CMPE 327 – Assignment 06

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“We hereby attest that the work submitted is our own individual work and that no portion of this submission has been copied in whole or in part from another source, with the possible exception of properly referenced material.”

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1. Integration Test Summary

1.1. Login and Registration End-to-End Tests

This section provides a summary of two Python files, **test_login.py** and **test_register.py**, which are end-to-end (E2E) test scripts designed to validate login and registration functionality for a web application.

Features Considered for Testing:

1. Input validation for user credentials (username, email, password).
2. Navigation and redirection upon successful or unsuccessful form submission.
3. Visibility and interactivity of UI elements, such as radio buttons.
4. Handling valid and invalid user scenarios to test edge cases.
5. Assertion of expected outcomes through URL verification.
6. Screenshot capturing for debugging and reporting.

Summary of test_login.py

This script tests the login functionality by simulating browser interactions using Playwright. It validates scenarios with both valid and invalid user credentials. The test ensures that:

- Valid credentials redirect to a success page.
- Invalid credentials do not result in successful login redirection. Screenshots are taken at key stages for debugging, and the outcomes are asserted using redirect URLs to confirm the behavior.

Summary of test_register.py

This script verifies the registration functionality by testing valid and invalid user inputs. It also uses Playwright for browser simulation and incorporates additional validation for UI elements, such as the 'Landlord' radio button. The script ensures that:

- Valid registration inputs lead to successful account creation and redirection.
- Invalid inputs, such as improper email formats or missing passwords, prevent registration. Like the login script, screenshots are captured, and assertions are made based on redirect URLs to validate behavior.

1.2. Tenant End-to-End Tests

This section provides a summary of the JavaScript files, **tenants.test.js**, **playwright.config.js**, and **setup.js**, which collectively facilitate end-to-end (E2E) testing of tenant-related functionalities of the web application.

Features Considered for Testing:

1. Validation of form submission and error handling for missing role selection.
2. Sorting functionality for table columns, including Name, Email, and Last Contacted.
3. Visibility and interactivity of dropdown menus, including toggling and closing behavior.
4. Modal functionality, including opening, closing, and interaction for viewing profiles, sending messages, and checking message history.
5. Validation of toast notifications for user feedback, including their appearance and timing.
6. Parsing and comparing date strings for table data and sorting.

Summary of tenants.tests.js

This script organizes tenant tests into distinct modules using Playwright:

- **Register Page:**
  - Tests form submission when a role is selected.
  - Ensures error visibility for missing role selection.

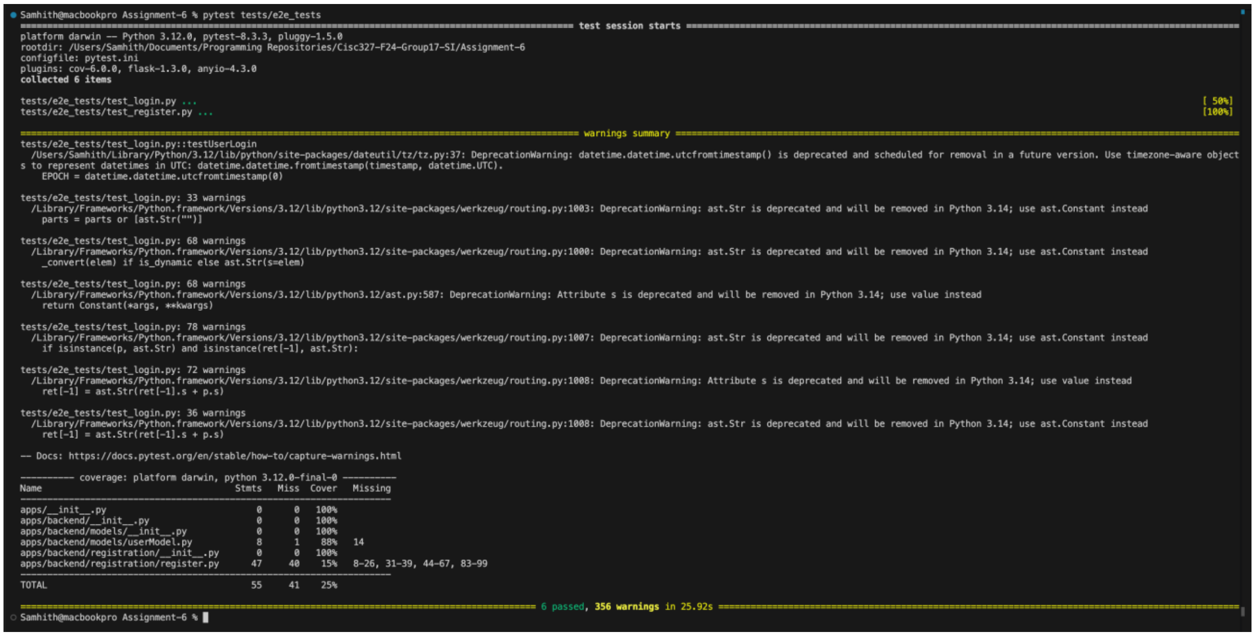
- **Tenants Page:**
  - **Table Sorting:** Validates sorting by various columns and confirms correct sorting indicators (arrows) for ascending/descending order.
  - **Dropdown Menu:** Tests the toggling and closing of dropdown menus for actions.
  - **Modal Functionality:** Verifies modals for profile views, sending messages, and message history, ensuring they open and close as expected.
  - **Toast Notifications:** Confirms toast visibility and proper display of success messages for sent actions.
  - **Date Parsing:** Ensures accurate comparison and manipulation of date strings.

Summary of Supporting Files

playwright.config.js: Configures the Playwright testing environment with settings for timeout, reporters, and browser specifications.

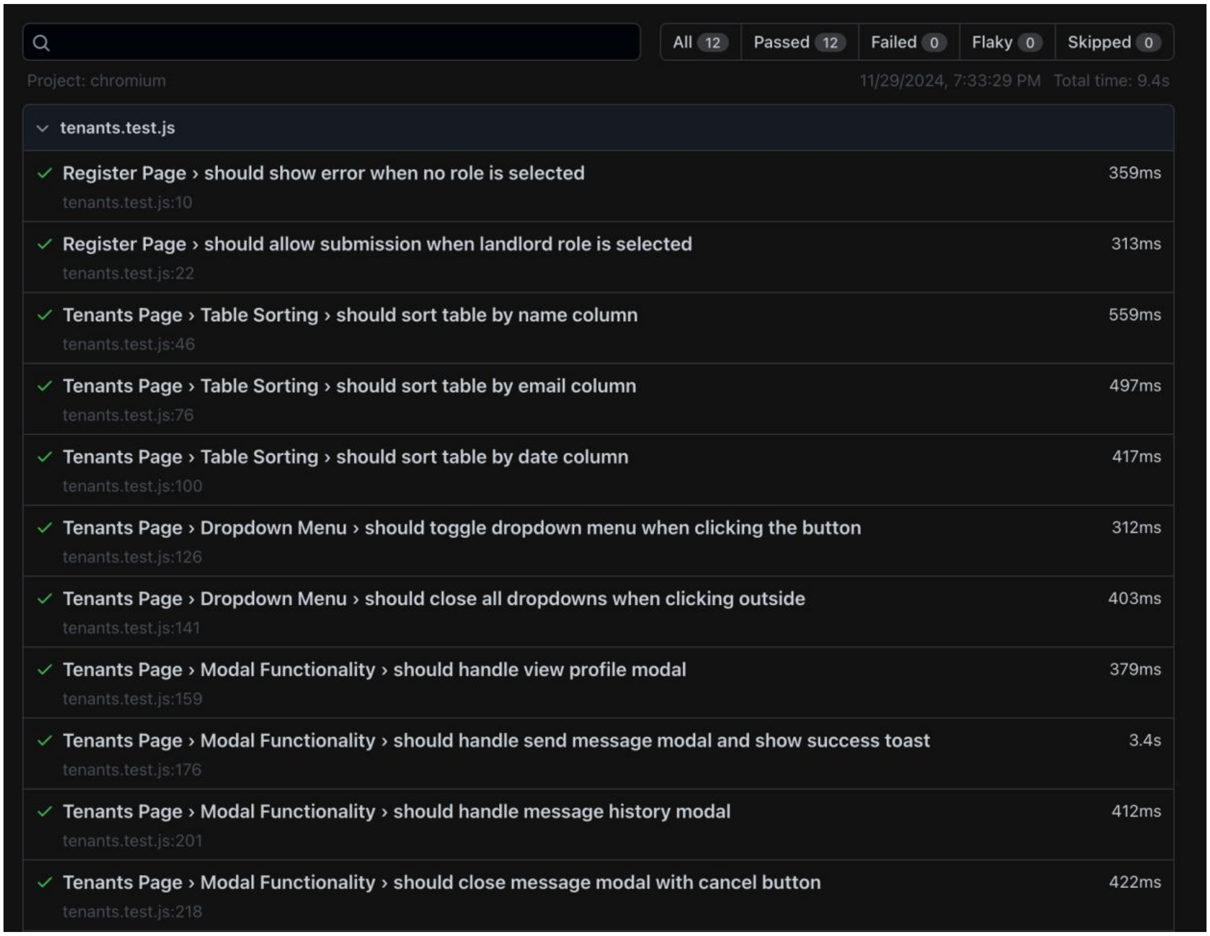
setup.js: Establishes a simulated DOM environment using JSDOM to mimic browser behavior for testing purposes.

Step 02: Test Script Outputs



```
● Samhith@macbookpro Assignment-6 % pytest tests/e2e_tests
============================================================================== test session starts ==============================================================================
platform darwin -- Python 3.12.0, pytest-8.3.3, pluggy-1.5.0
rootdir: /Users/Samhith/Documents/Programming Repositories/Cisc327-F24-Group17-SI/Assignment-6
configfile: pytest.ini
plugins: cov-6.0.0, flask-1.3.0, anyio-4.3.0
collected 6 items

tests/e2e_tests/test_login.py ...                                                                                                                                          [ 50%]
tests/e2e_tests/test_register.py ...                                                                                                                                       [100%]

=============================================================================== warnings summary ================================================================================
tests/e2e_tests/test_login.py::testUserLogin
  /Users/Samhith/Library/Python/3.12/lib/python/site-packages/dateutil/tz/tz.py:37: DeprecationWarning: datetime.datetime.utcfromtimestamp() is deprecated and scheduled for removal in a future version. Use timezone-aware object
s to represent datetimes in UTC: datetime.datetime.fromtimestamp(timestamp, datetime.UTC).
    EPOCH = datetime.datetime.utcfromtimestamp(0)

tests/e2e_tests/test_login.py: 33 warnings
  /Library/Frameworks/Python.framework/Versions/3.12/lib/python3.12/site-packages/werkzeug/routing.py:1003: DeprecationWarning: ast.Str is deprecated and will be removed in Python 3.14; use ast.Constant instead
    parts = parts or [ast.Str("")]

tests/e2e_tests/test_login.py: 68 warnings
  /Library/Frameworks/Python.framework/Versions/3.12/lib/python3.12/site-packages/werkzeug/routing.py:1000: DeprecationWarning: ast.Str is deprecated and will be removed in Python 3.14; use ast.Constant instead
    _convert(elem) if is_dynamic else ast.Str(s=elem)

tests/e2e_tests/test_login.py: 68 warnings
  /Library/Frameworks/Python.framework/Versions/3.12/lib/python3.12/ast.py:587: DeprecationWarning: Attribute s is deprecated and will be removed in Python 3.14; use value instead
    return Constant(*args, **kwargs)

tests/e2e_tests/test_login.py: 78 warnings
  /Library/Frameworks/Python.framework/Versions/3.12/lib/python3.12/site-packages/werkzeug/routing.py:1007: DeprecationWarning: ast.Str is deprecated and will be removed in Python 3.14; use ast.Constant instead
    if isinstance(p, ast.Str) and isinstance(ret[-1], ast.Str):

tests/e2e_tests/test_login.py: 72 warnings
  /Library/Frameworks/Python.framework/Versions/3.12/lib/python3.12/site-packages/werkzeug/routing.py:1008: DeprecationWarning: Attribute s is deprecated and will be removed in Python 3.14; use value instead
    ret[-1] = ast.Str(ret[-1].s + p.s)

tests/e2e_tests/test_login.py: 36 warnings
  /Library/Frameworks/Python.framework/Versions/3.12/lib/python3.12/site-packages/werkzeug/routing.py:1008: DeprecationWarning: ast.Str is deprecated and will be removed in Python 3.14; use ast.Constant instead
    ret[-1] = ast.Str(ret[-1].s + p.s)

-- Docs: https://docs.pytest.org/en/stable/how-to/capture-warnings.html

---------- coverage: platform darwin, python 3.12.0-final-0 ----------
Name                                        Stmts   Miss  Cover   Missing
-------------------------------------------------------------------------
apps/__init__.py                                0      0   100%
apps/backend/__init__.py                        0      0   100%
apps/backend/models/__init__.py                 0      0   100%
apps/backend/models/userModel.py                8      1    88%   14
apps/backend/registration/__init__.py           0      0   100%
apps/backend/registration/register.py          47     40    15%   8-26, 31-39, 44-67, 83-99
-------------------------------------------------------------------------
TOTAL                                          55     41    25%

========================================================================= 6 passed, 356 warnings in 25.92s ==========================================================================
○ Samhith@macbookpro Assignment-6 % █
```

Figure 1: A snippet of the result of running the end-to-end python scripts.



Project: chromium

11/29/2024, 7:33:29 PM Total time: 9.4s

tenants.test.js

✓ Register Page › should show error when no role is selected 359ms
tenants.test.js:10

✓ Register Page › should allow submission when landlord role is selected 313ms
tenants.test.js:22

✓ Tenants Page › Table Sorting › should sort table by name column 559ms
tenants.test.js:46

✓ Tenants Page › Table Sorting › should sort table by email column 497ms
tenants.test.js:76

✓ Tenants Page › Table Sorting › should sort table by date column 417ms
tenants.test.js:100

✓ Tenants Page › Dropdown Menu › should toggle dropdown menu when clicking the button 312ms
tenants.test.js:126

✓ Tenants Page › Dropdown Menu › should close all dropdowns when clicking outside 403ms
tenants.test.js:141

✓ Tenants Page › Modal Functionality › should handle view profile modal 379ms
tenants.test.js:159

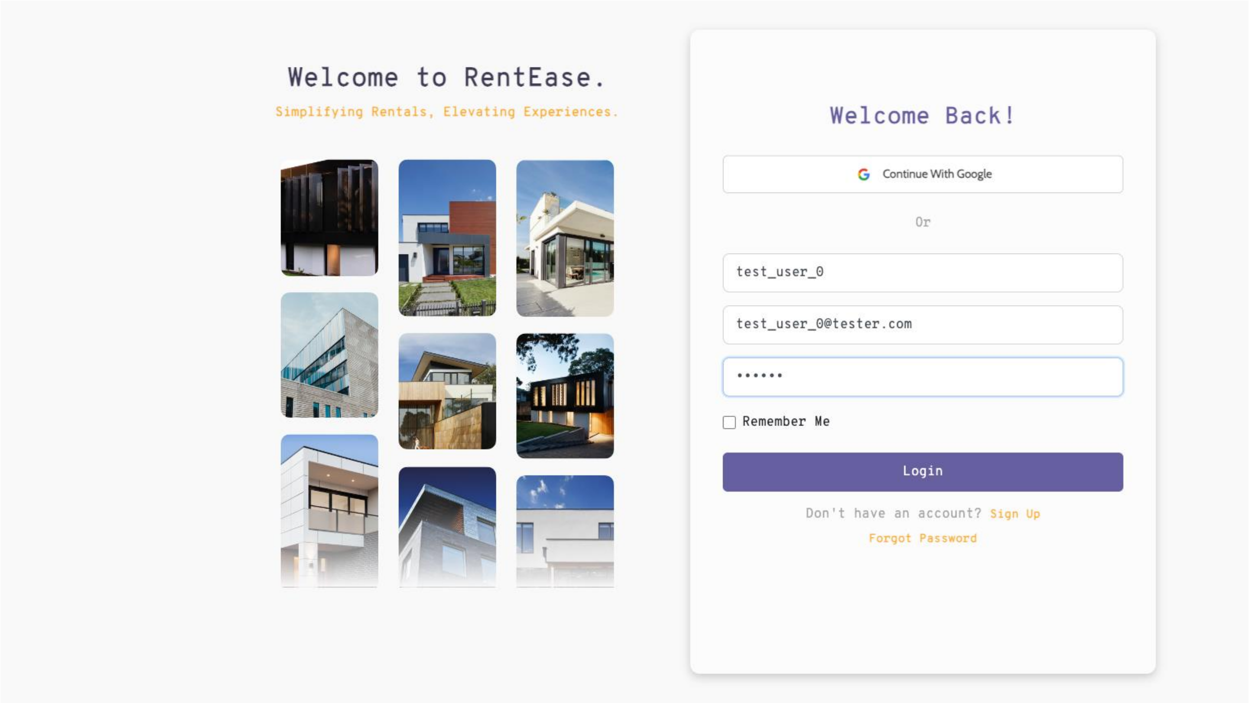
✓ Tenants Page › Modal Functionality › should handle send message modal and show success toast 3.4s
tenants.test.js:176

✓ Tenants Page › Modal Functionality › should handle message history modal 412ms
tenants.test.js:201

✓ Tenants Page › Modal Functionality › should close message modal with cancel button 422ms
tenants.test.js:218

Figure 2: A snippet of the result of running the end-to-end JavaScript scripts.

2.1 Login End-to-End Test Outputs



Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Welcome Back!

test_user_0

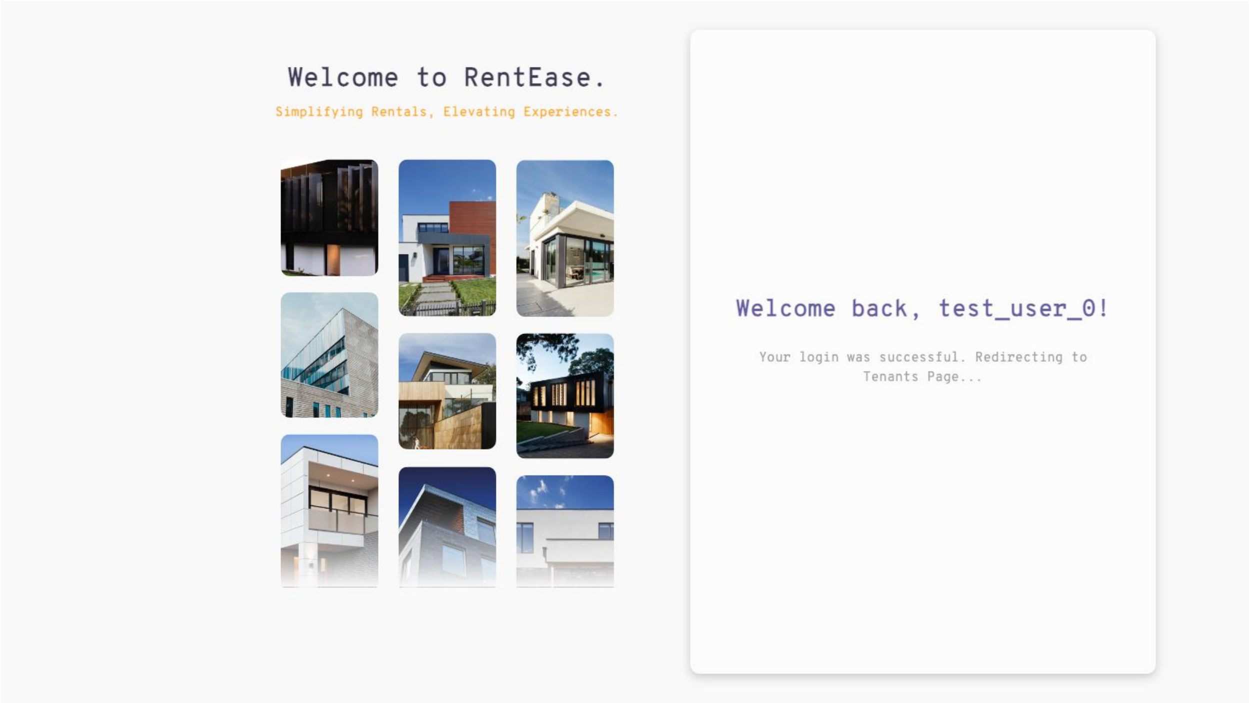
test_user_0@tester.com

••••••

□ Remember Me

Don't have an account? Sign Up

Figure 3: An image captured by playwright with the script filling in the correct format for the login details.



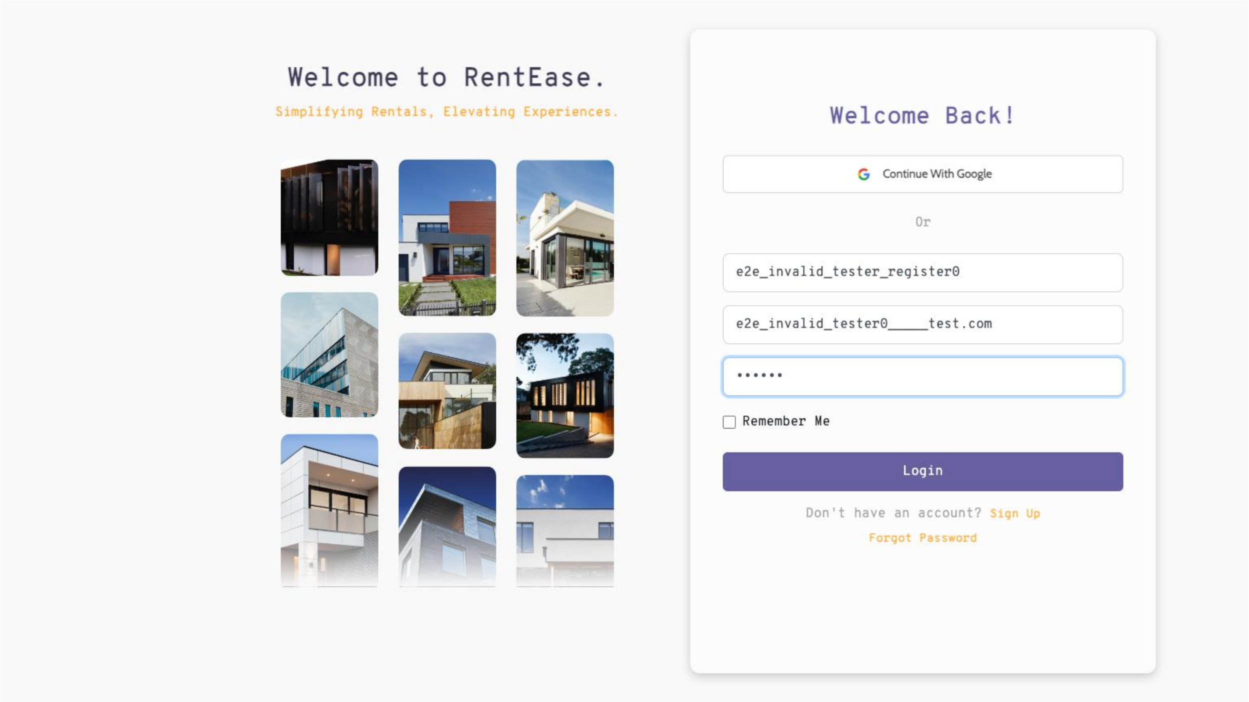
Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Welcome back, test_user_0!

Your login was successful. Redirecting to Tenants Page...

Figure 4: An image captured by playwright showing the login was a success.



Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Welcome Back!

Continue With Google

Or

e2e_invalid_tester_register0

e2e_invalid_tester0_____test.com

••••••

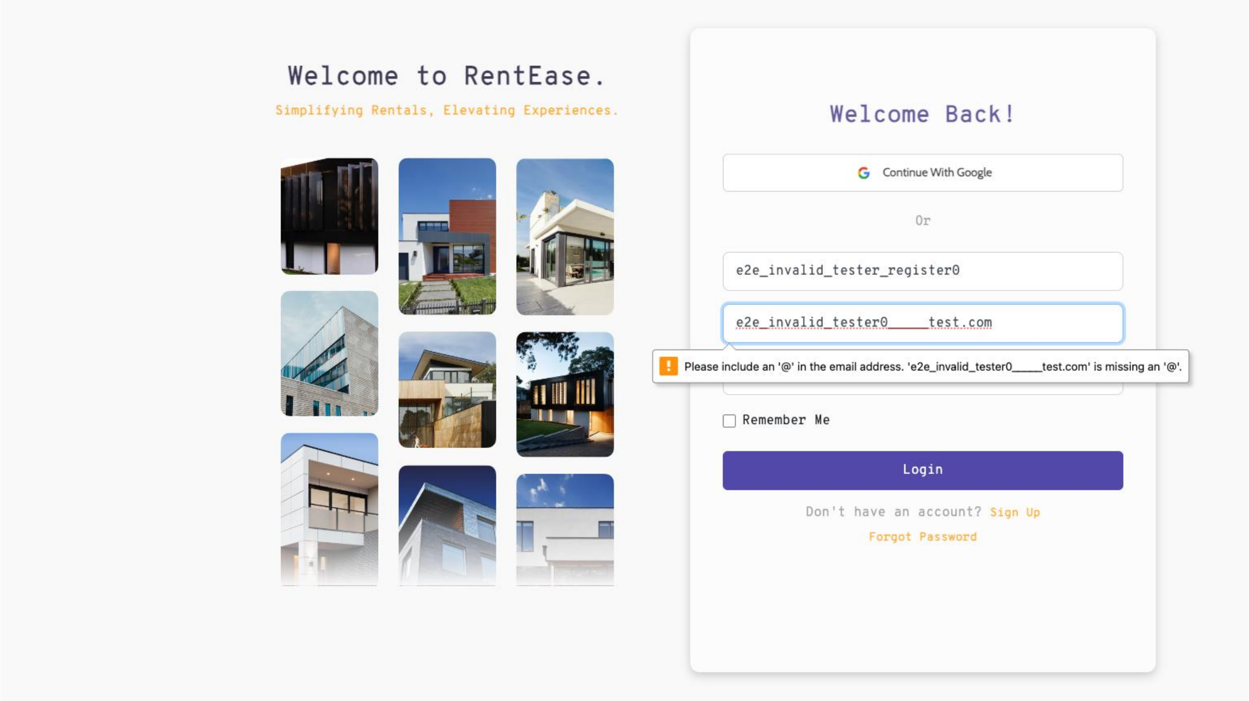
□ Remember Me

Login

Don't have an account? Sign Up

Forgot Password

Figure 5: An image captured by playwright showing the login details with an incorrectly formatted email.



Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Welcome Back!

Continue With Google

Or

e2e_invalid_tester_register0

e2e_invalid_tester0_____test.com

! Please include an '@' in the email address. 'e2e_invalid_tester0_____test.com' is missing an '@'.

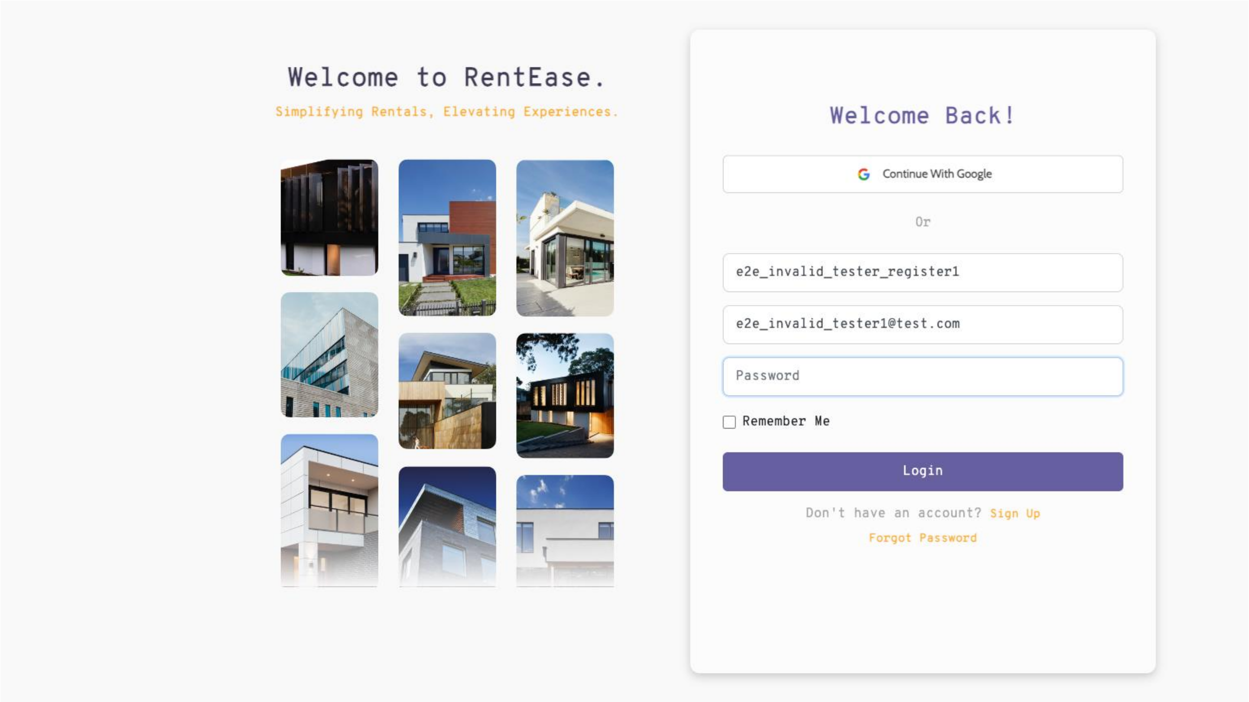
□ Remember Me

Login

Don't have an account? Sign Up

Forgot Password

Figure 6: An image captured by playwright showing a failed login attempt and prompt to include the '@' symbol in the email.



Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Welcome Back!

e2e_invalid_tester_register1

e2e_invalid_tester1@test.com

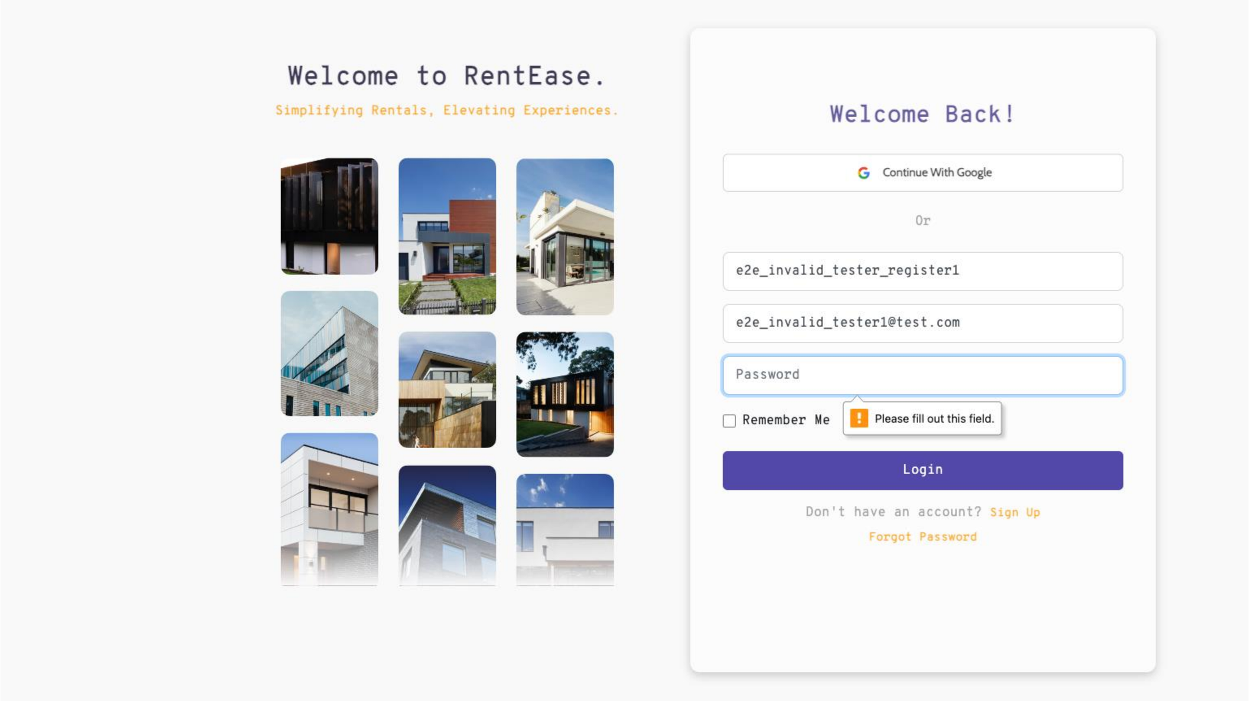
Password

□ Remember Me

Don't have an account? Sign Up

Forgot Password

Figure 7: An image captured by playwright showing the login details with no password.



Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Welcome Back!

e2e_invalid_tester_register1

e2e_invalid_tester1@test.com

Password

□ Remember Me

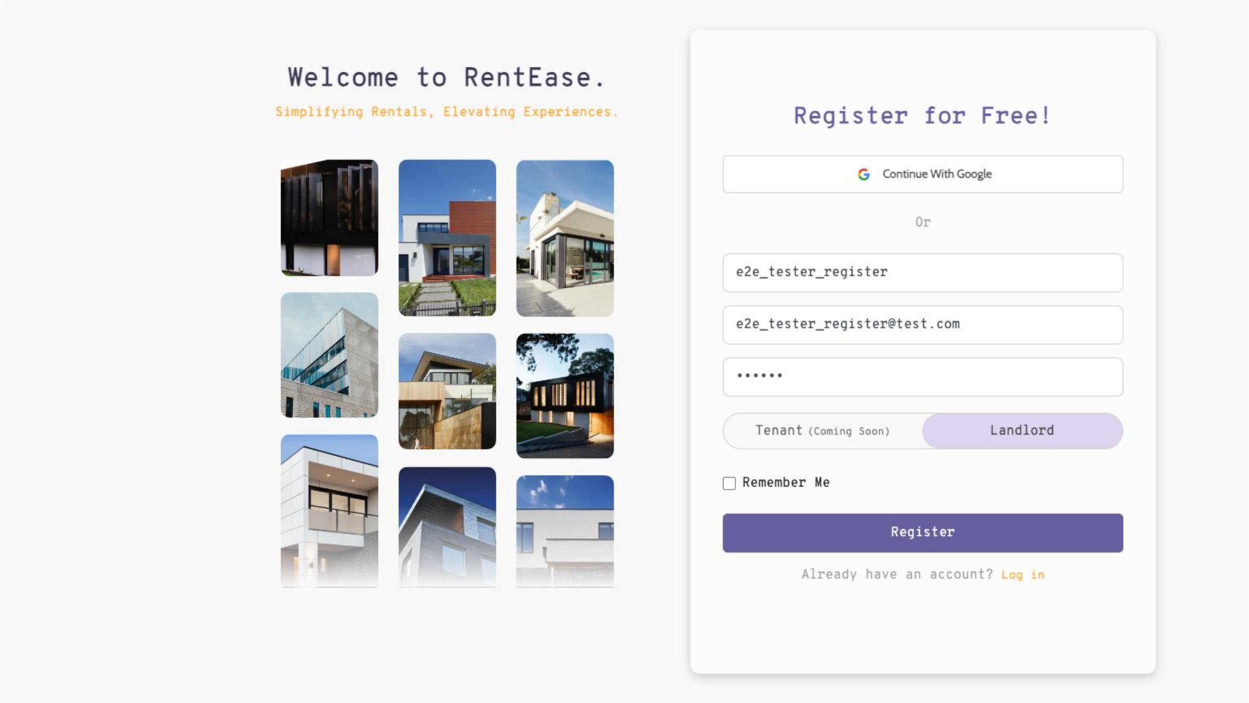
! Please fill out this field.

Don't have an account? Sign Up

Forgot Password

Figure 8: An image captured by playwright showing a failed login attempt and prompt to fill out the password text field.

2.2 Registration End-to-End Test Outputs



Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Register for Free!

e2e_tester_register

e2e_tester_register@test.com

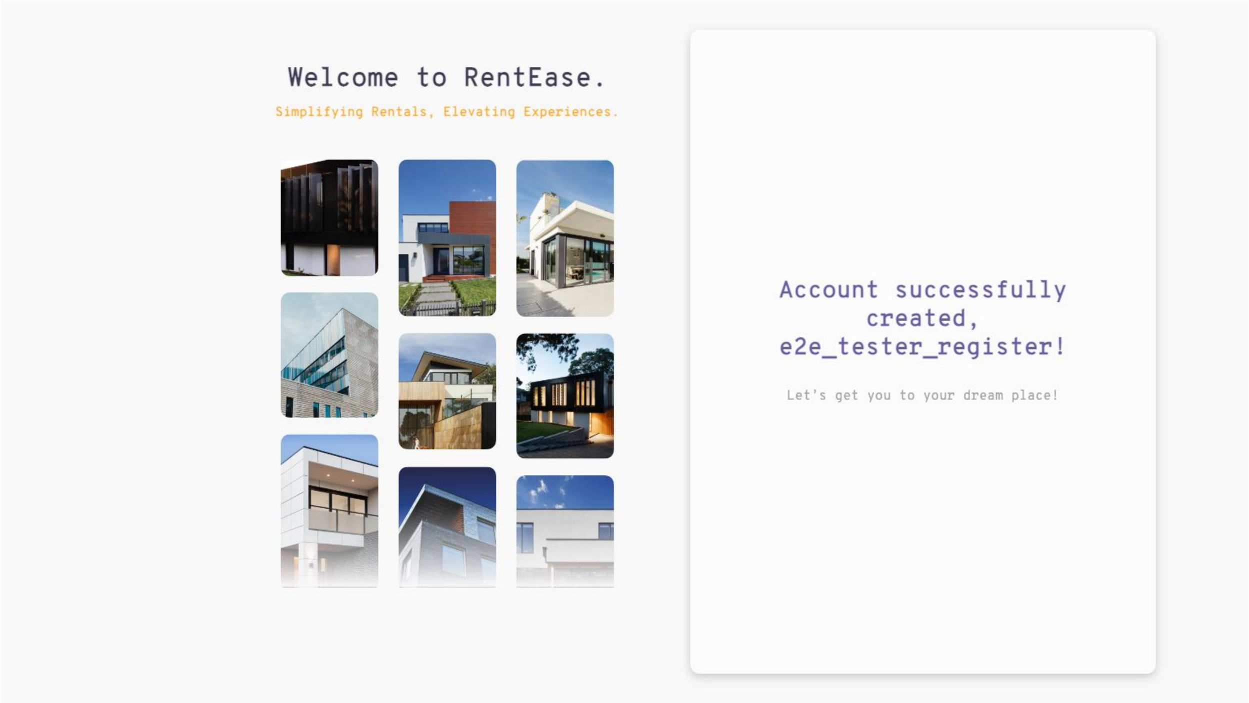
••••••

Tenant (Coming Soon) [✓ Landlord]

□ Remember Me

Already have an account? Log in

Figure 9: An image captured by playwright with the script filling in the correct format for the registration details.



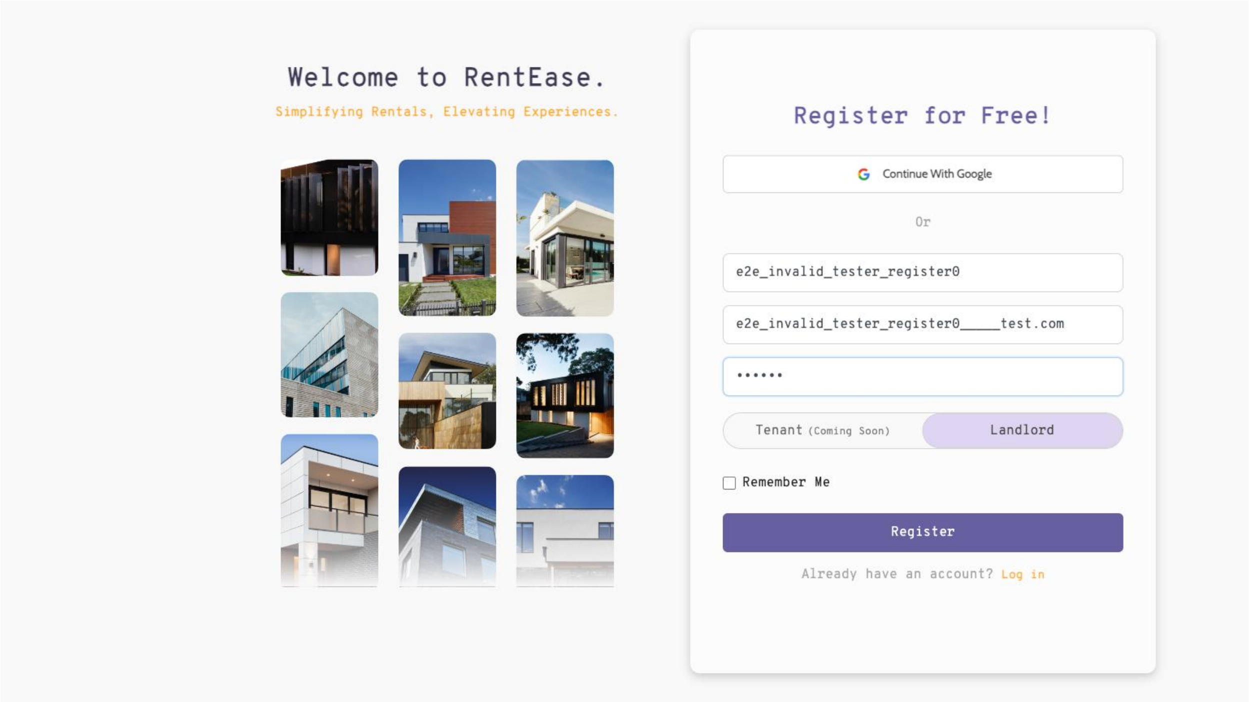
Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Account successfully created, e2e_tester_register!

Let's get you to your dream place!

Figure 10: An image captured by playwright showing the registration was a success.



Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Register for Free!

e2e_invalid_tester_register0

e2e_invalid_tester_register0_____test.com

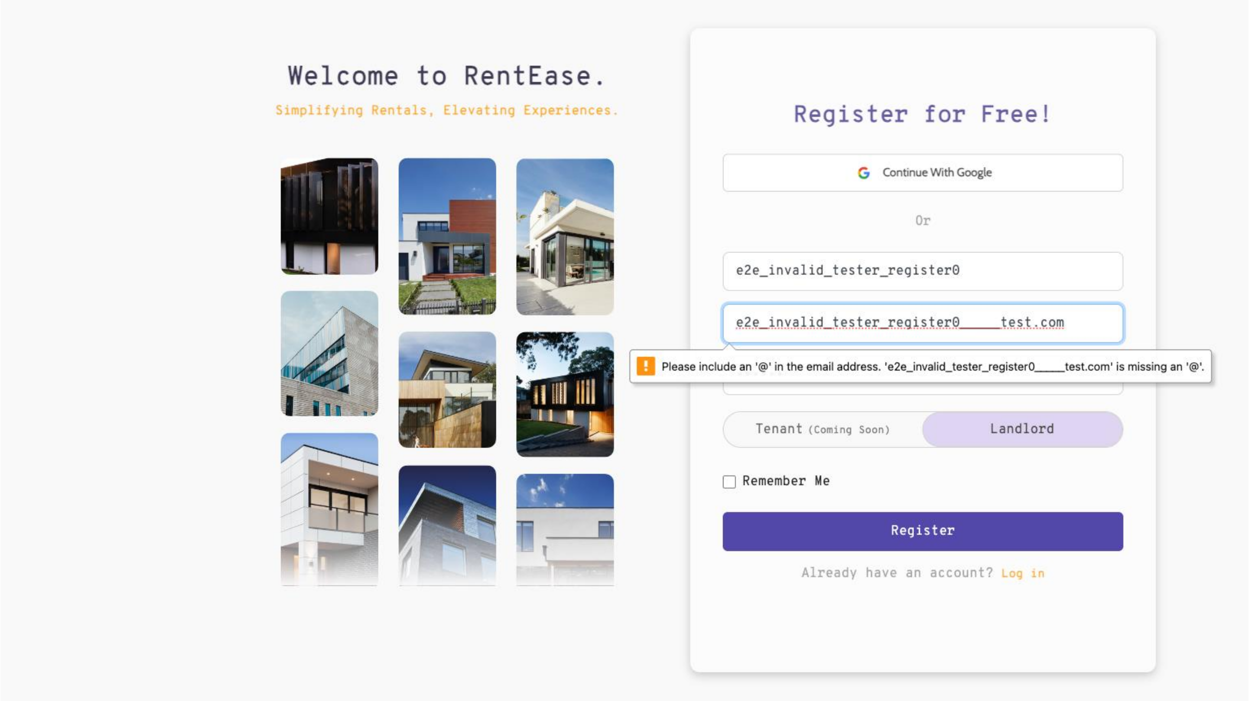
••••••

Tenant (Coming Soon) Landlord

☐ Remember Me

Already have an account? Log in

Figure 11: An image captured by playwright showing the registration details with an incorrectly formatted email.



Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Register for Free!

e2e_invalid_tester_register0

e2e_invalid_tester_register0_____test.com

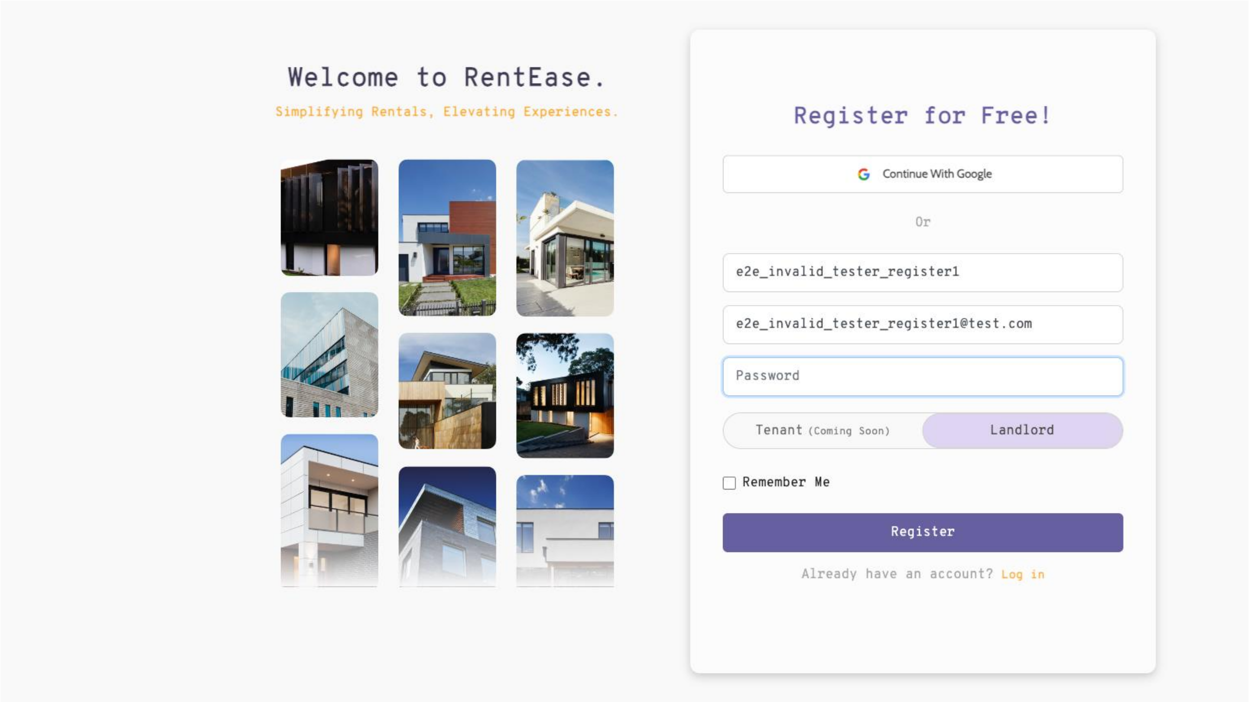
! Please include an '@' in the email address. 'e2e_invalid_tester_register0_____test.com' is missing an '@'.

Tenant (Coming Soon) Landlord

☐ Remember Me

Already have an account? Log in

Figure 12: An image captured by playwright showing a failed registration attempt and prompt to include the '@' symbol in the email.


Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Register for Free!

e2e_invalid_tester_register1

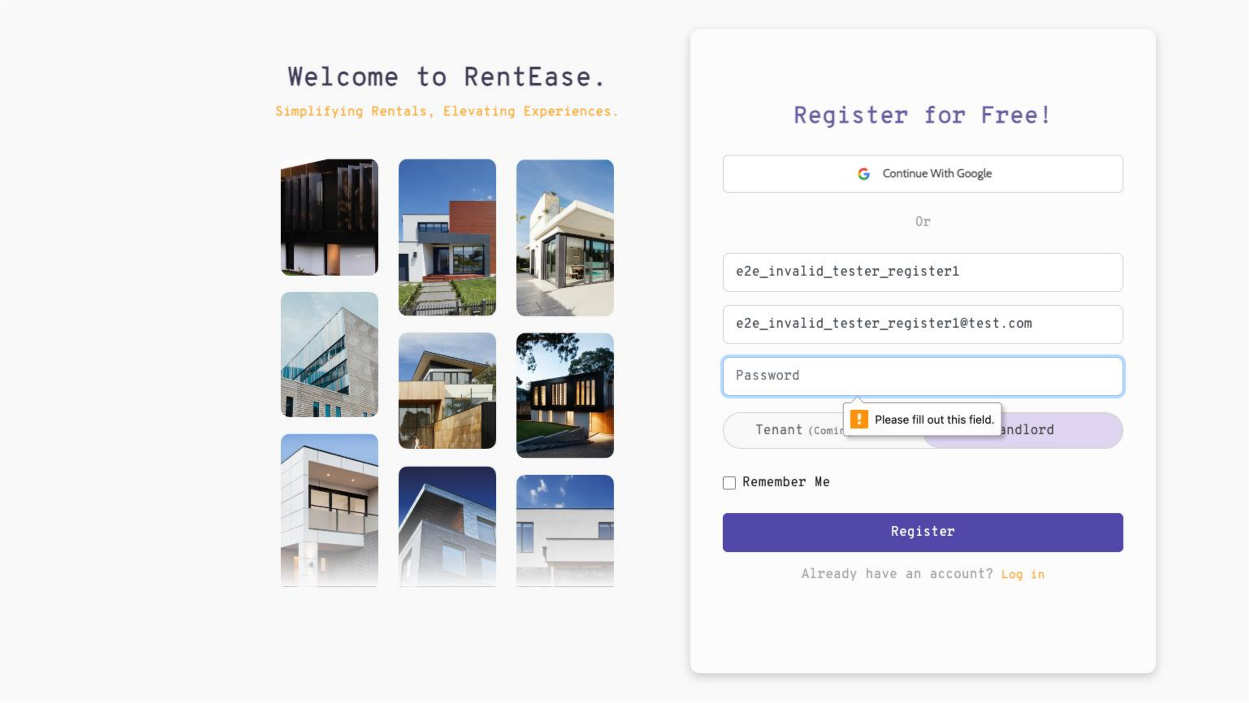
e2e_invalid_tester_register1@test.com

Password

□ Remember Me

Already have an account? Log in

Figure 13: An image captured by playwright showing the registration details with no password.


Welcome to RentEase.

Simplifying Rentals, Elevating Experiences.

Register for Free!

e2e_invalid_tester_register1

e2e_invalid_tester_register1@test.com

Password

Please fill out this field.

□ Remember Me

Already have an account? Log in

Figure 14: An image captured by playwright showing a failed login attempt and prompt to fill out the password text field.

3. Test Execution Instructions

3.1 Python End-to-End Tests

1. Navigate to the project root directory: **cd Assignment-6**
2. Install dependencies: **pip install -r requirements.txt**
3. Launch the local server: **flask run**
4. On a seperate terminal go to the `Assignment-6` directory and run the test using the `pytest` command: **pytest tests/e2e_tests**

3.2. Javascript End-to-End Tests

1. Navigate to the tenant_tests directory: **cd Assignment-6/tests/tenant_tests**
2. Install the required npm packages: **npm install**
3. Install other packages:
   a. **npm install @playwright/test**
   b. **npx playwright install**
4. Run the tests using the following command: **npx playwright test**
5. After the tests run, open the HTML report: **npx playwright show-report .nyc_output/html-report**
6. Click on the http link that is generated to see the testing report.

4. Task Distribution

Name	Contributions
Samhith Sripada (20232740)	1. Implemented end-to-end tests for Python routes. 2. Updated README.
Nicholas Seegobin (20246787)	1. Created a report to document the end-to-end tests. 2. Updated README.
Rodrigo Del Aguila Velarde (20275528)	1. Implemented end-to-end tests for Javascript features. 2. Updated README.