

# Recarnation : The Ultimate Platform for Buying and Selling Pre-Owned Cars

Team – TechTitans

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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.

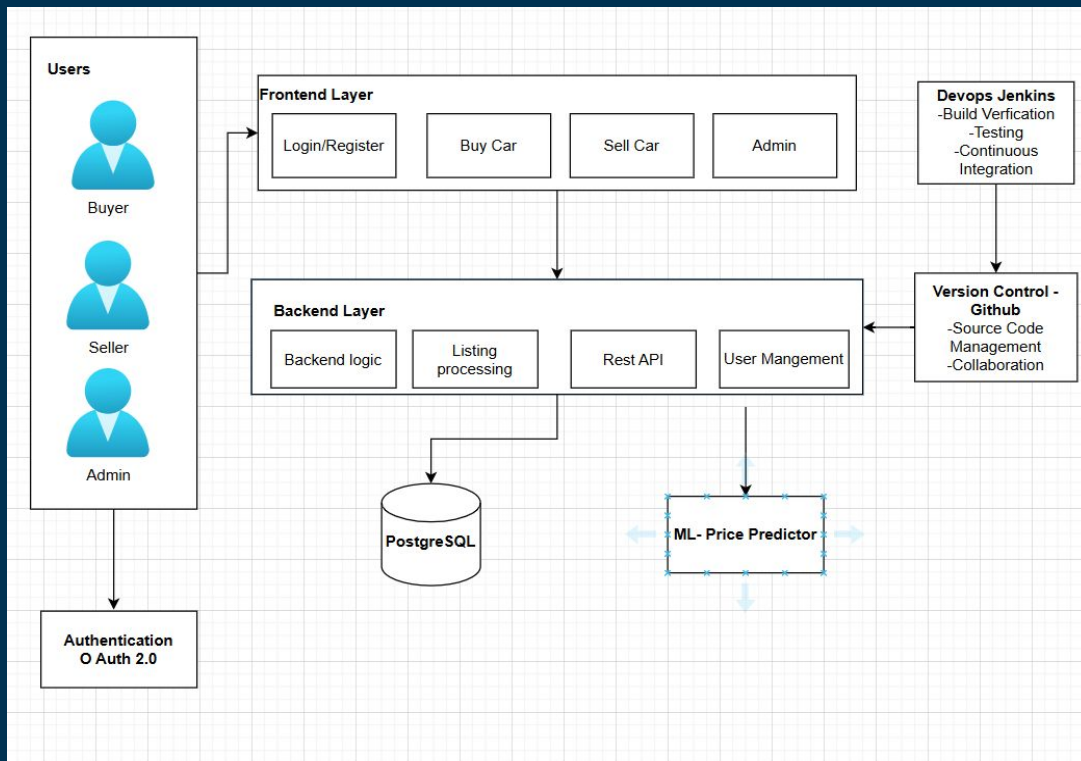
3

## 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

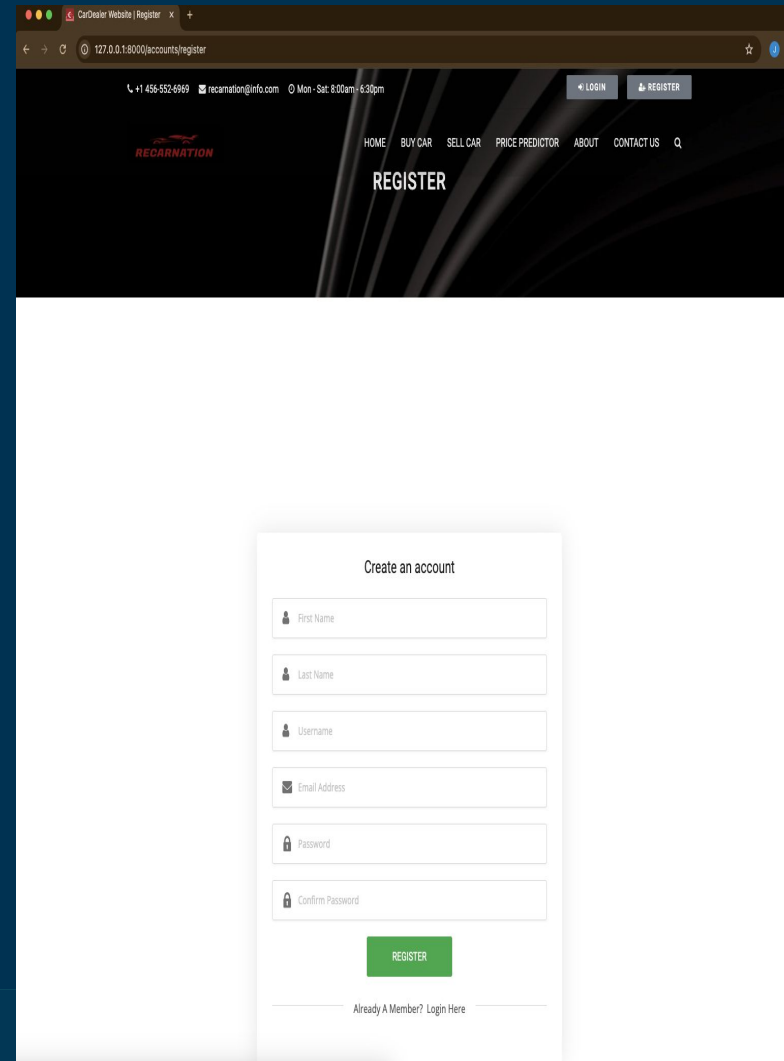
# Sign up and Sign In

Users can register via a simple form.

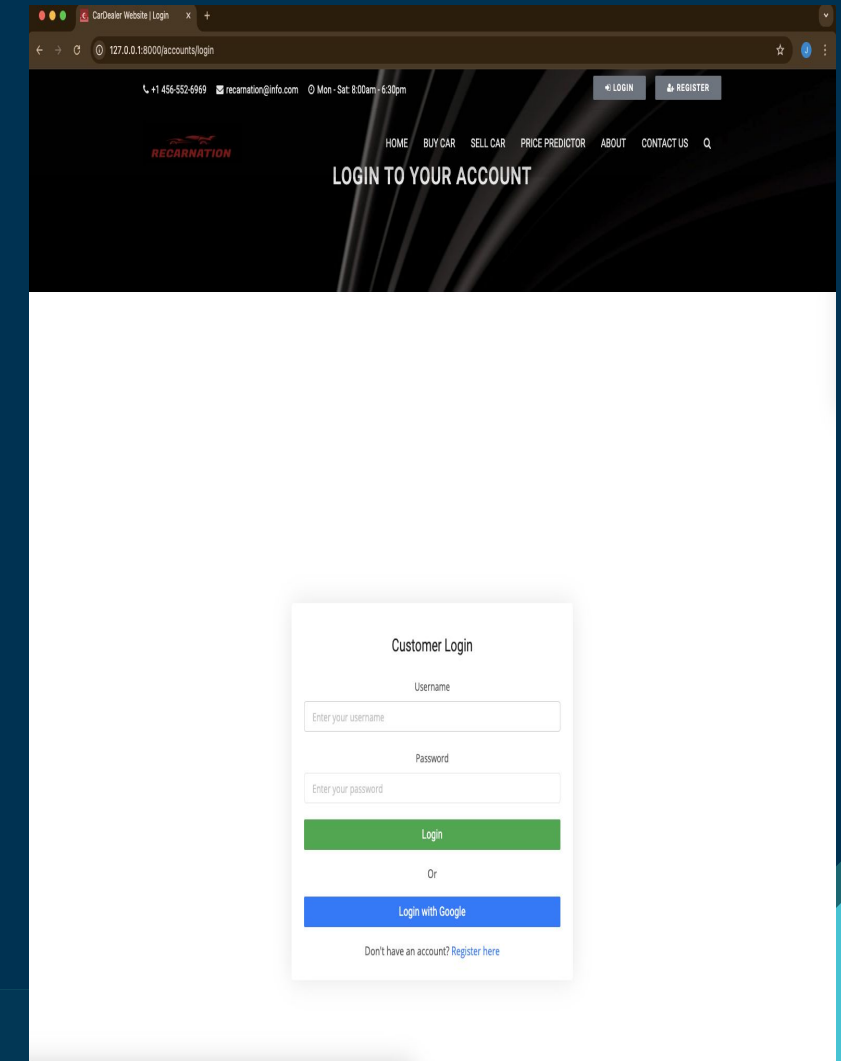
Secure login via username/email and password.

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 contact information (+1 456-552-6969, recarnation@info.com, Mon-Sat: 9:00am-6:30pm), navigation links (HOME, BUY CAR, SELL CAR, PRICE PREDICTOR, ABOUT, CONTACT US), and a search icon. A 'REGISTER' button is visible 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 located at the bottom of the page.



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 at the bottom of the form. Below the login button is a link 'Or Login with Google'. At the bottom of the page 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

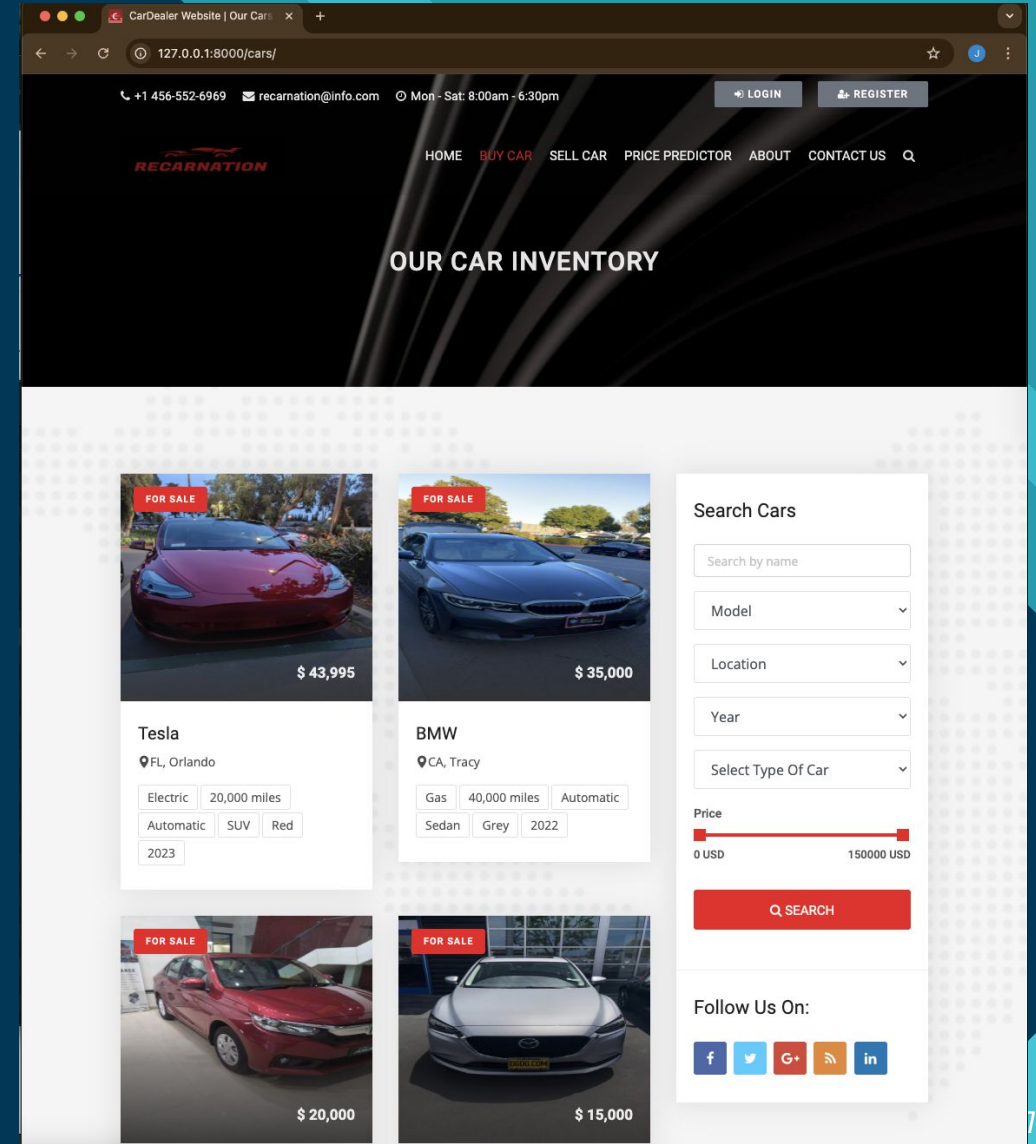
## Listing Details

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

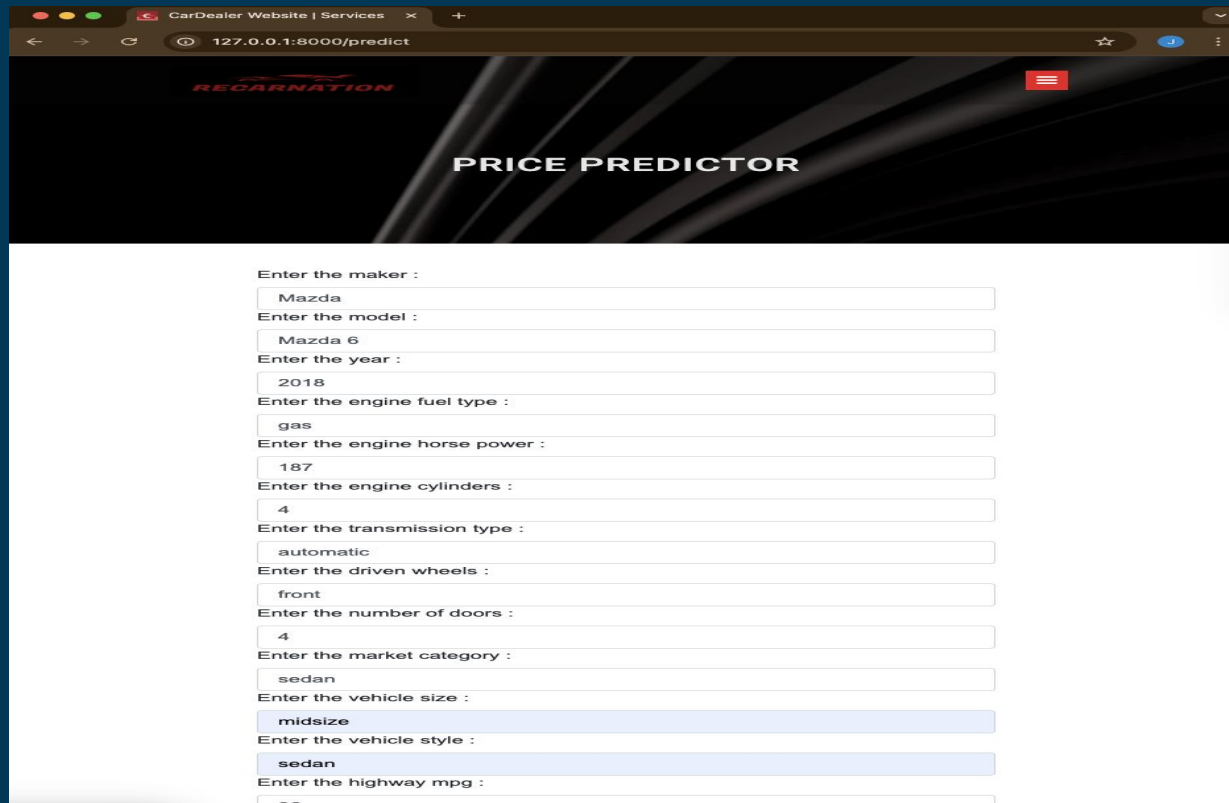
Car Title	Color	Model	Year	Status	Actions
2023 Toyota 4Runner	White	LYRIQ Luxury 2	2000	Pending	<button>Edit</button> <button>Delete</button>

Add Car



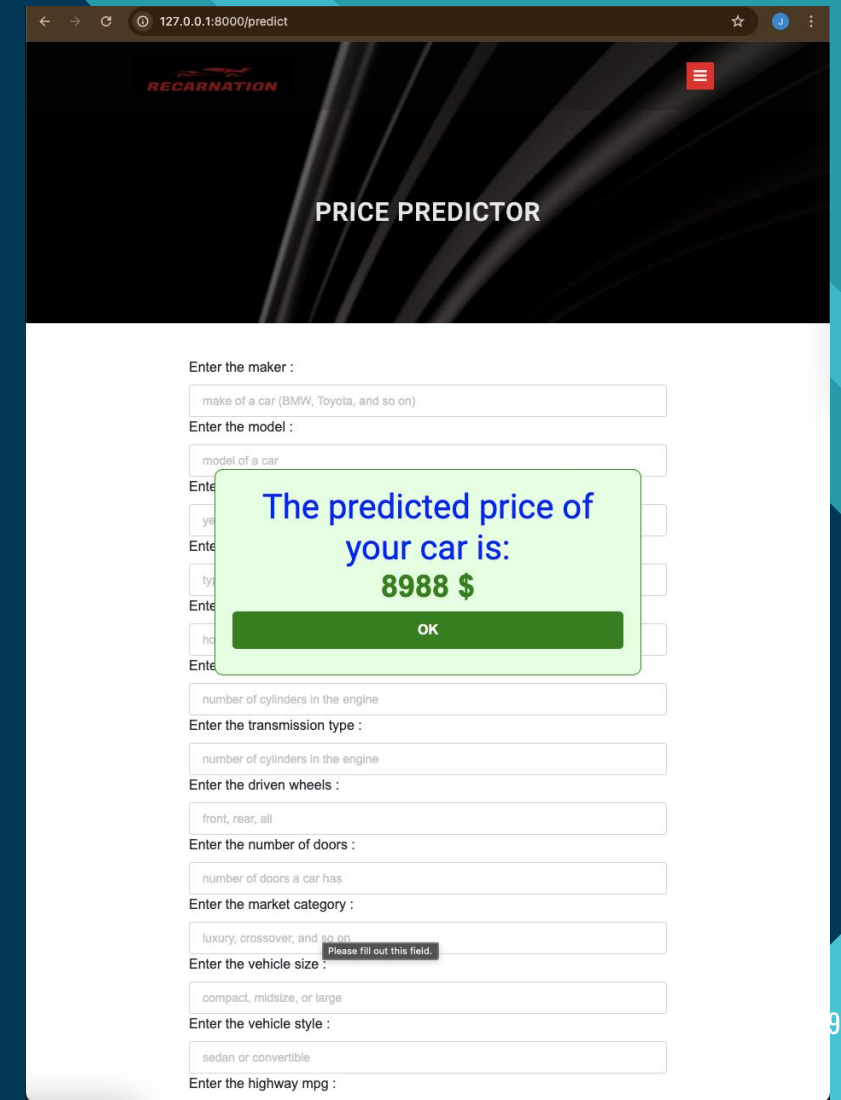
# Vehicle Price Prediction Using Linear Regression

- 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 title '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 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 title 'PRICE PREDICTOR' is centered. The main content area contains a form with the following fields and values:

- 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 : horsepower
- 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 : highway miles per gallon

A modal box is displayed in the center of the screen, showing the predicted price:

The predicted price of your car is:  
**8988 \$**  
OK

# ReCarNation: Admin Management System

## Listing Approval Workflow

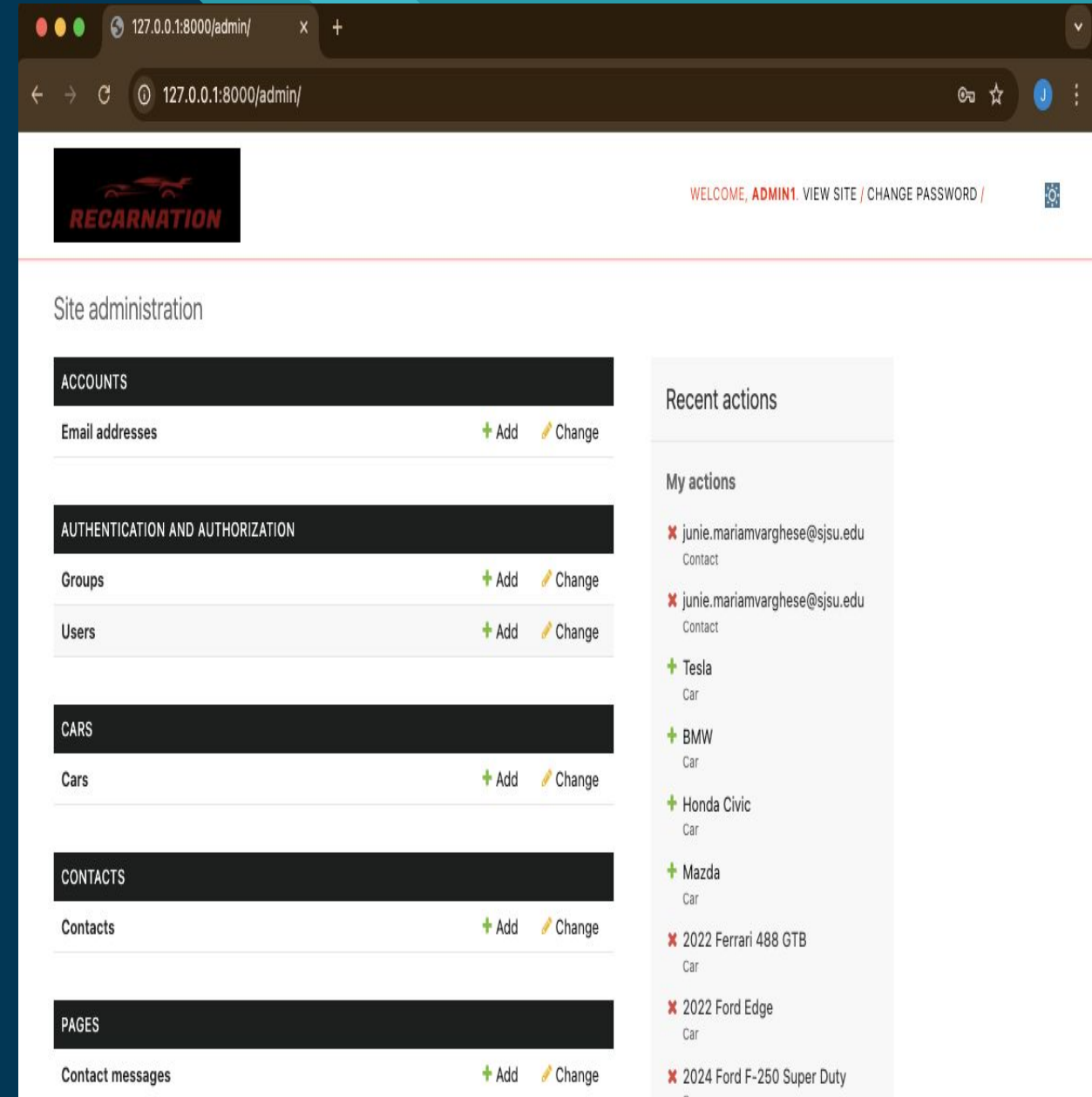
Administrators can review, approve, or reject listings before publication, ensuring a high-quality and trustworthy marketplace.

## Handle permissions

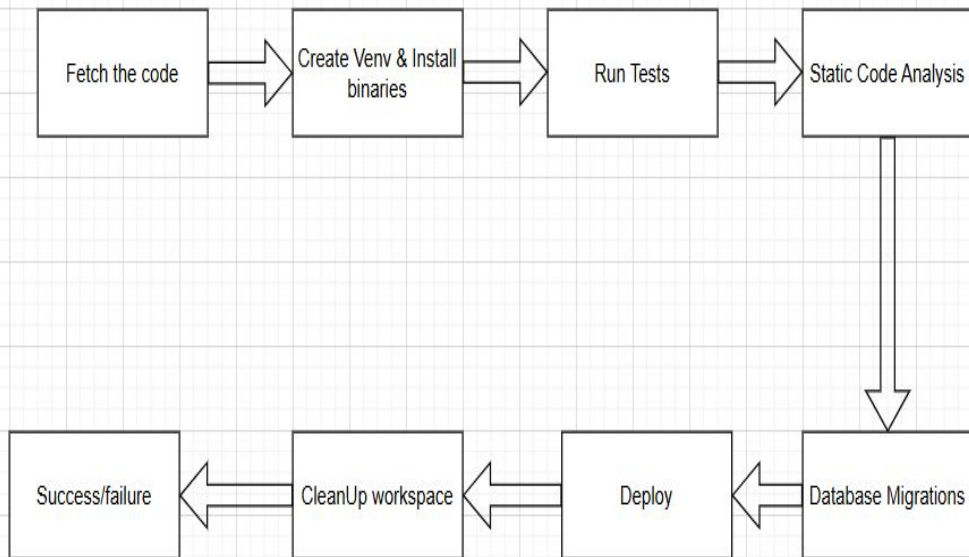
Administrators have control over user permissions to maintain platform integrity and security.

## Manage vehicles

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



# Jenkins CI/CD Integration



The screenshot shows the Jenkins dashboard for the 'TechTitans' view. The top navigation bar includes the Jenkins logo, a search bar, and notification icons. The left sidebar contains links for 'New Item', 'Build History', 'Edit View', 'Delete View', 'Project Relationship', and 'Check File Fingerprint'. The main content area displays a table of build history for the 'Recarnation-pipeline'.

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

Below the table, there are filters for 'Icons' (S, M, L) and sections for 'Build Queue' (showing 'No builds in the queue') and 'Build Executor Status' (showing '0/2').



Thank You