

# **Team members:**

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## Introduction

CarXchange is a modern web-based platform that redefines how people buy and sell vehicles. Built with a user-first mindset, the application offers a seamless experience from vehicle listing to browsing and inquiry — all without the hassle, delays, or fees. It leverages cutting-edge web technologies, intuitive design, and AI integration to deliver a solution that's fast, secure, and intelligent.

## **Technologies Used**

### Frontend:

- HTML, CSS
- Tailwind CSS
- JavaScript
- React.js

#### **Backend:**

- Node.js
- Express.js

#### Database:

MongoDB

#### Other Tools:

- JWT for authentication
- bcrypt for password hashing
- Multer for file (image) uploads
- Postman for API testing

## **Key Features**

- User Authentication Secure signup, login, and tokenbased access to personal listings.
- Vehicle Listings:Users can list cars with detailed information and upload 3–15 images per listing.
- Browse and Filter: Buyers can search cars using filters like Make, Model and Year
- AI Chatbot: An integrated 24/7 virtual assistant offers real-time car buying/selling advice.
- User Dashboard: Users can manage and review their information in a personalized profile view.

### **System Design Overview**

- Client Side: Developed with React and Tailwind for dynamic, responsive UI.
- Server Side: Built with Express.js to handle routing, authentication, and database operations.
- Database: MongoDB stores user data and vehicle listings, using ObjectIDs to link user ownership.
- File Handling: Multer handles secure image uploads, which are saved locally for display.

### **Outcomes**

- The platform is fully functional and allows seamless car listing and browsing.
- Users can authenticate securely and view only their informatin on the profile page.
- CarXchange has simplified the process of trading vehicles by removing fees and improving transparency.
- The chatbot successfully enhances user engagement by answering common questions in real time.









