



TaskTrail Project Report

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Problem Statement

Project Visibility

Lacking in small to medium teams.

Disorganized Tools

Existing systems are non-collaborative.

Complexity vs. Simplicity

Tools are too complex or too limited.



Key Features



User Authentication

Django's built-in system.



Task Management

Create, update, and status changes.



Redis Caching

For frequently accessed views.



Unit Testing

Django's testing framework.

Architecture and Tools Used



Frontend

Django Templates
(HTML/CSS/JS).



Backend

Django (Python).



Database

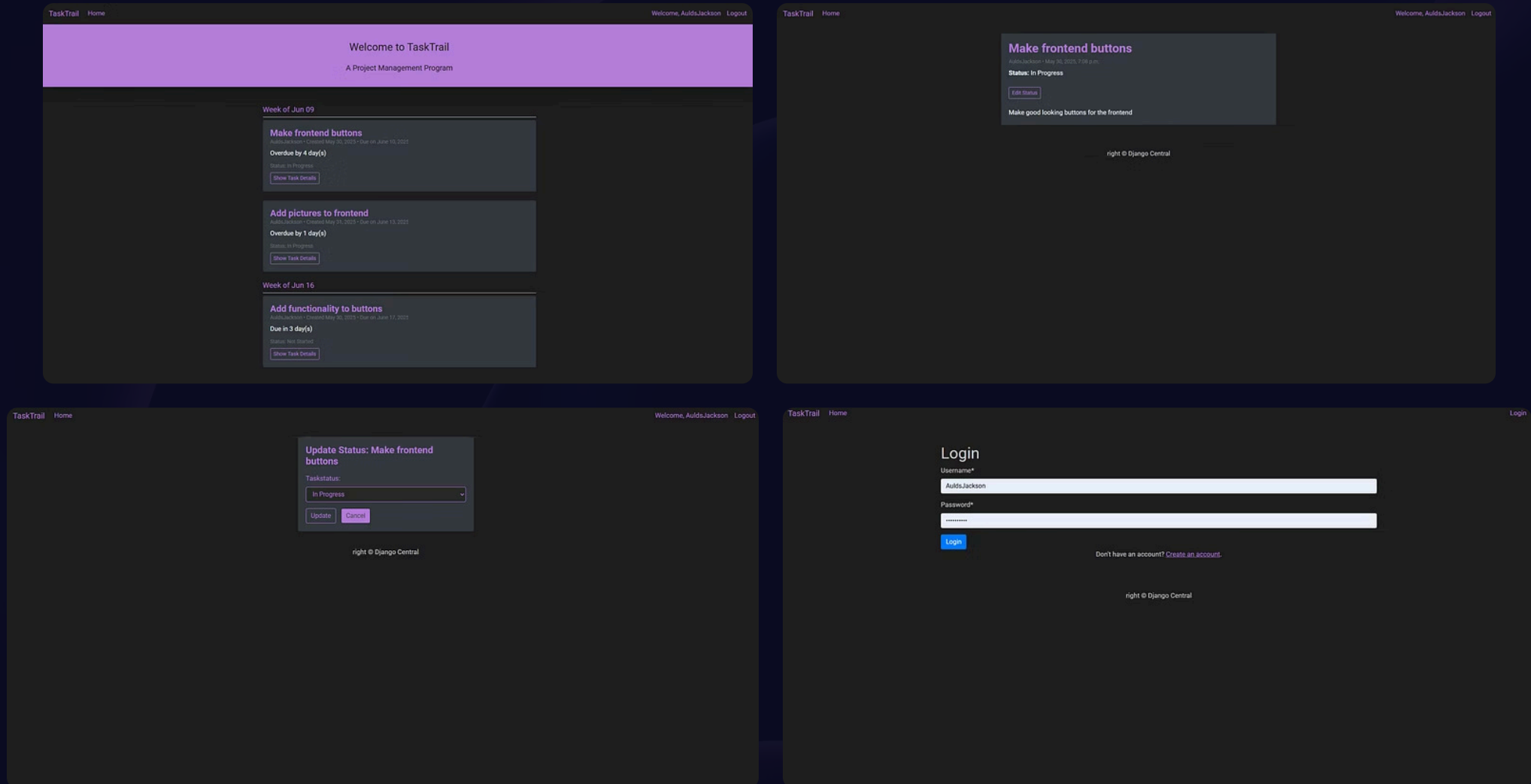
SQLite (dev),
PostgreSQL (prod).



Cache

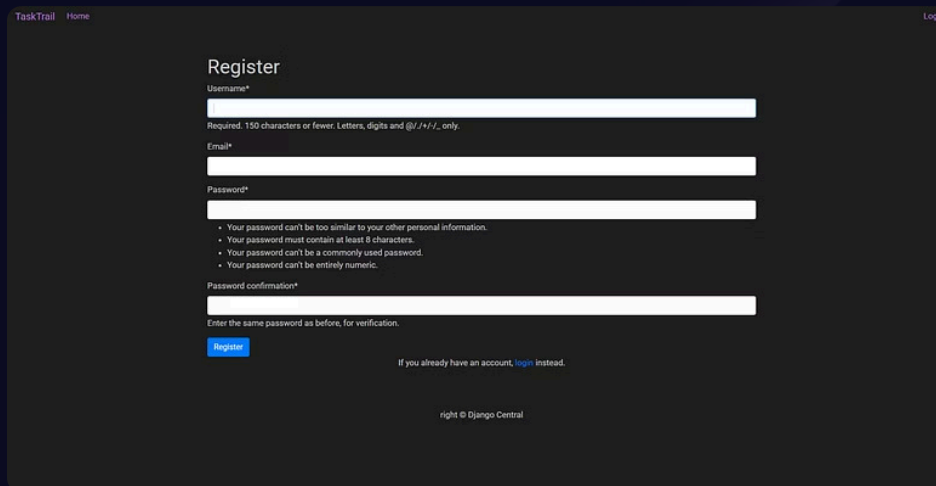
Redis.

Screenshots



Visualizing TaskTrail's user interface and core functionalities.

Screenshots



TaskTrail Home Login

Register

Username*

Required: 150 characters or fewer. Letters, digits and @/./+/-/_ only.

Email*

Password*

- Your password can't be too similar to your other personal information.
- Your password must contain at least 8 characters.
- Your password can't be a commonly used password.
- Your password can't be entirely numeric.

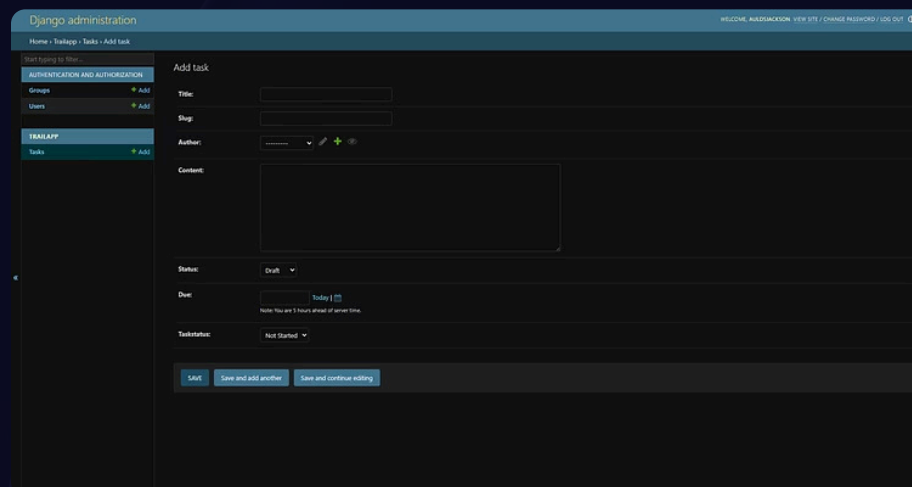
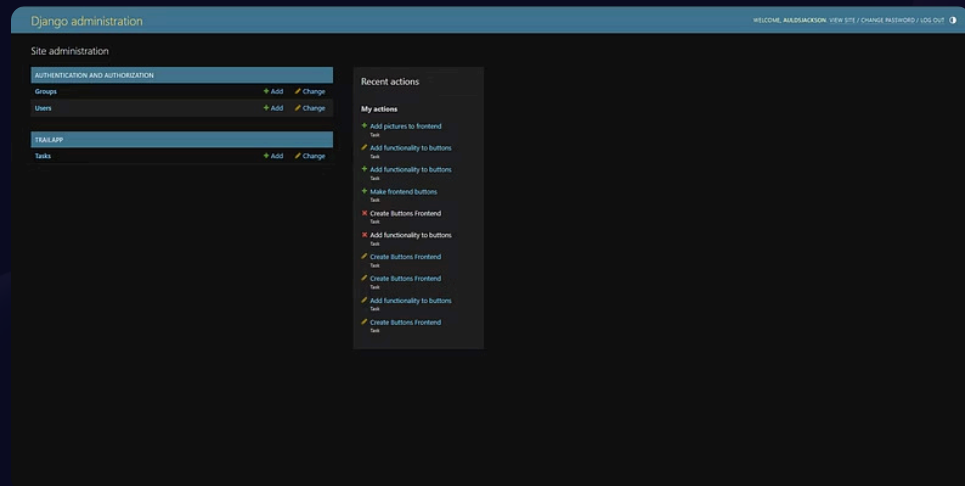
Password confirmation*

Enter the same password as before, for verification.

[Register](#)

If you already have an account, [login](#) instead.

right © Django Central



Django administration

WELCOME, MALCOLMSON. VIEW SITE / CHANGE PASSWORD / LOG OUT

Home - Trailapp - Tasks - Add task

Start typing to filter...

AUTHENTICATION AND AUTHORIZATION

Groups [Add](#)

Users [Add](#)

TRAILAPP

Tasks [Add](#)

Add task

Title:

Slug:

Author:

Content:

Status:

Due:

Task status:

[Save](#) [Save and add another](#) [Save and continue editing](#)

Accessed Home Page at 2025-06-14 13:29:33.905721 hours!

Accessed Home Page at 2025-06-14 13:30:27.522065 hours!

Logged out at 2025-06-14 13:30:30.960210 hours!

Register was accessed at 2025-06-14 13:30:45.465308 hours!

Logged in at 2025-06-14 13:31:05.518333 hours!

Accessed Home Page at 2025-06-14 13:31:05.529553 hours!

Implementation Notes

1

Status Update

update_task_status view.

2

Access Protection

@login_required decorator.

3

User-Task Link

Foreign key relationship.

4

Homepage Caching

Redis for expensive queries.



What is Software Testing?

The process of evaluating and verifying that a software application or system functions correctly and meets its intended requirements.

Testing Summary

test_taskstatus_update

Validates task status updates.

test_update_task_requires_login

Ensures unauthorized redirection.

Summary and Reflections



Security Complexity

Many ways to breach systems.



Unit Testing

Ensures long-term reliability.



Django Admin

Simplifies management.

Thank You for Your Time!