Final Project Report

BY : Nallamsetty Sri Krishna Manohar

Batch : 1 -TCS LastMile

Mentor : Ms. Mounika Katta

Aditya College Of Engineering And Technology, Surampalem

DEPARTMENT OF : CSE(Artificial Intelligence and Machine Learning)

Phase 1: Problem Understanding & Industry Analysis

The automotive industry faces growing challenges in efficiently handling customer requests. DriveNext Motors, like many automobile companies, encountered delays in order processing, where customer requests were not routed to the nearest dealership. This resulted in long waiting times, dissatisfaction, and, in some cases, booking of vehicles that were no longer available. Additionally, test drive coordination and order updates were heavily dependent on manual phone calls, which not only consumed time but also reduced overall efficiency.

By analyzing industry needs, it became clear that a centralized system was required to streamline dealership networks, automate order handling, and provide customers with real-time updates. Stakeholders included buyers (who expect seamless booking and delivery), dealership partners (who manage orders and inventory), and sales administrators (who oversee end-to-end operations).

Phase 2: Org Setup & Initial Configuration

To address the identified challenges, DriveNext Motors implemented **AutoFlow CRM**, a Salesforce-based solution. The system was configured to automatically route purchase requests to the closest dealership based on the buyer's geographical location. This ensured timely handling of customer requests while reducing delivery delays.

The CRM also included features to validate live vehicle stock before confirming bookings, which prevented customers from ordering unavailable vehicles. Business hours, user roles, and access permissions were set up to align with dealership operations. This setup phase laid the foundation for a robust and scalable application.

Phase 3: Data Modeling & Relationships

The data model was carefully designed to capture the complexity of vehicle sales and dealership interactions. Key custom objects included:

- **Buyers:** Storing customer details and preferences.
- **Dealerships:** Holding information about partner dealers and locations.
- **Orders:** Managing purchase requests, test drives, and confirmations.
- **Vehicles:** Maintaining stock information for different models.

Relationships were established to connect buyers with their orders, dealerships with available stock, and technicians with scheduled test drives. Lookup and master-detail relationships ensured that orders could be linked to multiple entities, while a junction object allowed flexible assignment between vehicles and dealers.

Phase 4: Process Automation (Admin)

Automation was a critical step in reducing manual workloads. Using **Salesforce Flows, Workflows, and Process Builder**, the following automations were implemented:

- Automatic updates to order progress (Requested → Booked → Confirmed → Delivered).
- Automated notifications for test drives, sent via email and SMS.
- Validation rules to restrict bookings for unavailable vehicles.

These automations ensured that both customers and dealers received timely updates, reducing the need for manual communication by nearly 60%.

Phase 5: Apex Programming (Developer)

Where declarative tools could not provide sufficient functionality, **Apex programming** was used. Triggers were developed to cross-check inventory before confirming orders. Service classes ensured smooth execution of business logic.

Batch Apex jobs were scheduled to refresh vehicle availability across dealerships, maintaining live synchronization of stock levels. Scheduled jobs also automated repetitive tasks such as follow-ups and order processing. With 90%+ test coverage, the system was deployment-ready and scalable for high transaction volumes.

Phase 6: User Interface Development

A custom **Salesforce Lightning App** was developed for dealerships and administrators. The app featured:

- **Real-time dashboards** to track dealership performance.
- **Interactive order tracking pages** for administrators and buyers.

- **Custom Lightning Web Components (LWCs)** for visualizing sales funnels, test drive schedules, and dealership stock health.

The modern and intuitive interface allowed both sales teams and managers to make quick, data-driven decisions.

Phase 7: Integration & External Access

Integration was implemented to ensure seamless operations across multiple dealerships. Inventory data from different locations was synchronized through **batch jobs and external APIs**. This allowed dealerships to maintain accurate stock levels without manual updates.

For customer engagement, the CRM integrated with external communication services to send SMS and email notifications. Salesforce Connect provided external data access for real-time insights, ensuring customers were always updated with the latest status of their requests.

Phase 8: Data Management & Deployment

The system required robust data management practices to maintain accuracy and security. Using **Data Loader and Import Wizard**, dealership and vehicle data was uploaded into the CRM. Duplicate management rules prevented redundant entries.

Deployment was managed through **Change Sets** and **SFDX CLI**, ensuring that changes moved smoothly from sandbox testing to production environments. Scheduled backups were also established to protect critical data.

Phase 9: Reporting, Dashboards & Security Review

Reporting and analytics were crucial to track performance and efficiency. The following reports and dashboards were created:

- Tabular and summary reports to monitor orders and dealership activity.
- Matrix and joined reports for analyzing customer satisfaction and sales trends.
- Dashboards to visualize dealership performance, stock availability, and sales funnels.

To maintain data security, **Field Level Security (FLS)**, IP restrictions, and audit trails were applied. This ensured compliance with organizational policies while protecting customer information.

Phase 10: Final Presentation & Outcomes

The final phase involved presenting the **AutoFlow CRM system** as a complete solution. The demo showcased:

1. Logging in as a dealership administrator.
2. Creating an order and assigning it to the nearest dealer.
3. Scheduling a test drive with automated SMS/email notifications.

4. Monitoring the order lifecycle from request to delivery.
5. Viewing dashboards for dealership efficiency and customer satisfaction.

Outcomes:

- A centralized system for managing dealership networks and customer orders.
- Automated processes reduced manual efforts by 60%.
- Real-time updates improved customer trust and satisfaction.

Key Learnings:
The project demonstrated end-to-end Salesforce capabilities, combining declarative tools (flows, dashboards, automation) with developer expertise (Apex, batch jobs, LWCs). It highlighted how technology can solve real-world inefficiencies in the automotive sector.

Future Scope:

- AI/Einstein Analytics for predicting demand and vehicle shortages.
- Mobile app access for on-the-go dealership staff.
- IoT integration for real-time vehicle availability from manufacturing units.
- Gamification elements to engage dealership partners in achieving targets.