



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.



Django 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

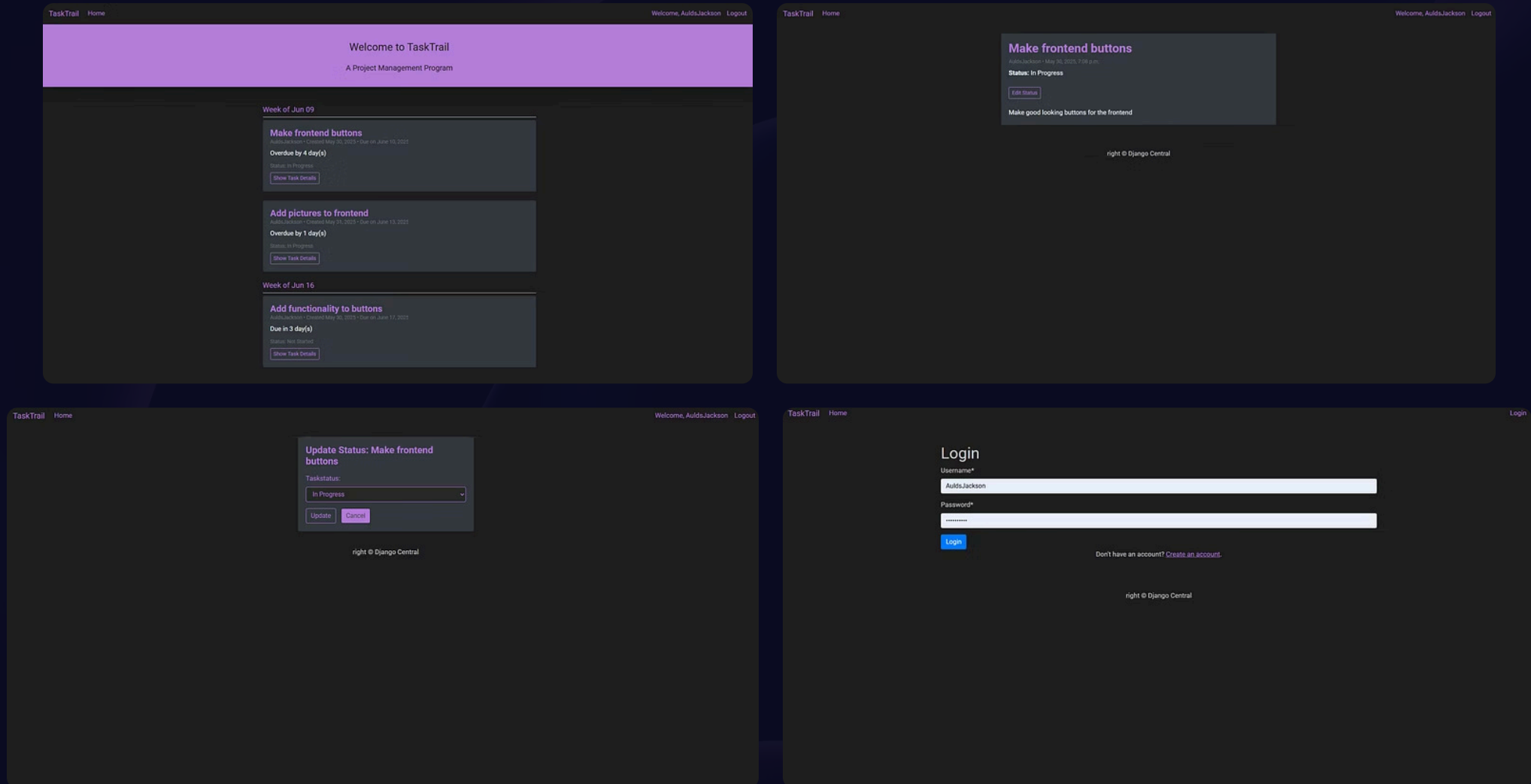
SQLite (dev),
PostgreSQL (prod).



Cache

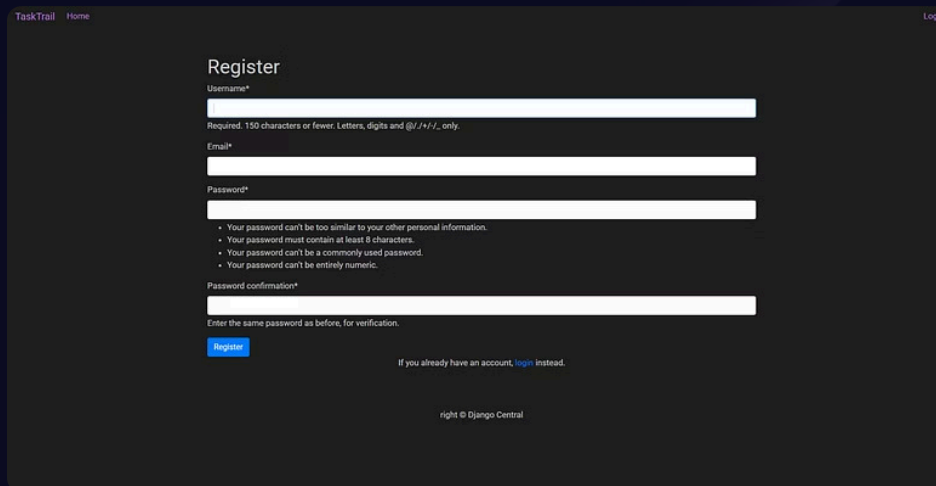
Django Caching

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.

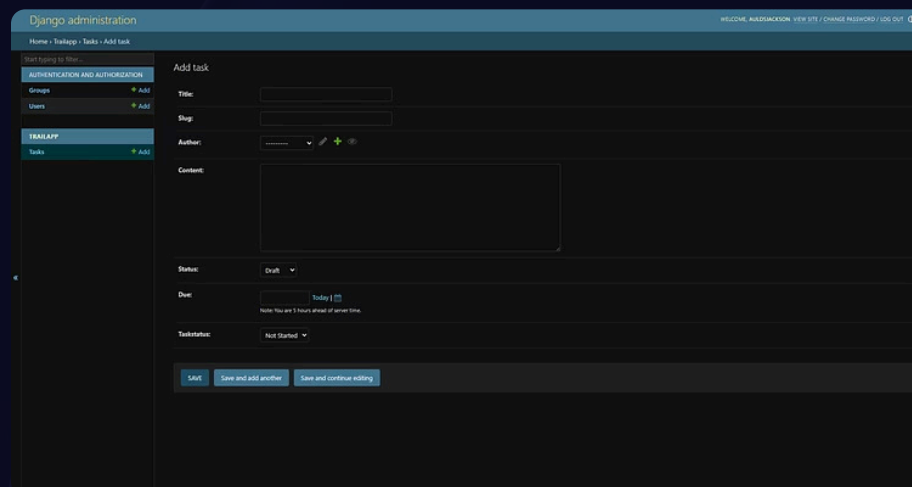
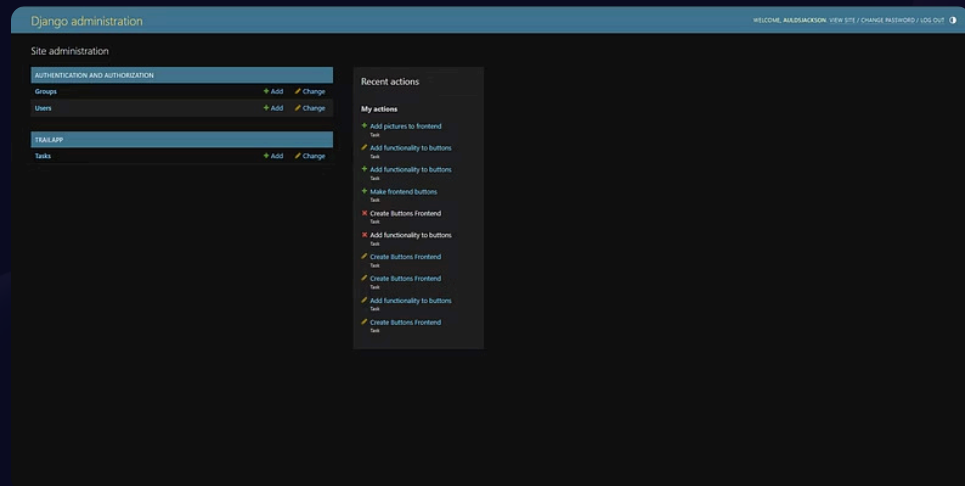
Password confirmation*

Enter the same password as before, for verification.

[Register](#)

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

right © Django Central



Django administration

WELCOME, MALCOLM! 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

Homepage Caching

Redis for expensive queries.

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.

Future Work



User Roles & Permissions

Add user roles and permissions for multi-tier access



Expose REST APIs

Expose REST APIs for mobile and third-party integrations



Add Analytics & Reporting

Add analytics and reporting features for projects

Thank You for Your Time!