WhatNext Vision Motors: Shaping The Future Of Mobility with Innovation and Excellence

Project Overview

The capstone project for WhatNext Vision Motors focused on delivering a tailored Salesforce Customer Relationship Management (CRM) system aimed at transforming the way the company engages with customers and manages its operations. As a rising player in the automotive industry with an emphasis on mobility, WhatNext Vision Motors' dependence on manual procedures for processing vehicle orders, assigning dealers, and following up with customers often resulted in delays, inaccurate inventory management, and dissatisfaction among customers. The primary goal of this project was to optimize the entire vehicle order management process by utilizing the Salesforce Platform to implement essential automated functionalities, such as Real-Time Stock Validation (ensuring that orders are only made for available vehicles), Automatic Dealer Assignment (smartly pairing customers with the nearest dealer based on their location), and Enhanced Customer Engagement (automating communication like reminders for test drives through scheduled flows). The end result offers a user-friendly, responsive interface featuring Lightning Apps and Dynamic Forms, significantly boosting internal user productivity, minimizing data inaccuracies, and creating a scalable digital infrastructure for future advancements.

Objectives

The core objective of the Salesforce CRM implementation at WhatNext Vision Motors was to automate the vehicle order processing pipeline. The strategy was centered around the following three key, verifiable automation goals as mandated by the project scope:

1. **Intelligent Dealer Assignment:** To implement a workflow (using Flow) that automatically assigns pending vehicle orders to the nearest available dealer based on the customer's location address.
2. **Real-Time Inventory Integrity:** To deploy transactional Apex logic that prevents the placement of an order for a vehicle that is currently marked as having zero (0) stock quantity.

3. **Scheduled Customer Engagement:** To configure a scheduled process (using Flow) that sends automated email reminders to customers one day before their scheduled vehicle test drive appointment.

Technology Description

The WhatNext Vision Motors solution is engineered on the Salesforce Customer 360 Platform, strategically combining low-code configuration and programmatic development to manage the entire automotive mobility lifecycle.

Salesforce:

Salesforce is a cloud-based Customer Relationship Management (CRM) platform that helps businesses manage customer data, automate processes, and improve sales and service operations. It provides point-and-click tools (Flows) as well as programmatic capabilities (Apex) to build custom business solutions.

Custom Objects:

Objects in Salesforce are like tables in a database. Custom Objects are created to store specific data points and form the foundation of the custom application data model.

- **Application Example:** The project leverages six interconnected Custom Objects: Vehicle, Vehicle Dealer, Vehicle Customer, Vehicle Order, Vehicle Test Drive, and Vehicle Service Request.

Tabs:

Tabs are UI components used to display object data in the Salesforce user interface. They allow internal users to easily access and manage records for a specific object.

- **Application Example:** Custom Tabs were created for all six objects (e.g., Vehicle Order Tab, Vehicle Test Drive Tab) and added to the Lightning App navigation bar.

Custom App:

A Custom App in Salesforce is a collection of tabs, objects, and utilities grouped together for a specific business purpose, providing a centralized workspace for end-users.

- **Application Example:** The "WhatNext Vision Motors" Lightning App was created to serve as the single, focused console for sales and service agents, containing all necessary records and reports.

Profiles:

Profiles are governance tools that control object permissions, field-level security, record types, and feature access. They define what users can see and do within the application.

- **Application Example:** Access to the "WhatNext Vision Motors" App and its underlying data was explicitly granted to the System Administrator profile during the setup phase.

Declarative Automation (Flows):

Salesforce Flow is the platform's low-code tool used to automate complex business processes, record data manipulation, and scheduling logic.

- **Application Example:** Flows were utilized for Intelligent Dealer Assignment and Scheduled Customer Email Reminders.

Programmatic Automation (Apex):

Apex is Salesforce’s proprietary, object-oriented programming language, used for complex transactional logic and back-end processes that require programmatic control.

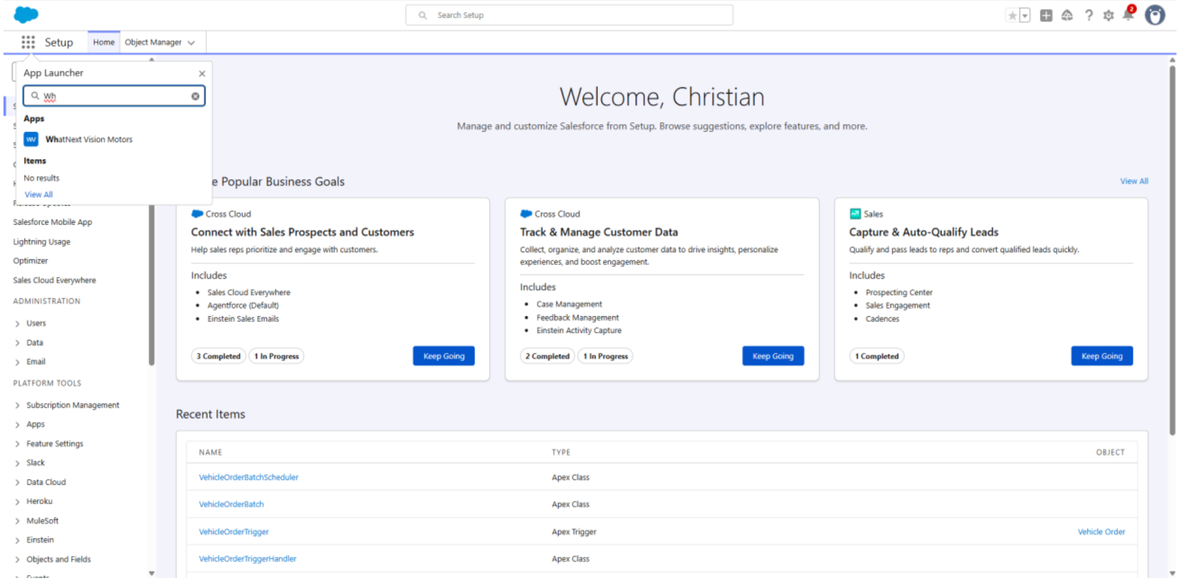
- **Application Example:** Apex Triggers and Classes were deployed to enforce Real-Time Stock Validation and perform the Stock Quantity Deduction upon order confirmation.

Detailed Execution and Automation Implementation

Foundational Setup and Data Modeling

This initial phase established the core environment and data structure required for the application.

1. **Developer Org Setup:** A Salesforce Developer Org was created and configured. The account was verified, password set, and access was granted to the Salesforce Setup page, allowing for all subsequent customization.



Welcome, Christian

Manage and customize Salesforce from Setup. Browse suggestions, explore features, and more.

e Popular Business Goals

View All

Cross Cloud
Connect with Sales Prospects and Customers
Help sales reps prioritize and engage with customers.
Includes
- Sales Cloud Everywhere
- Agentforce (Default)
- Einstein Sales Emails

3 Completed 1 In Progress Keep Going

Cross Cloud
Track & Manage Customer Data
Collect, organize, and analyze customer data to drive insights, personalize experiences, and boost engagement.
Includes
- Case Management
- Feedback Management
- Einstein Activity Capture

2 Completed 1 In Progress Keep Going

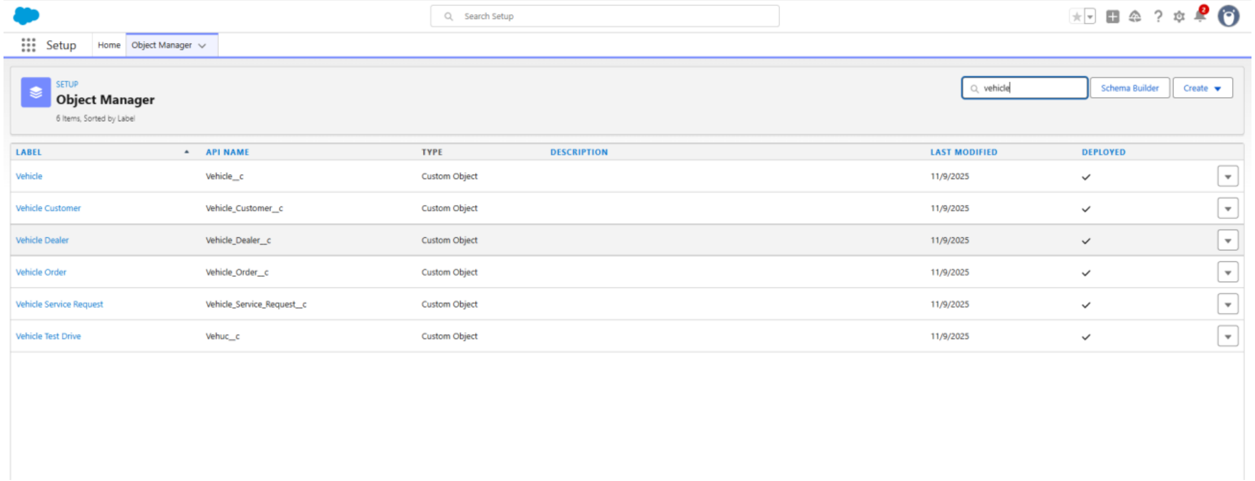
Sales
Capture & Auto-Qualify Leads
Qualify and pass leads to reps and convert qualified leads quickly.
Includes
- Prospecting Center
- Sales Engagement
- Cadences

1 Completed Keep Going

Recent Items

NAME	TYPE	OBJECT
VehicleOrderBatchScheduler	Apex Class	
VehicleOrderBatch	Apex Class	
VehicleOrderTrigger	Apex Trigger	Vehicle Order
VehicleOrderTriggerHandler	Apex Class	

2. **Custom Object Creation:** All six necessary Custom Objects (Vehicle, Vehicle Dealer, Vehicle Customer, Vehicle Order, Vehicle Test Drive, and Vehicle Service Request) were created to store core business data.



SETUP
Object Manager
6 Items, Sorted by Label

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Vehicle	Vehicle__c	Custom Object		11/9/2025	✓
Vehicle Customer	Vehicle_Customer__c	Custom Object		11/9/2025	✓
Vehicle Dealer	Vehicle_Dealer__c	Custom Object		11/9/2025	✓
Vehicle Order	Vehicle_Order__c	Custom Object		11/9/2025	✓
Vehicle Service Request	Vehicle_Service_Request__c	Custom Object		11/9/2025	✓
Vehicle Test Drive	Vehuc__c	Custom Object		11/9/2025	✓

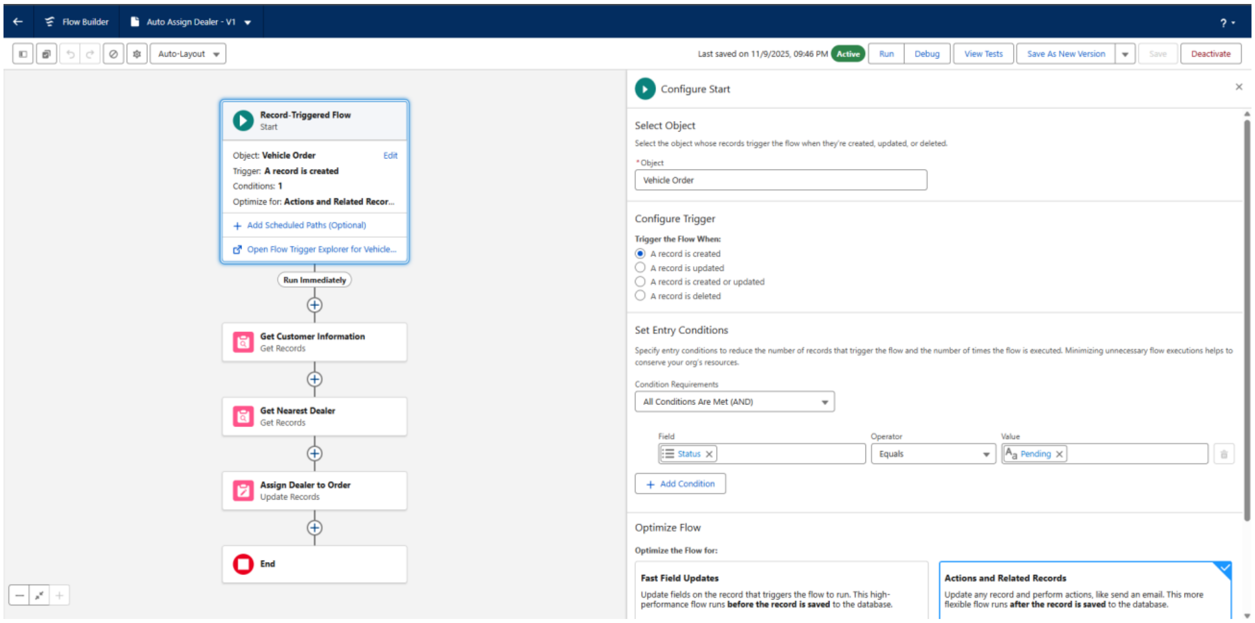
3. **App and Tab Configuration:** A Custom Lightning App, WhatNext Vision Motors, was created and configured as the central workspace. Custom Tabs were then created for all six objects and added to the app's navigation bar, alongside standard objects like Reports and Dashboards.

Declarative Automation: Flows

Two distinct Record-Triggered Flows automate customer interaction and dealer routing, ensuring immediate operational efficiency.

A. Auto Assign Dealer Flow

- **Objective:** Assign the nearest dealer to a new order.
- **Trigger Condition:** Record is Created or Updated on the Vehicle Order object, where Status equals 'Pending'.



Record-Triggered Flow
Start

Object: **Vehicle Order**
Trigger: **A record is created**
Conditions: **1**
Optimize for: **Actions and Related Recor...**

Get Customer Information
Get Records

Get Nearest Dealer
Get Records

Assign Dealer to Order
Update Records

Configure Start

Select Object

Select the object whose records trigger the flow when they're created, updated, or deleted.

* Object: Vehicle Order

Configure Trigger

Trigger the Flow When:

● A record is created
○ A record is updated
○ A record is created or updated
○ A record is deleted

Set Entry Conditions

Specify entry conditions to reduce the number of records that trigger the flow and the number of times the flow is executed. Minimizing unnecessary flow executions helps to conserve your org's resources.

Condition Requirements: All Conditions Are Met (AND)

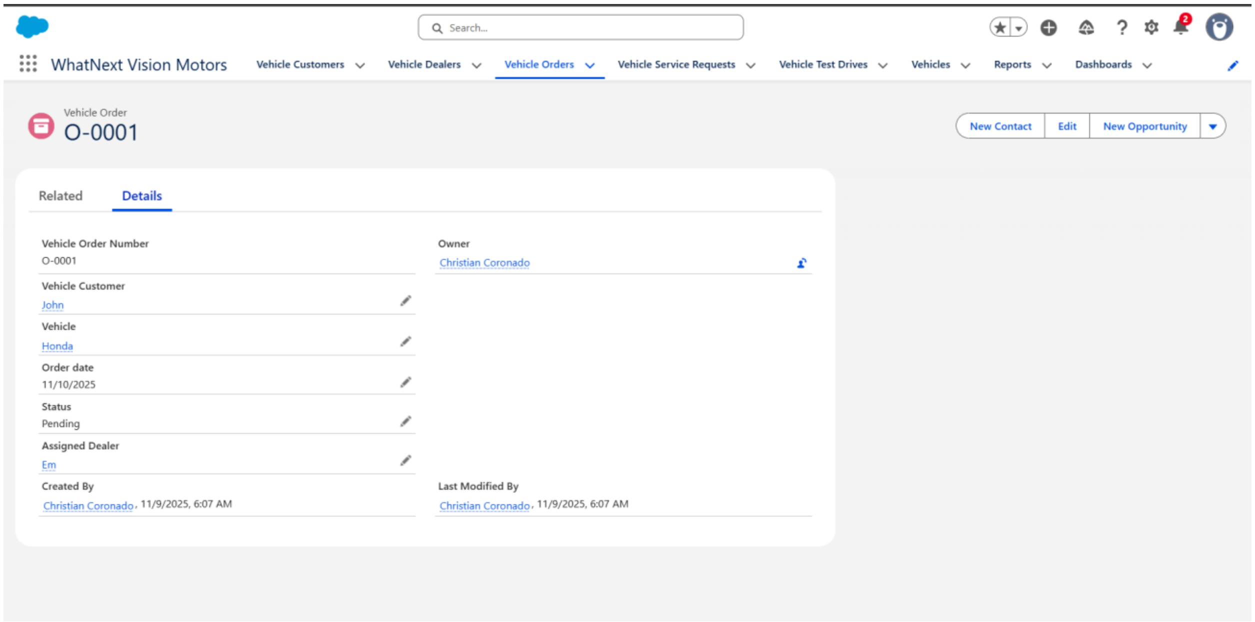
Field	Operator	Value
Status	Equals	Pending

Optimize Flow

Optimize the Flow for:

Fast Field Updates
Update fields on the record that triggers the flow to run. This high-performance flow runs **before the record is saved** to the database.

Actions and Related Records ✓
Update any record and perform actions, like send an email. This more flexible flow runs **after the record is saved** to the database.



Vehicle Order
O-0001

Vehicle Order Number
O-0001

Owner
Christian Coronado

Vehicle Customer
John

Vehicle
Honda

Order date
11/10/2025

Status
Pending

Assigned Dealer
Em

Created By
Christian Coronado, 11/9/2025, 6:07 AM

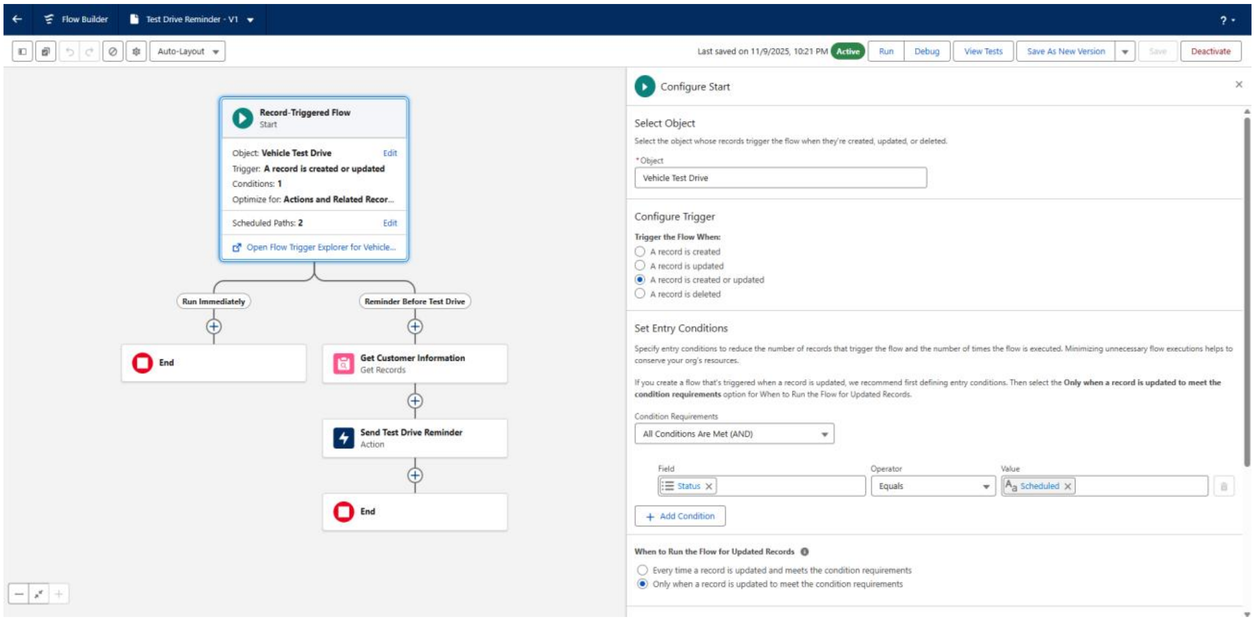
Last Modified By
Christian Coronado, 11/9/2025, 6:07 AM

B. Test Drive Reminder Flow

Objective: Send a reminder email 24 hours before the appointment**.**

Trigger Condition: Record is Created or Updated on the Vehicle Test Drive object, where Status equals 'Scheduled'.

Scheduled Path: Configured to execute the email action 1 Day Before the value in the Test Drive Date field.



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Record-Triggered Flow
Start

Object: **Vehicle Test Drive** Edit
Trigger: **A record is created or updated**
Conditions: **1**
Optimize for: **Actions and Related Recor...**

Scheduled Paths: **2** Edit

Open Flow Trigger Explorer for Vehicle...

Configure Start

Select Object

Select the object whose records trigger the flow when they're created, updated, or deleted.

*Object
Vehicle Test Drive

Configure Trigger

Trigger the Flow When:

○ A record is created
○ A record is updated
● A record is created or updated
○ A record is deleted

Set Entry Conditions

Specify entry conditions to reduce the number of records that trigger the flow and the number of times the flow is executed. Minimizing unnecessary flow executions helps to conserve your org's resources.

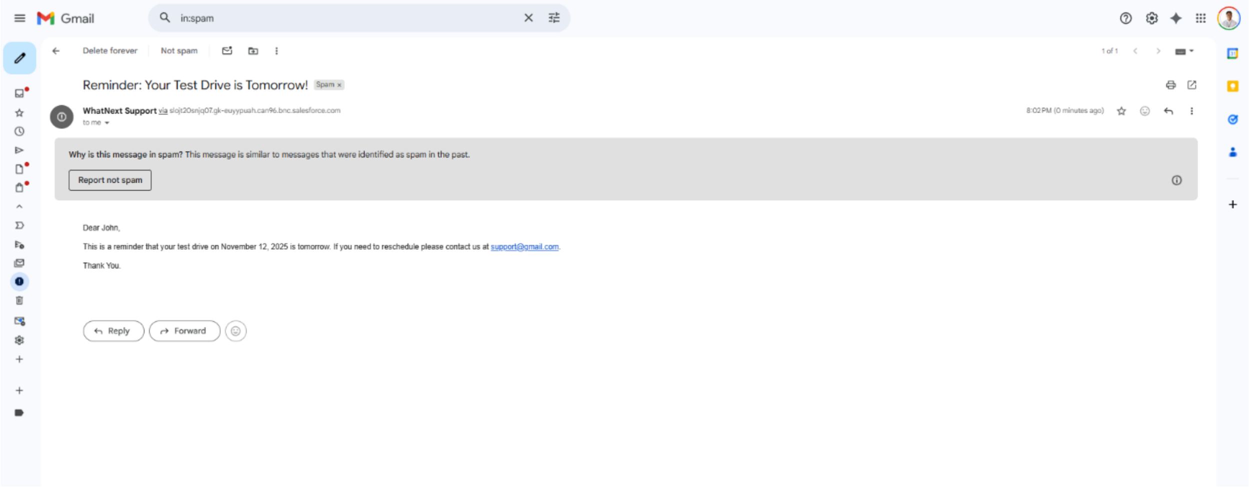
If you create a flow that's triggered when a record is updated, we recommend first defining entry conditions. Then select the **Only when a record is updated to meet the condition requirements** option for When to Run the Flow for Updated Records.

Condition Requirements
All Conditions Are Met (AND)

Field	Operator	Value
Status	Equals	Scheduled

When to Run the Flow for Updated Records

○ Every time a record is updated and meets the condition requirements
● Only when a record is updated to meet the condition requirements



Reminder: Your Test Drive is Tomorrow!

WhatNext Support via slojt20snjq07.gk-euyypuah.can96.bnc.salesforce.com
to me
8:02 PM (0 minutes ago)

Why is this message in spam? This message is similar to messages that were identified as spam in the past.

Dear John,

This is a reminder that your test drive on November 12, 2025 is tomorrow. If you need to reschedule please contact us at support@gmail.com.

Thank You.

Programmatic Automation: Apex

Apex components enforce the critical transactional integrity required for inventory management and order validation.

Apex Component	**Target Object**	**Execution Event**	**Core Functionality**
VehicleOrderTrigger	Vehicle Order	Before Insert/Update, After Update	Manages the calling sequence for the handler class to ensure stock validation and deduction occur at the correct stage of the transaction.
VehicleOrderTrigger Handler	N/A	Synchronous Logic	Validation: Returns the error message "This vehicle is out of stock." if Vehicle.Stock Quantity is 0. Deduction: Decrements Vehicle.Stock Quantity by 1 when Vehicle Order.Status transitions to 'Confirmed'.

VehicleOrderBatch & Scheduler	Vehicle Order	Asynchronous/Scheduled	Provides backend capability to periodically check zero stock vehicles and manage related order statuses in bulk for data reconciliation.

Project Explanation with Real-World Scenario

This section illustrates the end-to-end customer journey, demonstrating how the implemented Flow and Apex automations work together seamlessly to process an order and manage customer engagement.

1. **Customer Registration and Test Drive Request:**
   - A customer is registered in the Vehicle Customer object, capturing their Address and Email.
   - A Vehicle Test Drive record is created and set to 'Scheduled' with a date set for tomorrow.
   - Automation Triggered: The Test Drive Reminder Flow runs and schedules an email to customer.
2. **Automated Customer Engagement:**
   - System Action: After the required 24-hour period, the Scheduled Path of the Flow executes the email action.
   - Result: Customer receives the Test Drive Reminder email in their inbox, confirming the appointment.
3. **New Order Submission and Dealer Assignment:**
   - The customer decides to place an order. A new Vehicle Order record is created, linking to John (Customer) and the Honda EV (Vehicle), with the Status set to 'Pending'.
   - Automation Triggered: The Auto Assign Dealer Flow runs instantly.

   - Result: The Flow identifies the closest dealer and automatically populates the Assigned Dealer field.
4. **Order Confirmation and Inventory Deduction:**
   - The sales agent updates the order's Status to 'Confirmed'.
   - Automation Triggered: The VehicleOrderTrigger (Apex) runs.
   - Result: The VehicleOrderTriggerHandler executes the deduction logic, reducing the Stock Quantity of the Honda EV in the Vehicle record by one (1).
5. **Inventory Protection (Validation Test):**
   - Setup: The agent attempts to create an order for a vehicle whose stock has been manually reduced to 0.
   - Automation Triggered: The VehicleOrderTriggerHandler runs its *before save* validation logic.
   - Result: The transaction is blocked, and the system displays the critical error message: "This vehicle is out of stock."

Deployment, Documentation & Maintenance (Phase 5 Requirement)

Deployment Strategy

The deployment approach for this Capstone Project uses the fundamental Org-Based Development model common in initial Salesforce projects.

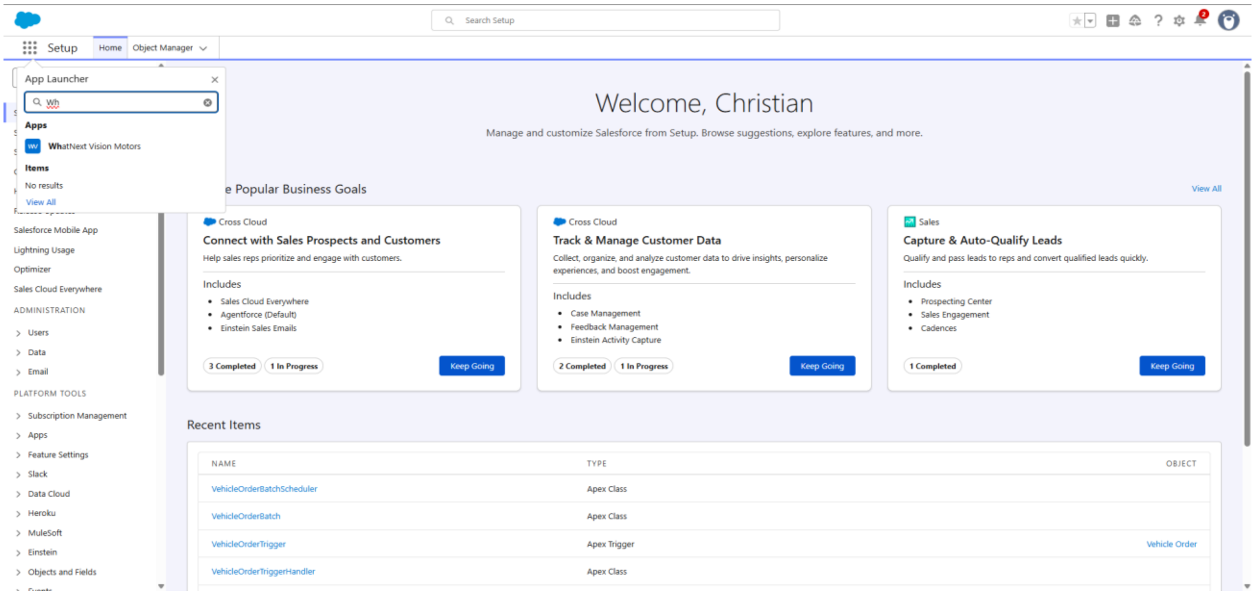
- **Method: Manual Deployment** (Simulating Change Sets/Metadata Migration).
- **Process:** After successful development and testing in the Developer Org (source), all configured metadata (Objects, Fields, Flows, Apex Classes, and Triggers) are manually prepared for migration.
- **Best Practice:** All custom code must be accompanied by Apex Test Classes that execute successfully with a minimum of 75% code coverage before deployment to a production environment is allowed.

System Maintenance and Monitoring

The system requires ongoing monitoring to ensure peak performance and data integrity:

- **Monitoring:** Apex Jobs (for Batch Apex) and Flow Interview logs are routinely checked for failed transactions, scheduled job errors, and Governor Limit violations caused by high-volume order processing.
- **Maintenance:** Automated processes (Flows, Apex Triggers) are versioned. Minor changes are handled via Flow Builder; major changes are tested in a sandbox environment before being migrated to ensure system stability.
- **Troubleshooting:** The primary troubleshooting approach relies on Debug Logs to capture execution details of Apex Triggers and Flows, ensuring rapid identification and resolution of transaction errors.

Screenshots:



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Connect with Sales Prospects and Customers

Help sales reps prioritize and engage with customers.

Includes

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- Agentforce (Default)
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Track & Manage Customer Data

Collect, organize, and analyze customer data to drive insights, personalize experiences, and boost engagement.

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- Feedback Management
- Einstein Activity Capture

Sales

Capture & Auto-Qualify Leads

Qualify and pass leads to reps and convert qualified leads quickly.

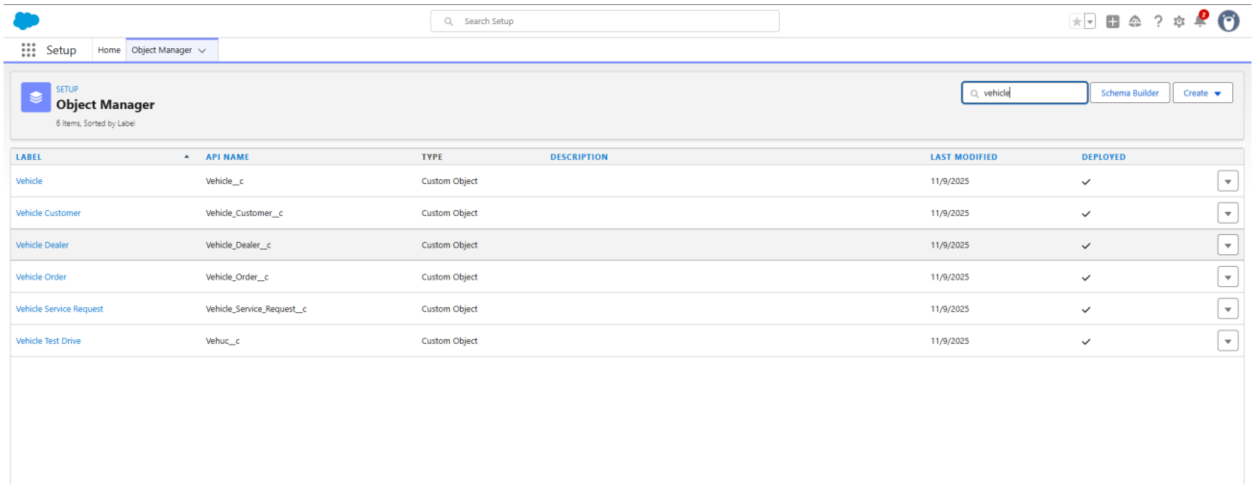
Includes

- Prospecting Center
- Sales Engagement
- Cadences

Recent Items

NAME	TYPE	OBJECT
VehicleOrderBatchScheduler	Apex Class	
VehicleOrderBatch	Apex Class	
VehicleOrderTrigger	Apex Trigger	Vehicle Order
VehicleOrderTriggerHandler	Apex Class	

Fig. A: WhatNext Vision Motors Lightning App View



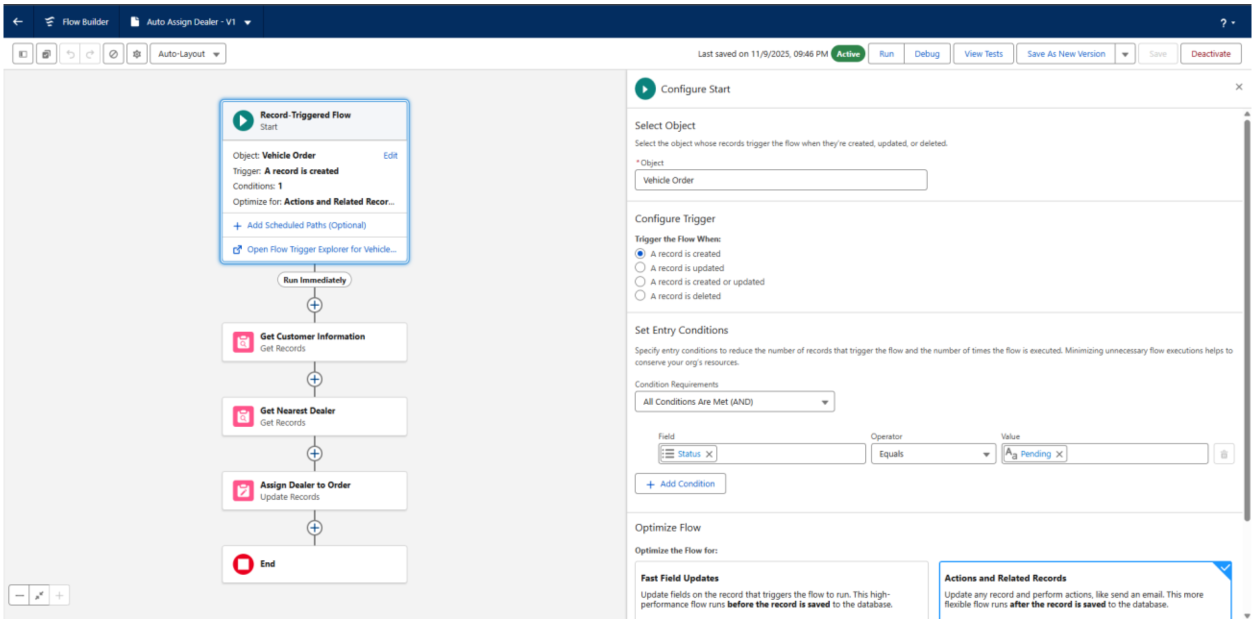
SETUP

Object Manager

6 Items, Sorted by Label

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Vehicle	Vehicle__c	Custom Object		11/9/2025	✓
Vehicle Customer	Vehicle_Customer__c	Custom Object		11/9/2025	✓
Vehicle Dealer	Vehicle_Dealer__c	Custom Object		11/9/2025	✓
Vehicle Order	Vehicle_Order__c	Custom Object		11/9/2025	✓
Vehicle Service Request	Vehicle_Service_Request__c	Custom Object		11/9/2025	✓
Vehicle Test Drive	Vehuc__c	Custom Object		11/9/2025	✓

Fig. B: Custom Objects in Object Manager



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Record-Triggered Flow
Start

Object: **Vehicle Order**
Trigger: **A record is created**
Conditions: **1**
Optimize for: **Actions and Related Recor...**

Get Customer Information
Get Records

Get Nearest Dealer
Get Records

Assign Dealer to Order
Update Records

End

Configure Start

Select Object

Select the object whose records trigger the flow when they're created, updated, or deleted.

* Object: Vehicle Order

Configure Trigger

Trigger the Flow When:

- ● A record is created
- ○ A record is updated
- ○ A record is created or updated
- ○ A record is deleted

Set Entry Conditions

Specify entry conditions to reduce the number of records that trigger the flow and the number of times the flow is executed. Minimizing unnecessary flow executions helps to conserve your org's resources.

Condition Requirements: All Conditions Are Met (AND)

Field	Operator	Value
Status	Equals	Pending

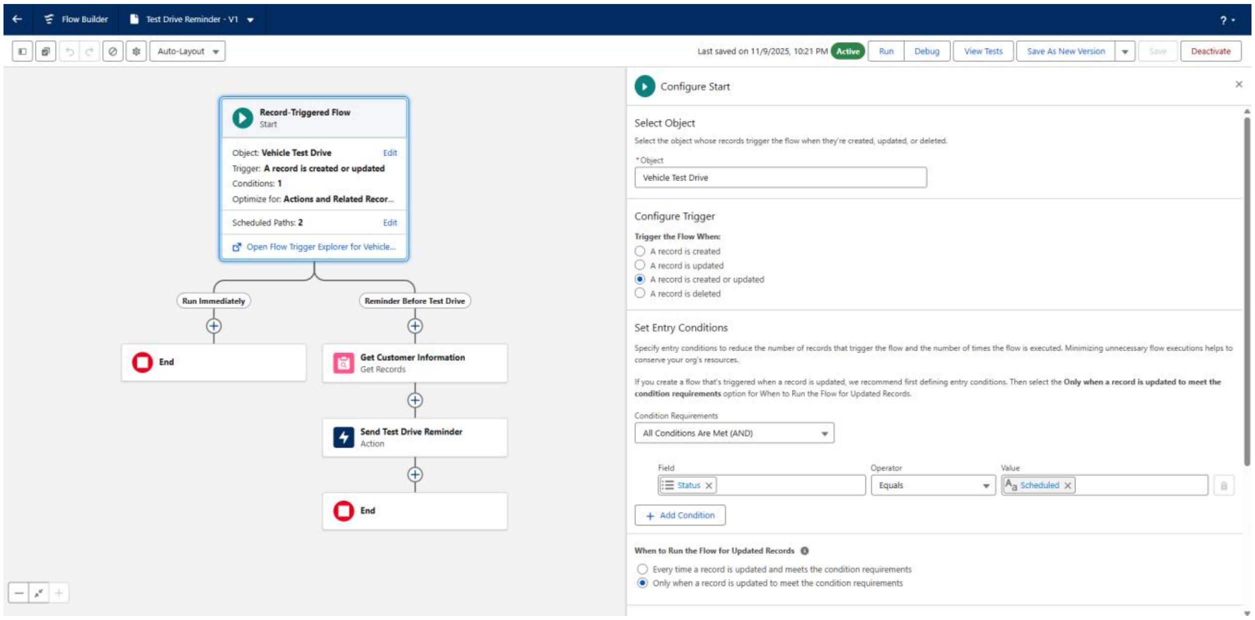
Optimize Flow

Optimize the Flow for:

Fast Field Updates
Update fields on the record that triggers the flow to run. This high-performance flow runs **before the record is saved** to the database.

☑ **Actions and Related Records**
Update any record and perform actions, like send an email. This more flexible flow runs **after the record is saved** to the database.

Fig. C: Auto Assign Dealer Flow Canvas



Object: **Vehicle Test Drive**

Trigger: **A record is created or updated**

Conditions: **1**

Optimize for: **Actions and Related Recor...**

Configure Start

Select Object

Select the object whose records trigger the flow when they're created, updated, or deleted.

*Object: Vehicle Test Drive

Configure Trigger

Trigger the Flow When:

○ A record is created
○ A record is updated
● A record is created or updated
○ A record is deleted

Set Entry Conditions

Specify entry conditions to reduce the number of records that trigger the flow and the number of times the flow is executed. Minimizing unnecessary flow executions helps to conserve your org's resources.

If you create a flow that's triggered when a record is updated, we recommend first defining entry conditions. Then select the **Only when a record is updated to meet the condition requirements** option for When to Run the Flow for Updated Records.

Condition Requirements: All Conditions Are Met (AND)

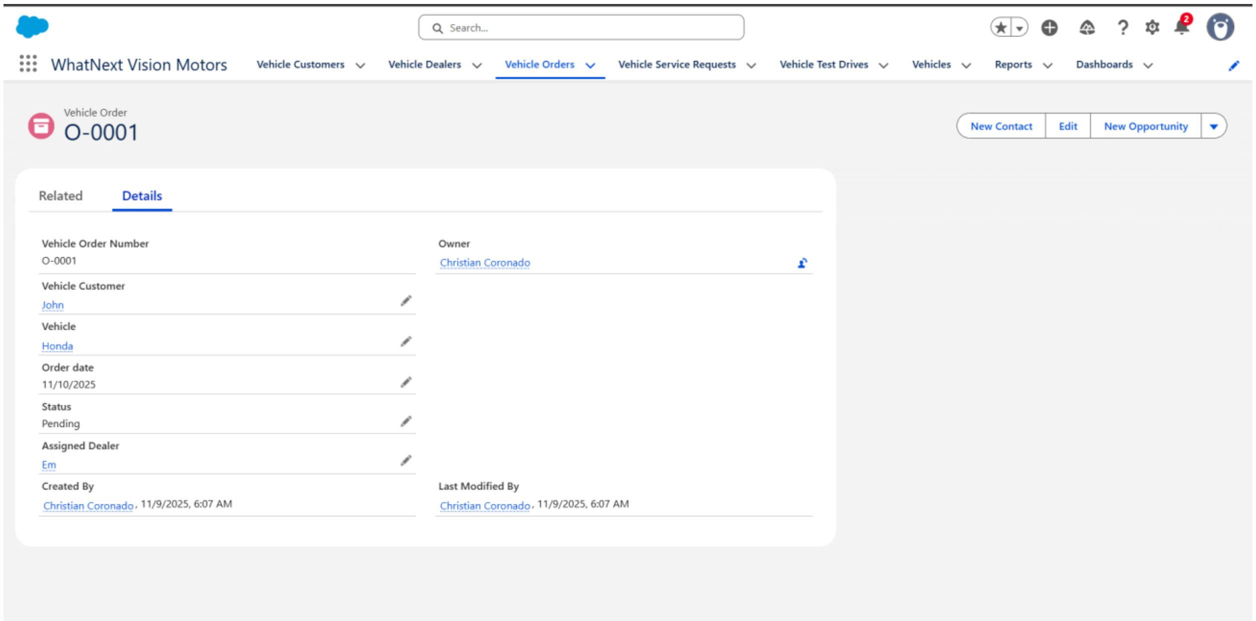
Field	Operator	Value
Status	Equals	Scheduled

+ Add Condition

When to Run the Flow for Updated Records

○ Every time a record is updated and meets the condition requirements
● Only when a record is updated to meet the condition requirements

Fig. D: Test Drive Reminder Flow Canvas



Vehicle Order

O-0001

Vehicle Order Number: O-0001

Vehicle Customer: John

Vehicle: Honda

Order date: 11/10/2025

Status: Pending

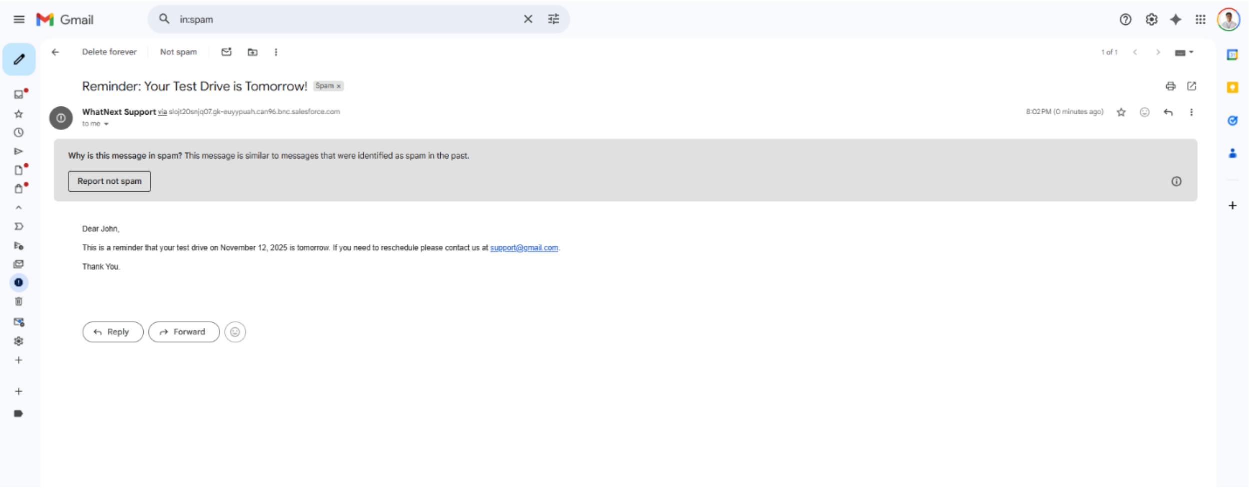
Assigned Dealer: Em

Created By: Christian Coronado, 11/9/2025, 6:07 AM

Owner: Christian Coronado

Last Modified By: Christian Coronado, 11/9/2025, 6:07 AM

Fig: E. Auto Assigned Dealer Proof



Reminder: Your Test Drive is Tomorrow! Spam

WhatNext Support via slojt20snjq07.gk-euyypuah.can96.bnc.salesforce.com
to me

8:02 PM (0 minutes ago)

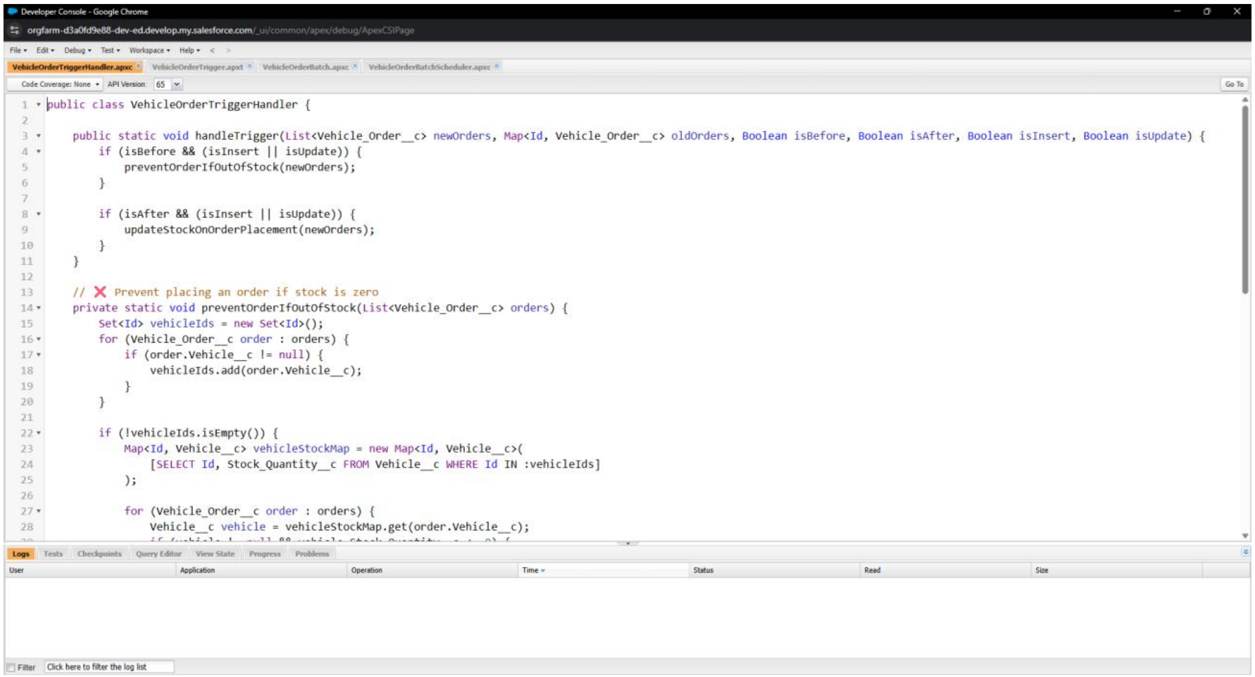
Why is this message in spam? This message is similar to messages that were identified as spam in the past.

Dear John,

This is a reminder that your test drive on November 12, 2025 is tomorrow. If you need to reschedule please contact us at support@gmail.com.

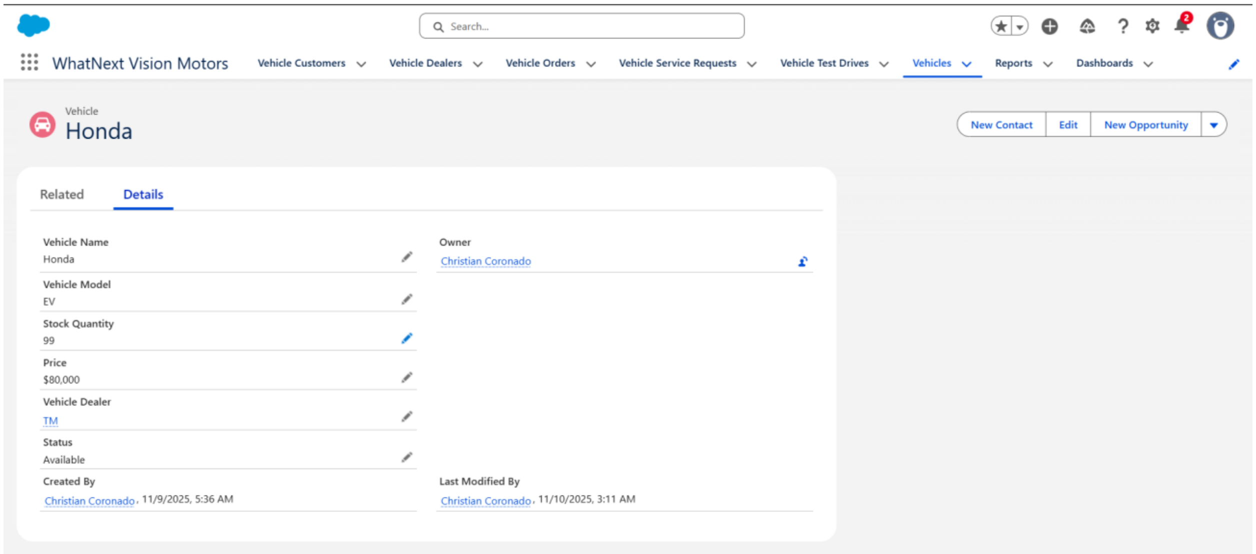
Thank You.

Fig. F: Test Drive Email Delivery Proof



```
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);
        }
    }

    // ❌ Prevent placing an order if stock is zero
    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);
```

Fig. G: Apex Components Status (Developer Console)



Vehicle

Honda

Vehicle Name
Honda

Owner
Christian Coronado

Vehicle Model
EV

Stock Quantity
99

Price
$80,000

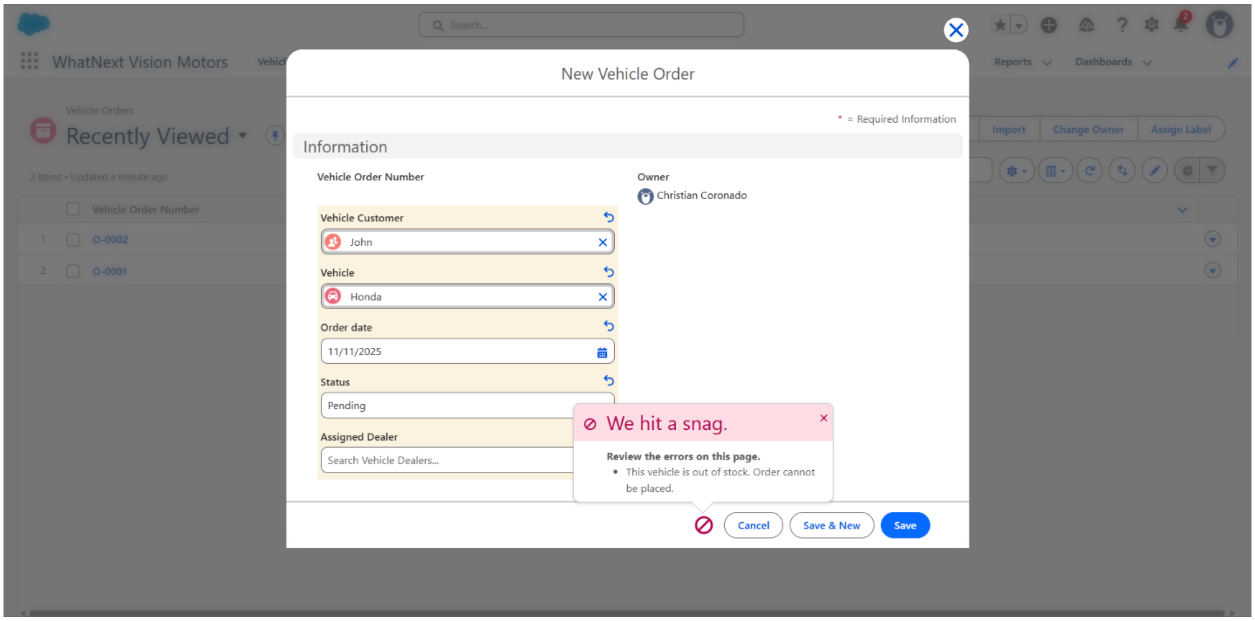
Vehicle Dealer
TM

Status
Available

Created By
Christian Coronado, 11/9/2025, 5:36 AM

Last Modified By
Christian Coronado, 11/10/2025, 3:11 AM

Fig. H: Stock Quantity Deduction Proof



New Vehicle Order

* = Required Information

Information

Vehicle Order Number

Owner
Christian Coronado

Vehicle Customer
John

Vehicle
Honda

Order date
11/11/2025

Status
Pending

Assigned Dealer
Search Vehicle Dealers...

We hit a snag.

Review the errors on this page.

- This vehicle is out of stock. Order cannot be placed.

Fig. I: Apex Stock Validation Error Message

Conclusion

The WhatNext Vision Motors capstone project successfully deployed a highly customized Salesforce CRM solution, establishing a critical digital backbone for the organization. The project’s success relied on the expert blend of Apex programmatic code and Salesforce Flow declarative automation. This hybrid approach achieved key objectives, including instantaneous Real-Time Stock Validation and intelligent Automatic Dealer Assignment. By automating these mission-critical processes, the solution eliminated manual, error-prone workflows, yielding significant gains in operational efficiency and data integrity. The final platform validates the team's comprehensive mastery of the Salesforce development stack and provides a scalable foundation ready to support WhatNext Vision Motors' future growth and innovation in the automotive sector.

Future Enhancements

The current platform is a stable foundation for growth. Future optimization should include:

- **Integrated Post-Sale Customer Care (Service Cloud):** Extending the platform to manage all post-sale interactions, warranty claims, and maintenance requests for a complete 360-degree customer view.
- **Customer Self-Service and Transparency (Experience Cloud):** Deployment of a Customer Experience Cloud (Community) to allow customers to self-service, track order status, and schedule appointments independently.
- **AI-Powered Predictive Modeling:** Leverage Salesforce Einstein capabilities to analyze purchasing patterns and vehicle maintenance data, enabling intelligent recommendations for accessories, proactive maintenance scheduling, or tailored next-vehicle upgrade suggestions.