



Recarnation

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The Problem : Navigating the Used Car Market

- Navigating the Used Car Market

The increasing need for cost-effective and eco-friendly transportation has led to notable expansion in the used car market. Our project tackles this demand by creating a user-friendly, secure web application that streamlines this process.

- A Complex Seller Journey

Sellers, meanwhile, find the process equally daunting. Listing their cars, dealing with inquiries, negotiating prices, and handling logistics – the experience can be time-consuming and stressful.

Our Solution : ReCarNation Platform

1

Seamless User Experience

ReCarNation offers a simplified, intuitive interface, making it easy for buyers to find their dream car and for sellers to list their vehicles.

2

Comprehensive Features

Our platform features advanced search and filtering tools, detailed car listings, and a comprehensive administration system.

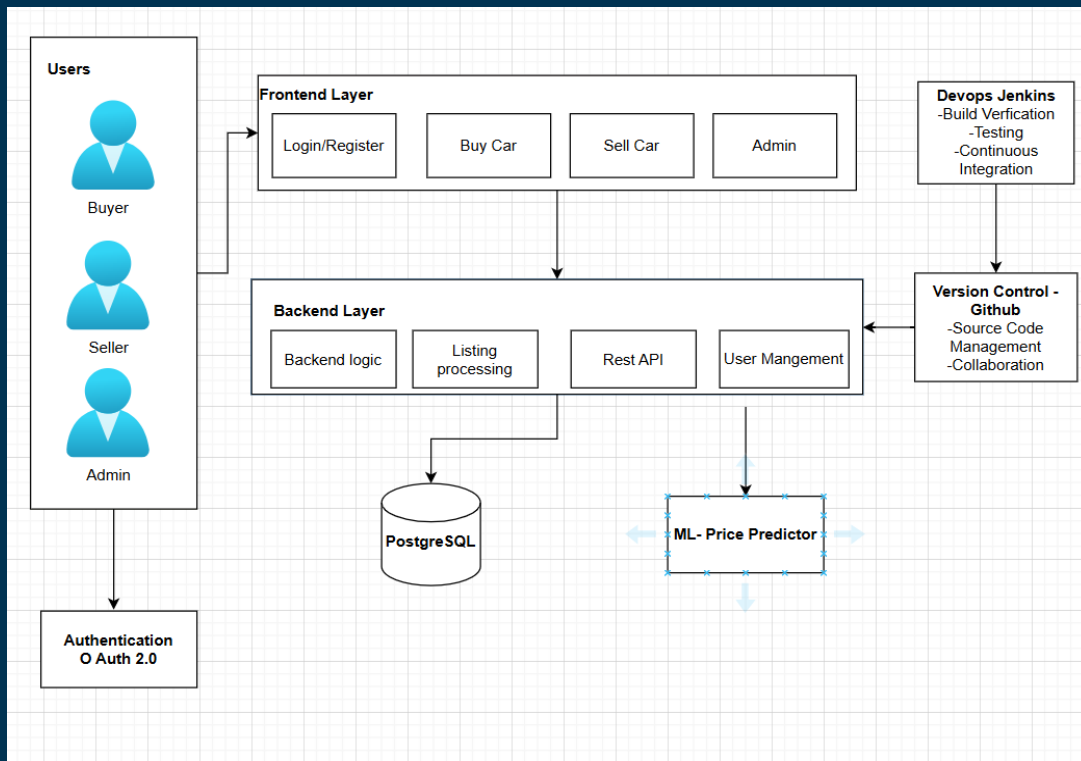
3

Trust and Transparency

We prioritize trust and transparency through strict verification processes, and secure communication channels.

At a Glance

Architecture Diagram



Key Features

- ❑ Sign In & Sign Up – Users can securely register and login using Oauth 2.0
- ❑ Buy Car – Advanced search and filtering for finding vehicles
- ❑ Sell Car – Intuitive forms for listing cars with detailed information.
- ❑ Admin – Robust control panel for managing users and listings.
- ❑ Price Predictor – Vehicle price prediction using linear regression

Technology Stack: Building a Robust Platform

Frontend: HTML, CSS, Javascript– Responsive, dynamic UI with advanced search and filtering.

Backend: Django – Handles business logic

ML Model: Linear Regression using libraries like Pandas, Numpy, Matplotlib

Database: PostgreSQL – Reliable and scalable relational database.

CI/CD: Jenkins – Automates building, testing, integration

Authentication: OAuth 2.0

Version Control: Github for code management and collaboration

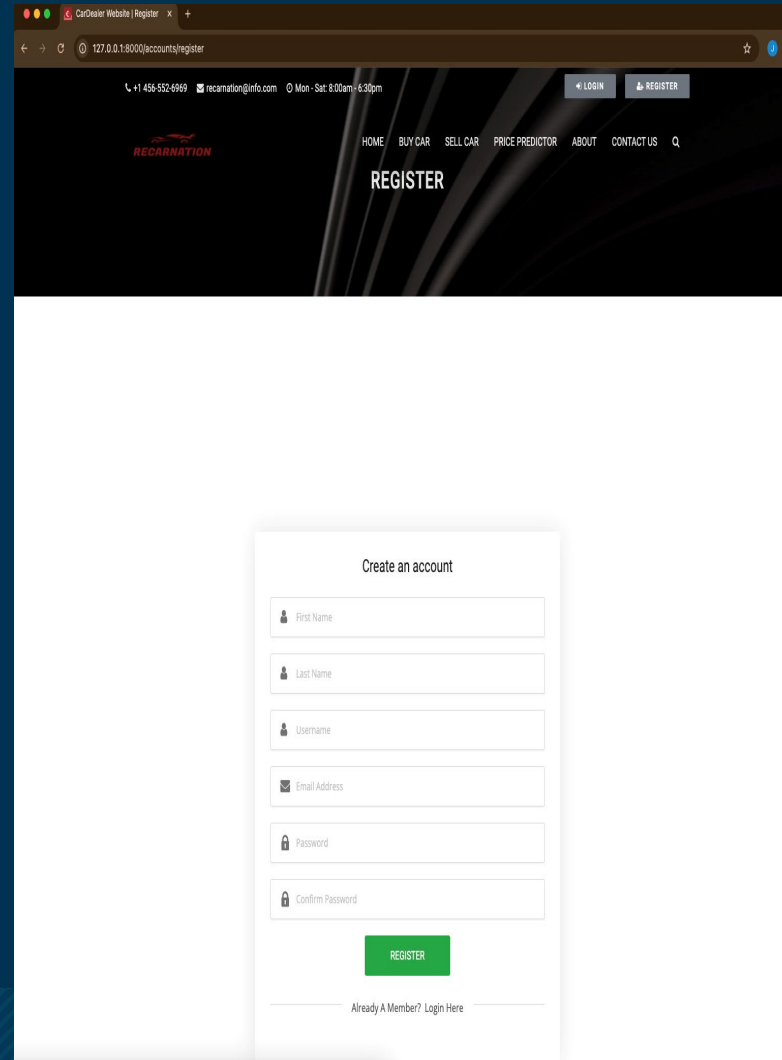
Sign up and Sign In

Users can register via a simple form.

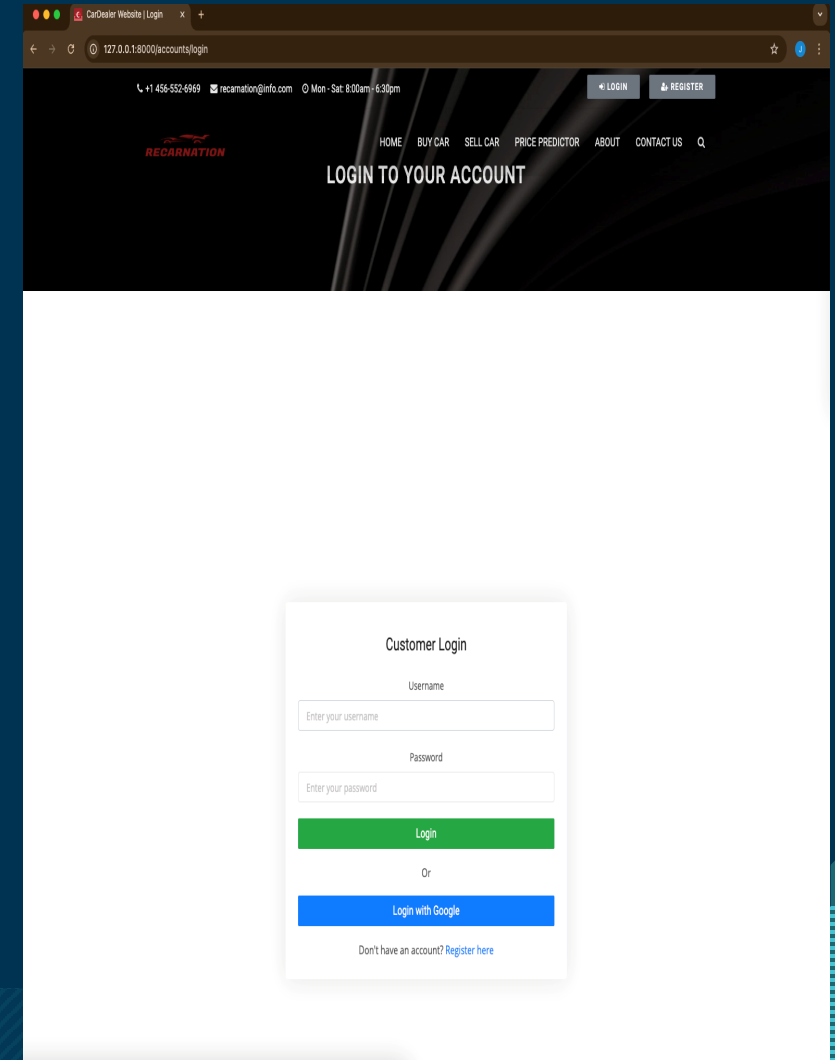
Secure login via username/email and password.

OAuth integration for Google.

Credentials are verified via Django Allauth backend.



The screenshot shows the 'CarDealer Website | Register' page. The browser address bar displays '127.0.0.1:8000/accounts/register'. The website header includes a phone number '+1 456-552-6969', an email 'recarnation@info.com', and a status 'Mon - Sat: 9:00am - 6:30pm'. Navigation links for 'HOME', 'BUY CAR', 'SELL CAR', 'PRICE PREDICTOR', 'ABOUT', and 'CONTACT US' are present. A 'REGISTER' button is in the top right. The main heading is 'REGISTER'. Below the heading is a 'Create an account' form with fields for 'First Name', 'Last Name', 'Username', 'Email Address', 'Password', and 'Confirm Password'. A green 'REGISTER' button is at the bottom of the form. A link 'Already A Member? Login Here' is at the very bottom.



The screenshot shows the 'CarDealer Website | Login' page. The browser address bar displays '127.0.0.1:8000/accounts/login'. The website header is identical to the register page. The main heading is 'LOGIN TO YOUR ACCOUNT'. Below the heading is a 'Customer Login' form with fields for 'Username' and 'Password'. A green 'Login' button is below the password field. Below the login button is an 'Or' separator and a blue 'Login with Google' button. At the bottom, there is a link 'Don't have an account? Register here'.

Buyer Journey - A User-Friendly Experience

1

Landing Page

Our landing page features a sleek design and intuitive navigation, guiding users to the right tools and information.

2

Search and Filtering

The search bar and filters allow buyers to quickly narrow down their options based on make, model, year, price.

3

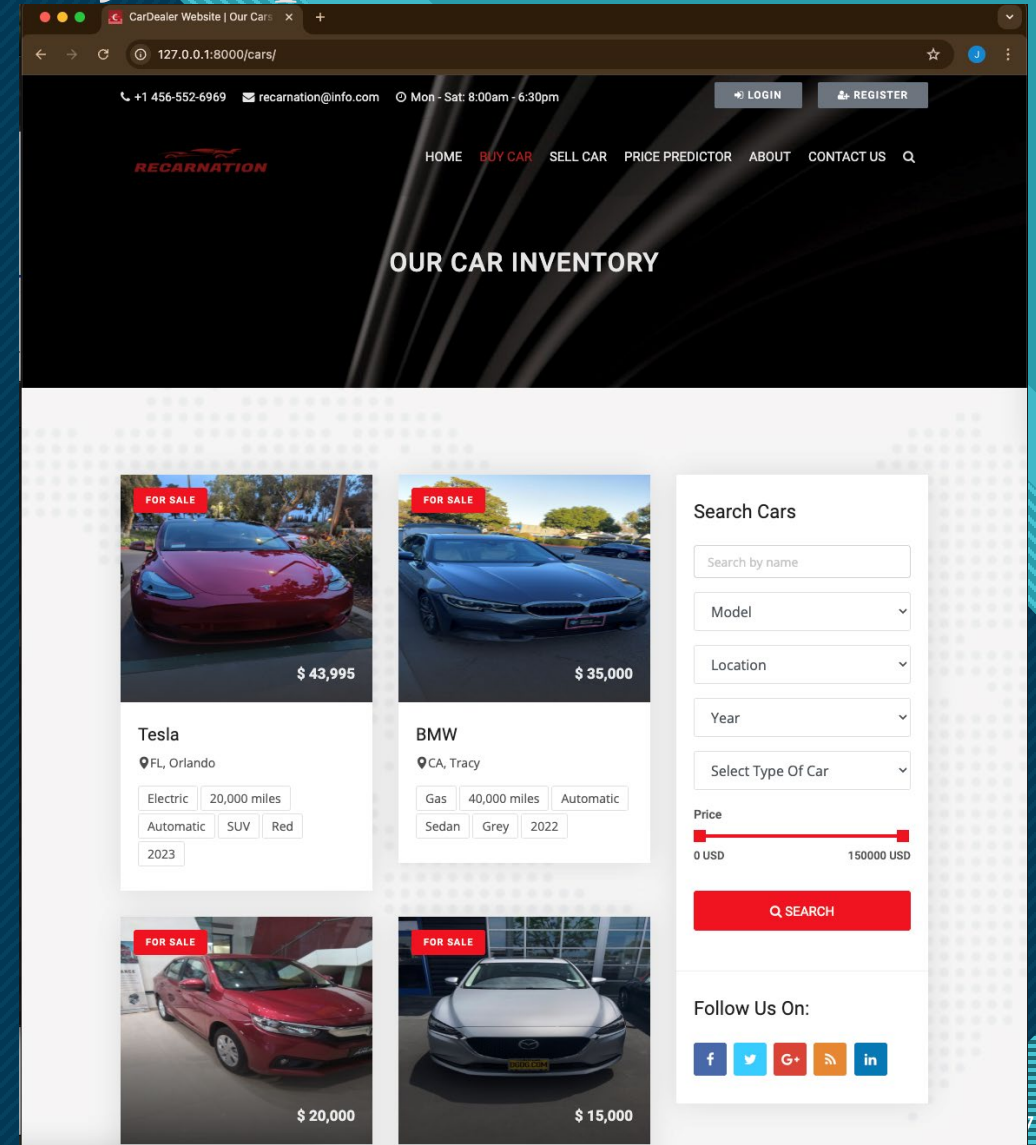
Listing Details

Each listing provides comprehensive details about the vehicle, including photos, vehicle history reports.

4

Secure Communication

Buyers can communicate with sellers through email by sending a message .



Seller Journey: Listing Your Vehicle

1

Simple Listing Creation

Listing a car on ReCarNation is easy and intuitive. The platform provides a clear and concise form with detailed fields for car information.

2

Comprehensive Information

Sellers can input all relevant details about their car, including vehicle history, maintenance records, and any potential issues.

3

Image Uploads

Users can upload high-quality photos of their car, showcasing its condition, features, ensuring potential buyers have a clear picture.

4

Listing Management

ReCarNation empowers sellers to manage their listings, adjust prices, respond to inquiries.

+1 456-552-6969 recarnation@info.com Mon - Sat: 8:00am - 6:30pm DASHBOARD LOGOUT



HOME BUY CAR SELL CAR PRICE PREDICTOR ABOUT CONTACT US Q

MANAGE YOUR CARS

Your Cars

Car Title	Color	Model	Year	Status	Actions
2023 Toyota 4Runner	White	LYRIQ Luxury 2	2000	Pending	<button>Edit</button> <button>Delete</button>

Add Car

Vehicle Price Prediction Using Linear Regression

- Data preprocessing and splitting into training, validation, and test sets.
- Building and optimizing a regression model with regularization.
- Using the model for accurate vehicle price predictions.

The screenshot shows a web browser window with the address bar displaying "127.0.0.1:8000/predict". The page has a dark header with the "RECARNATION" logo and a hamburger menu icon. Below the header, the text "PRICE PREDICTOR" is centered. The main content area contains a form with the following fields and values:

- Enter the maker : Mazda
- Enter the model : Mazda 6
- Enter the year : 2018
- Enter the engine fuel type : gas
- Enter the engine horse power : 187
- Enter the engine cylinders : 4
- Enter the transmission type : automatic
- Enter the driven wheels : front
- Enter the number of doors : 4
- Enter the market category : sedan
- Enter the vehicle size : midsize
- Enter the vehicle style : sedan
- Enter the highway mpg : 36

The screenshot shows the same web browser window as the previous one, but with a green overlay box displaying the predicted price. The overlay box contains the text "The predicted price of your car is: 8988 \$" and an "OK" button. The form fields are partially visible behind the overlay.

Enter the maker :
make of a car (BMW, Toyota, and so on)

Enter the model :
model of a car

Enter the year :
year of a car

Enter the engine fuel type :
type of fuel

Enter the engine horse power :
horse power of the engine

Enter the engine cylinders :
number of cylinders in the engine

Enter the transmission type :
type of transmission

Enter the driven wheels :
front, rear, all

Enter the number of doors :
number of doors a car has

Enter the market category :
luxury, crossover, and so on

Enter the vehicle size :
compact, midsize, or large

Enter the vehicle style :
sedan or convertible

Enter the highway mpg :
miles per gallon

ReCarNation: Admin Management System

Listing Approval Workflow

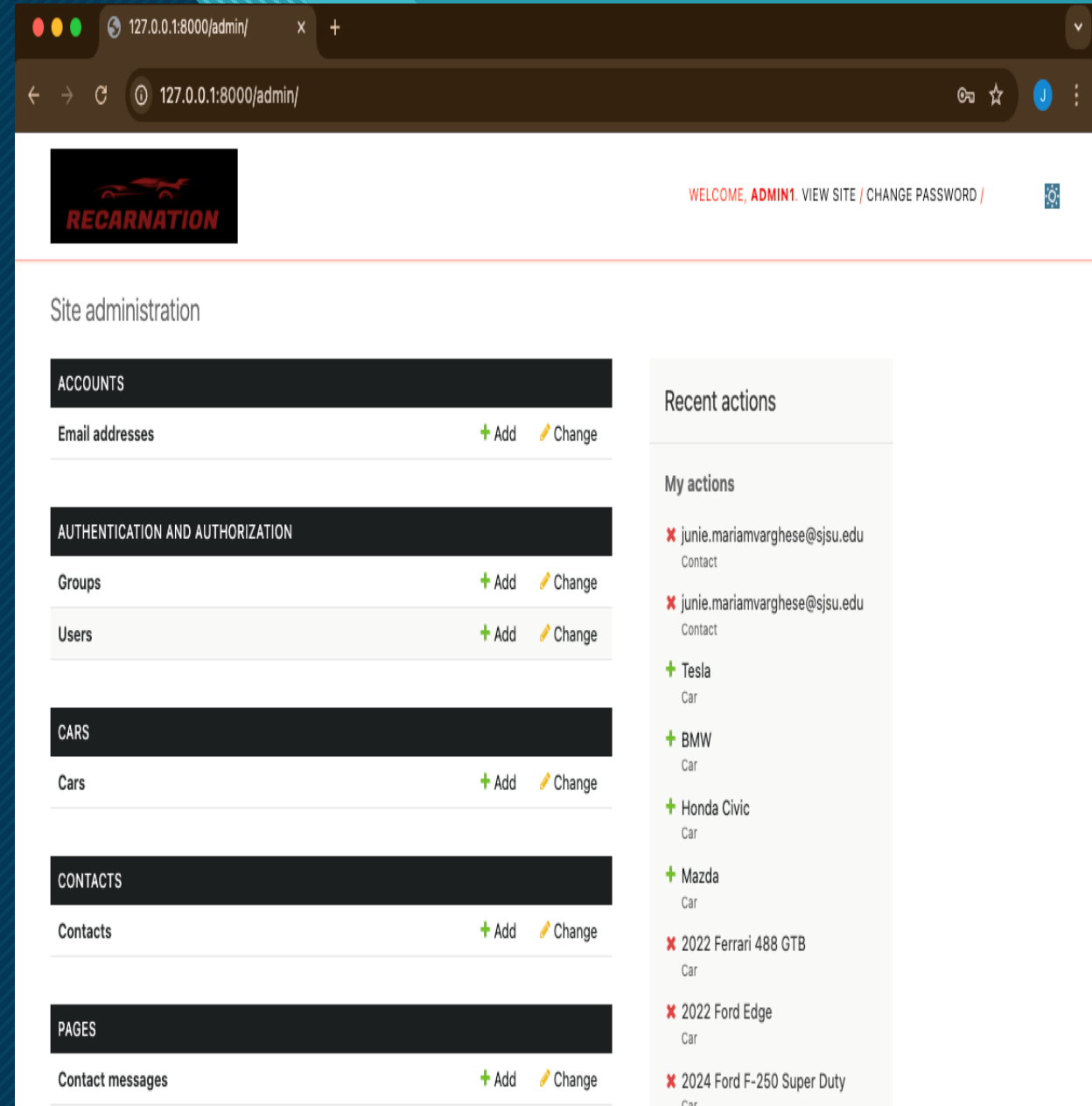
Administrators can review, approve, or reject listings before publication, ensuring a high-quality and trustworthy marketplace.

Handle permissions

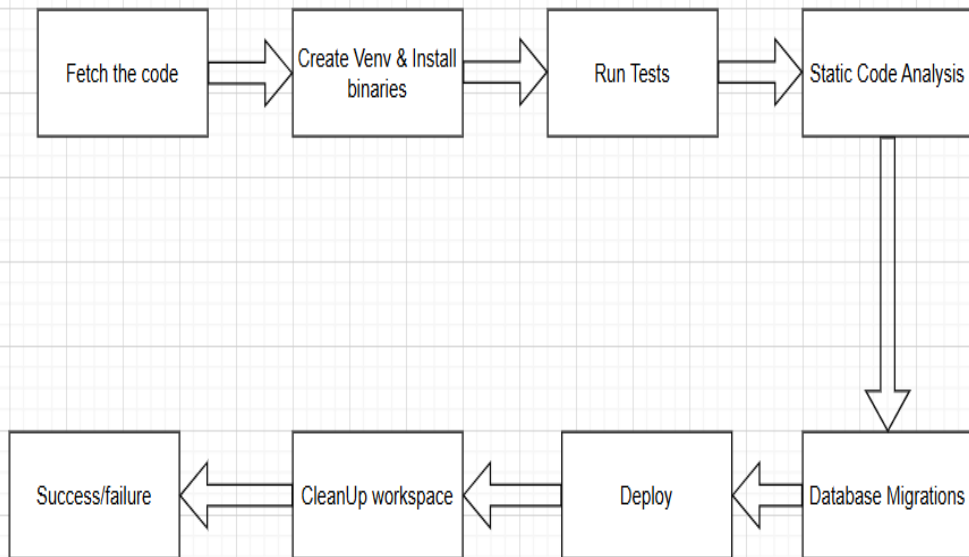
Administrators have control over user permissions to maintain platform integrity and security.

Manage vehicles

They can also manage sold and unsold vehicles, including updating or removing listing details as needed..



Jenkins CI/CD Integration



Jenkins Dashboard > admin > My Views > TechTitans

Search (CTRL+K)

+ New Item

Build History

Edit View

Delete View

Project Relationship

Check File Fingerprint

Icons: S M L

S	W	Name	Last Success	Last Failure	Last Duration
✓	🔧	Recarnation-pipeline	20 hr #23	10 days #21	3 min 0 sec

Build Queue: No builds in the queue.

Build Executor Status: 0/2

Future Enhancements

- Make the machine learning model better to give more accurate price predictions for cars.
- Host the entire application on the cloud for better reliability and access from anywhere.
- Make it Global: add support for different languages, and allow payments in various currencies to reach more people worldwide.



Thank You