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Abstract

The **Automobile Showroom Management System** is a MERN stack-based application designed to streamline showroom operations. It features role-based panels for Admins, Sales Representatives, and Customers, offering tools for inventory management, sales tracking, customer engagement, and order processing. Integrating third-party APIs for social login, payment gateways, SMS notifications, and AI-driven support, the system ensures efficiency, scalability, and a superior user experience.



Scope Document

Automobile Showroom Management System

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Scope Document for Automobile Showroom Management System

# Project Title

Automobile Showroom Management System

# Project Overview

The Automobile Showroom Management System is a web-based platform designed to streamline showroom operations such as inventory management, customer interactions, order processing, and sales tracking. Built on the MERN stack, the system is modular, secure, and scalable. It integrates advanced features like third-party APIs for authentication, payments, notifications, and customer support, ensuring an enhanced user experience for administrators, sales representatives, and customers.

# System Objectives

- Provide a centralized platform for managing automobile showroom operations efficiently.

- Facilitate seamless interactions between showroom staff and customers.

- Enable comprehensive inventory and transaction management with analytics and reporting.

- Offer an intuitive interface for customers to browse, book, and purchase vehicles online.

- Integrate modern technologies and APIs for secure payments, notifications, and instant customer support.

# Key Features and Modules

## 1. Admin Panel

The Admin Panel ensures effective management of users, vehicles, orders, and analytics.

### User Management

Role-Based Access Control: Assign and manage roles (Admin, Sales Representative, Customer).

User Registration and Login: Create, update, and delete user accounts.

### Inventory Management

Vehicle Listings: Add, update, and delete vehicle records.

Categorization and Organization: Categorize vehicles by type, model, make, and price.

Image and Video Uploads: Manage multimedia content for each vehicle.

Filtering and Search: Search and filter vehicles by specifications, price, and availability.

### Sales Management

Order Management: Track and manage sales orders with real-time status updates (Pending, Completed, Canceled).

Refund Processing: Handle customer refund requests.

### Transaction Management

Transaction Overview: View all payment transactions and methods (Online Payment, Cash on Delivery).

Revenue Tracking: Monitor showroom revenue and performance trends.

### Analytics and Reporting

Sales Reports: Generate daily, weekly, and monthly sales reports.

Vehicle Performance: Identify popular models and track inventory turnover.

### Video Link Management

Tutorials and Demos: Add, update, and delete video links showcasing tutorials, features, and demo videos for vehicles.

## 2. Sales Representative Panel

The Sales Panel focuses on customer interactions and closing deals efficiently.

### Customer Management

Customer Profiles: View, add, and update customer information.

Interaction Records: Maintain a history of customer interactions and preferences.

### Quotation Management

Quotation Generation: Generate customized price quotes, including financing and installment options.

Follow-Up Notifications: Automatically send follow-up SMS or email notifications.

### Order and Delivery Management

Order Updates: Manage customer orders and update statuses (Pending, Processing, Delivered).

Delivery Scheduling: Coordinate and schedule vehicle deliveries with customers.

### Discount and Offers Management

Promotions: Add or remove limited-time discounts on vehicles.

## 3. Customer Panel

The Customer Panel is designed for ease of use, offering a seamless experience from browsing to purchase.

### Vehicle Catalog

Search and Filter: Search for vehicles by category, price, and make.

Detailed Information: View specifications, pricing, images, videos, and customer reviews.

### Booking and Inquiry

Test Drive Booking: Schedule test drives for preferred vehicles.

Inquiry Form: Submit questions about vehicles or showroom services.

Notification System: Receive email or SMS updates for inquiries and bookings.

### Order Processing

Shopping Cart: Add vehicles to a shopping cart for purchase.

Checkout:

- Cash on Delivery: Proceed with COD options.

- Online Payment: Complete transactions using secure payment gateways.

Order Confirmation: Display and email order confirmation details.

### Order History

Purchase Records: View all past purchases and invoices.

Invoice Download: Download and print invoices for completed orders.

### Account Management

Profile Management: Add or update personal details.

Address Book: Manage multiple delivery addresses.

### Customer Support

Instant Assistance: Use Gemini API for automated responses to customer queries.

# Technology Stack

## Frontend:

- React.js: Responsive and dynamic user interfaces.

- Tailwind CSS: Modern and mobile-friendly design.

## Backend:

- Node.js with Express.js: Server-side logic and API handling.

## Database:

- MongoDB: Flexible data storage for vehicles, users, and orders.

## Third-Party API Integrations:

- Authentication API: Social login via Google and Facebook.

- Payment Gateway API: Secure payments through Stripe or PayPal.

- SMS API: Notifications for bookings, orders, and follow-ups.

- Gemini API: Chatbot for customer support and queries.

- Google Maps API: Showroom location display and directions.

## Hosting:

- Frontend: Vercel or Netlify.

- Backend: Heroku or AWS EC2.

- Database: MongoDB Atlas.

# Real-World Example

A similar system is CarMax, which provides a comprehensive platform for vehicle browsing, test drives, financing, and purchases. It integrates features such as advanced search filters, secure online payments, and customer support, making it an industry benchmark.

# Expected Outcomes

- Enhanced operational efficiency for showroom staff.

- Streamlined customer experience for browsing and purchasing vehicles.

- Secure, data-driven management of inventory and sales.

- Valuable insights through analytics and reporting.