


## Task 2.7: Search and Visualization Plan

### What I Want the App to Do

I want users to be able to search for recipes in a simple way, either by recipe name or by ingredient. So if someone types something like “pasta” or “chick,” the app should find anything with that word, including partial matches like “chicken” or “chickpeas.”

I also want users to be able to see all recipes, even without searching, just by clicking a button.

### The Search Form

There's a single search box with a  icon inside. Users type a word and press Enter and that's it. No separate "Search" button. If they don't enter anything and just click “Show Recipes,” all recipes from the database will be shown.

### Search Results

The matching recipes show up in a table with:

- Recipe image
- Recipe name (which links to the detail page)
- Ingredients
- Number of ingredients
- Cooking time
- Difficulty level

## Data Visualization

Once the table of results is shown, the page also shows three charts below it. The charts are based only on the recipes from that search.

### Bar Chart: Cooking Time

- Compares how long each recipe takes
- X-axis = recipe names
- Y-axis = cooking time in minutes

- Labels are added above each bar so users can read the values easily

#### Pie Chart: Recipes by Difficulty

- Each slice shows a group of recipes that have the same difficulty
- Instead of just saying “Easy” or “Hard,” the labels now include the recipe names in each group
- This gives users a better idea of what recipes are in each category

#### Line Chart: Ingredient Count

- Shows how the number of ingredients changes across the recipes
- Recipes are sorted from fewest to most ingredients
- Each point is labeled with the count so users can see which ones are simple or more complex

#### Chart Navigation

There’s a “Jump to Chart” button after the results so users can scroll down quickly.

If someone clicks “Charts” in the top menu, it also scrolls them down to the charts (if they’re on the page already).

#### Extra Features (If I Have Time)

- Add a filter for cooking time or difficulty
- Show the most commonly used ingredients in a separate chart
- Let users hide or show individual charts

## Test Results

```
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
```

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Ran 11 tests in 3.970s

OK

Destroying test database for alias 'default' ('file:memorydb\_default?mode=memory&cache=shared')..