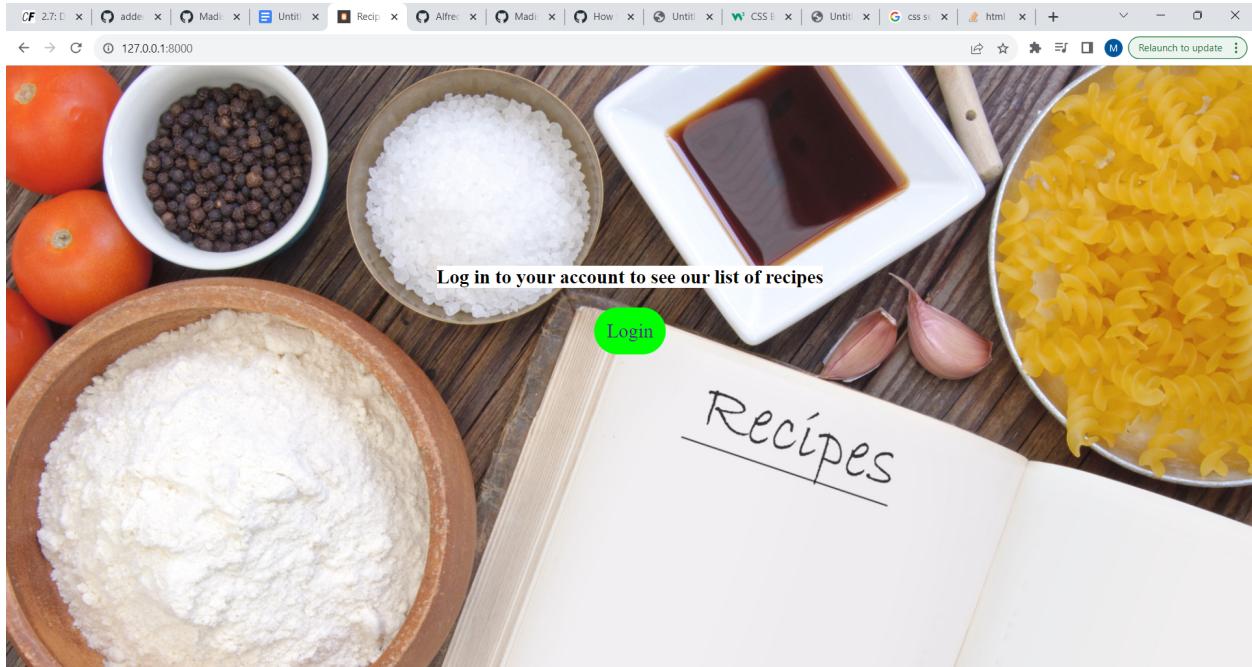


## Execution Flow:



The screenshot shows the same web browser window after a user has navigated to the login page at `127.0.0.1:8000/login/`. The title bar now says "Login". The main content area displays a login form with fields for "Username" (containing "madiis") and "Password" (containing "\*\*\*\*\*"). Below the form are two buttons: a green "Login" button and a red "Cancel" button. The background of the login form is a photograph of a kitchen counter with various ingredients like a green bottle, a bowl of colorful peppercorns, a bowl of ground meat, some fresh herbs, and garlic cloves.

Search Recipes

Name	Cooking Time	Difficulty
PB&J Sandwich	4.0	Easy
Spaghetti	10.0	Intermediate
Scrambled Eggs	6.0	Easy
Brownies	25.0	Intermediate
Hot Dog	3.0	Easy

127.0.0.1:8000/list/3

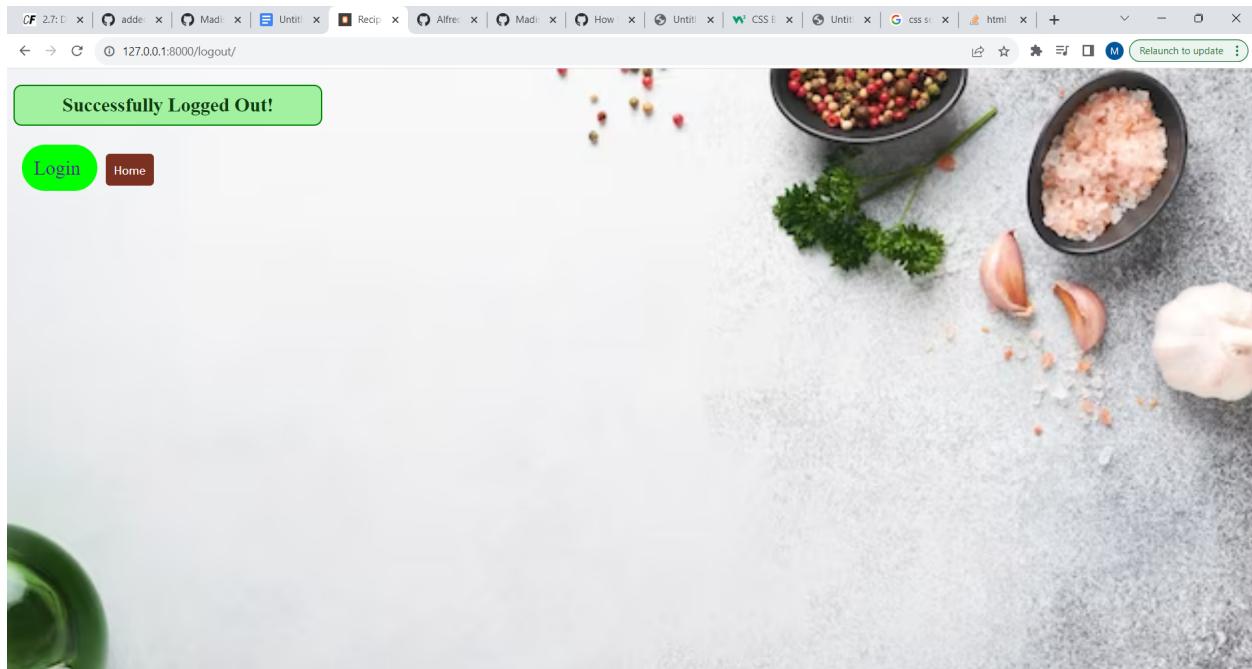
**Details: Scrambled Eggs**

**Name:** Scrambled Eggs  
**Cooking Time** (min): 6.0  
**Difficulty:** Easy

**Ingredients:** Eggs, salt, pepper

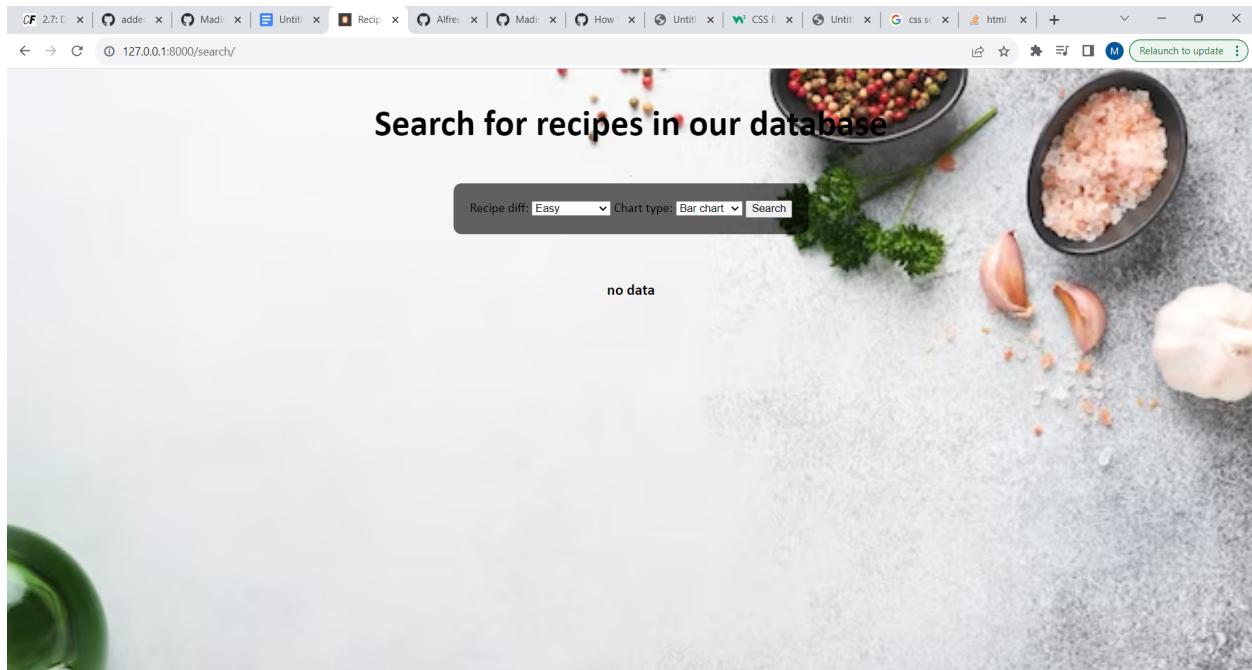
**Description:** Scrambled eggs is a dish made from chicken eggs stirred, whipped or beaten together while being gently heated. Salt, butter, and oil are the most common ingredients.

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## Data Analysis

On this recipe app, I am adding a new feature: “Search Using Recipe Difficulty Level”. Using this feature, users should be able to choose the difficulty of recipes from the database and the type of chart they want the data to be displayed on.



According to the search criteria entered by the user (recipe difficulty and chart type), the app should extract the recipes needed from the database as QuerySet, convert the QuerySet to pandas DataFrame, and display the results as a table.

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "127.0.0.1:8000/search/". The page content includes:

- Search Title:** "Search for recipes in our database" with a background image of various ingredients.
- Filter Options:** "Recipe diff: Intermediate" dropdown, "Chart type: Bar chart" dropdown, and a "Search" button.
- Table Data:**

	<b>id</b>	<b>name</b>	<b>cooking_time</b>	<b>ingredients</b>	<b>description</b>	<b>pic</b>
0	2	Spaghetti	10.0	Spaghetti noodles, water, marinara sauce, meatballs	Spaghetti is a long, thin, cylindrical pasta. Originating from traditional Italian cuisine. Like other pasta, Spaghetti is made of milled wheat, water, and sometimes enriched with vitamins and minerals. Usually topped with marinara sauce with meatballs added.	recipes/spaghetti.jpeg
1	4	Brownies	25.0	Eggs, water, sugar, cocoa powder, vanilla extract	Brownies come in a variety of forms and may be either fudgy or cakey, depending on their density. Brownies often have a glossy 'skin' on their upper crust. They may also include nuts, frosting, cream cheese, chocolate chips, or other ingredients.	recipes/brownies.jpeg
- Bar Chart:** A bar chart titled "Cooking Time Comparison" showing the cooking time for Spaghetti (10.0) and Brownies (25.0). The Y-axis ranges from 0 to 25 minutes.

In the above image, I have chosen “Intermediate” as the difficulty level on the form and the app displayed three recipes with “Intermediate” level difficulties to cook.

The app also gives data visualization on the search page using the “matplotlib” library. According to the chart type chosen by the user, it displayed a chart with the names of the recipes searched against their respective cooking times. The following images are charts of recipes in the database with ‘easy’ difficulty and their cooking times compared.

Search for recipes in our database

Recipe diff: Easy Chart type: Bar chart Search

<b>id</b>	<b>name</b>	<b>cooking_time</b>	<b>ingredients</b>	<b>description</b>	<b>pic</b>
0	PB&J Sandwich	4.0	Bread, Peanut Butter, Jelly	A popular food among American children, PB&J is short for peanut butter and jelly sandwich that consist of two slices of bread, one with a layer of peanut butter, and the other one with jelly or jam.	recipes/pbj.png
1	Scrambled Eggs	6.0	Eggs, salt, pepper	Scrambled eggs is a dish made from chicken eggs stirred, whipped or beaten together while being gently heated. Salt, butter, and oil are the most common ingredients.	recipes/scrambledeggs.jpeg
2	Hot Dog	3.0	Hot dog, buns, ketchup, mustard	"Hot dog" means a whole, cured, cooked sausage that is skinless or stuffed in a casing, that may be known as a frankfurter, frank, or wiener and may be served on a bun or roll.	recipes/hotdog.png

The bar chart displays the cooking time for three recipes. The y-axis represents time in minutes from 0 to 6. The x-axis lists the recipes: PB&J Sandwich, Scrambled Eggs, and Hot Dog. The bars show cooking times of approximately 4.0 minutes for PB&J, 6.0 minutes for Scrambled Eggs, and 3.0 minutes for Hot Dog.

Recipe	Cooking Time (approx.)
PB&J Sandwich	4.0
Scrambled Eggs	6.0
Hot Dog	3.0

Search for recipes in our database

Recipe diff: Easy Chart type: Pie chart Search

<b>id</b>	<b>name</b>	<b>cooking_time</b>	<b>ingredients</b>	<b>description</b>	<b>pic</b>
0	PB&J Sandwich	4.0	Bread, Peanut Butter, Jelly	A popular food among American children, PB&J is short for peanut butter and jelly sandwich that consist of two slices of bread, one with a layer of peanut butter, and the other one with jelly or jam.	recipes/pbj.png
1	Scrambled Eggs	6.0	Eggs, salt, pepper	Scrambled eggs is a dish made from chicken eggs stirred, whipped or beaten together while being gently heated. Salt, butter, and oil are the most common ingredients.	recipes/scrambledeggs.jpeg
2	Hot Dog	3.0	Hot dog, buns, ketchup, mustard	"Hot dog" means a whole, cured, cooked sausage that is skinless or stuffed in a casing, that may be known as a frankfurter, frank, or wiener and may be served on a bun or roll.	recipes/hotdog.png

The pie chart illustrates the proportion of total cooking time for each recipe. The slices represent the percentage of the total cooking time. The chart shows that Scrambled Eggs account for the largest portion (approximately 45%), followed by PB&J Sandwich (approximately 30%) and Hot Dog (approximately 25%).

Recipe	Proportion (%)
PB&J Sandwich	~30%
Scrambled Eggs	~45%
Hot Dog	~25%

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← → ⌂ 127.0.0.1:8000/search/ Relaunch to update

## Search for recipes in our database

Recipe diff: Easy Chart type: Line chart Search

<b>id</b>	<b>name</b>	<b>cooking_time</b>	<b>ingredients</b>	<b>description</b>	<b>pic</b>
0	PB&J Sandwich	4.0	Bread, Peanut Butter, Jelly	A popular food among American children, PB&J is short for peanut butter and jelly sandwich that consist of two slices of bread, one with a layer of peanut butter, and the other one with jelly or jam.	recipes/pbj.png
1	Scrambled Eggs	6.0	Eggs, salt, pepper	Scrambled eggs is a dish made from chicken eggs stirred, whipped or beaten together while being gently heated. Salt, butter, and oil are the most common ingredients.	recipes/scrambledeggs.jpeg
2	Hot Dog	3.0	Hot dog, buns, ketchup, mustard	"Hot dog" means a whole, cured, cooked sausage that is skinless or stuffed in a casing, that may be known as a frankfurter, frank, or wiener and may be served on a bun or roll.	recipes/hotdog.png

The chart displays the cooking time for three recipes. The x-axis categories are PB&J Sandwich, Scrambled Eggs, and Hot Dog. The y-axis ranges from 3.0 to 6.0. The data points are connected by straight lines, forming a triangle. The peak of the triangle is at Scrambled Eggs, indicating it has the longest cooking time.

Category	Cooking Time
PB&J Sandwich	4.0
Scrambled Eggs	6.0
Hot Dog	3.0