



# International Journal of Multidisciplinary Research in Science, Engineering and Technology

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## International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

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# Car Sale Management System

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**ABSTRACT:** The Car Sale Management Portal is a web solution that addresses the processes of buying and selling cars by both car dealerships and the customers. This system is intended to improve the existing problems in relation to the management of car sales, such as high manual data processing, low levels of accountability, and inefficient access to inventory. The portal adopts current technologies to enhance technological, operational, and transactional interfaces for users to car dealerships, sellers and buyers to conduct transactions easily, safely, and transparently. For dealerships, the portal provides advanced functionality for inventory, pricing, and sales control. Dealers are allowed to enter the cars' details alongside images, features, and prices, which are further sorted into categories and made accessible to potential buyers. The system comes with smart analytics which monitors the market, sets the prices automatically, and estimates sales. Customers have the advantage of using the powerful search and filter features which allow them to search for cars by make, model, year and other parameters like price range. The system also allows comparisons to help the buyers decide. Furthermore, the system has strong user authentication capabilities to protect buyers and sellers' personal identity and enhance their confidentiality. Buyers and sellers, both professional and private, can register and list their cars, as well as monitor buyer activity. A predictive feature of The Car Sale Management Portal is the recommendation of cars to buyers through the use of machine learning algorithms based on a user's preferred choices, searches, and past interactions. Additionally, the portal features a comprehensive vehicle history tracking system which guarantees the buyers receive reports detailing the car's condition, accident history, maintenance records, and enhances trust and transparency. Node.js and Express.js were used to build the back side of the portal which guarantees scalability and fast performance. Additionally, React.js was used at the frontend level to ensure an appealing user interface. User and vehicle information is securely stored in a structured MySQL database enabling swift retrieval and optimal data management. Enhanced resources and backup option are ensured through cloud hosting service allocation of AWS and Azure. A complete service offering experience is created through the integration of APIs to receive real life market data, exchange rates, and insurance quotes. The Car Sale Management Portal transforms the automobile sales industry through user-oriented modern technologies, and provides an efficient marketplace ecosystem for selling and buying vehicles. The automated online system has tremendous value for individual sellers, buyers, and car dealerships. By simplifying the sales process, providing more transparency, and ensuring convenience, it enables smarter and more secure sales in the digital age.

## I. INTRODUCTION

The digital transformation made it possible for customers to buy and order vehicles online, which is a crucial step to take if the automobile industry is to develop further. Selling cars via sales promotions utilizing telephone calls and ads tends to be labor-intensive, non-transparent, and time-consuming for both customers and sellers. The development of the Car Sale Management Portal means that aid is available through an innovative web-based car sale system that intends to automate and simplify the entire car sale process. The portal integrates all the major participants in the car sale business, thus making the buying and selling process simple for everyone involved. An entire ecosystem is created through the system which includes sellers, individual and dealership buyers, and all features such as inventory and orders, searching and comparing cars, communication between buyers and sellers, as well as safe deals. The portal environment is designed for people who have little computer knowledge. These include a sophisticated and efficient marketing and communication system with real-time chat, filters and dynamic searches, integration for secure payments via debit and credit cards, and smart advertising that uses machine learning to recommend cars. In addition, the platform allows for detailed management of dealership inventories.





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### II. OBJECTIVE

This entire project revolves around the creation and implementation of a car dealership management system that aims to enhance the productivity of the business operations as far as the sale of vehicles is concerned through automation, digital record keeping, and proper transaction processes. By removing the likelihood of human mistakes, the system guarantees correct order and inventory processing. It simplifies the processes done by users by giving a friendly interface which users such as dealers and customers can use to search, select, and buy vehicles with ease. The system also helps in providing accurate information reports which aids transparency in finances and helps the dealers to make sound business decisions. Also, this allows for greater security and convenience through several methods of payment. Scalability is another imperative concern by allowing the system to serve various kinds of businesses from the small dealerships to the big ones. With the adoption of modern technology, the Car Sale Management System automates the entire vehicle sales process making it less tedious for users while increasing accuracy and warmth of service.

### III. LITERATURE SURVEY

- [1] Summary of Findings: Patel et al. (2020) provided an analysis that showcased how digital sales platforms enhance integration leading to increased customer satisfaction and reduced transactional errors.
- [2] Inventory Management Precision: According to Kumar & Sharma (2021), automated inventory tracking leads to more accurate stock levels and increased dealership productivity.
- [3] Fraud Prevention: Secure payment gateways enable cardiac frauds to be eliminated while aiding in the safe online transactions Ranjan & Thomas (2022) argue that this proves the significance of fraud prevention payment gateways.
- [4] Data Analysis Flexibility: Gupta & Mehta (2023) confirmed that reporting real time sales enables tracking of several trends within the dealership allowing for data driven decisions to be made on the business.
- [5] Enhanced Customer Relationship: Lee & Park (2021) reports the integration of car sales systems and CRM tools improves customer participation and retention.
- [6] Without Limits Access: Alok & Verma (2022) underline that cloud based car sales systems facilitate unlimited scalability which is ideal for both small and large dealerships.
- [7] Interaction and Business Activity Automation: Singh & Nair (2021) underlines the improvement in employee efficiency due to less work being done by dealership staff caused by user friendly dashboards and automation of several activities.

### IV. SYSTEM REQUIREMENTS

#### USER REQUIREMENTS:

- Intuitive interface for dealers and buyers.
- Secure login and authentication for different users.
- Automated vehicle listing and filtering options.

#### FUNCTIONAL REQUIREMENT:

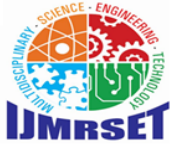
- User authentication and role-based access.
- Vehicle inventory management (add/update/delete vehicles).
- Order processing and invoice generation.
- Payment integration with multiple gateways.
- Sales reporting and analytics.

#### NON-FUNCTIONAL REQUIREMENTS:

- Data security and encryption for customer transactions.
- High system performance during peak traffic.
- Scalability to accommodate multiple dealers.

#### Hardware & Software Requirements:

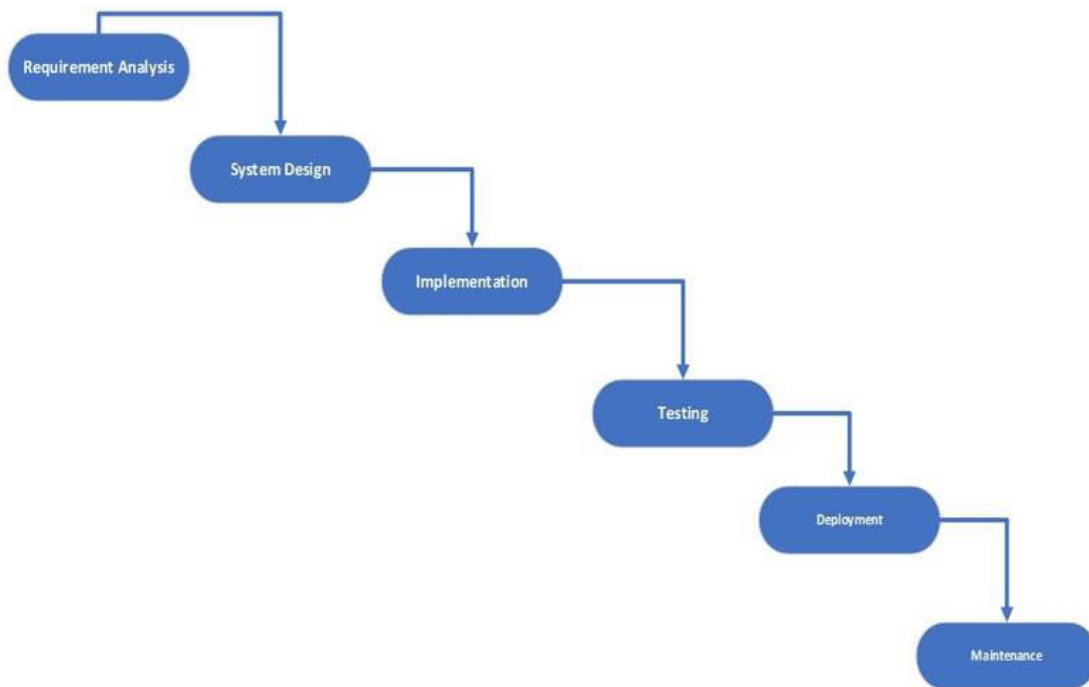
- **Front-End:** HTML, CSS, JavaScript.
- **Back-End:** PHP, MySQL.
- **Hardware:** Minimum 8GB RAM, 512GB Storage.



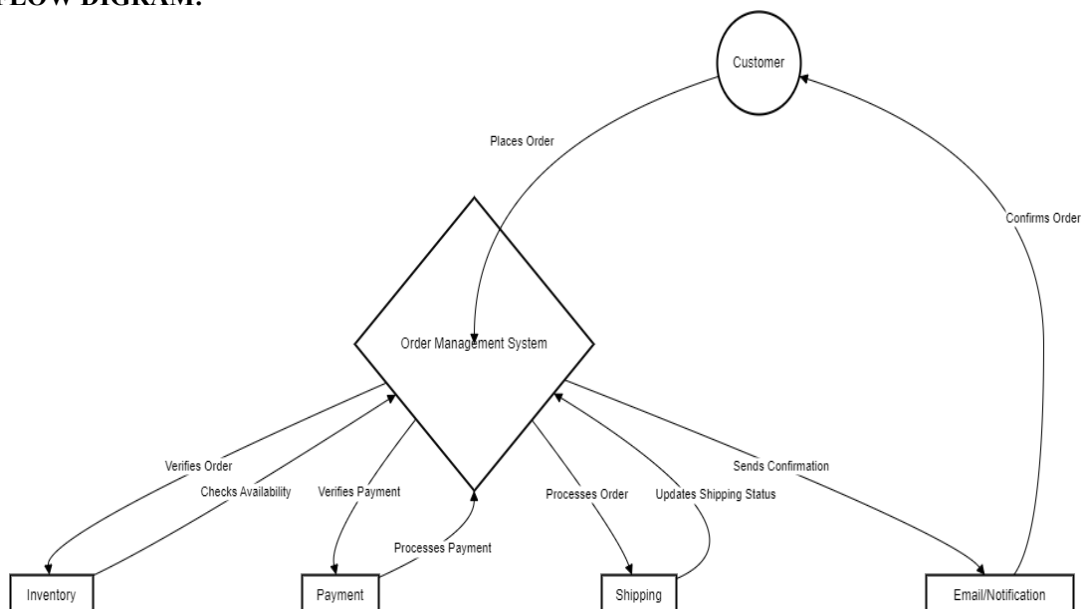
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### BLOCK DIGRAM:



### WORKFLOW DIGRAM:



### V. SCOPE OF THE PROJECT

With the aid of these systems, small to large-scale dealerships can manage their auto sale needs with ease. The seamless way of managing sales, MCC accounts, and inventory enables automobiles businesses, big or small, to run with ease and efficiency. The Traditional car dealers are also able to switch onto the online market without skipping a beat, while eCommerce companies are able to foster strong relationships with their customers and offer aid in the sale automation process. These systems are beneficial for the well-being of the dealership as it lessens the amount of



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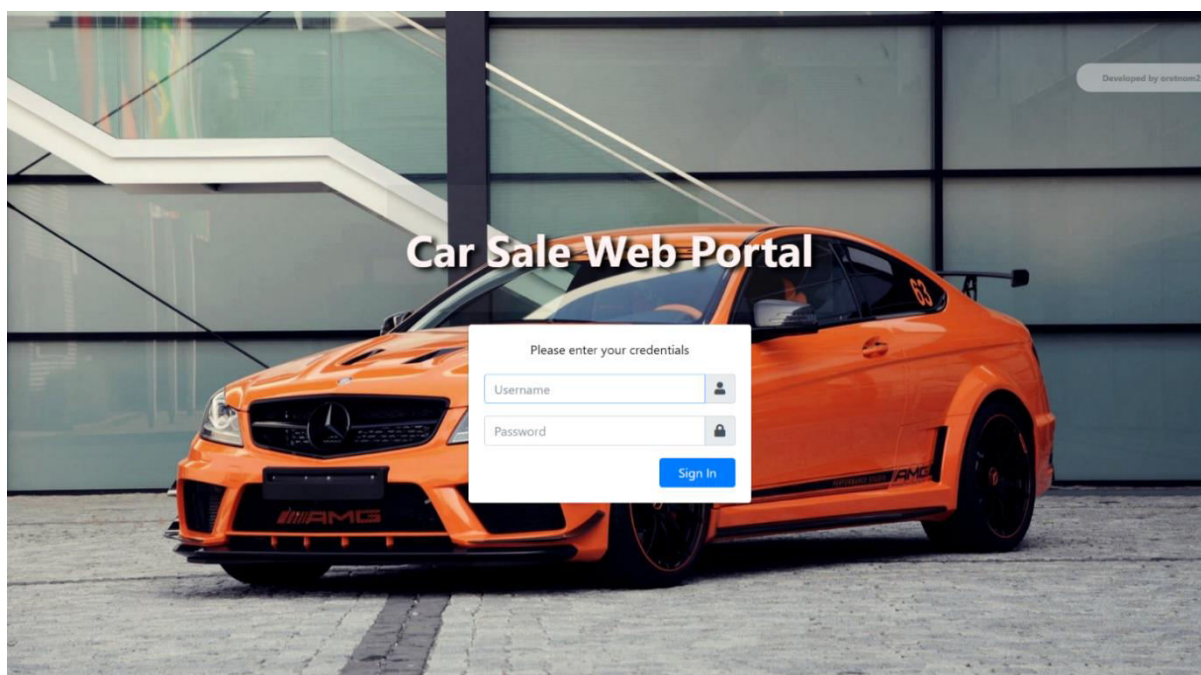
administrative work, enhances customer engagement, and helps improve overall business operations. This also assists inline with the industry's standard guidelines and regulations for selling vehicles and provide financing. The incorporation of these analytic and reporting features allows the business to monitor their performance, identify market trends, and track important sales numbers to make more educated decisions. This will have a positive influence which result in improving workflows and increased profits for car dealers and efficiently managing fleets.

### EXPERIMENTAL RESULTS:

Year	Sales Value (in million\$)
2018	25.4
2019	28.9
2020	32.5
2021	36.8
2022	41.2
2023	47.5
2024	53.9

### OUTPUT DESIGN:

Login page:





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### Dashboard Page:

Car Sale Web Portal - Admin

Welcome, Guru E!

Developed by oretnm23

Category	Count
Brands	18
Car Types	8
Car Models	2
Available Vehicles	2
Sold Vehicles	1
Today's Sales	0

Left Sidebar Menu:

- Dashboard
- Car Models
- Vehicles
- Master List
- Monthly Sales Report
- Maintenance
  - User List
  - System Information

### Car Available Page:

Car Sale Web Portal - Admin

List of Vehicles

Developed by oretnm23

Show 10 entries

Search:

#	Brand	Model	Vehicle	Price	Action
1	BMW Coupe	BMW M2 Petrol manual	MV File No.: 23456787654 Plate #: TN94A2233	100,000,000.00	Sell
2	Ford Sports	Ford Mustang petrol manual	MV File No.: 5677667 Plate #: TN38CH6677	7,400,000.00	Sell

Showing 1 to 2 of 2 entries

Previous 1 Next

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Car Sale (by: Nobel Software) v1.0



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### Brands Page:

Car Sale Web Portal - Admin

Developed by nobelsoftwares3

+ Create New

Show 10 entries

Search:

#	Date Created	Brand	Status	Action
1	2025-03-20 16:01	Audi	Active	Action
2	2025-03-20 16:02	BMW	Active	Action
3	2025-03-20 16:01	Bugati	Active	Action
4	2025-03-20 15:59	Chevrolet	Active	Action
5	2025-03-20 15:59	Ford	Active	Action
6	2025-03-20 15:59	Honda	Active	Action
7	2025-03-20 15:59	Hyundai	Active	Action
8	2025-03-20 16:00	Jeep	Active	Action
9	2025-03-20 16:01	Land Rover	Active	Action
10	2025-03-20 15:27	Maruthi Suzuki	Active	Action

Showing 1 to 10 of 18 entries

Previous 1 2 Next

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Car Sale (by: Nobel Software) v1.0

### User List Page:

Car Sale Web Portal - Admin

Developed by nobelsoftwares3

+ Create New

Show 10 entries

Search:

#	Date Updated	Avatar	Name	Username	Type	Action
1	2025-03-20 17:14		Gowtham B	gowtham	Staff	Action
2	2025-03-20 17:13		Guru Balan E	guru	Administrator	Action
3	2025-03-13 22:37		KARUPPUSAMY KUPPUSAMY	ksamy1527	Staff	Action

Showing 1 to 3 of 3 entries

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localhost/admin/admin/?page=user/list





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### Car Type List:

#	Date Created	Car Type	Status	Action
1	2025-03-20 16:28	Coupe	Active	Action
2	2025-03-20 16:29	Hatchback	Active	Action
3	2025-03-20 16:29	Minivan	Active	Action
4	2025-03-20 16:29	Pickup Truck	Active	Action
5	2025-03-20 16:29	Sedan	Active	Action
6	2025-03-20 16:29	Sports	Active	Action
7	2025-03-20 16:30	Sports-Utility Vehicle(SUV)	Active	Action
8	2025-03-20 16:30	Station Wagon	Active	Action

Showing 1 to 8 of 8 entries

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### VI. CONCLUSION

As for this web application, it was successfully designed and saved the Customers for POS and Inventory, user, user validation, user verification, enquiry, and report details into the corresponding tables within the scope of this application. The application is well tested for most of the errors and debugging was done properly. Testing also showed that the performance of the system was satisfactory. All required output is generated. This system provides a simplified method of automating all the features of consumption. It will be effective if this application is implemented in a few places. Further enhancements can be done to the project so that the website works in a more attractive and functional way than it does now. It is acknowledged that the application performs as intended and meets requirements. The application is well tested for most of the errors and debugging was done properly. It also acts as a repository for sharing files to the valued resources.

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