

Search Features:

1. Search by Recipe Name:

- **Input:** Users can enter partial or complete recipe names.
- **Criterion:** Matches recipe names using partial or full text.
- **Wildcards:** Supports wildcard searches (e.g., "*cake*" for all recipes containing "cake").

2. Search by Ingredients:

- **Input:** Users can specify one or more ingredients (comma-separated).
- **Inclusion/Exclusion:**
 - **Inclusion:** Filters recipes containing the specified ingredients.
 - **Exclusion:** Optionally exclude recipes containing certain ingredients (e.g., "chicken, -pepper").

Output Format

The search results are displayed in two parts:

1. Recipe Cards:

- **Default View:** Displays all recipes as cards unless a search query is entered.
- **Card Format:**
 - Recipe image.
 - Recipe name (clickable link to the recipe detail page).

2. Search Results (Table):

- **Table Columns:**
 - Recipe Name.
 - Ingredients.
 - Difficulty.
 - Cooking Time.
 - Details (direct link to the recipe detail page).

Data Analysis:

1. Bar Chart:

- **Purpose:** Displays cooking time for each recipe.
- **X-Axis:** Recipe names.
- **Y-Axis:** Cooking time (in minutes).
- **Use Case:** Helps users identify recipes with shorter or longer cooking times.
- **Displayed by default and is updated if the search includes a recipe name or ingredient.**

2. Pie Chart:

- Purpose: Shows the distribution of cooking times across all recipes.
- Labels: Cooking time ranges (e.g., 0-10 min, 10-20 min, etc.).
- Values: Percentage of recipes within each cooking time range.
- Use Case: Provides a quick visual summary of cooking time distribution.
- Trigger: Displayed based on user input in the search form.

3. Line Chart:

- Purpose: Displays cooking time for each recipe in a linear format.
- X-Axis: Recipe names.
- Y-Axis: Cooking time (in minutes).
- Use Case: Helps visualize variations in cooking times across recipes.
- Trigger: Displayed based on user input in the search form.

Execution Flow:

User Journey:

1. Homepage:
 - The user lands on the homepage and is greeted with a welcome message.
 - The user sees the option to login.
2. Navigation to Recipe List:
 - The user clicks to login and is redirected to a page displaying all available recipes.
 - Recipes are shown in card format with an image, name, and a link to the detailed view.
3. Search Functionality:
 - The user interacts with the search form at the top of the "Recipe List" page.
 - Search criteria include:
 - Recipe name (partial or full match).
 - Ingredients (comma-separated values).
 - Upon submitting the form, the page dynamically updates to show:
 - A table of matching recipes with clickable links to their detail pages.
 - Visualization charts summarizing the search results.
4. Recipe Details:
 - Clicking on a recipe's link in the list or table redirects the user to the detailed view of that recipe.
 - The detail page displays:
 - Recipe name, ingredients, cooking time, difficulty level, and an image.
 - A logout button in the top-right corner for authenticated users.
5. Logout:
 - If the user is logged in, they can log out using the button available on all pages.
 - Upon logging out, the user sees a successful logout message and has the option to login again.