Task 2.7: Search and Visualization Plan

What I want to do

I want users to be able to search for recipes in two ways: by recipe title and by ingredients. For example, if someone types “chicken” or “pasta” in the title or ingredients search box, they should find recipes that include that word.

Search Form

I'll make a simple form where users can either type the name of the recipe or an ingredient they’re looking for (or both).

How it works

When the user clicks submit, the app will look through the recipes in the database and find ones that match the recipe title and/or ingredient. It should also work if they don’t type the full word — like if they type “chick”, it will still find “chicken” or “chickpeas”.

Search Results

The results should show up in a table with the recipe name, cooking time, and difficulty. The recipe name should be a link so users can click it and go to the full recipe page.

Data Analysis

To help users understand the data better, I will include simple visualizations that are generated based on the user’s search results. After the table of search results, a dropdown will let the user choose between three chart types. The selected chart will then be displayed below the table.

Bar Chart

- Purpose: Good for comparing cooking times across recipes
- X-axis: Recipe names
- Y-axis: Cooking time (in minutes)
- Labels: Recipe names displayed on the X-axis
- When displayed: After user selects "Bar Chart" from dropdown

Pie Chart

- Purpose: Shows the proportion of cooking time each recipe takes
- Slices represent: Cooking time for each recipe
- Labels: Recipe names on each slice
- When displayed: After user selects "Pie Chart" from dropdown

Line Chart

- Purpose: Visualize changes in cooking time across search results
- X-axis: Recipe names (in order of display)
- Y-axis: Cooking time (in minutes)
- Labels: Cooking times connected by lines
- When displayed: After user selects "Line Chart" from dropdown

These charts only appear after a search is submitted and a chart type is selected, so the interface stays clean and user-friendly.

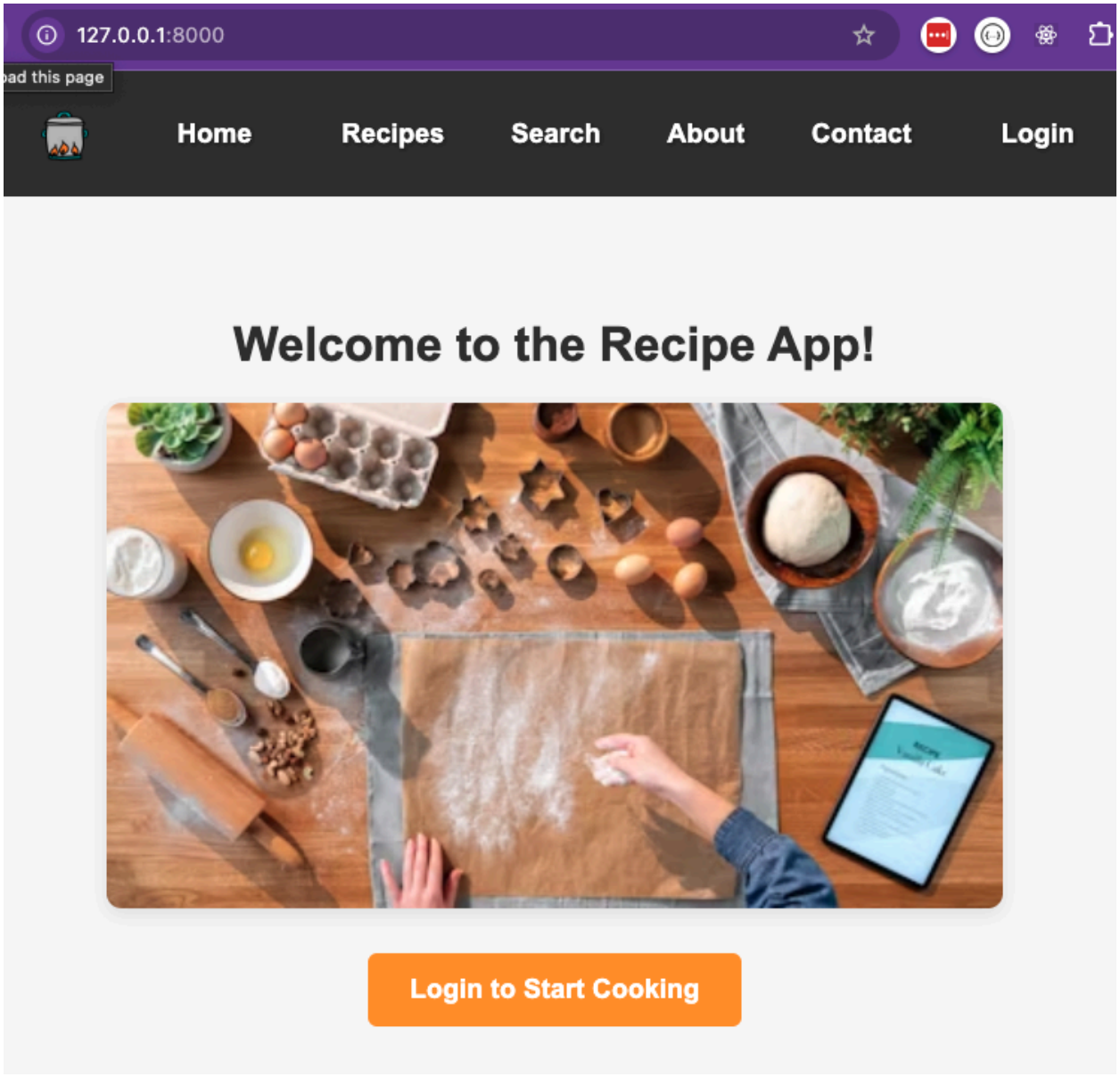
Extra Ideas (if I have time)

- Let users search by other fields like cooking time
- Add charts that show which ingredients appear the most
- Include filters for difficulty levels

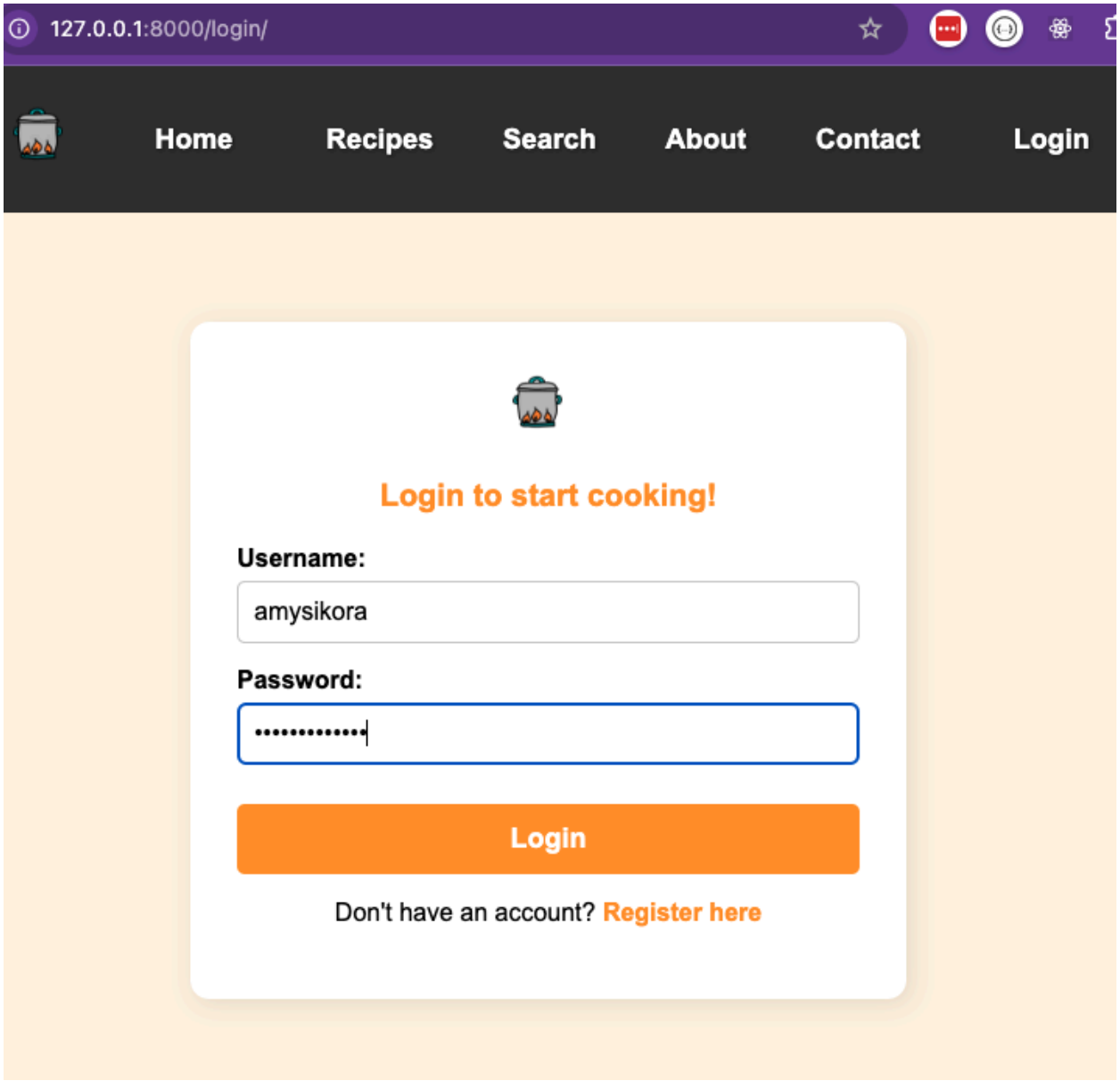
Test Outcome

```
  Applying recipes.0001_initial... OK
  Applying recipes.0002_recipe_pic... OK
  Applying recipes.0003_remove_recipe_difficulty... OK
  Applying recipes.0004_ingredients_recipe_created_at_recipe_instructions_and_more... OK
  Applying recipes.0005_remove_recipe_created_at_remove_recipe_instructions_and_more... OK
  Applying recipes.0006_recipe_instructions... OK
  Applying sessions.0001_initial... OK
System check identified no issues (0 silenced).
test_cooking_time (recipes.tests.test_models_forms.RecipeModelTest) ... ok
test_get_absolute_url (recipes.tests.test_models_forms.RecipeModelTest) ... ok
test_recipe_name (recipes.tests.test_models_forms.RecipeModelTest) ... ok
test_blank_form_data (recipes.tests.test_models_forms.RecipeSearchFormTest) ... ok
test_invalid_chart_type (recipes.tests.test_models_forms.RecipeSearchFormTest) ... ok
test_valid_form_data (recipes.tests.test_models_forms.RecipeSearchFormTest) ... ok
test_home_page_loads (recipes.tests.tests_views.RecipeViewsTest) ... ok
test_invalid_recipe_detail_404 (recipes.tests.tests_views.RecipeViewsTest) ... ok
test_recipe_detail_link_on_list_page (recipes.tests.tests_views.RecipeViewsTest) ... ok
test_recipe_detail_page_loads (recipes.tests.tests_views.RecipeViewsTest) ... ok
test_recipe_list_page_loads (recipes.tests.tests_views.RecipeViewsTest) ... ok

----------------------------------------------------------------------
Ran 11 tests in 3.970s

OK
Destroying test database for alias 'default' ('file:memorydb_default?mode=memory&cache=shared')..
```

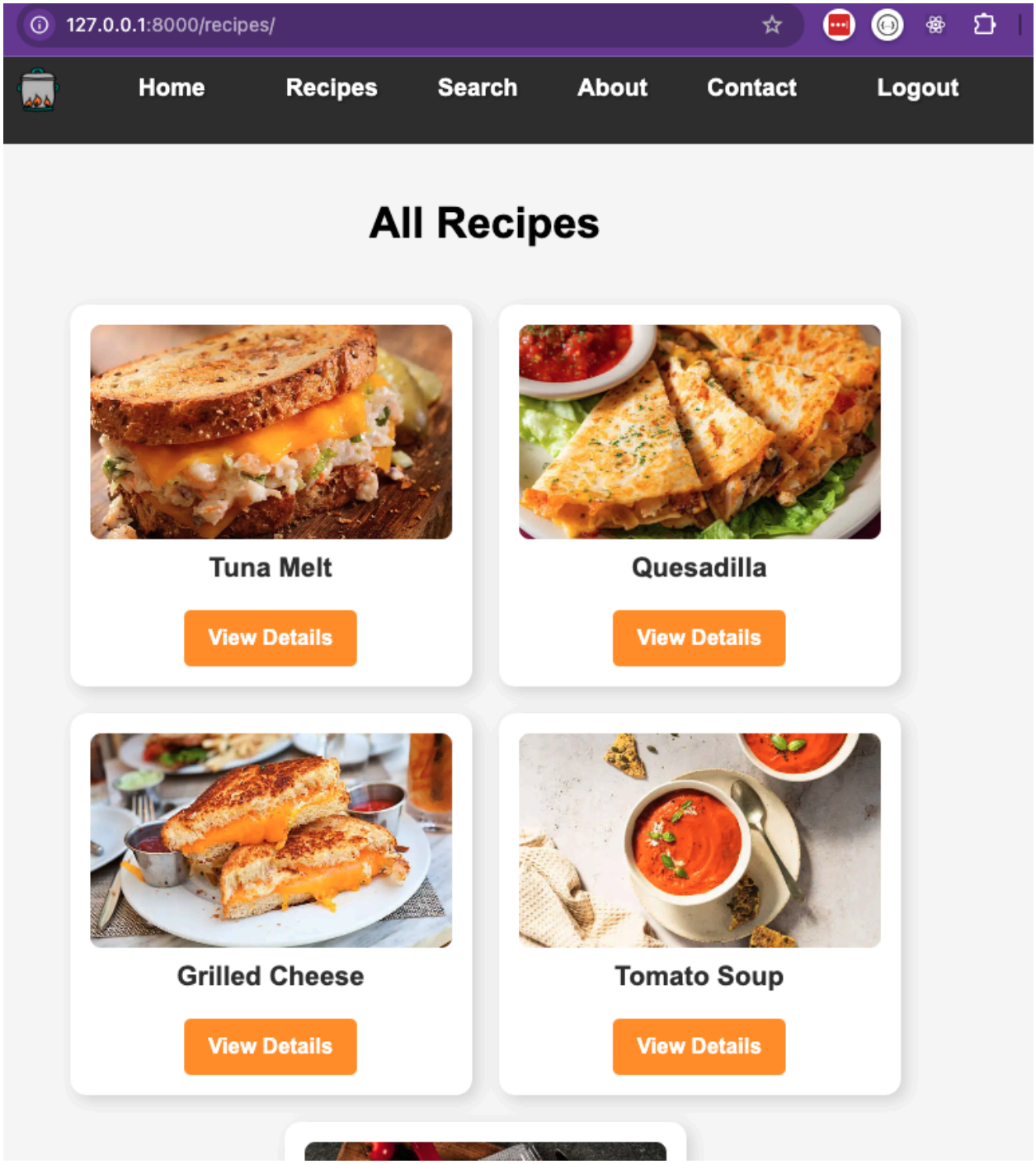
Home Route


127.0.0.1:8000
ad this page
Home
Recipes
Search
About
Contact
Login
Welcome to the Recipe App!
Login to Start Cooking

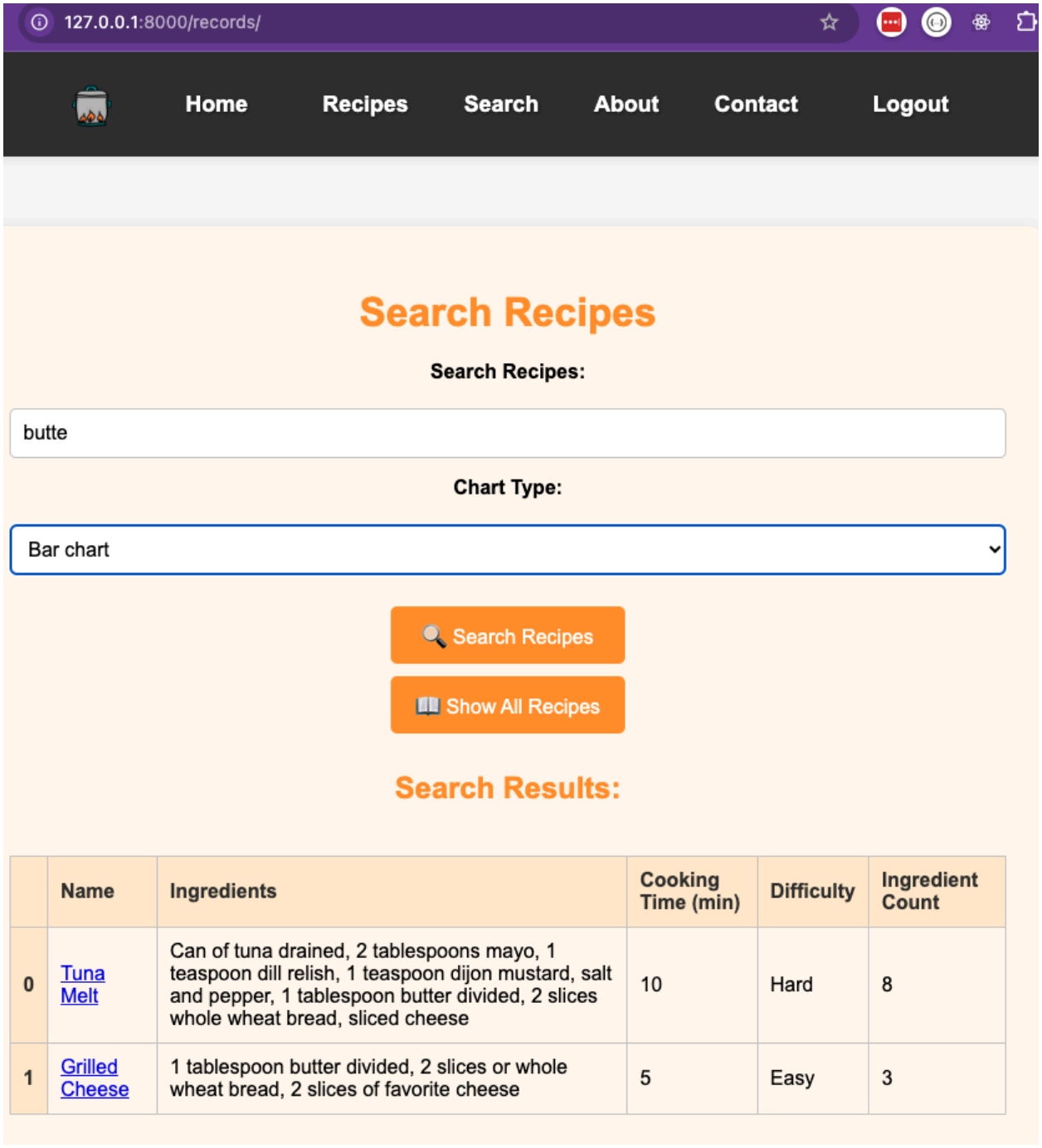
Login Route


127.0.0.1:8000/login/
Home
Recipes
Search
About
Contact
Login
Login to start cooking!
Username:
amysikora
Password:
Login
Don't have an account? Register here

Recipes Route



Search Recipes



Search Ingredient

Search by Recipe Name or Ingredient

Search Recipes:

butt

Chart Type:

Bar chart

Search

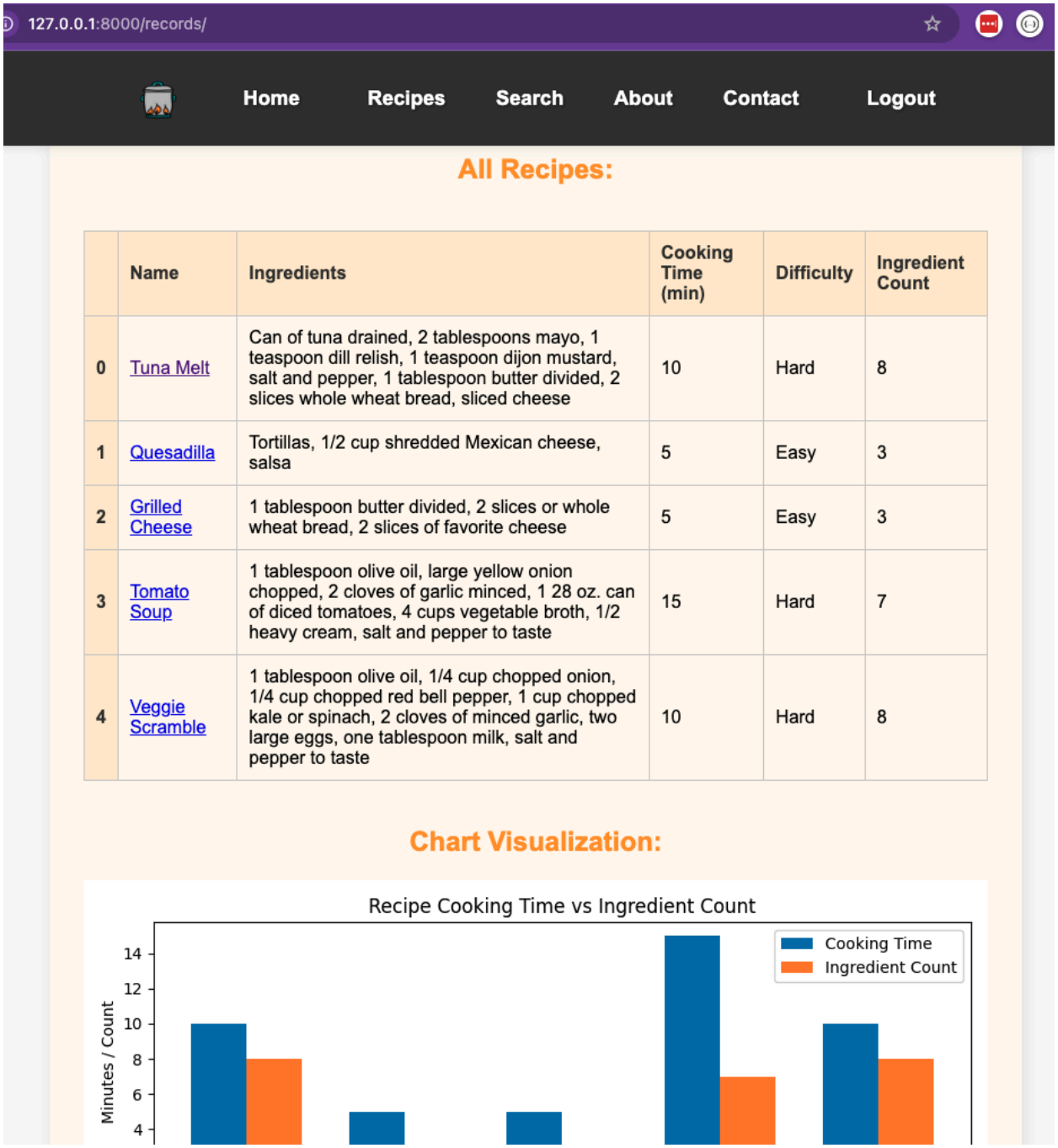
Show All Recipes

No recipes found. Try another search.

All Recipes

Name	Ingredients	Cooking Time (min)	Difficulty
Tuna Melt	Can of tuna drained, 2 tablespoons mayo, 1 teaspoon dill relish, 1 teaspoon dijon mustard, salt and pepper, 1 tablespoon butter divided, 2 slices whole wheat bread, sliced cheese	10	Hard
Quesadilla	Tortillas, 1/2 cup shredded Mexican cheese, salsa	5	Easy
Grilled Cheese	1 tablespoon butter divided, 2 slices or whole wheat bread, 2 slices of favorite cheese	5	Easy

Show All Recipes



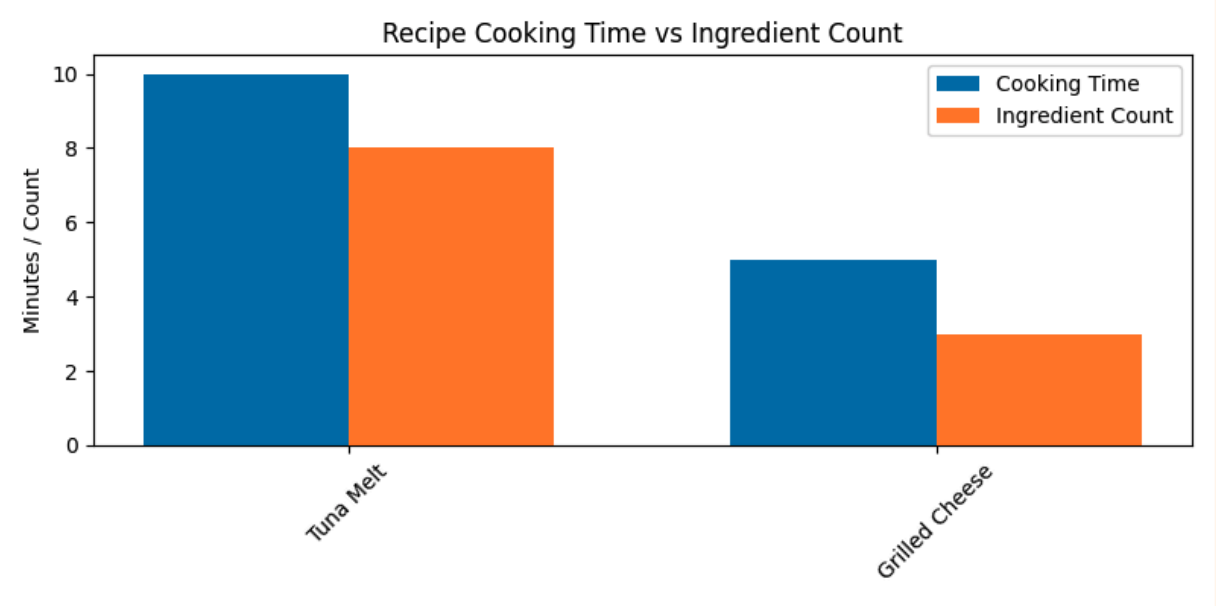
	Name	Ingredients	Cooking Time (min)	Difficulty	Ingredient Count
0	Tuna Melt	Can of tuna drained, 2 tablespoons mayo, 1 teaspoon dill relish, 1 teaspoon dijon mustard, salt and pepper, 1 tablespoon butter divided, 2 slices whole wheat bread, sliced cheese	10	Hard	8
1	Quesadilla	Tortillas, 1/2 cup shredded Mexican cheese, salsa	5	Easy	3
2	Grilled Cheese	1 tablespoon butter divided, 2 slices or whole wheat bread, 2 slices of favorite cheese	5	Easy	3
3	Tomato Soup	1 tablespoon olive oil, large yellow onion chopped, 2 cloves of garlic minced, 1 28 oz. can of diced tomatoes, 4 cups vegetable broth, 1/2 heavy cream, salt and pepper to taste	15	Hard	7
4	Veggie Scramble	1 tablespoon olive oil, 1/4 cup chopped onion, 1/4 cup chopped red bell pepper, 1 cup chopped kale or spinach, 2 cloves of minced garlic, two large eggs, one tablespoon milk, salt and pepper to taste	10	Hard	8

Charts

Bar Chart

	Name	Ingredients	Cooking Time (min)	Difficulty	Ingredient Count
0	Tuna Melt	Can of tuna drained, 2 tablespoons mayo, 1 teaspoon dill relish, 1 teaspoon dijon mustard, salt and pepper, 1 tablespoon butter divided, 2 slices whole wheat bread, sliced cheese	10	Hard	8
1	Grilled Cheese	1 tablespoon butter divided, 2 slices or whole wheat bread, 2 slices of favorite cheese	5	Easy	3

Chart Visualization:



Pie Chart

Search Results:

	Name	Ingredients	Cooking Time (min)	Difficulty	Ingredient Count
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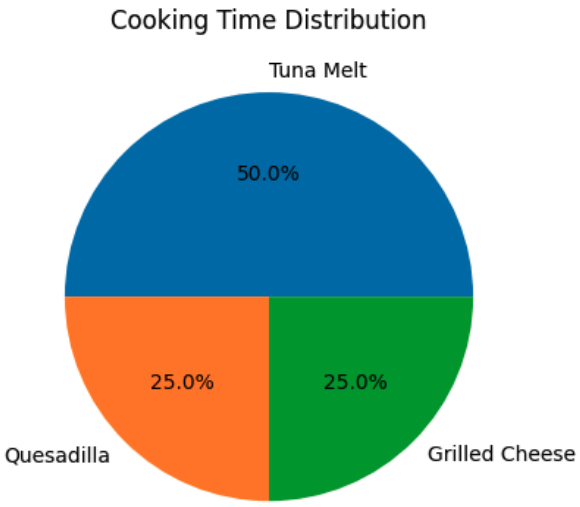
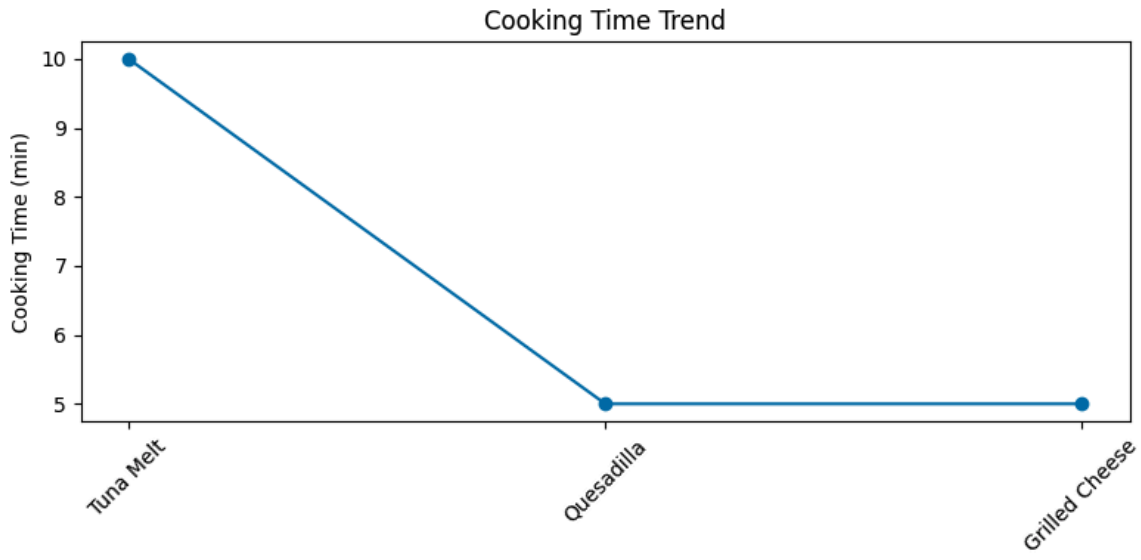
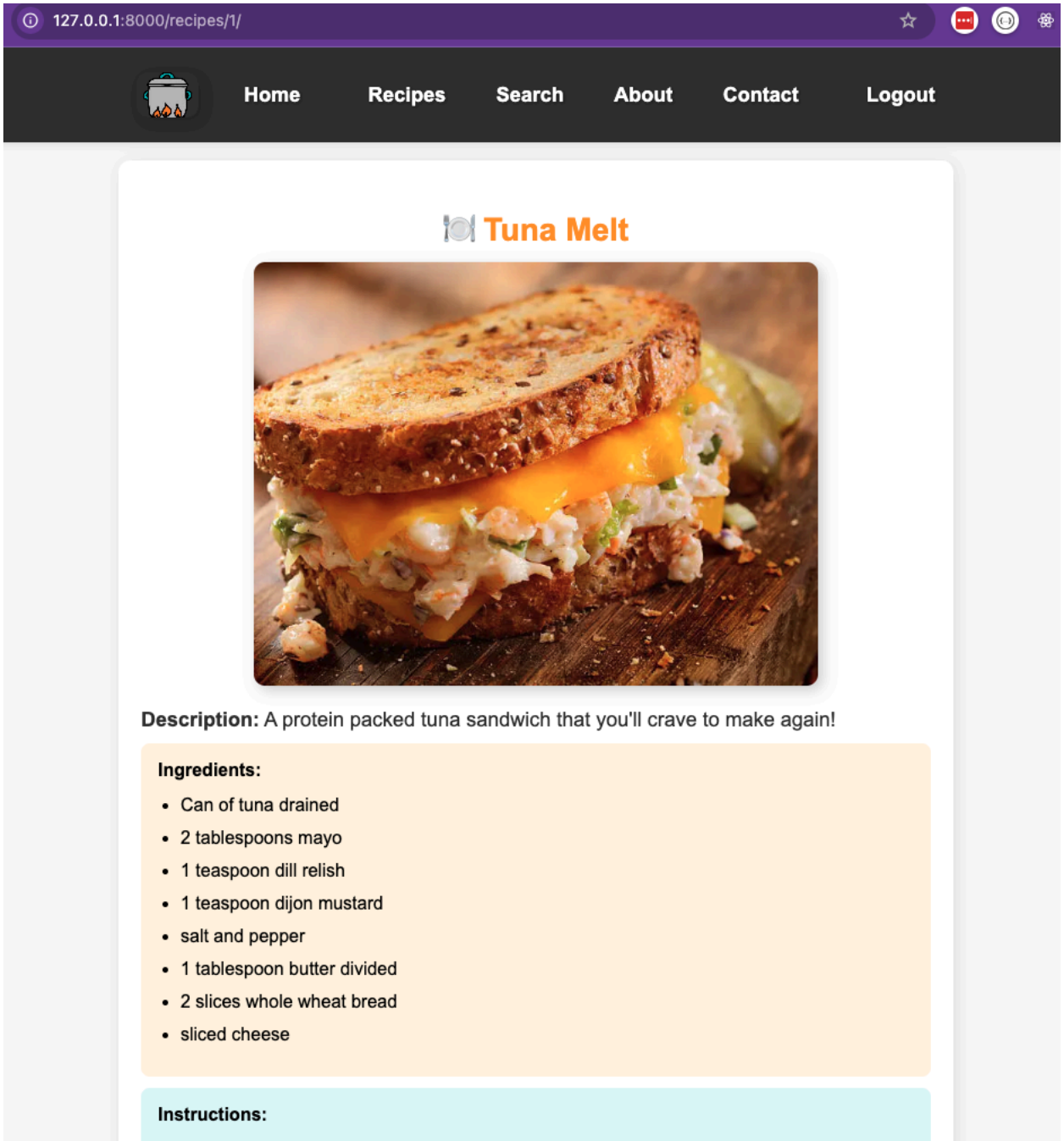


Line Chart

	Name	Ingredients	Cooking Time (min)	Difficulty	Ingredient Count
0	Tuna Melt	Can of tuna drained, 2 tablespoons mayo, 1 teaspoon dill relish, 1 teaspoon dijon mustard, salt and pepper, 1 tablespoon butter divided, 2 slices whole wheat bread, sliced cheese	10	Hard	8
1	Quesadilla	Tortillas, 1/2 cup shredded Mexican cheese, salsa	5	Easy	3
2	Grilled Cheese	1 tablespoon butter divided, 2 slices or whole wheat bread, 2 slices of favorite cheese	5	Easy	3

Chart Visualization:



Recipe Details Route