

Task 2.7 - Search and Data Visualization Features

Search Implementation Planning

Search Criteria

Users should be able to search recipes based on:

1. Recipe name (search by recipe name, partial/ wildcard matching)
2. Ingredients (search for recipes containing certain ingredients)
3. Cooking time (filter for recipes that fall within a maximum cooking time)
4. Difficulty level (filter for recipes that fall within a certain level of difficulty)
5. Author (search by recipe author)

Search Format considerations

- Input Method (form-based search with multiple optional fields)
- Search Type (partial/ wildcard matching for recipe name & ingredients searches; exact matching for difficulty level; range filtering for cooking time/ numeric fields).
- Output format (display results as a pandas DataFrame table, as specified in task instructions; make recipe names clickable to link through to details pages; show total number of results)

Data Analysis

Chart 1: Bar Chart - Recipes by Difficulty Level

Type: Bar chart

X-axis: Difficulty levels (easy, medium, intermediate, hard)

Y-axis: Number of recipes

Purpose: Show distribution of recipe difficulties

Display: Always visible on search results page

Data Source: All recipes in database

Chart 2: Pie Chart - Recipes by Author

Type: Pie chart

Categories: Authors (with "Multiple Authors" as a catchall for misc/ multiple)

Values: Number of recipes per author

Purpose: Show recipe contributions by author

Display: Always visible on search results page

Data Source: All recipes in database

Chart 3: Line Chart - Average Cooking Time by Difficulty

Type: Line chart

X-axis: Difficulty levels (easy, medium, intermediate, hard)

Y-axis: Average cooking time (in minutes)

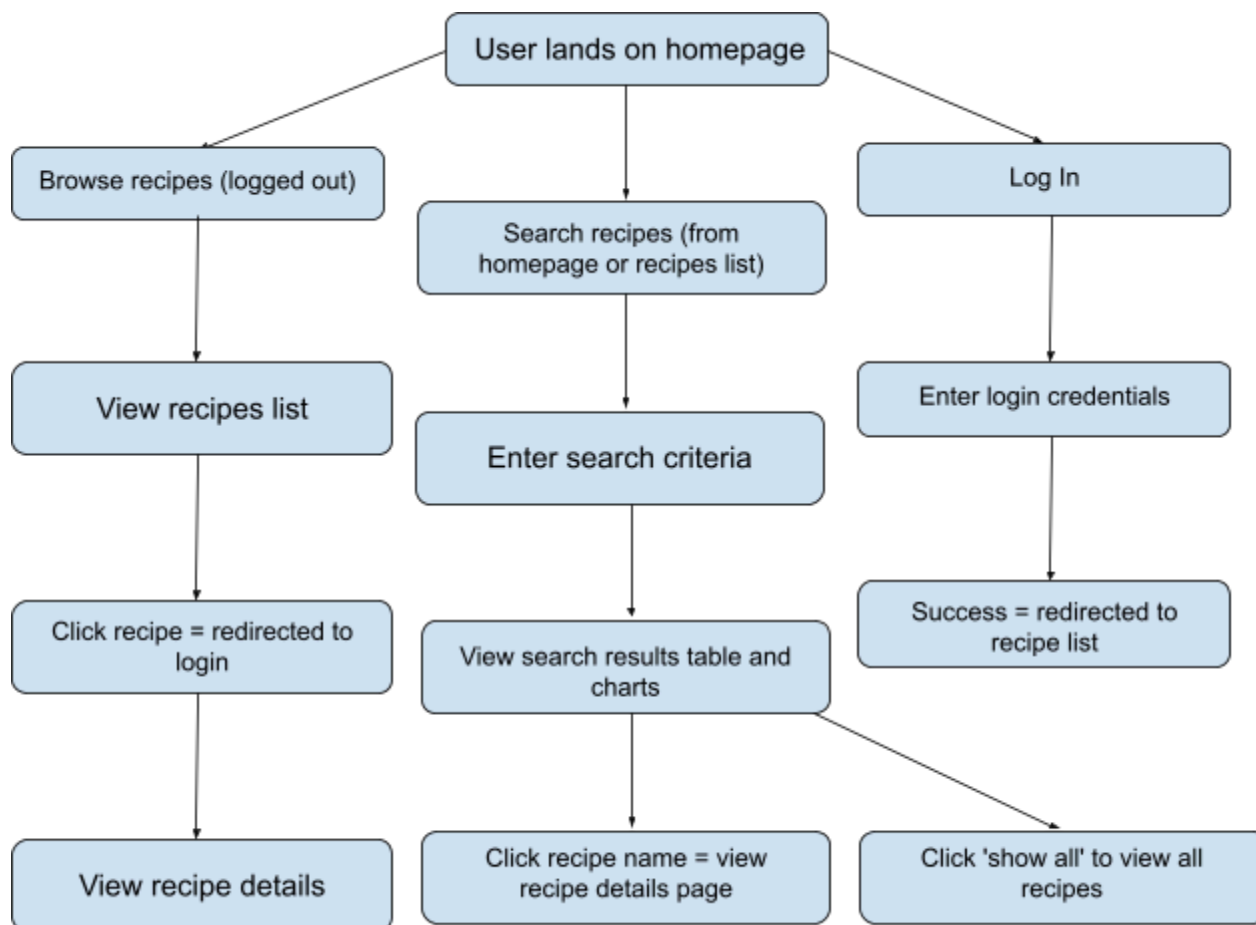
Purpose: Show relationship between difficulty and cooking time

Display: Always visible on search results page

Data Source: All recipes in database

Execution Flow

User Journey Flowchart



Detailed User Journey Example

1. Homepage:

- User sees welcome page with "Browse Recipes" and "Search Recipes" buttons
- URL: `http://localhost:8000/`

2. Login:

- User clicks "Login" button
- Enters username and password
- URL: `http://localhost:8000/login/`

3. Recipes List:

- After login, redirected to recipes list
- URL: ``http://localhost:8000/recipes/``

4. Search Recipes:

- User clicks "Search Recipes" link
- Enters search criteria (e.g., difficulty="Easy", max_cooking_time=30)
- URL: ``http://localhost:8000/recipes/search/``
- Submits form → URL:

``http://localhost:8000/recipes/search/?difficulty=Easy&max_cooking_time=30``

5. Search Results:

- View results table with matching recipes
- View three data visualizations (bar, pie, line charts)
- URL: ``http://localhost:8000/recipes/search/?difficulty=Easy&max_cooking_time=30``

6. Recipe Detail:

- User clicks on a recipe name from search results
- Views full recipe details
- URL: ``http://localhost:8000/recipes/1/``

7. Show All Recipes:

- User clicks "Show All" button
- Views all recipes without filters
- URL: ``http://localhost:8000/recipes/search/?show_all=1``

8. Logout:

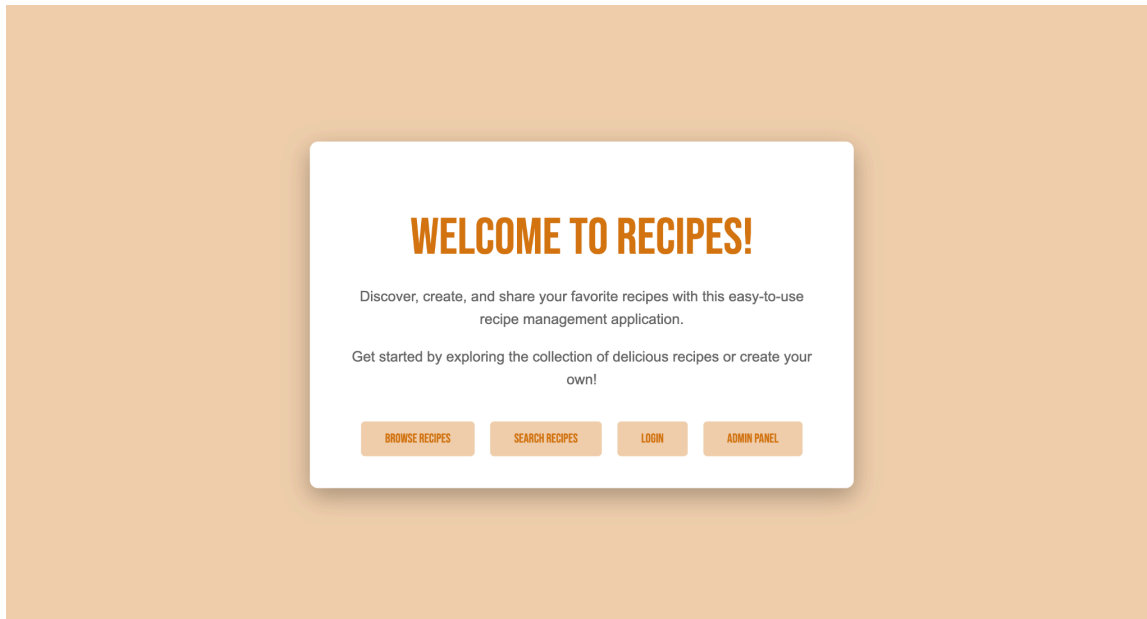
- User clicks "Logout" button
- Redirected to logout success page
- URL: ``http://localhost:8000/logout/``

Screenshots

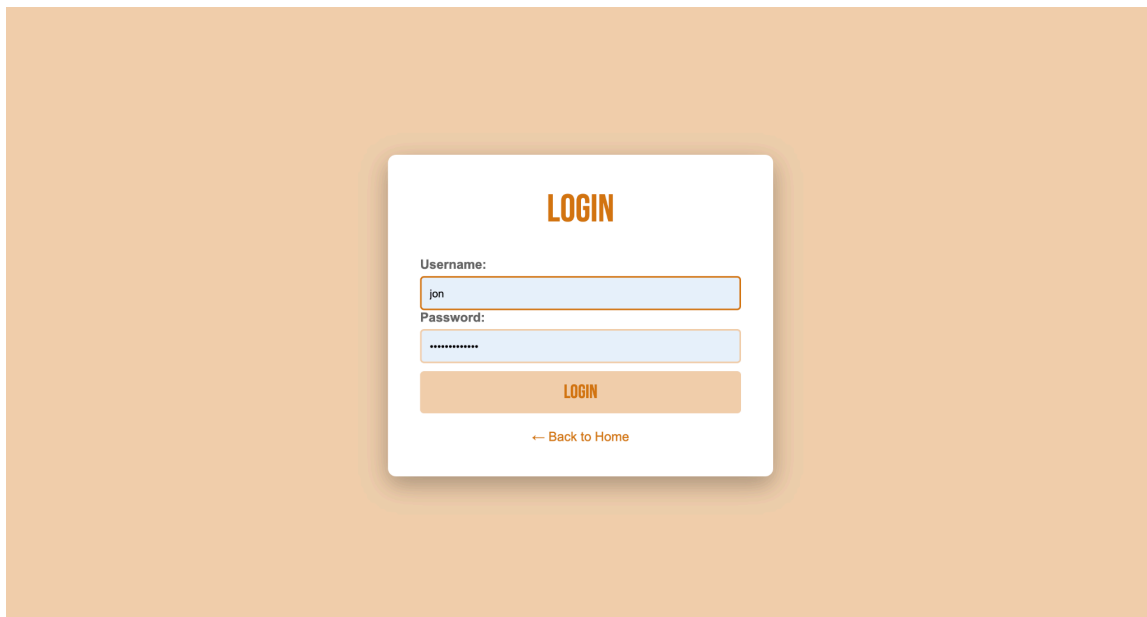
test-outcome.png:

```
○ (a2-ve-recipeapp) Jon@Annies-MacBook-Pro src % python manage.py test recipes -v 2
Found 38 test(s).
Creating test database for alias 'default' ('file:memorydb_default?mode=memory&cache=shared')...
Operations to perform:
  Synchronize unmigrated apps: messages, staticfiles
  Apply all migrations: admin, auth, contenttypes, ingredients, recipes, sessions, users
Synchronizing apps without migrations:
  Creating tables...
  Running deferred SQL...
Running migrations:
  Applying contenttypes.0001_initial... OK
  Applying auth.0001_initial... OK
  Applying admin.0001_initial... OK
  Applying admin.0002_logentry_remove_auto_add... OK
  Applying admin.0003_logentry_add_action_flag_choices... OK
  Applying contenttypes.0002_remove_content_type_name... OK
  Applying auth.0002_alter_permission_name_max_length... OK
  Applying auth.0003_alter_user_email_max_length... OK
  Applying auth.0004_alter_user_username_opts... OK
  Applying auth.0005_alter_user_last_login_null... OK
  Applying auth.0006_require_contenttypes_0002... OK
  Applying auth.0007_alter_validators_add_error_messages... OK
  Applying auth.0008_alter_user_username_max_length... OK
  Applying auth.0009_alter_user_last_name_max_length... OK
  Applying auth.0010_alter_group_name_max_length... OK
  Applying auth.0011_update_proxy_permissions... OK
  Applying auth.0012_alter_user_first_name_max_length... OK
  Applying ingredients.0001_initial... OK
  Applying recipes.0001_initial... OK
  Applying recipes.0002_recipe_pic... OK
  Applying sessions.0001_initial... OK
  Applying users.0001_initial... OK
```

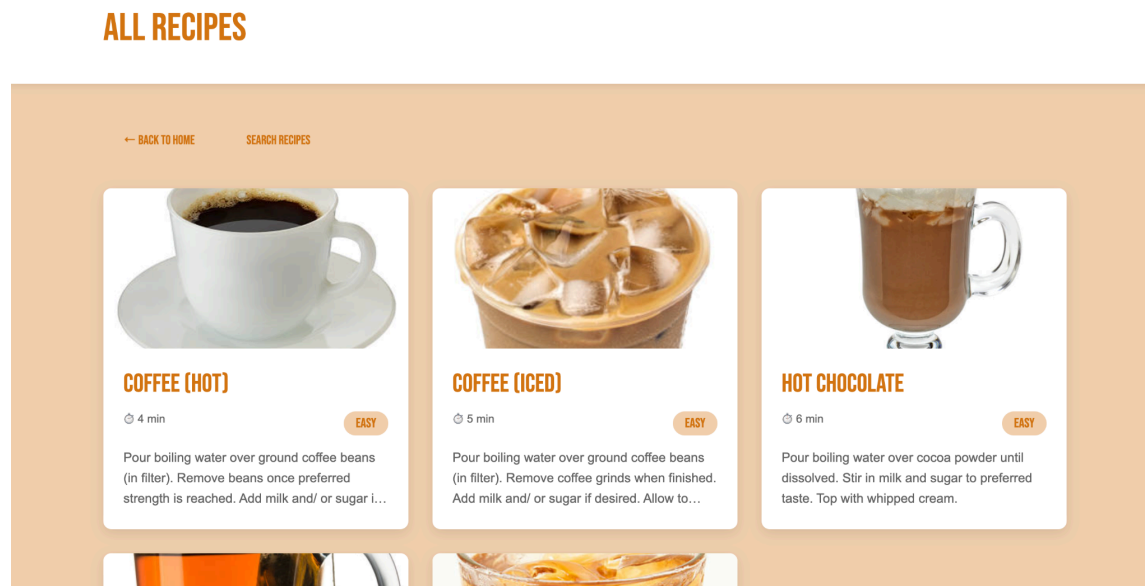
homepage.png:



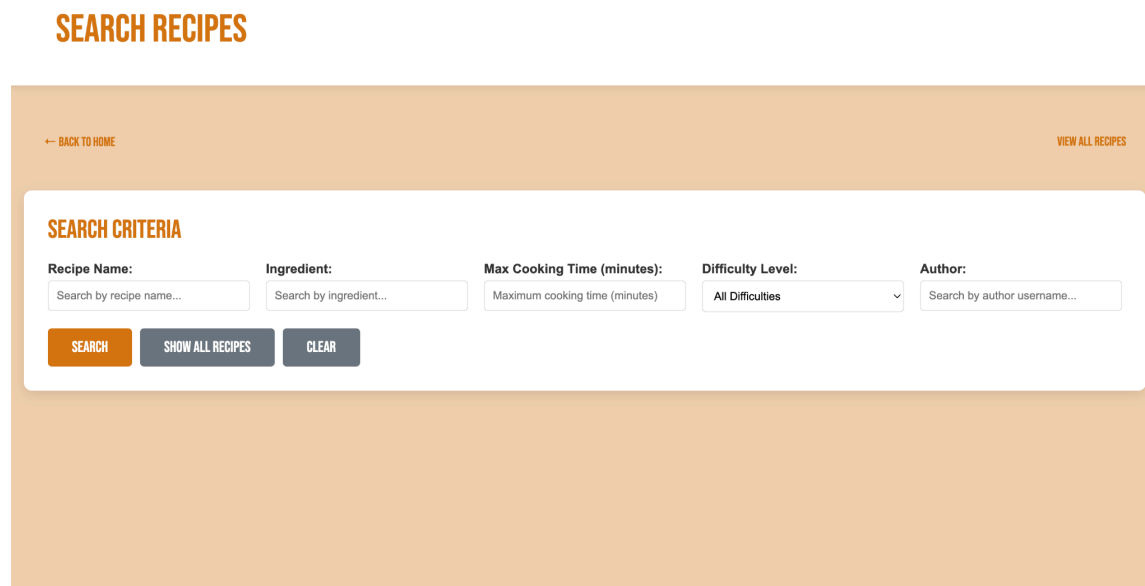
login.png:



recipes-list.png:



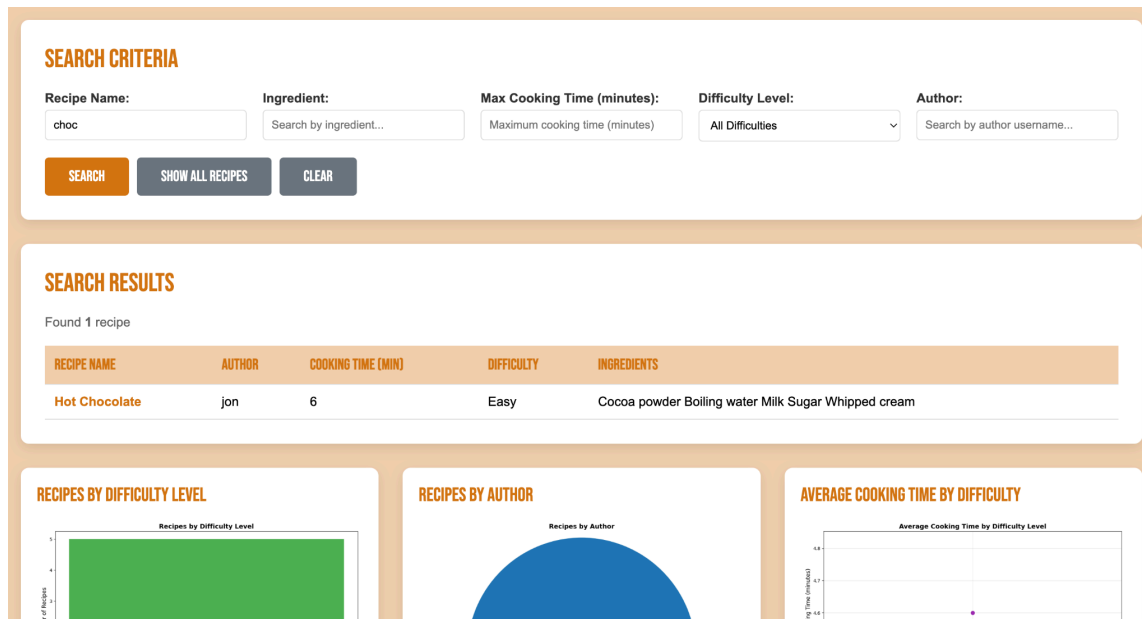
search-form.png:



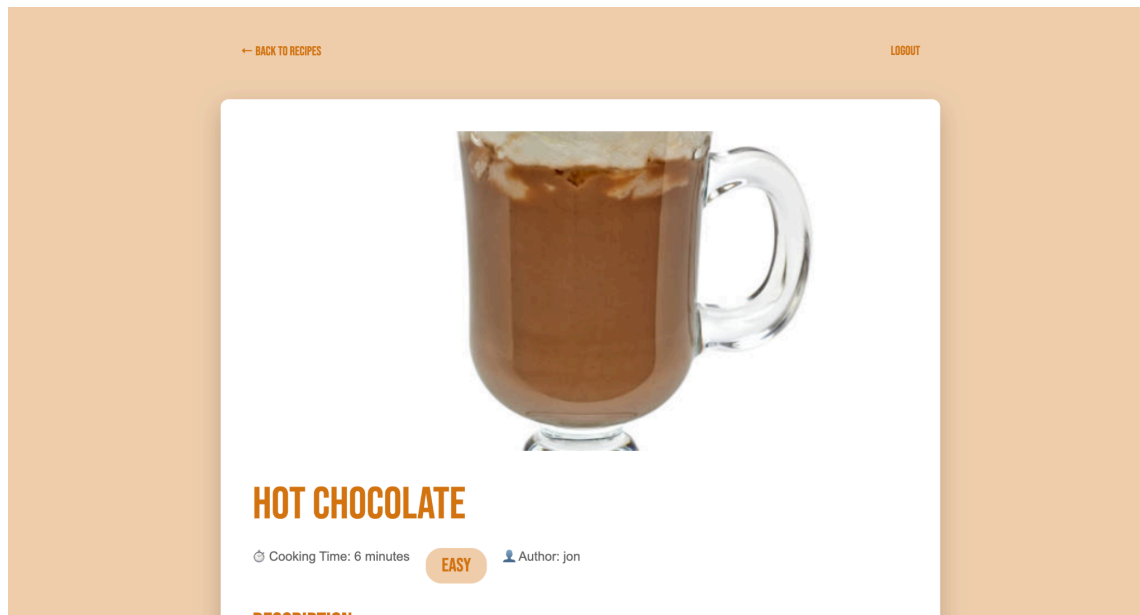
search-results.png:



search-wildcard-results.png (partial match):



recipe-detail.png:



logout.png:

