4WHEEL.COM

4wheel.com is a full-stack web application built using the MERN (MongoDB, Express.js, React.js, Node.js) stack. It serves as a car dealership webApp where users can browse cars, register, book test drives, and interact with administrators. The project includes both frontend and backend components to provide a seamless user experience.

FEATURES

- **User Registration and Login**:
    - Users can register and log in to their accounts securely.
- **Admin Login**:
    - Separate login functionality for administrators to access the dashboard.
- **Authentication**:
    - Authentication is handled using cookie-based tokens for secure session management.
- **Responsive Design**:
    - The application is fully responsive, adapting to various screen sizes and devices.
    - Navbar displays user photo upon login, and clicking on the photo shows a dropdown menu for user profile and logout options.
- **Pages**:
    - Users can navigate through Home, About, and Car Detail pages.
- **Test Drive Booking**:
    - Authenticated users can book test drives for cars available on the website.
- **User Profile**:
    - Users have access to their profile where they can view their details and booked test drives. They can also update their name and phone number.
- **Messaging**:
    - Users can send messages to the admin directly from the homepage, with or without login.

ADMIN DASHBOARD FEATURES

- **Dashboard Overview**:
    - Admins are presented with an overview of key metrics like total test drive requests and registered cars.
- **Test Drive Management**:
    - Admins can view and manage test drive requests, update their status, and delete requests.
- **Car Management**:
    - Admins can view the list of available cars, add new cars to the inventory, and manage existing car details.
- **Admin Management**:
    - Admins have the capability to add new administrators to the system.
- **Messaging**:
    - Admins can view incoming messages from users and delete messages if needed.

TECH STACK

- **Frontend**
    - React
    - Vite (for fast development and building)
    - HTML/CSS/JavaScript
- **Backend**
    - Node.js with Express (RESTful API)
    - MongoDB with Mongoose (Database)

ADDITIONAL FEATURES(TO BE INCLUDED)

Cross-Browser Compatibility (Polyfills)

- The application ensures compatibility across various browsers using appropriate polyfills for features not supported by certain browsers.

SEO Optimization

- Pages are designed with SEO best practices in mind, including proper HTML structure, meta tags, and structured data for search engine visibility.

Accessibility

- The application is built with accessibility considerations, ensuring it is usable by people with disabilities. Proper semantic HTML and ARIA attributes are used for screen readers and keyboard navigation.

Web Security and Authentication

- User authentication is managed securely using cookie tokens, and other web security best practices are implemented to protect against common security threats.

Responsive Images

- Images in the application are optimized and served responsively based on device resolution to ensure fast loading times and optimal display on various screen sizes.

GETTING STARTED

Follow these steps to set up and run the project locally:

Prerequisites

- Node.js and npm installed on your machine
- MongoDB Atlas account (or local MongoDB instance) for database storage

Installation

1. Clone the repository:

```bash
git clone <repository-url>
```

2. Navigate to the project directory:

```bash
cd 4wheel.com
```

3. Install dependencies for the client:

```bash
cd client
npm install
```

4. Install dependencies for the admin:

```bash
cd 4wheel.com/admin
npm install
```

5. Install dependencies for the server:

```bash
cd ../server
npm install
```

Configuration

1. Set up environment variables:
    - Create a **.env** file in the **server/config** directory.
    - Add necessary environment variables (e.g., database URI, JWT secret).
2. Configure MongoDB connection:
    - Update the **database/db.js** file with your MongoDB connection details.

Running the Application

1. Start the server:

```bash
cd ../server
npm start
```

2. Start the client application in development mode:

```bash
cd ../client
npm run dev
```

FOLDER STRUCTURE

The project is structured as follows:

```
4wheel.com/
├── admin/
│   ├── public/             # Public assets for the admin dashboard
│   ├── src/
│   │   ├── components/     # React components for admin dashboard
│   │   ├── app.css         # Styling for the admin dashboard
│   │   ├── app.jsx         # Main application component for admin dashboard
│   │   └── main.jsx        # Entry point for rendering the admin dashboard
│   └── index.html          # HTML entry point for the admin dashboard
├── client/
│   ├── public/             # Public assets for the client application
│   ├── src/
│   │   ├── components/     # React components for client application
│   │   ├── pages/          # React components representing different pages
│   │   ├── app.css         # Global styles for the client application
│   │   ├── app.jsx         # Main application component for the client application
│   │   └── main.jsx        # Entry point for rendering the client application
│   └── index.html          # HTML entry point for the client application
└── server/
    ├── config/             # Configuration files (e.g., environment variables)
    ├── database/           # Database setup (e.g., MongoDB connection)
    ├── middlewares/        # Middleware functions (e.g., authentication)
    ├── models/             # Mongoose models for database schemas
    ├── router/             # Express routers for API endpoints
    ├── utils/              # Utility functions (e.g., JWT token management)
    ├── app.js              # Express application setup
    └── index.js            # Entry point for running the Node.js server
```

ADDITIONAL NOTES

- Ensure MongoDB is running locally or use MongoDB Atlas for cloud-based database storage.
- Customize and extend the application as needed based on specific business requirements.

CONTRIBUTOR

SUBODH SINGH subodhsingh360@gmail.com