

## 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)

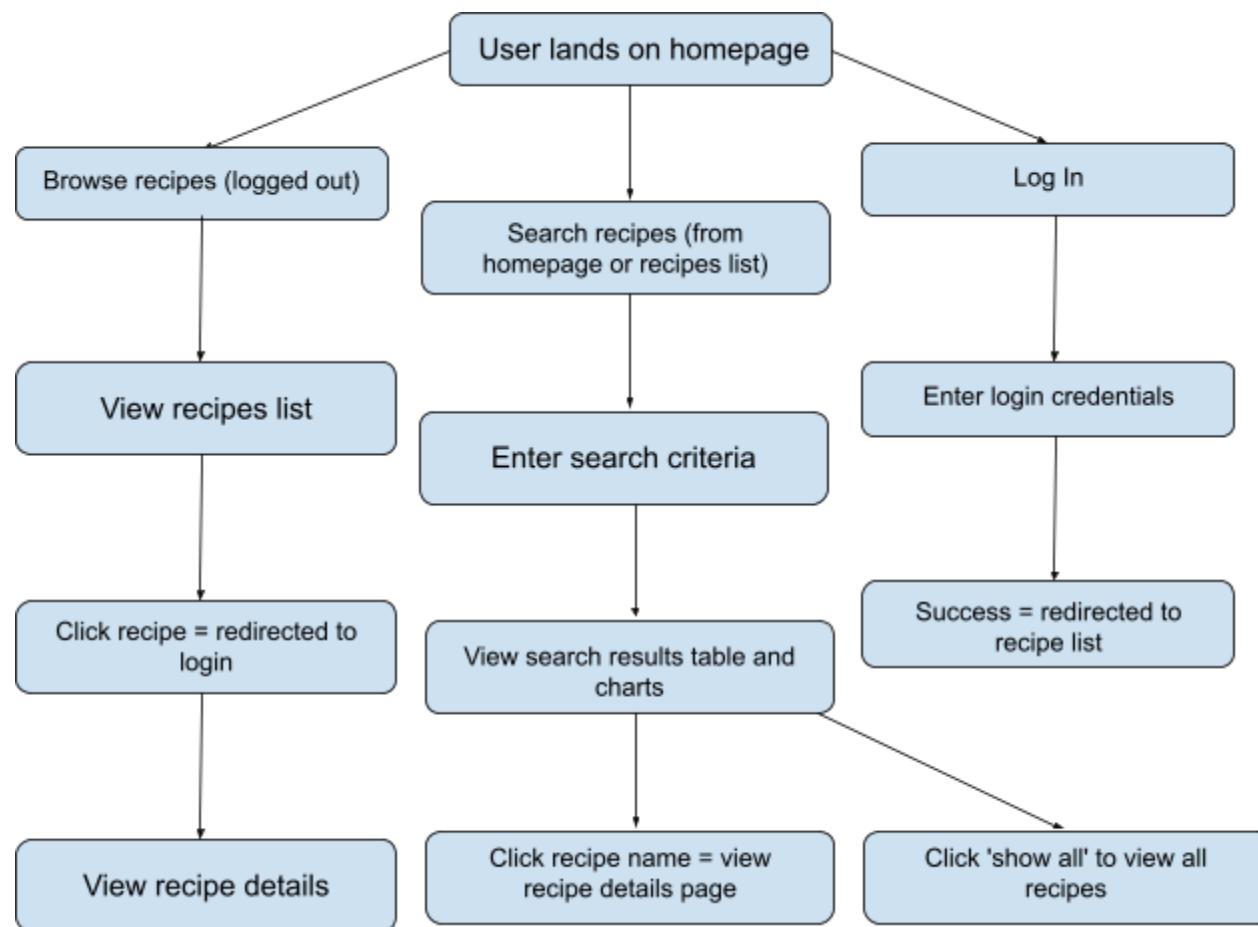
**Purpose:** Show relationship between difficulty and cooking time

**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:**

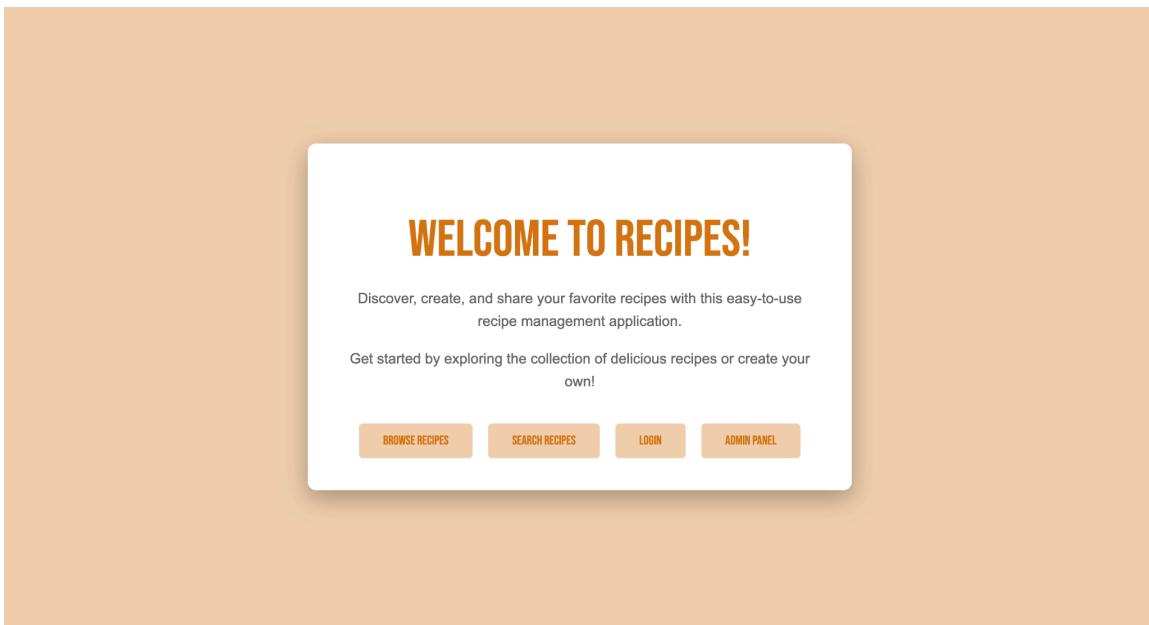
- User clicks "Logout" button
- Redirected to logout success page
- URL: `http://localhost:8000/logout/`

## Screenshots

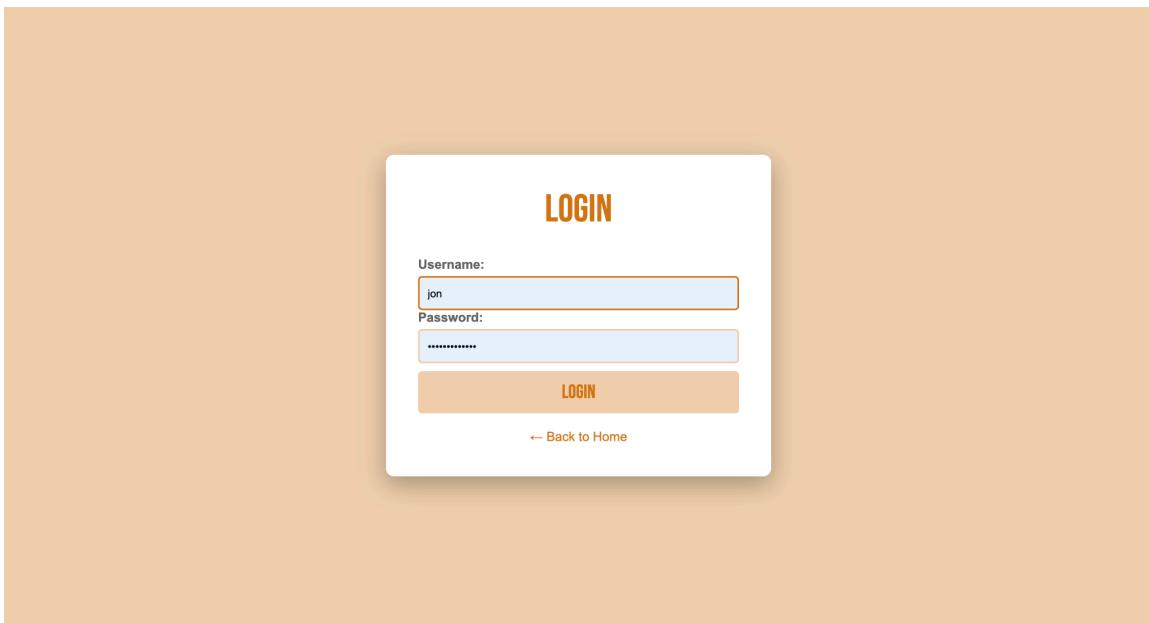
test-outcome.png:

```
○ (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=s
hared')...
Operations to perform:
  Synchronize unmigrated apps: messages, staticfiles
  Apply all migrations: admin, auth, contenttypes, ingredients, recipes, sessions, use
rs
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:*

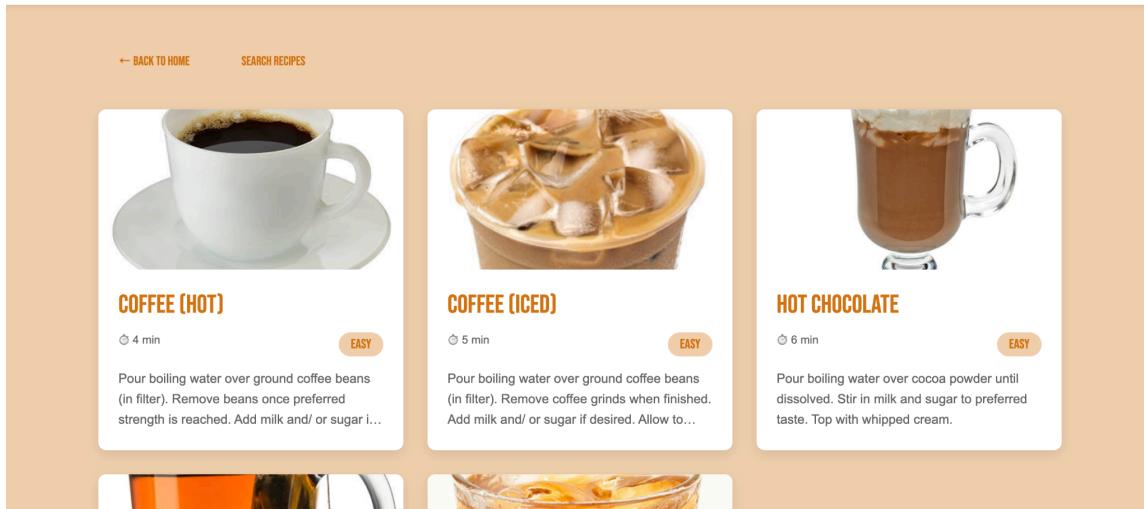


*login.png:*



recipes-list.png:

## ALL RECIPES



search-form.png:

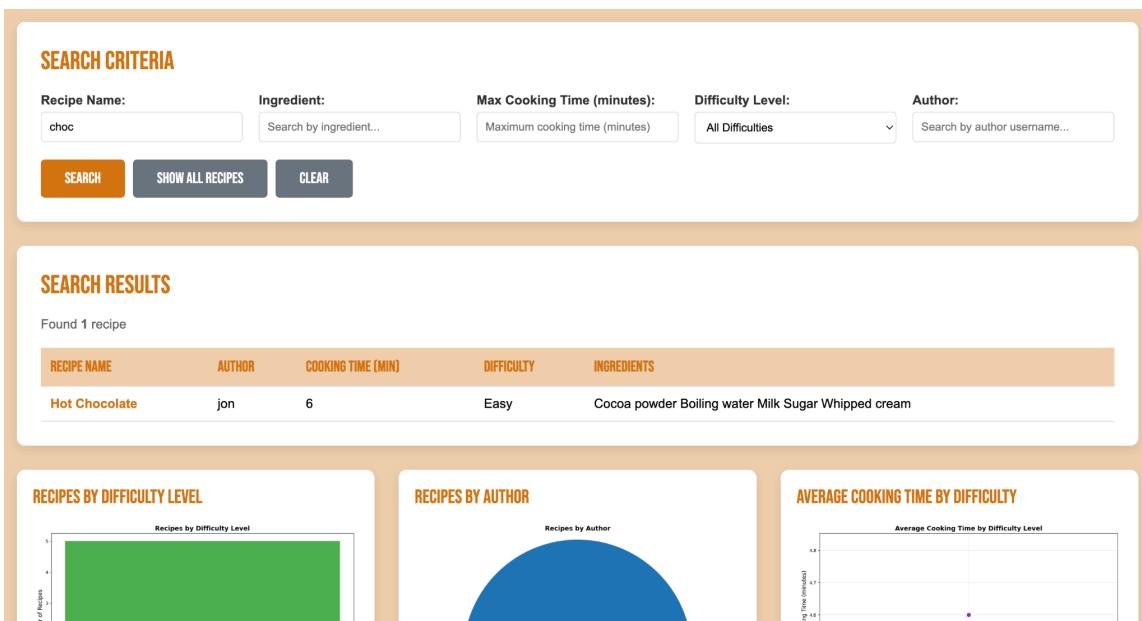
## SEARCH RECIPES

The screenshot shows a search form on a light orange background. At the top left is a 'BACK TO HOME' button and at the top right is a 'VIEW ALL RECIPES' link. A large white search criteria box is centered. It contains fields for 'Recipe Name' (with placeholder 'Search by recipe name...'), 'Ingredient' (with placeholder 'Search by ingredient...'), 'Max Cooking Time (minutes)' (with placeholder 'Maximum cooking time (minutes)'), 'Difficulty Level' (a dropdown menu currently set to 'All Difficulties'), and 'Author' (with placeholder 'Search by author username...'). Below these fields are three buttons: 'SEARCH' (orange), 'SHOW ALL RECIPES' (dark grey), and 'CLEAR' (dark grey).

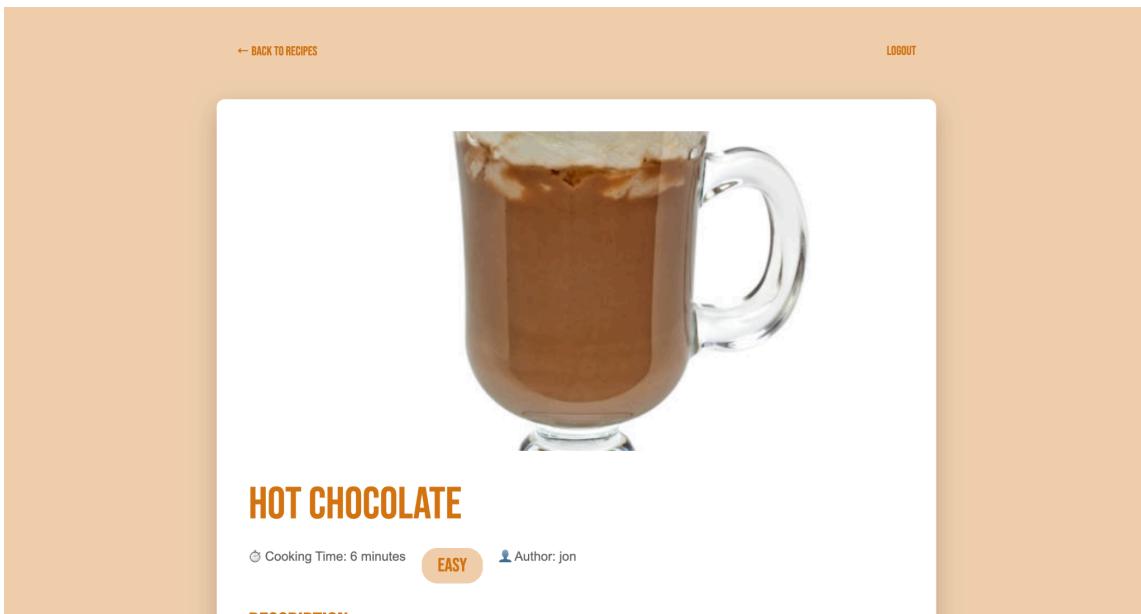
search-results.png:



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



recipe-detail.png:



logout.png:

