

Salesforce CRM Project Documentation

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

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Project Overview

WhatsNext Vision Motors is revolutionizing the mobility sector by integrating cutting-edge technologies into its operational and customer service workflows. This Salesforce CRM project's main goal is to make the car ordering and service management procedures more efficient. Important features include automated process flows, scheduled updates for bulk records, order validation based on live stock status, and intelligent dealer assignment based on client geography. The accuracy of order fulfillment is increased, manual labor is decreased, and customer happiness is raised by this application.

Objectives

The main goal of the Salesforce CRM project is to build an intelligent, automated system that enhances customer service and operational efficiency. Objectives include:

- Ensuring customers only place orders for in-stock vehicles.
- Automatically assigning orders to the nearest dealer using customer location.
- Automating reminders and updates for test drives and stock levels.
- Reducing manual errors and optimizing staff time for strategic tasks.

Requirement Analysis & Planning

Understanding Business Requirements

- Customers were previously able to place orders for unavailable vehicles.
- Dealer assignment was manual and prone to errors.
- Order status updates were inconsistent and required manual tracking.
- Test drive scheduling and follow-up lacked automation.

Defining Project Scope and Objectives

- Develop a Salesforce-based system to handle vehicle orders, test drives, and service requests.
- Prevent order placement if the vehicle is out of stock.
- Auto-assign orders to the nearest dealer using customer address.
- Enable automated emails for test drives and stock updates.
- Implement Apex logic and scheduled jobs for automation and backend processing.

Design Data Model and Security Model

- **Custom Objects:** Vehicle__c, Dealer__c, Customer_Order__c, Test_Drive__c
- **Key Relationships:**
 - Vehicle__c → Lookup to Dealer__c
 - Customer_Order__c → Lookup to Vehicle__c & Dealer__c
 - Test_Drive__c → Lookup to Customer__c & Vehicle__c
- **Security:**
 - Role-based access for Sales Executives, Admins, and Dealers.
 - Object and field-level security via profiles and permission sets.

Salesforce Development – Backend & Configurations

Setup Environment

- Source control through GitHub.
- Salesforce developer organization for workflow and development of project.

Custom Object Fields Overview

Vehicle__c

- Model – Name or type of the vehicle model
- Variant – Specific variant of the model
- Price – Cost of the vehicle
- Available_Quantity__c – Number of vehicles in stock
- Stock_Status__c – Current stock status (e.g., In Stock, Out of Stock)

Dealer__c

- Dealer_Name – Name of the vehicle dealer
- Location__c – Dealer's location or branch
- Email – Contact email of the dealer
- Contact_Number – Phone number of the dealer

Vehicle_Customer__c

- Customer_Name – Name of the customer
- Email – Customer's email address
- Address – Physical address of the customer
- Phone – Customer's phone number

Vehicle_Order__c

- Order_Date – Date the order was placed
- Order_Status__c – Status of the order (Pending / Confirmed)
- Linked Vehicle & Dealer – References to related Vehicle__c and Dealer__c

Vehicle_Test_Drive__c

- Scheduled_Date__c – Date of the test drive
- Vehicle__c – Vehicle to be test driven (linked to Vehicle__c)
- Customer__c – Customer taking the test drive (linked to Vehicle_Customer__c)
- Reminder_Sent__c – Indicates if a reminder was sent (Yes/No)

Vehicle_Service_Request__c

- Service_Type__c – Type of service requested (e.g., Repair, Maintenance)
- Status__c – Status of the service request
- Vehicle__c – Related vehicle (linked to Vehicle__c)
- Customer__c – Related customer (linked to Vehicle_Customer__c)

Automation Configuration

Validation Rules

- Prevent Order on Zero Stock
 - Applied on Vehicle_Order__c: Prevents order if Available_Quantity__c = 0
- Test Drive Date Check
 - Ensures Scheduled_Date__c is not set in the past

Record-Triggered Flows

- Dealer Auto-Assignment Flow
 - Trigger: When a Vehicle_Order__c is created
 - Action: Assigns the nearest Dealer__c based on customer's address
- Test Drive Reminder Flow
 - Trigger: Scheduled daily check
 - Action: Sends automated email reminder if test drive is due within 24 hours

Scheduled Flows

- Stock Reminder Email Flow
 - Sends low-stock alert to inventory managers for any vehicle with Available_Quantity__c below threshold

Apex Classes and Triggers

Apex Trigger: Stock Validation

- Object: Vehicle_Order__c
- Checks if the selected vehicle is in stock
- If not, sets Order_Status__c to Pending and prevents status as Confirmed

Apex Trigger: Nearest Dealer Assignment

- Object: Vehicle_Order__c
- Uses customer location and dealer proximity logic to assign the most relevant Dealer__c

Trigger Handler Structure

- All logic follows a modular trigger handler pattern for clean code separation and easy maintenance.

Asynchronous Apex

Batch Apex: Stock Updater

- Class: Batch_StockUpdater
- Purpose: Periodically updates Available_Quantity__c on Vehicle__c
- Also triggers restock alert if stock is low

Scheduled Apex: Bulk Order Status Updater

- Class: Schedule_Order Status Update
- Runs at predefined intervals to:
 - Set Order_Status__c to Confirmed if vehicle is in stock
 - Set to Pending if not available

UI/UX Development & Customization

- App Name: WhatNext Vision Motors
- Created using the App Manager in Salesforce with a custom logo, default landing tab as “Vehicle Orders,” and user-specific navigation items for Sales Executives, Dealers, and Admins.
- App Items Included: Vehicle__c, Vehicle_Order__c, Vehicle_Customer__c, Dealer__c, Vehicle_Test_Drive__c, Vehicle_Service_Request__c, Reports, Dashboards

Lightning Pages and Dynamic Layouts

- Object-Specific Lightning Record Pages were created for all major custom objects.

- Dynamic Forms were enabled for:
 - *Vehicle_Order__c*: Show/hide dealer assignment fields based on vehicle availability.
 - *Vehicle_Test_Drive__c*: Display test drive status and reminders conditionally.
- Component Visibility Filters used to personalize record views based on user role (e.g., dealers only see assigned orders).

Reports and Dashboards

- Reports Developed:
 - Order Volume by Dealer
 - Vehicles Low in Stock
 - Test Drives Scheduled per Week
 - Service Requests by Status
- Dashboards Created:
 - *Dealer Dashboard*: Order fulfillment, average delivery time, top-selling models.
 - *Admin Overview*: Real-time view of stock, service backlogs, and test drive metrics.
- All visualizations use charts, gauges, and filters with real-time updates for quick decision-making.

Data Migration, Testing & Security

Data Quality Management

- Field History Tracking:
 - Enabled for key fields like *Stock_Quantity__c* (*Vehicle__c*), *Order_Status__c* (*Vehicle_Order__c*), and *Service_Status__c* (*Vehicle_Service_Request__c*) to track changes over time.
- Duplicate Rules & Matching Rules:
 - *Vehicle_Customer__c*: Matching rule on Email and Phone to prevent duplicate customer records.
 - *Vehicle_Order__c*: Duplicate rule based on same vehicle and customer within a week (to avoid accidental rebooking).
 - Custom alerts configured to notify users during record creation.

Deployment, Documentation & Maintenance

- In-Org Deployment:
 - All configurations (objects, fields, flows, Apex, profiles, dashboards) were created and tested directly within the Developer Org.
 - Real-time validation was done using test records and debug logs.
- Package Creation (for reuse or migration):
 - If needed, the entire configuration can be exported using:
 - Unmanaged Packages: Created within the org and used to deploy to another Developer Org.
 - Salesforce DX (SFDX): For future CI/CD pipeline support, especially in team environments.

Troubleshooting Approach

A structured approach was followed for identifying and resolving any issues during configuration or testing:

- Identify the Issue:
 - Monitor user actions or flow execution via debug logs or unexpected field values.
 - Review field history tracking or Apex execution logs.
- Isolate the Component:
 - Identify whether the issue lies in a validation rule, flow, Apex trigger, or UI setting.
- Resolve and Re-Test:
 - Update the relevant logic (Flow, Apex, Validation Rule).
 - Re-test using the same test data to verify the fix.

Conclusion

This Salesforce CRM project streamlined key processes at WhatsNext Vision Motors, improving order accuracy, dealer assignment, and customer interaction. With automation and centralized data, the system enhances efficiency, reduces manual errors, and ensures better service delivery. It lays a strong foundation for future upgrades like AI and chatbot integration, supporting the company's goal of delivering smart, customer-first mobility solutions.