

Django Developer Test

Purpose

This test is designed to assess a candidate developers level of Django skill. In no particular order it is designed to assess:

- Level of familiarity with Django
- Ability to follow specific instructions
- Familiarity with TDD
- Familiarity with BDD
- General Python tooling
- MVC-type architectures
- Code quality and style

The task

In the wake of the COVID pandemic, Dodgy Brothers (a car dealership) has decided to try its hand at selling used cars online. The dealership principal - Mike "Iron" Smith wants users to be able to submit their used cars for sale online for free.

Buyers will then search for the cars online and apply to buy. When the car is marked as "sold", Mike will receive an email with the following details:

- The details of the vehicle
- the details of the seller
- The sale price
- The name of the interested party
- The mobile number of the interested party
- The Dodgy Brothers commission (5%) in dollars
- The net amount that is transferrable to the seller

The tech specs

Using that background, below are the user stories that will make up the MVP for Iron Mike. The proof of concept will be a Django application that can run on a local machine. Please include instructions for getting it spun up. As this test is time limited it is recommended that you make use of only Django (ie no separate front end) and that you don't invest too much time in the front end styling.

In the course of building this app, you are free to use whatever third party libraries you like. It is recommended that you ensure your solution includes the following: Unit tests Integration tests Seed data

For senior developers and up, it is also recommended that you include as many of the following as you can:

- Gherkin style BDD tests
- Docker/Docker-compose integration
- Automated code quality checks using your ruby linter of choice
- Provide coverage statistics

- A basic ERD

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User Story 1 - List a car

As a seller of a vehicle

I want to be able to list a car on the Dodgy Bros site

so that I can sell my car without getting off the couch.

Acceptance Criteria:

- On the home page of the site, there should be a 'list car' button
- Clicking this button should open a form where I can enter the details of my car
- The details I MUST include before submitting a car are:
 - Seller name
 - Seller mobile
 - Make - eg Ford, Holden etc.
 - Model - Falcon, Commodore
 - Year - use a dropdown for this or a datepicker
 - Condition - this should be from a drop down consisting of: - Poor, Fair, Good, Excellent
 - Asking Price - This should be a currency formatted amount and be at minimum \$1,000 and no more than \$100,000
- The form should not allow submission until the form is valid
- When the form is submitted, a thankyou page should be shown letting me know the submission was successful

Testing Scenarios

Show the form

GIVEN I am on the home page

WHEN I click the "List Car" button

THEN I should be shown the form

List a car

GIVEN I am on the list car form

AND I have filled in all the details

WHEN I click submit

THEN I should be shown the thankyou page

AND the thankyou page should contain the listing id

Incomplete form

GIVEN I am on the list car form

AND I have only filled in some of the details

WHEN I click submit

THEN the form should show an error

AND the parts of the form that are missing or incorrect should be highlighted

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User Story 2 - Find cars

As a buyer of a vehicle

I want to be able to arrange to buy a car on the Dodgy Bros site

so that I can sell my car without getting off the couch.

Acceptance Criteria:

- On the home page of the site, there should be a list of cars available on the site
- The list should be limited to 10 rows, with pagination
- There should be a basic filter at the top that lets me filter by:
 - Make
 - Year
- When I make changes to this filter and click submit, then the list should be filtered
- There should be a clear filter button that will revert to showing all cars
- By default cars should be shown from most recently listed
- Pagination should work, including on filtered results

Testing Scenarios

List cars

GIVEN I am on the home page

AND there are listings

THEN I should see a list of the most recently listed cars

Filter list

GIVEN I am on the home page

WHEN I apply a make or year filter

THEN only matching cars should be shown

Filter List - no results

GIVEN I am on the home page with filtered results

AND there are no matches

THEN I should see a message showing "No results found for your filter"

Pagination

GIVEN I am on the home page

AND there are more than 10 results

WHEN I click on a page number

THEN I should be taken to that page

AND the pagination bar should reflect this

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User Story 3 - Login

As Iron Mike

I want to be able to login

so that I can access additional admin functions on the site

Acceptance Criteria:

- On the home page of the site, there should be a login button
- Clicking this button should take me to a login form.

- If I enter the right login details I should be logged in taken back to the home page
- If I am on the home page and logged in, then a logout button should be shown instead of the login button
- The only username and password will be: -username: "mike@example.org"
 - password: mikeymike123
- If i enter the wrong details I should be shown an error message

Testing Scenarios

View Login Form

GIVEN I am on the home page

AND I am not logged in

WHEN I click the Login button

THEN I should be shown the login form

Login successfully

GIVEN I am on the login form

AND I have filled in valid details

WHEN I click Login

THEN I should be redirected to the home page

AND the login button should be replaced with a logout button

Login failure

GIVEN I am on the login form

AND I have entered invalid details

WHEN I click login

THEN I should be shown an error

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User Story 4 - Buy car

As a buyer of a car

I want to be able to register my interest

so that someone from Dodgy brothers will call me

Acceptance Criteria:

- Next to each listing on the home page, there should be a BUY button
- Clicking this button should take me to a buy form.
- The form will require I enter my name and mobile number
- When I submit the form, then I should be shown a success page, telling me Iron mike will be in touch
- When the form is submitted mike@example.org should get an email with the following:
 - The details of the vehicle
 - the details of the seller
 - The sale price
 - The name of the interested party
 - The mobile number of the interested party
 - The Dodgy Brothers commission (5%) in dollars
 - The net amount that is transferrable to the seller
- When the form is submitted the car should be marked as "SOLD" and this should be reflected in listings
- If a car is sold, then the "Buy" button should be replaced with a SOLD label

Testing Scenarios

Buy car button

GIVEN I am on the home page

WHEN I click the Buy button next to a listing

THEN I should be taken to the buy form

Complete buy form

GIVEN I am on the buy form

AND I have filled in valid details

WHEN I click BUY

THEN I should be redirected to a thankyou page

AND the car should be marked as sold

Sold car

GIVEN a car has been sold

WHEN I visit the listings pa

THEN the car should be marked as sold

AND there should be no "BUY" button next to the car

Email Iron Mike

GIVEN I have am on the buy form

AND I have filled in the details

WHEN I click BUY

THEN mike@example.org should receive an email

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User Story 5 - Make car available

As Iron Mike I want to be able to make a car available So i can put it back on the market if a sale falls through

Acceptance Criteria:

- If im logged in as Iron Mike, there should be a 'make available' button next to sold cars on the home page
- When I click this button, the car should be made available for sale again and the sold label removed

Testing Scenarios

Make available

GIVEN I am on the home page

AND there is a sold car

AND I am logged in

WHEN I click "Make available"

THEN the car should appear as available for sale again

Not logged in cant make available

GIVEN I am on the home page

AND I am NOT logged in

AND there is a car that is sold

THEN there should NOT be a make available button

Available cars dont have button

GIVEN I am on the home page

AND I am logged in

AND there is an unsold car

THEN there should not be a 'make available button'

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