date and status.
- **Vehicle_Test_Drive__c**: Tracks customer test drive bookings and status.
- **Vehicle_Service_Request__c**: Manages after-sales service appointments.

4. Business Logic Implementation

- **Validation Rule**: Prevents placing an order if stock is zero.
- **Trigger Handler**: Automatically reduces vehicle stock after order confirmation.
- **Batch Apex**: Updates pending orders to confirmed if stock becomes available.
- **Scheduled Job**: Runs batch job daily at midnight to update inventory/order status.

BUSINESS PROCESS AUTOMATION

1. Auto-Assign Nearest Dealer (Flow)

- **Trigger**: When a new Vehicle Order is created with status = Pending.
- **Logic**: Retrieves customer address, matches with dealer location, and assigns the nearest one.
- **Outcome**: Reduces manual effort and ensures faster service delivery.

2. Email Reminder for Test Drive (Scheduled Flow)

- **Trigger**: One day before the scheduled test drive.
- **Logic**: Fetches customer details and sends a personalized email.
- **Outcome**: Increases customer engagement and reduces test drive no-shows.

3. Order Validation (Apex Trigger)

- **Trigger**: Before Insert/Update on Vehicle_Order__c.
- **Logic**: Checks vehicle stock and prevents the order if quantity is zero.
- **Outcome**: Improves order accuracy and eliminates invalid bookings.

4. Batch Apex Order Processor

- **Trigger**: Scheduled via Apex Scheduler.
- **Logic**: Fetches all pending orders, confirms them if stock exists, and updates records.
- **Outcome**: Keeps order data fresh and reduces manual review.

REAL WORLD WORKFLOW EXAMPLE

Scenario: Kunal places an order for an EV sedan.

1. **Customer Record Creation**: Kunal's details (name, email, address) are entered and saved.

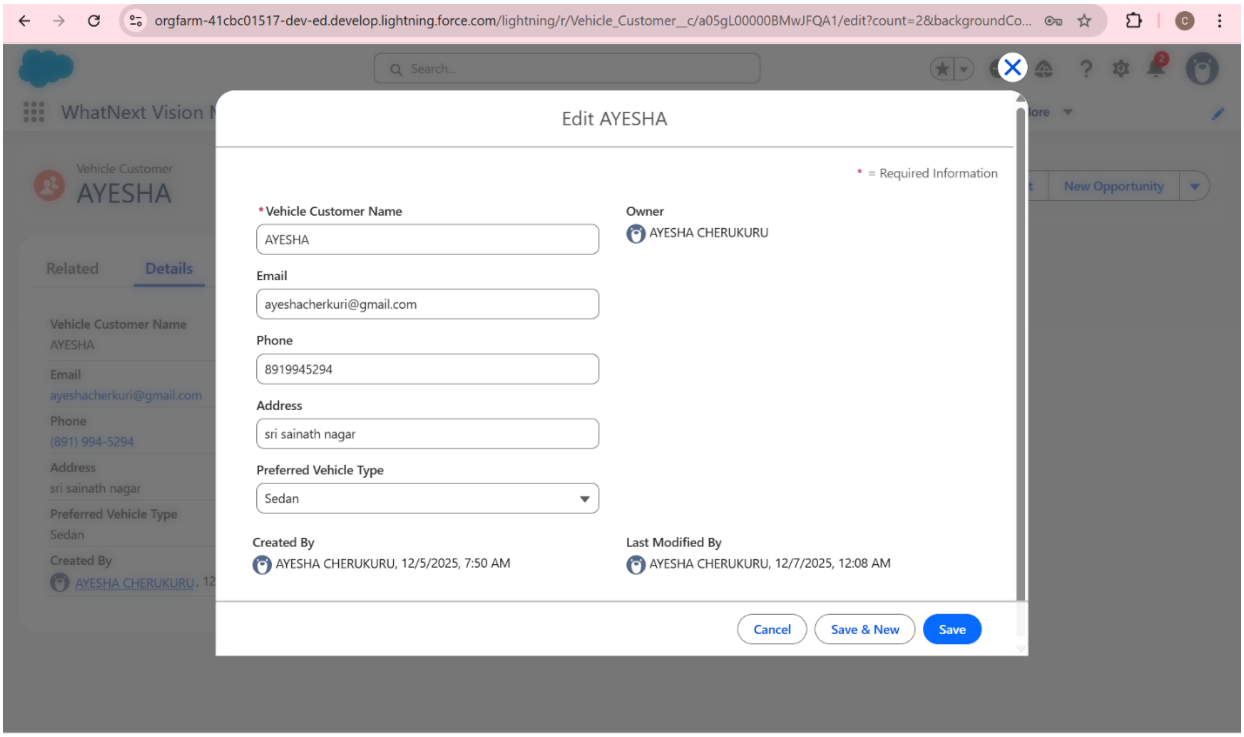


Figure 1: customer record creation

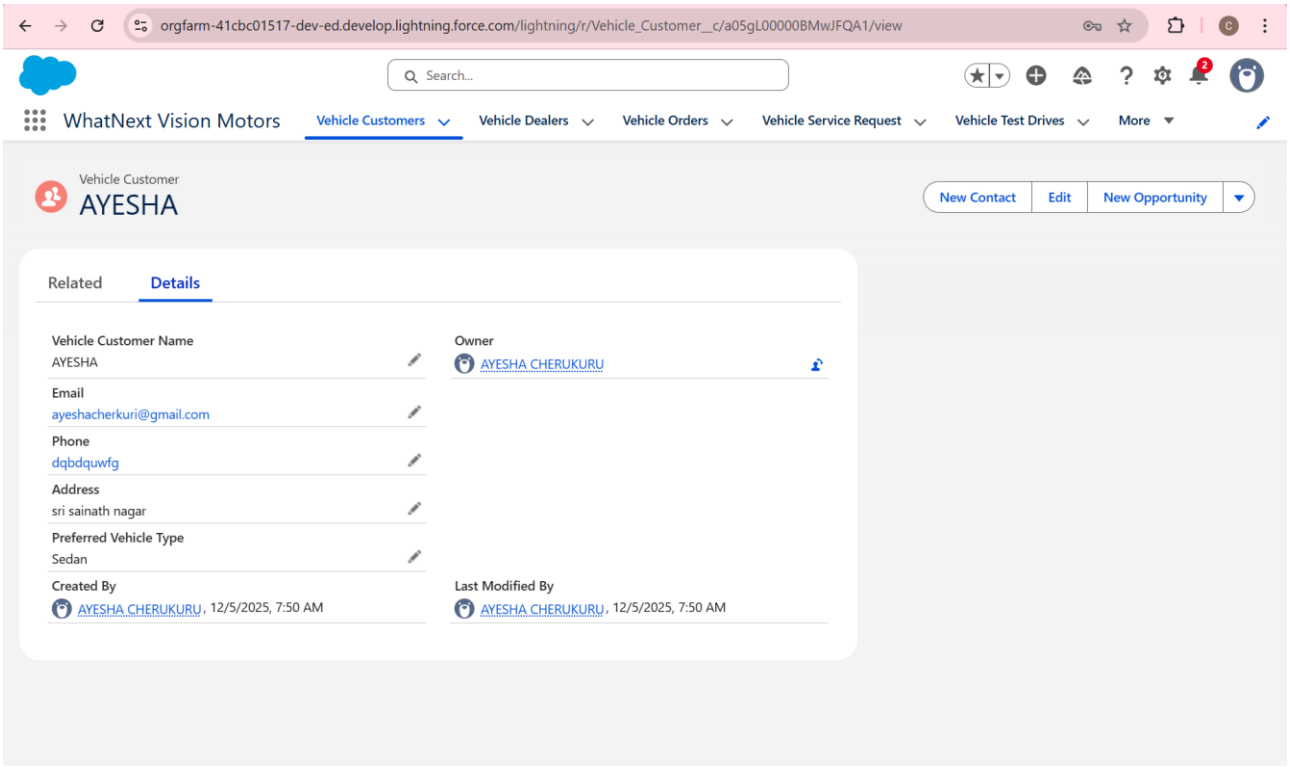


Figure 1.1: customer record created

2. **Dealer Record Creation:** Dealer details are created and saved.

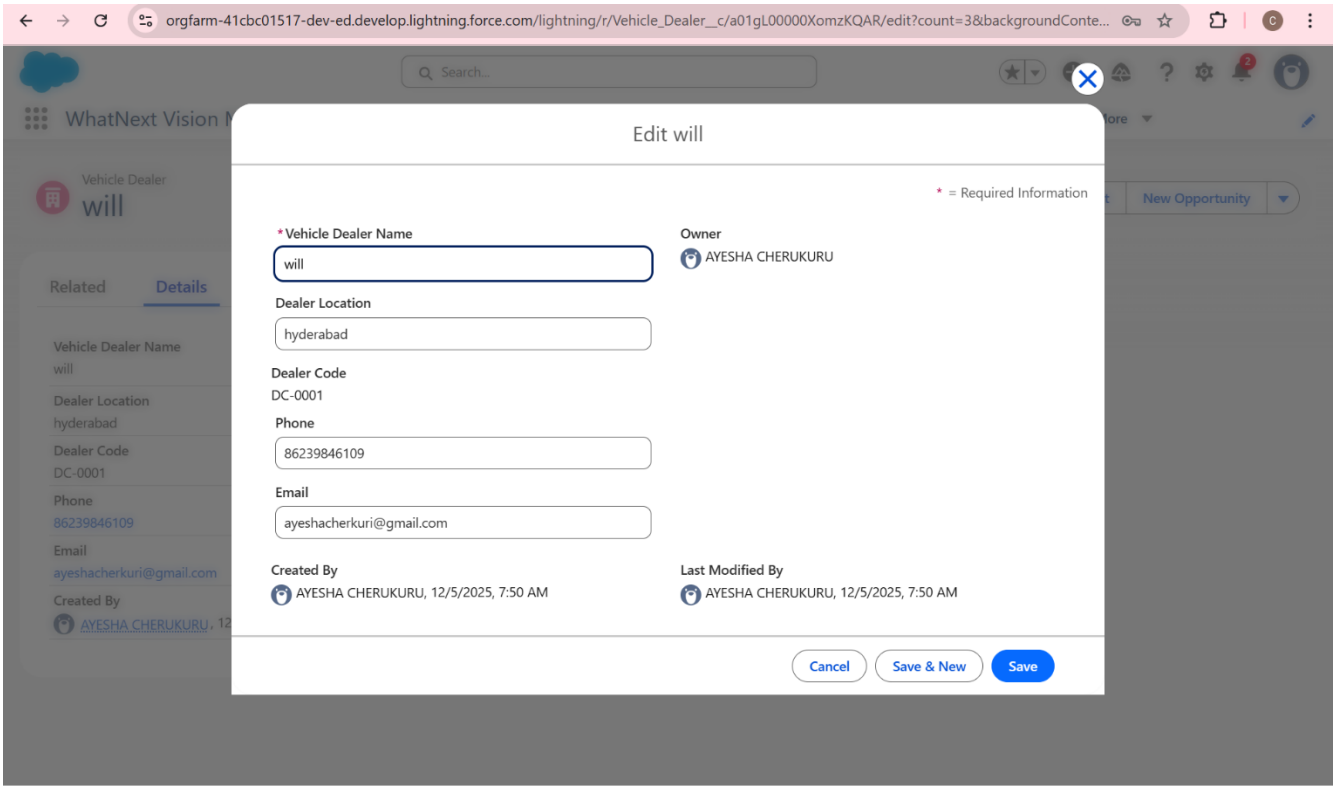


Figure 2: Dealer record creation

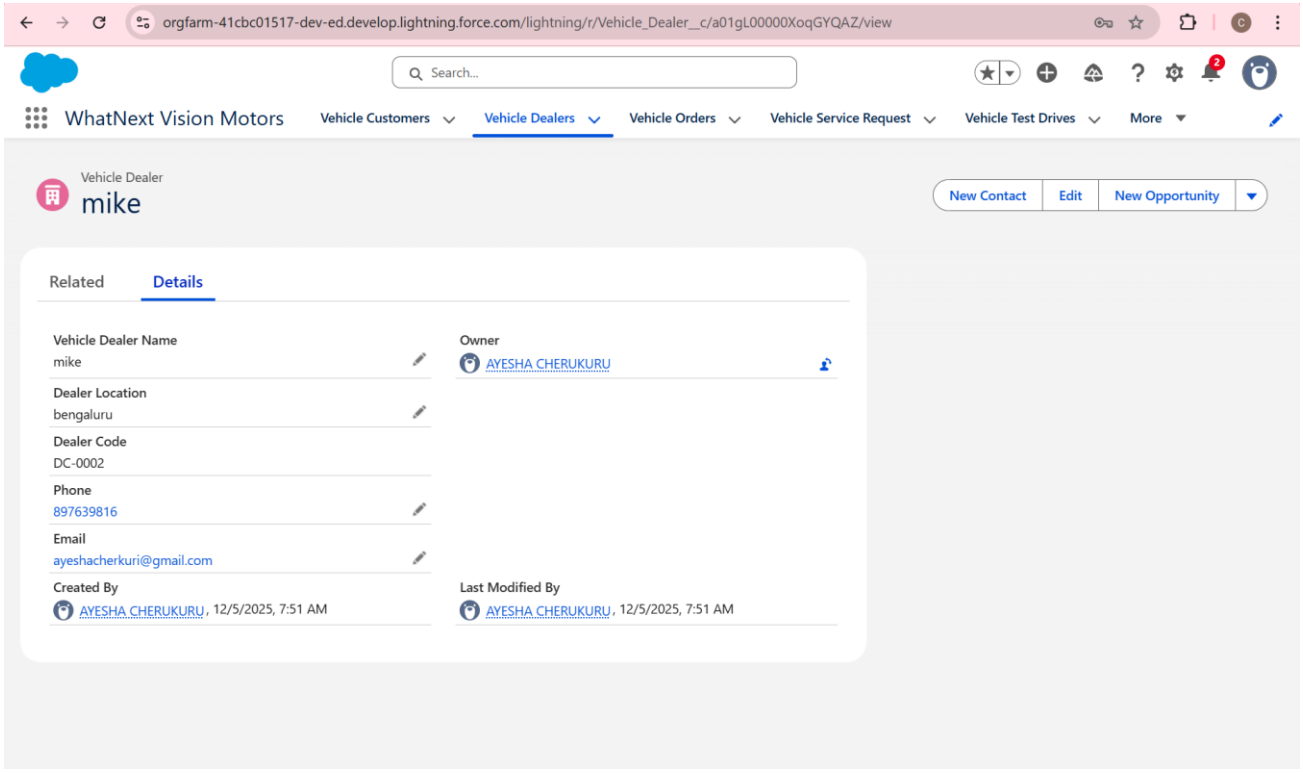


Figure 2.1: Dealer record created

3. **Vehicle Setup**: An EV model is listed with price ₹15,00,000 and stock = 2.

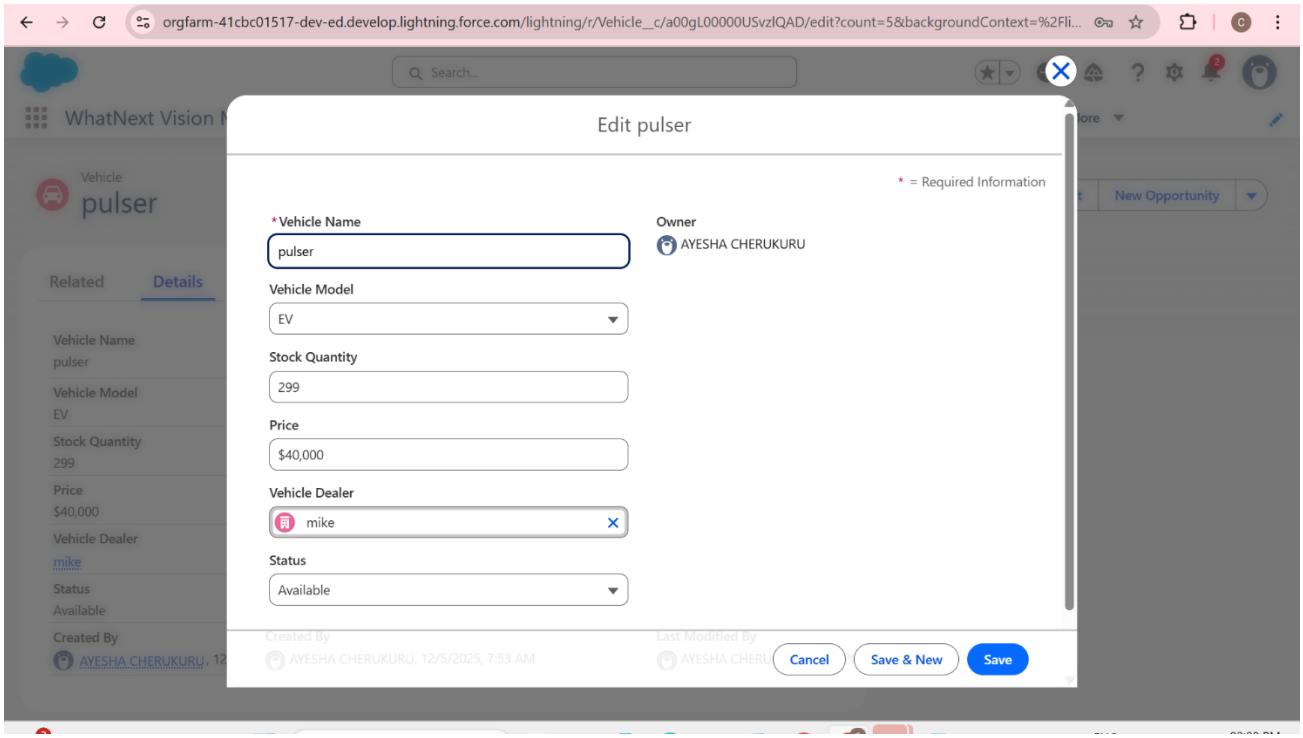


Figure 3: vehicle record creation

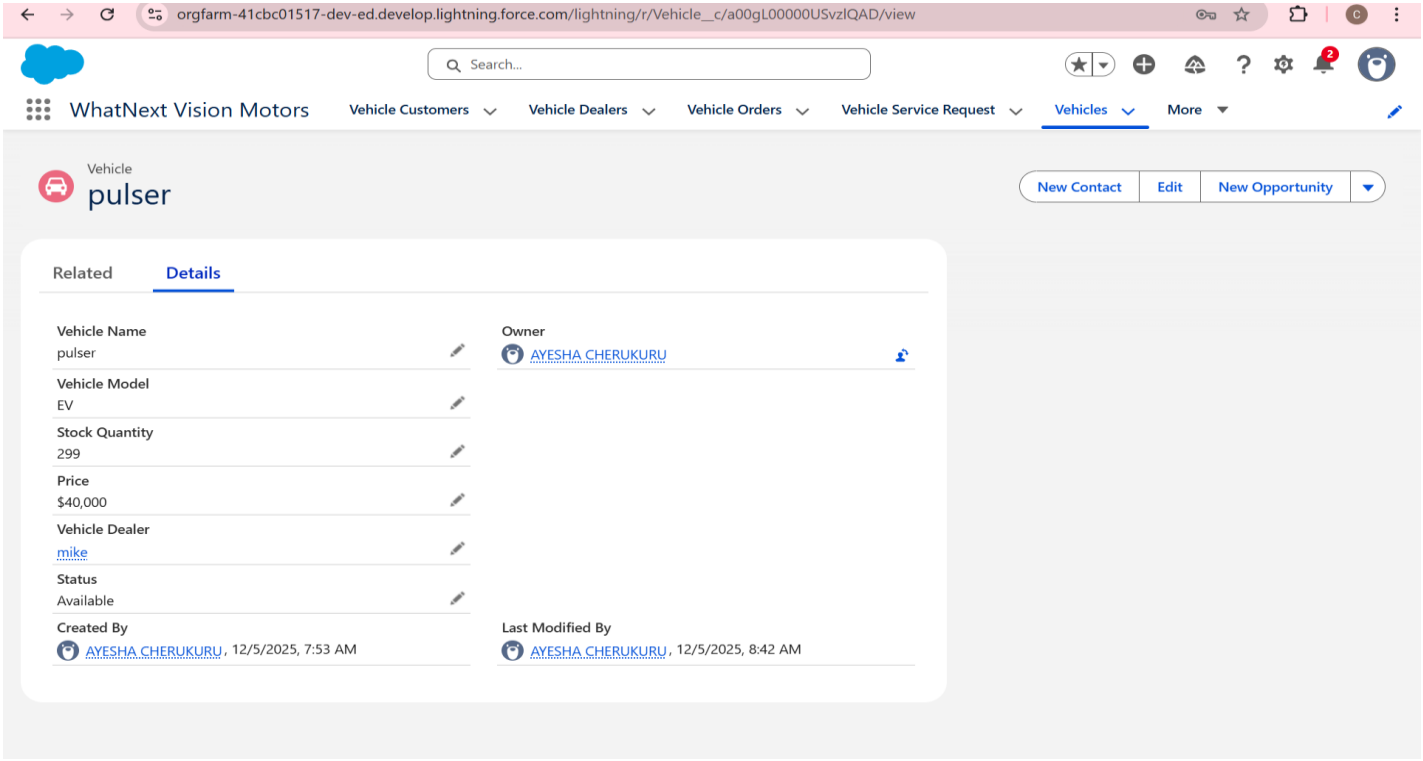


Figure 3.1: vehicle record created

4. **Order Creation**: Kunal books the EV → Status set to "Pending".

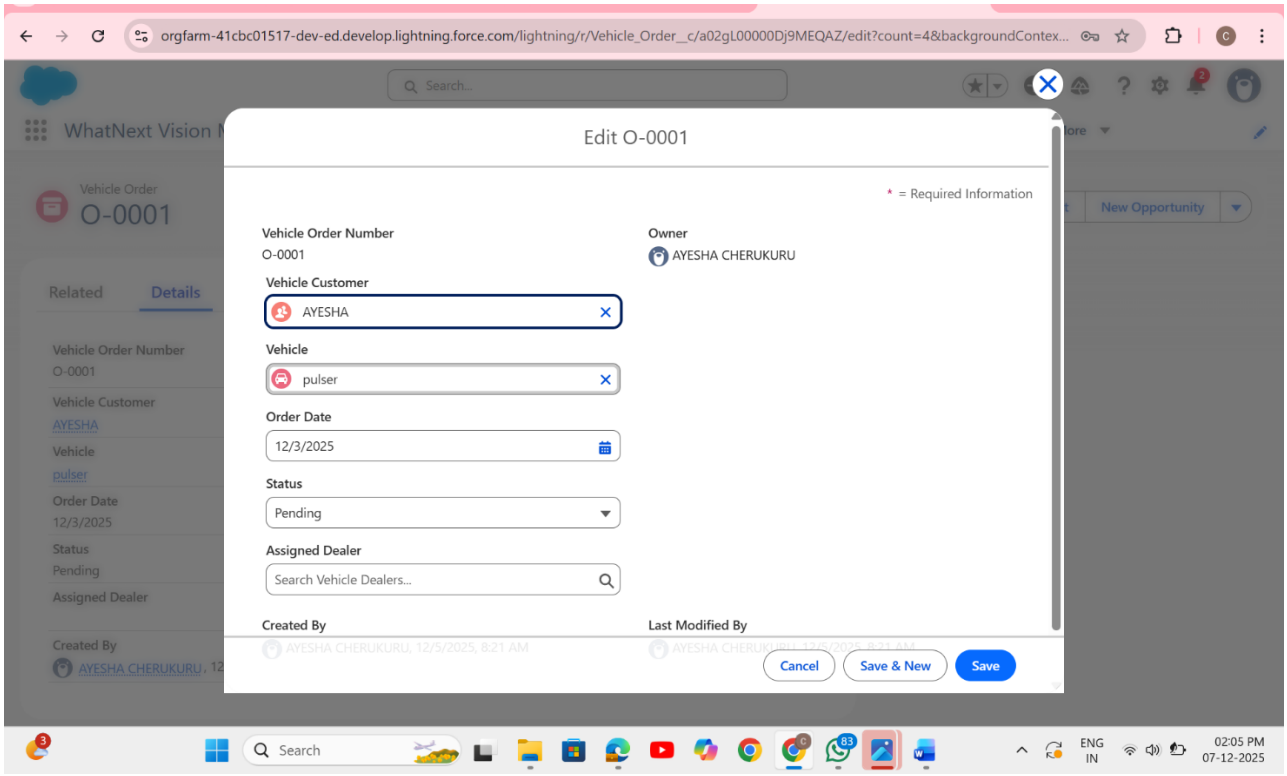


Figure 4: order creation

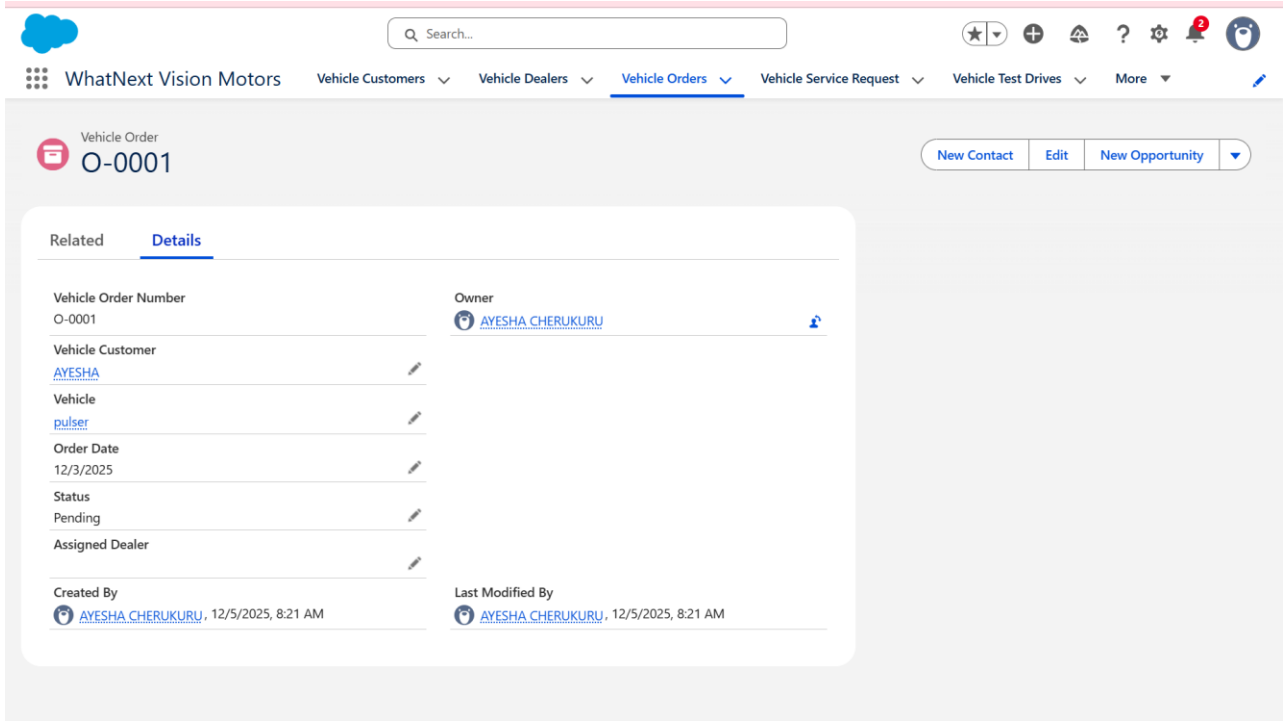


Figure 4.1: order created

5. **Dealer Assigned**: Based on Kunal's address, the nearest dealer is assigned via flow.

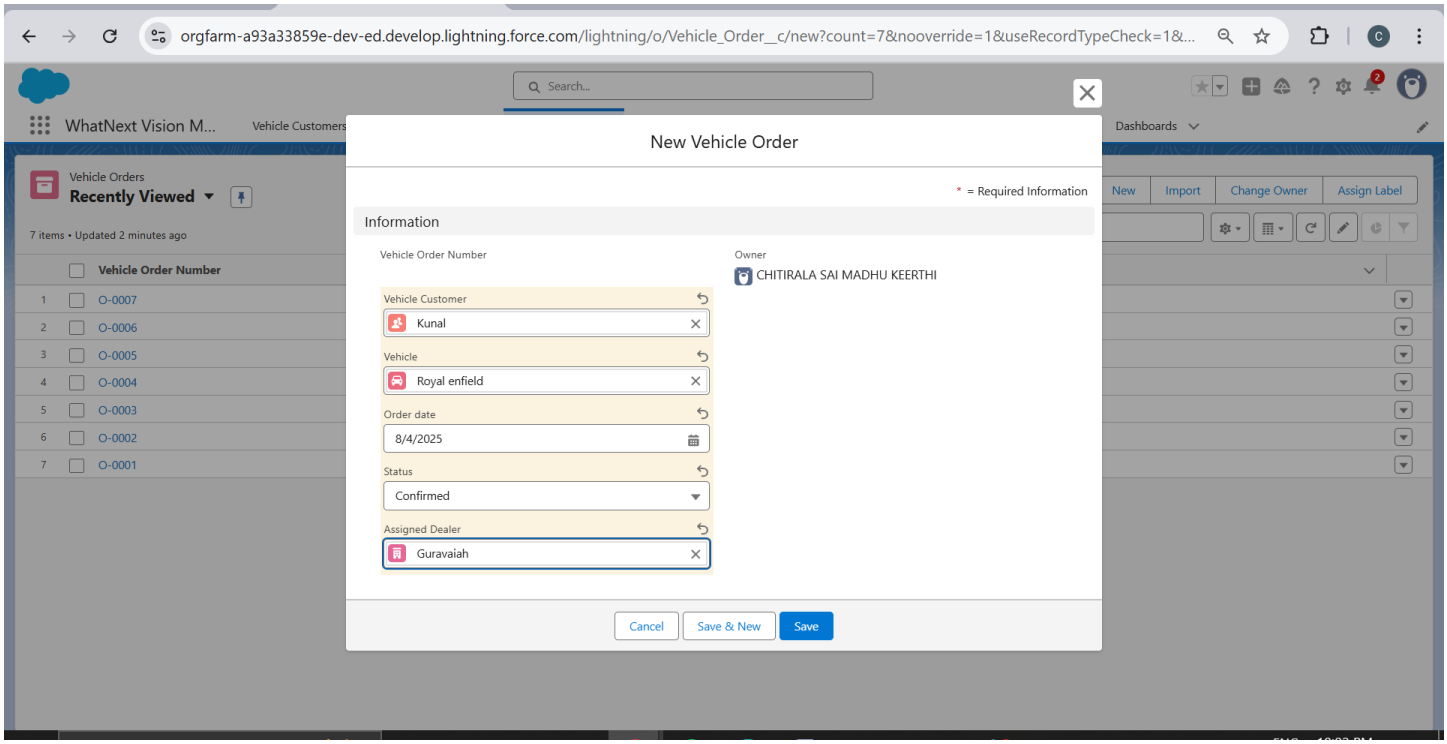


Figure 5: dealer assigning

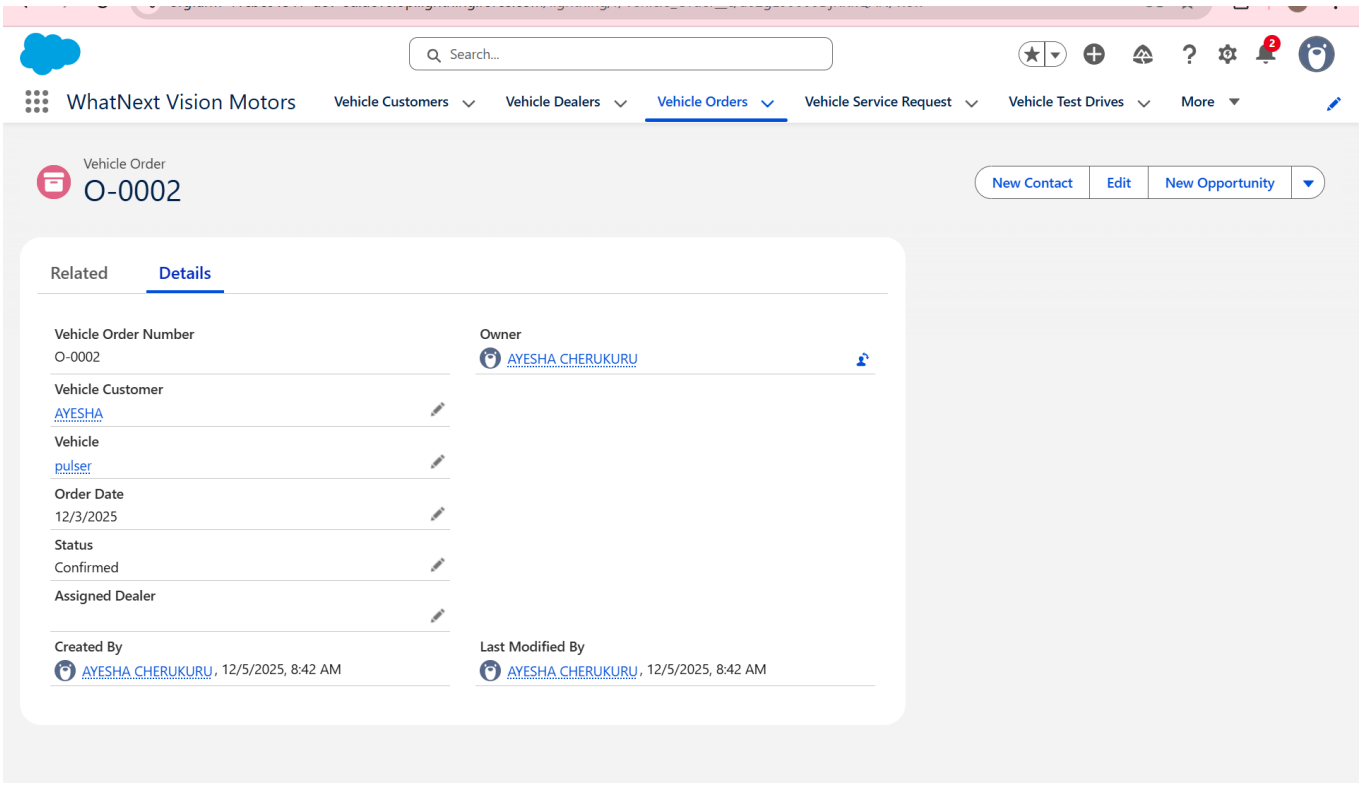


Figure 5.1: dealer assigned

6. **Order Confirmation**: When stock is verified → Status auto-updated to "Confirmed".

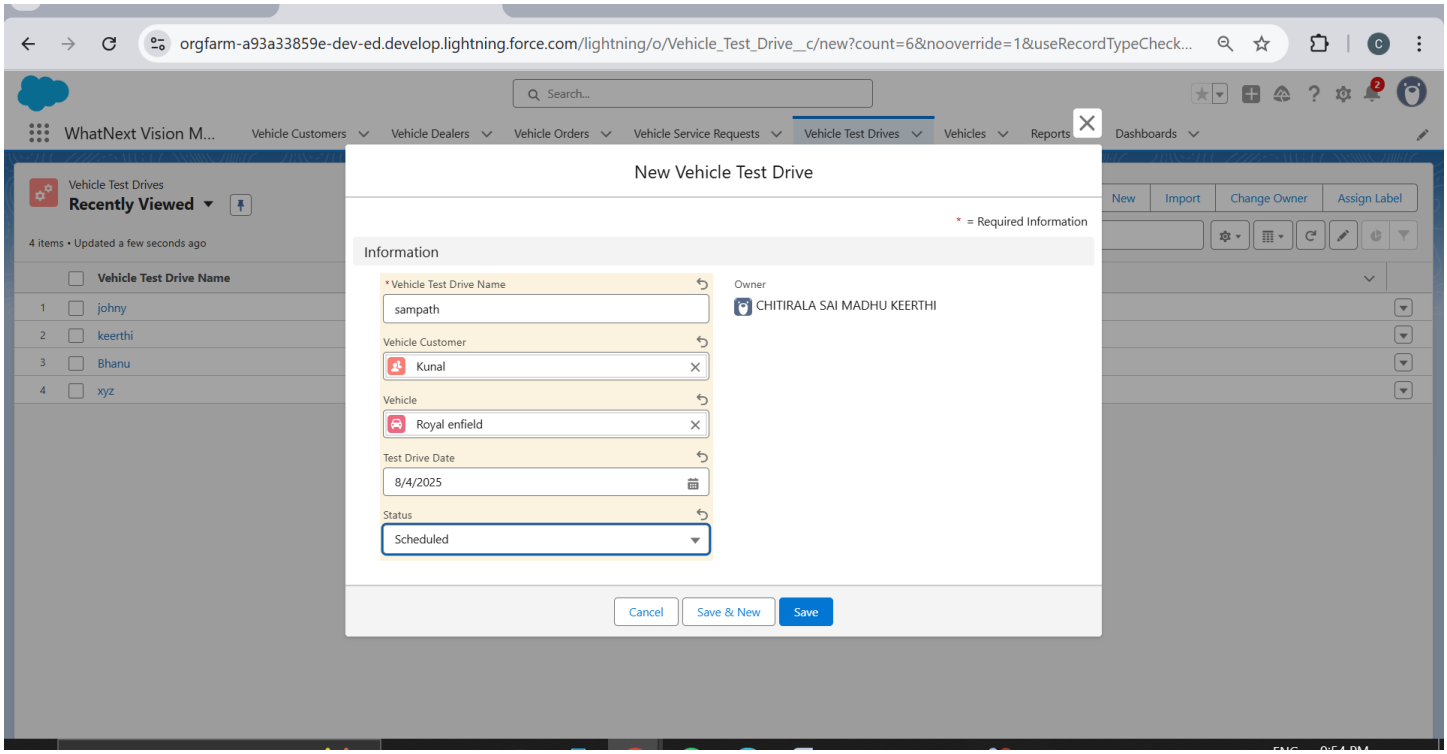


Figure 6: order confirming

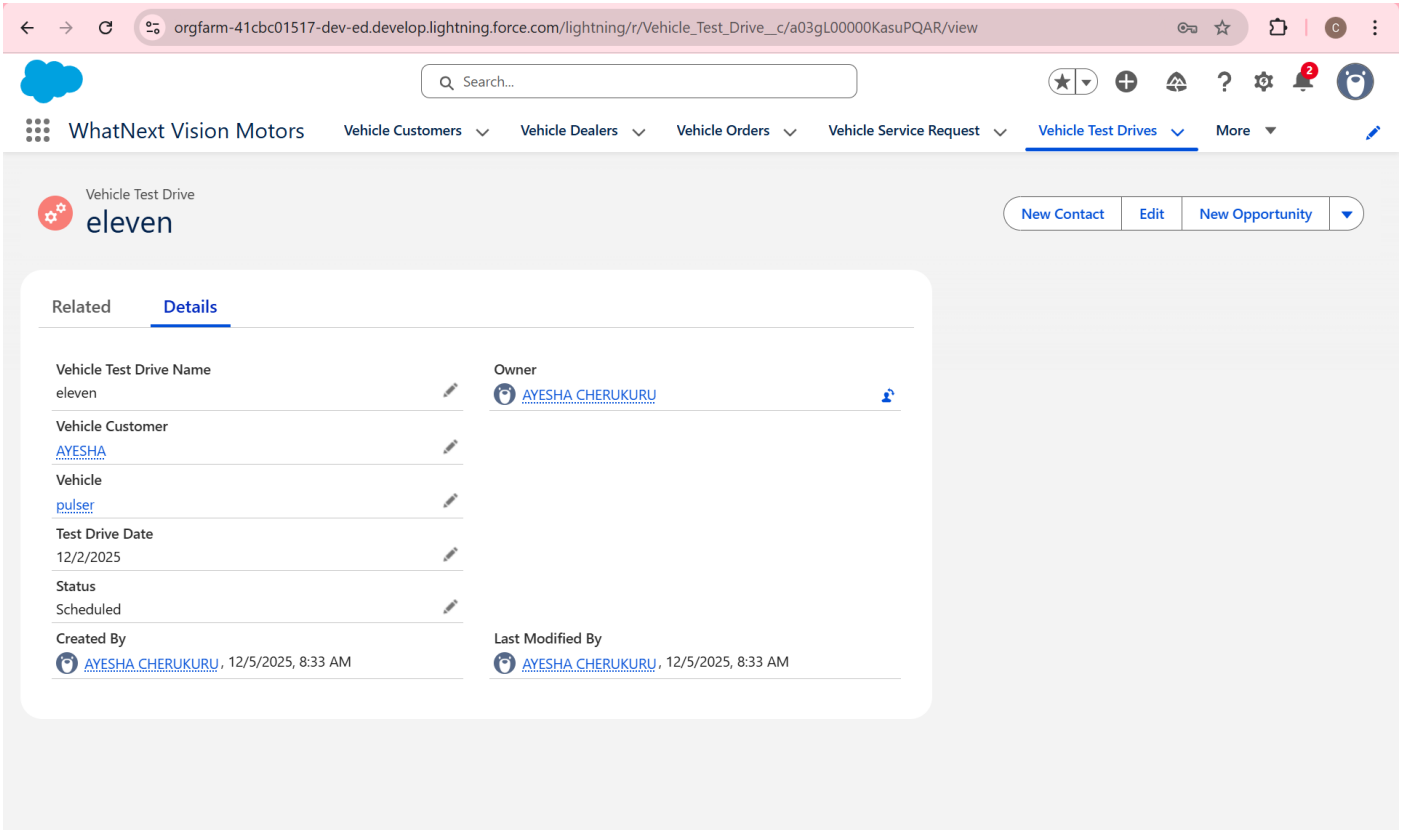


Figure 6.1: order confirmation

7. **Email Sent**: Kunal receives confirmation email.

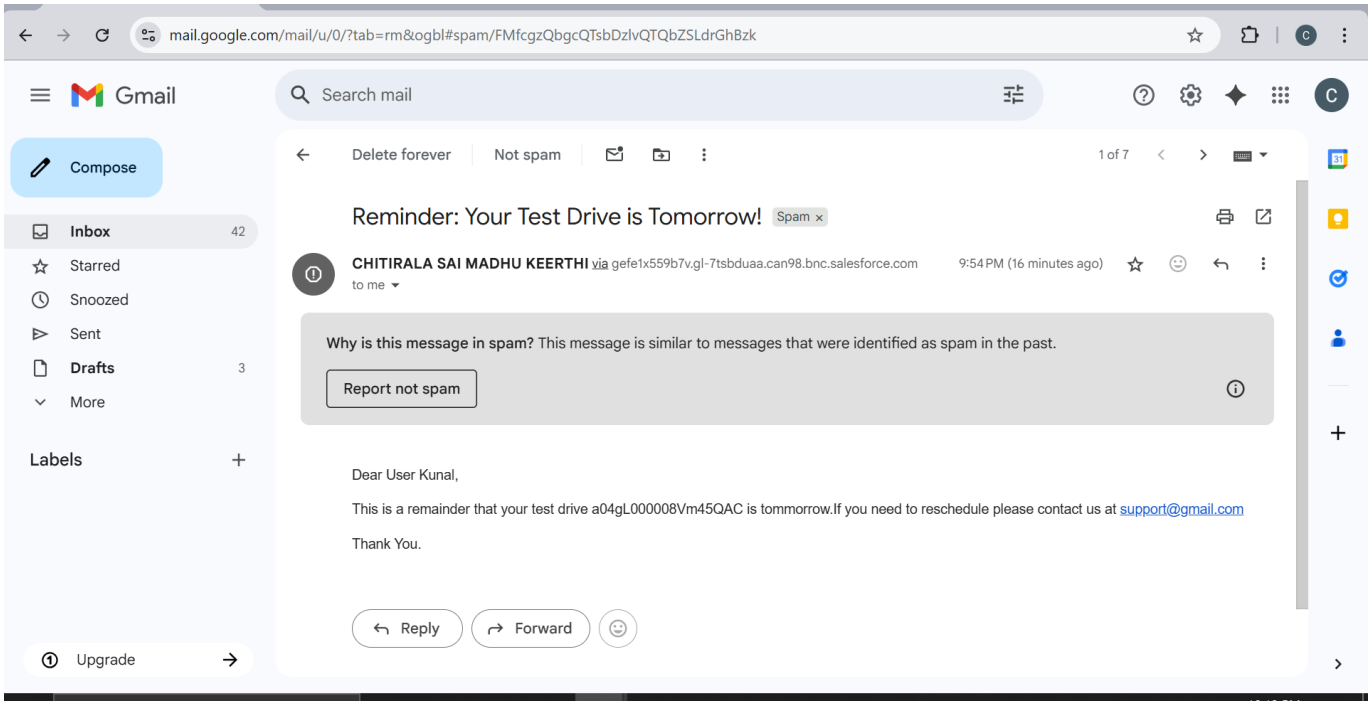


Figure 7: email received

8. **Stock Updated**: Remaining stock becomes 1.

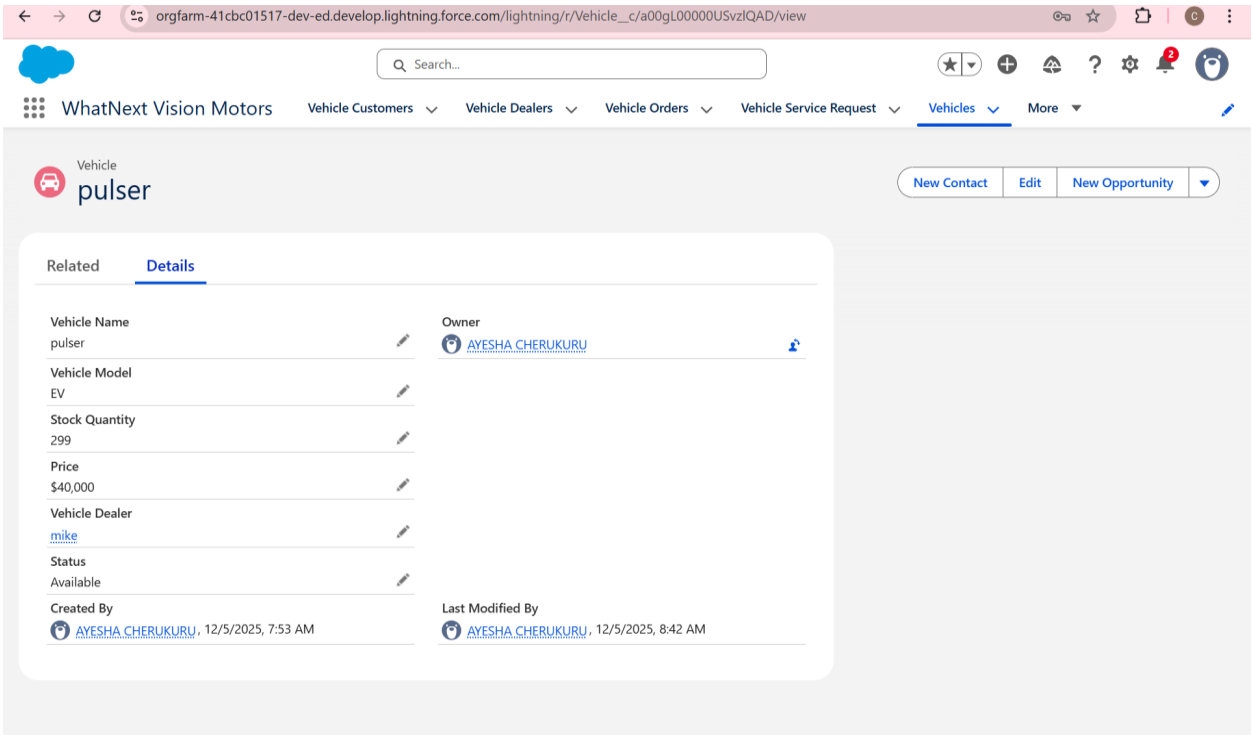
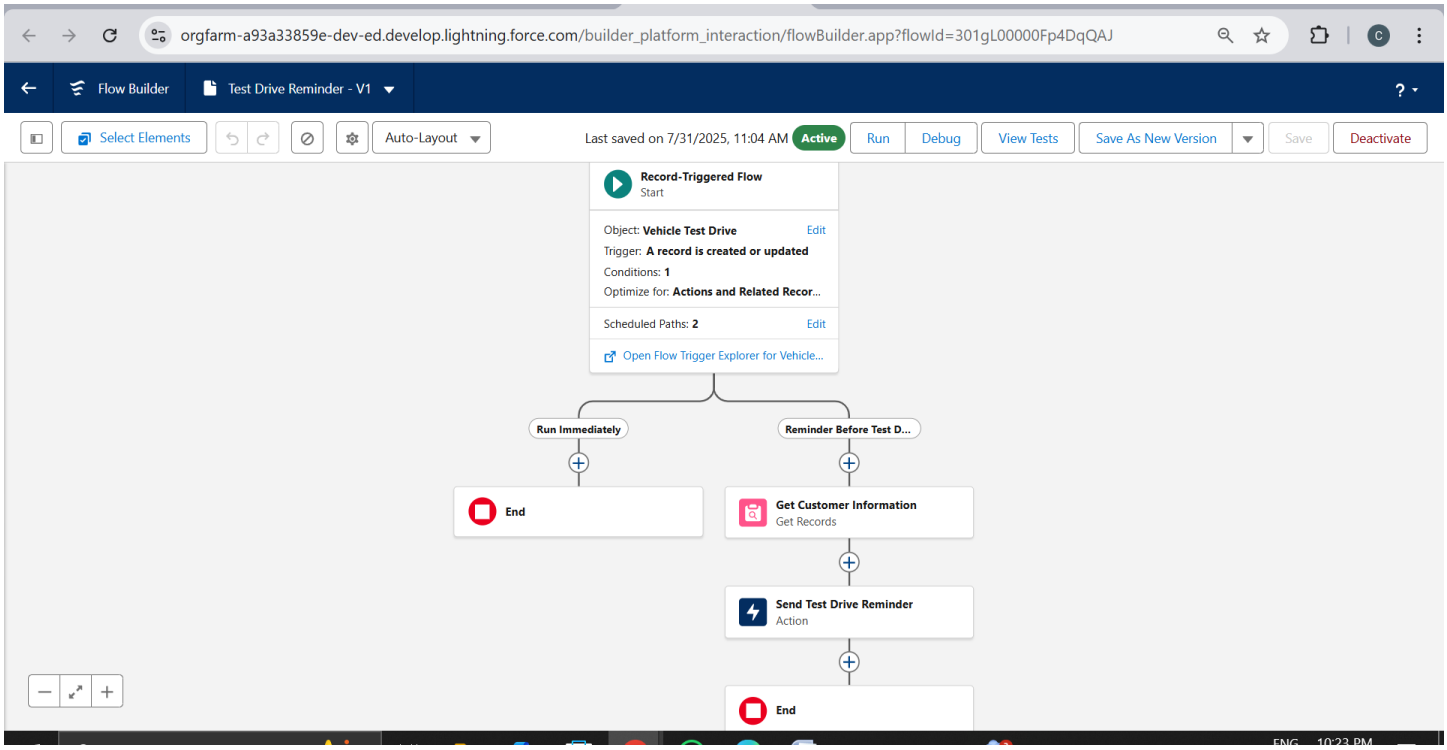


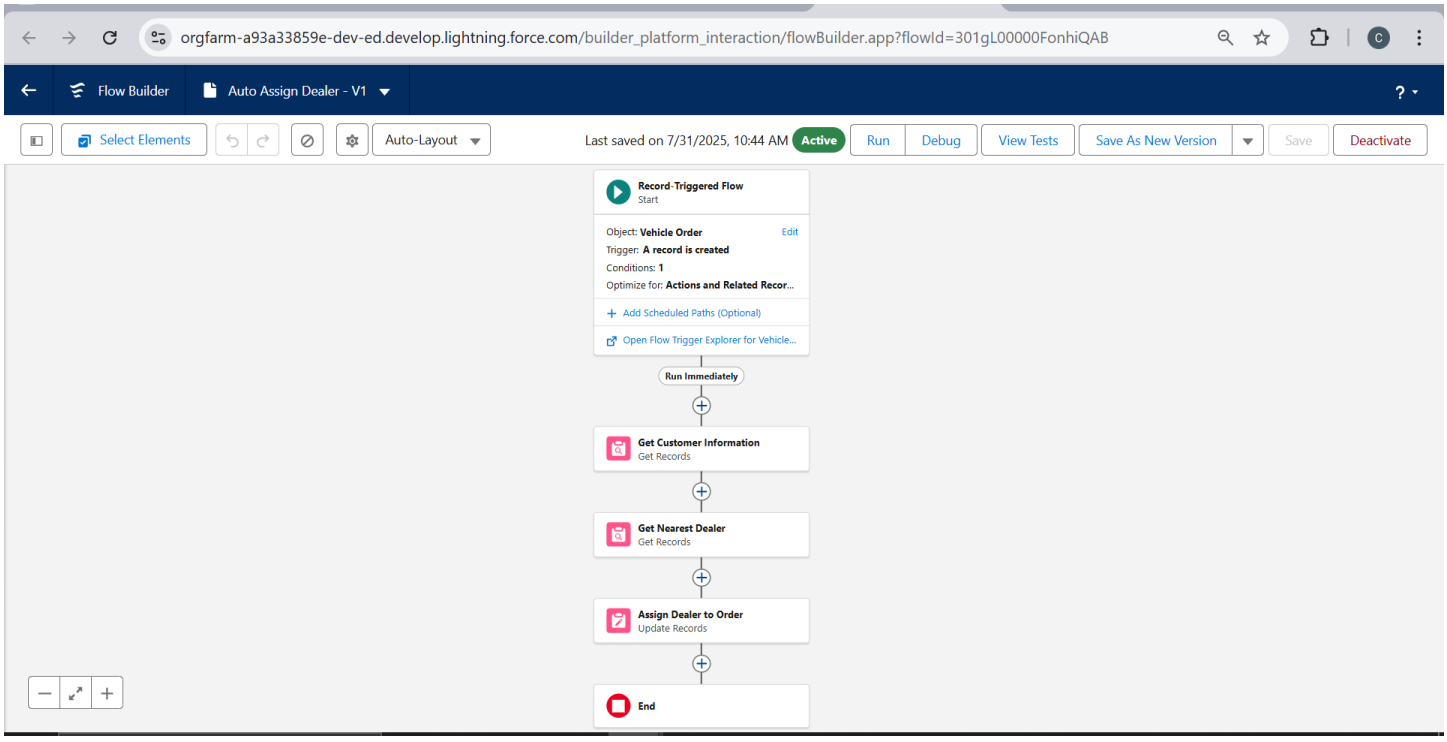
Figure 8: stock updated

FLOWS SCREENSHOTS

Flow 1: Test drive remainder



Flow 2: Auto assign dealer



CODES

Code 1: VehicleOrderTriggerHandler

```
public class VehicleOrderTriggerHandler {
   public static void handleTrigger(List<Vehicle_Order__c> newOrders, Map<Id, Vehicle_Order__c>
oldOrders, Boolean isBefore, Boolean isAfter, Boolean isInsert, Boolean isUpdate) {
      if (isBefore && (isInsert || isUpdate)) {
         preventOrderIfOutOfStock(newOrders);
      }
      if (isAfter && (isInsert || isUpdate)) {
         updateStockOnOrderPlacement(newOrders);
      }
   }
   private static void preventOrderIfOutOfStock(List<Vehicle_Order__c> orders) {
      Set<Id> vehicleIds = new Set<Id>();
      for (Vehicle_Order__c order : orders) {
         if (order.Vehicle__c != null) {
            vehicleIds.add(order.Vehicle__c);
         }
      }
      if (!vehicleIds.isEmpty()) {
         Map<Id, Vehicle__c> vehicleStockMap = new Map<Id, Vehicle__c>(
            [SELECT Id, Stock_Quantity__c FROM Vehicle__c WHERE Id IN :vehicleIds]
         );
         for (Vehicle_Order__c order : orders) {
            Vehicle__c vehicle = vehicleStockMap.get(order.Vehicle__c);
            if (vehicle != null && vehicle.Stock_Quantity__c <= 0) {
               order.addError('This vehicle is out of stock. Order cannot be placed.');
            }
         }
      }
   }
    private static void updateStockOnOrderPlacement(List<Vehicle_Order__c> orders) {
      Set<Id> vehicleIds = new Set<Id>();
      for (Vehicle_Order__c order : orders) {
         if (order.Vehicle__c != null && order.Status__c == 'Confirmed') {
            vehicleIds.add(order.Vehicle__c);
         }
      }
      if (!vehicleIds.isEmpty()) {
```

```
        Map<Id, Vehicle__c> vehicleStockMap = new Map<Id, Vehicle__c>(
            [SELECT Id, Stock_Quantity__c FROM Vehicle__c WHERE Id IN :vehicleIds]
        );
        List<Vehicle__c> vehiclesToUpdate = new List<Vehicle__c>();
        for (Vehicle_Order__c order : orders) {
            Vehicle__c vehicle = vehicleStockMap.get(order.Vehicle__c);
            if (vehicle != null && vehicle.Stock_Quantity__c > 0) {
                vehicle.Stock_Quantity__c -= 1;
                vehiclesToUpdate.add(vehicle);
            }
        }
        if (!vehiclesToUpdate.isEmpty()) {
            update vehiclesToUpdate;
        }
    }
  }
}
```

Code 2: VehicleOrderBatch

```
global class VehicleOrderBatch implements Database.Batchable<sObject> {
  global Database.QueryLocator start(Database.BatchableContext bc) {
    return Database.getQueryLocator([
      SELECT Id, Status__c, Vehicle__c FROM Vehicle_Order__c WHERE Status__c = 'Pending'
    ]);
  }
  global void execute(Database.BatchableContext bc, List<Vehicle_Order__c> orderList) {
    Set<Id> vehicleIds = new Set<Id>();
    for (Vehicle_Order__c order : orderList) {
      if (order.Vehicle__c != null) {
        vehicleIds.add(order.Vehicle__c);
      }
    }
    if (!vehicleIds.isEmpty()) {
      Map<Id, Vehicle__c> vehicleStockMap = new Map<Id, Vehicle__c>(
        [SELECT Id, Stock_Quantity__c FROM Vehicle__c WHERE Id IN :vehicleIds]
      );
      List<Vehicle_Order__c> ordersToUpdate = new List<Vehicle_Order__c>();
      List<Vehicle__c> vehiclesToUpdate = new List<Vehicle__c>();
      for (Vehicle_Order__c order : orderList) {
        Vehicle__c vehicle = vehicleStockMap.get(order.Vehicle__c);
        if (vehicle != null && vehicle.Stock_Quantity__c > 0) {
          order.Status__c = 'Confirmed';
          vehicle.Stock_Quantity__c -= 1;
          ordersToUpdate.add(order);
```

```
                vehiclesToUpdate.add(vehicle);
            }
        }

        if (!ordersToUpdate.isEmpty()) update ordersToUpdate;
        if (!vehiclesToUpdate.isEmpty()) update vehiclesToUpdate;
    }
  }
  global void finish(Database.BatchableContext bc) {
    System.debug('Vehicle order batch job completed.');
  }
}
```

Code 3: VehicleOrderBatchScheduler

```
global class VehicleOrderBatchScheduler implements Schedulable {
  global void execute(SchedulableContext sc) {
    VehicleOrderBatch batchJob = new VehicleOrderBatch();
    Database.executeBatch(batchJob, 50); // 50 = batch size
  }
}
```

CONCLUSION

The WhatNext Vision Motors Salesforce CRM implementation successfully demonstrates the power of automation in delivering customer-centric, intelligent, and scalable vehicle sales and service operations. From smart dealer assignment to scheduled order processing and proactive customer engagement, the CRM supports a 360° view of the mobility sales cycle. With strong foundations in both declarative and programmatic Salesforce capabilities, the system is future-ready, capable of expanding into electric mobility, shared vehicle solutions, and digital servicing.

Through seamless integration of business logic and user experience, this CRM stands as a model of innovation in automotive tech aligning with the brand’s mission to drive mobility forward with excellence.