

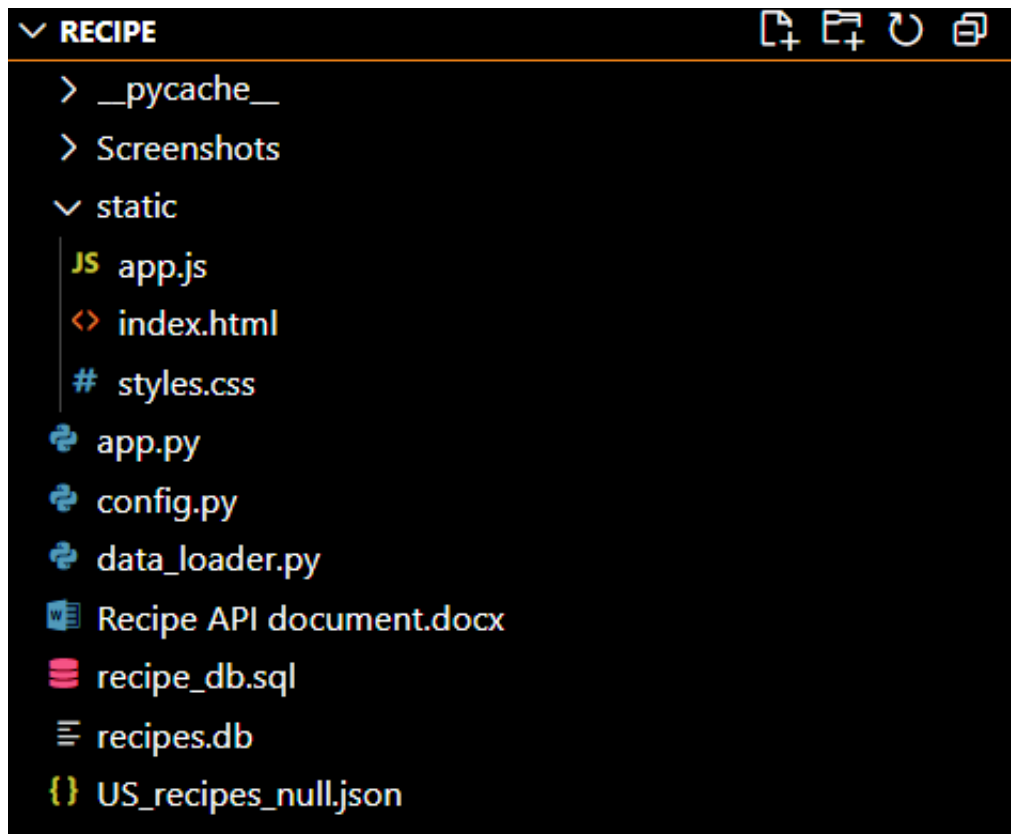
Recipe Application Documentation

1. Overview

This project is a web-based recipe application that allows users to:

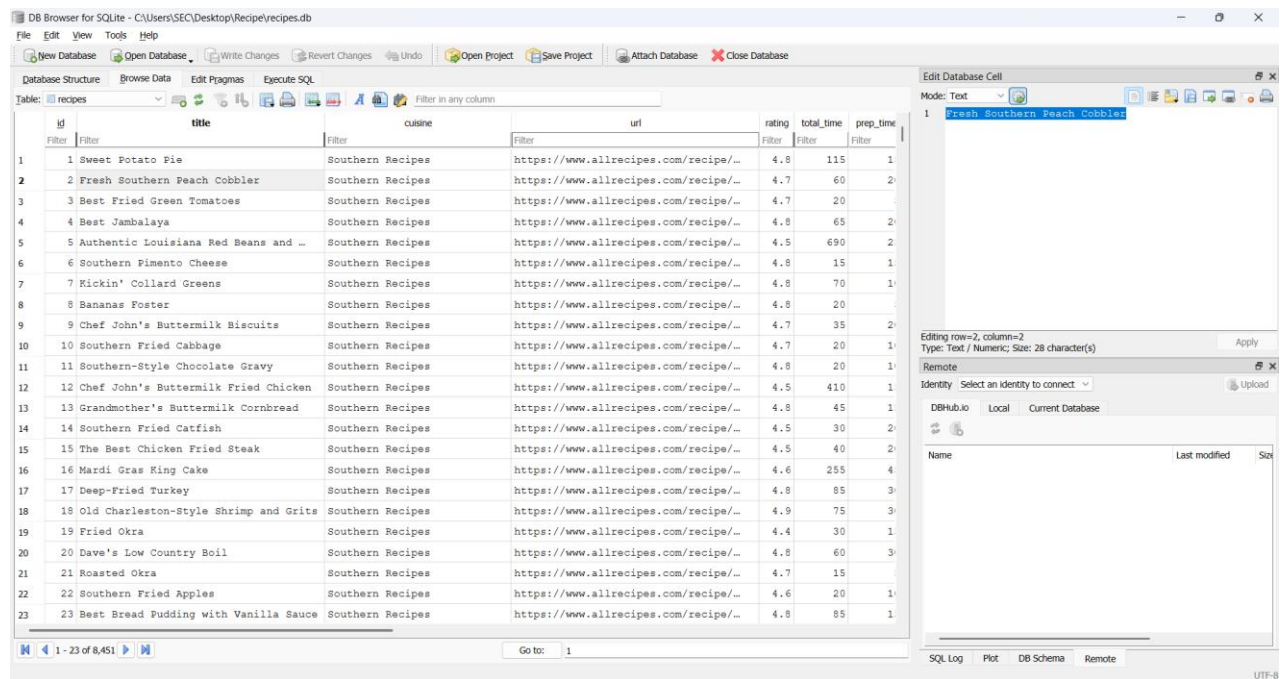
- Browse recipes stored in a SQLite database.
- Search and filter recipes by title and cuisine.
- Paginate results for easier navigation.
- View recipe details such as title, cuisine, rating, and description.
- The application consists of a Flask backend (serving a RESTful API and the frontend) and a modern, responsive frontend.
- The SQLite Database (**recipes.db**) has **8451** data

2. Project Structure



Key Points on Converting JSON to SQLite Database

- Use sqlite3 to interact with the SQLite database and json to parse the JSON file
- Load the JSON data into Python using json.load()
- Establish a connection to the SQLite database file using sqlite3.connect()
- Define the table schema and create it using SQL CREATE TABLE
- Loop through each JSON object and insert its values into the SQLite table using INSERT statements
- Handle Data Types and Structure:
 - **Flat JSON:** Each key-value pair in the JSON object maps directly to a column in the table.
 - **Nested JSON:** Store nested objects or lists as JSON strings (using json.dumps()) or consider normalizing into separate tables



The screenshot shows the DB Browser for SQLite application. The main window displays a table named 'recipes' with the following columns: id, title, cuisine, url, rating, total_time, and prep_time. The table contains 23 rows of recipe data. On the right, the 'Edit Database Cell' window is open, showing the text 'Fresh Southern Peach Cobbler' being edited in the 'title' column of the second row. The status bar at the bottom indicates '1 - 23 of 8,451' rows and 'Go to: 1'.

id	title	cuisine	url	rating	total_time	prep_time
1	Sweet Potato Pie	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	115	1
2	Fresh Southern Peach Cobbler	Southern Recipes	https://www.allrecipes.com/recipe/...	4.7	60	2
3	Best Fried Green Tomatoes	Southern Recipes	https://www.allrecipes.com/recipe/...	4.7	20	
4	Best Jambalaya	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	65	2
5	Authentic Louisiana Red Beans and ...	Southern Recipes	https://www.allrecipes.com/recipe/...	4.5	690	2
6	Southern Pimento Cheese	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	15	1
7	Kickin' Collard Greens	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	70	1
8	Bananas Foster	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	20	
9	Chef John's Buttermilk Biscuits	Southern Recipes	https://www.allrecipes.com/recipe/...	4.7	35	2
10	Southern Fried Cabbage	Southern Recipes	https://www.allrecipes.com/recipe/...	4.7	20	1
11	Southern-Style Chocolate Gravy	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	20	1
12	Chef John's Buttermilk Fried Chicken	Southern Recipes	https://www.allrecipes.com/recipe/...	4.5	410	1
13	Grandmother's Buttermilk Cornbread	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	45	1
14	Southern Fried Catfish	Southern Recipes	https://www.allrecipes.com/recipe/...	4.5	30	2
15	The Best Chicken Fried Steak	Southern Recipes	https://www.allrecipes.com/recipe/...	4.5	40	2
16	Mardi Gras King Cake	Southern Recipes	https://www.allrecipes.com/recipe/...	4.6	255	4
17	Deep-Fried Turkey	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	85	3
18	Old Charleston-Style Shrimp and Grits	Southern Recipes	https://www.allrecipes.com/recipe/...	4.9	75	3
19	Fried Okra	Southern Recipes	https://www.allrecipes.com/recipe/...	4.4	30	1
20	Dave's Low Country Boil	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	60	3
21	Roasted Okra	Southern Recipes	https://www.allrecipes.com/recipe/...	4.7	15	
22	Southern Fried Apples	Southern Recipes	https://www.allrecipes.com/recipe/...	4.6	20	1
23	Best Bread Pudding with Vanilla Sauce	Southern Recipes	https://www.allrecipes.com/recipe/...	4.8	85	1

3. System Requirements

- Python 3
- Flask (pip install flask)
- SQLite3 (included with Python)
- Web browser (Chrome, Firefox, Edge, etc.)

4. Setup

4.1. Prepare the Database

Run the data loader script to populate the SQLite database from your JSON file.

The database file (**recipes.db**) will be created in your project folder.

4.2. Start the Flask Application

python app.py

This will start the server at <http://localhost:5000>.

5. Frontend Features

Search and Filter: Filter recipes by title and/or cuisine.

Pagination: Navigate through pages of recipes using page and limit controls.

Responsive Design: Works on desktop and mobile devices.

6. Backend API Endpoints

All endpoints are prefixed with `/api/recipes`

Endpoint	Method
http://localhost:5000/api/recipes	GET
http://localhost:5000/api/recipes /title/Sweet%20Potato%20Pie	GET
http://localhost:5000/api/recipes/cuisine?cuisine=Southern%20Recipes	GET
http://localhost:5000/api/recipes?page=2&limit=5	GET

7. How to Use

Access the application:

Open <http://localhost:5000> in your browser.

Browse recipes:

Recipes are displayed in a table. Use the filters to bar to get the results.

Paginate results:

Use the page and limit inputs to navigate through pages.

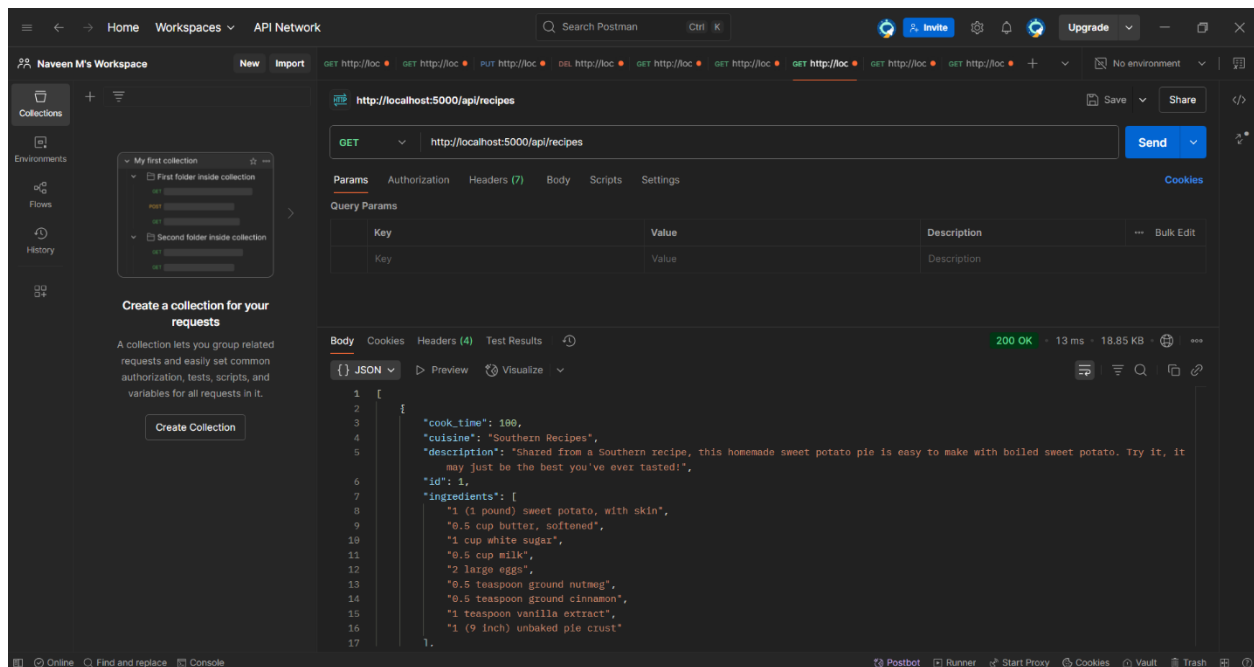
Search and filter:

Enter a title or cuisine to filter the results.

8. Example API Requests

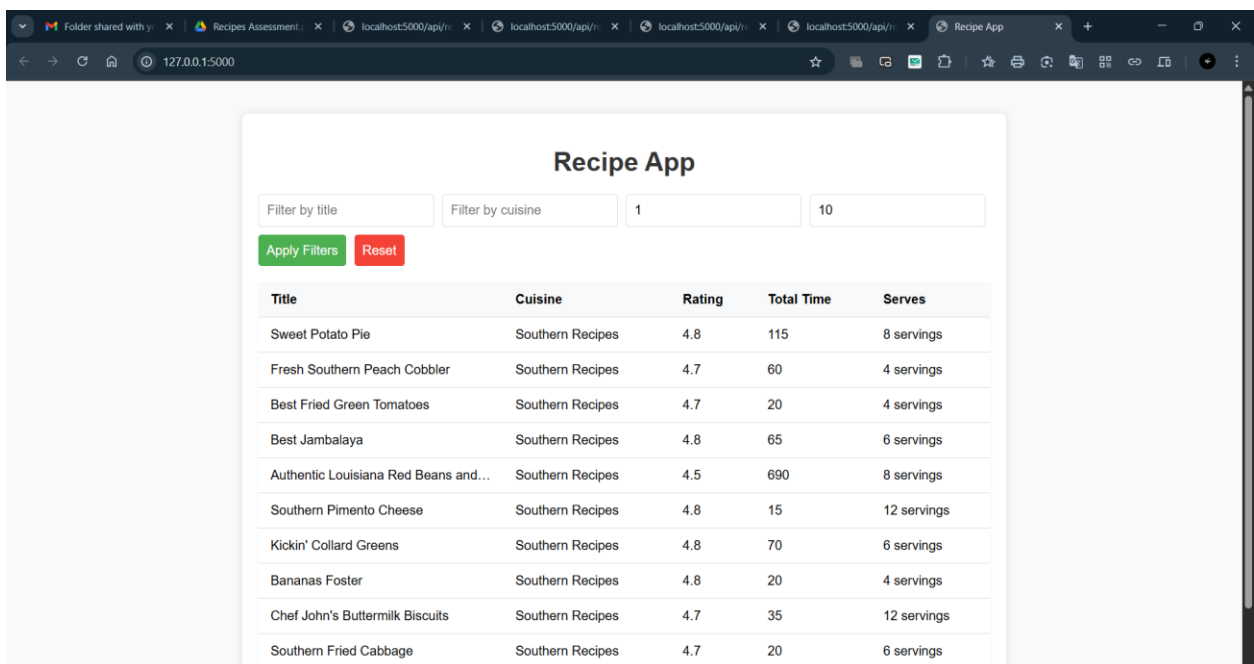
Fetching all recipes:

GET http://localhost:5000/api/recipes



The screenshot shows the Postman interface with a GET request to `http://localhost:5000/api/recipes`. The response is a 200 OK status with a response time of 13 ms and a body size of 18.85 KB. The response body is a JSON array of 10 recipe objects. The first recipe object is expanded, showing its details.

```
1 [
2   {
3     "cook_time": 180,
4     "cuisine": "Southern Recipes",
5     "description": "Shared from a Southern recipe, this homemade sweet potato pie is easy to make with boiled sweet potato. Try it, it may just be the best you've ever tasted!",
6     "id": 1,
7     "ingredients": [
8       "1 (1 pound) sweet potato, with skin",
9       "0.5 cup butter, softened",
10      "1 cup white sugar",
11      "0.5 cup milk",
12      "2 large eggs",
13      "0.5 teaspoon ground nutmeg",
14      "0.5 teaspoon ground cinnamon",
15      "1 teaspoon vanilla extract",
16      "1 (9 inch) unbaked pie crust"
17    ]
18   }
19 ]
```

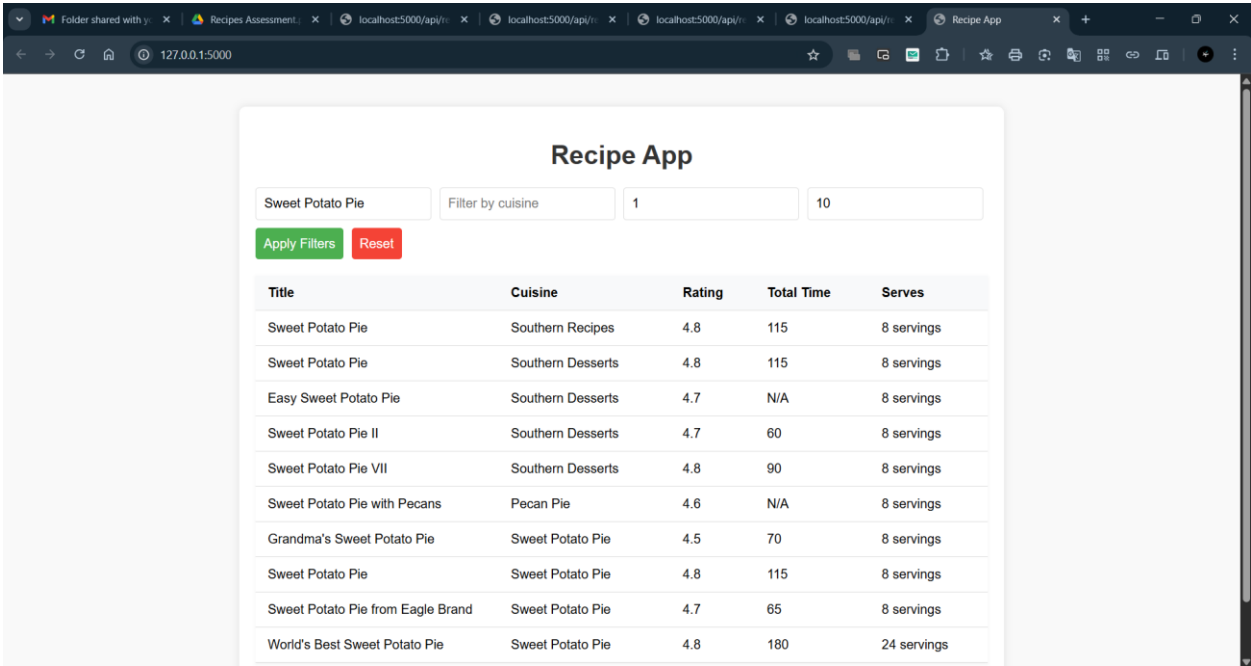
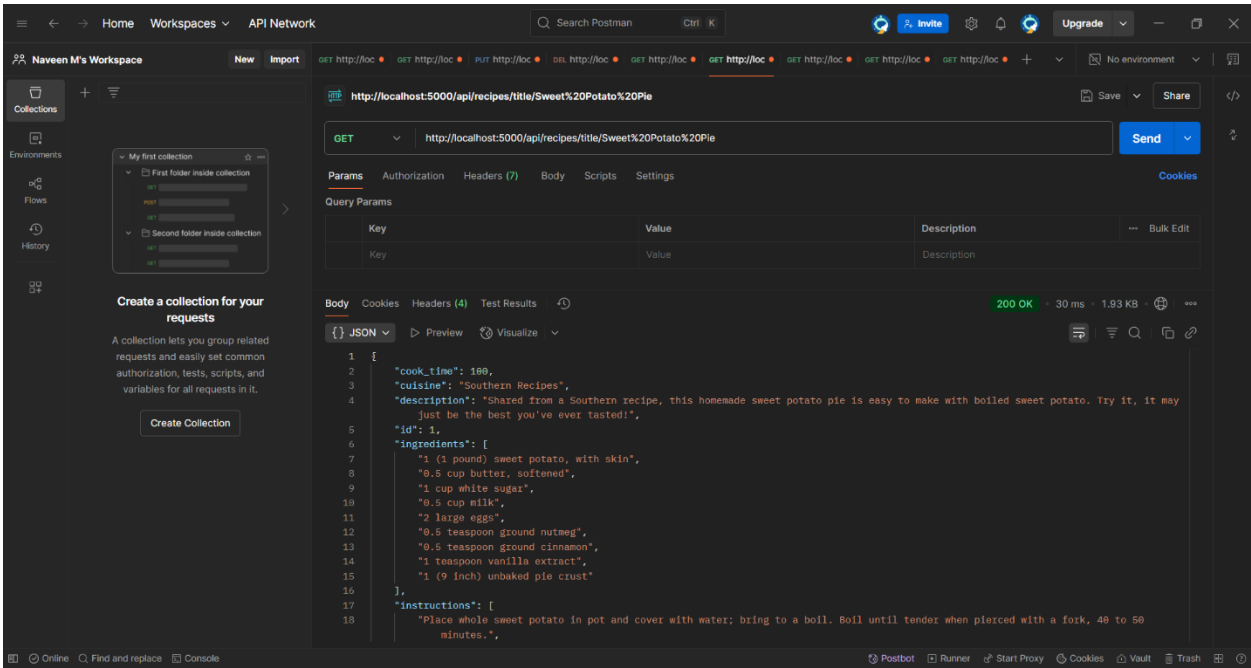


The screenshot shows a web browser displaying the Recipe App. The app has a header "Recipe App" and two filter inputs: "Filter by title" and "Filter by cuisine". Below the filters are two buttons: "Apply Filters" and "Reset". The main content is a table with 10 rows of recipe data.

Title	Cuisine	Rating	Total Time	Serves
Sweet Potato Pie	Southern Recipes	4.8	115	8 servings
Fresh Southern Peach Cobbler	Southern Recipes	4.7	60	4 servings
Best Fried Green Tomatoes	Southern Recipes	4.7	20	4 servings
Best Jambalaya	Southern Recipes	4.8	65	6 servings
Authentic Louisiana Red Beans and...	Southern Recipes	4.5	690	8 servings
Southern Pimento Cheese	Southern Recipes	4.8	15	12 servings
Kickin' Collard Greens	Southern Recipes	4.8	70	6 servings
Bananas Foster	Southern Recipes	4.8	20	4 servings
Chef John's Buttermilk Biscuits	Southern Recipes	4.7	35	12 servings
Southern Fried Cabbage	Southern Recipes	4.7	20	6 servings

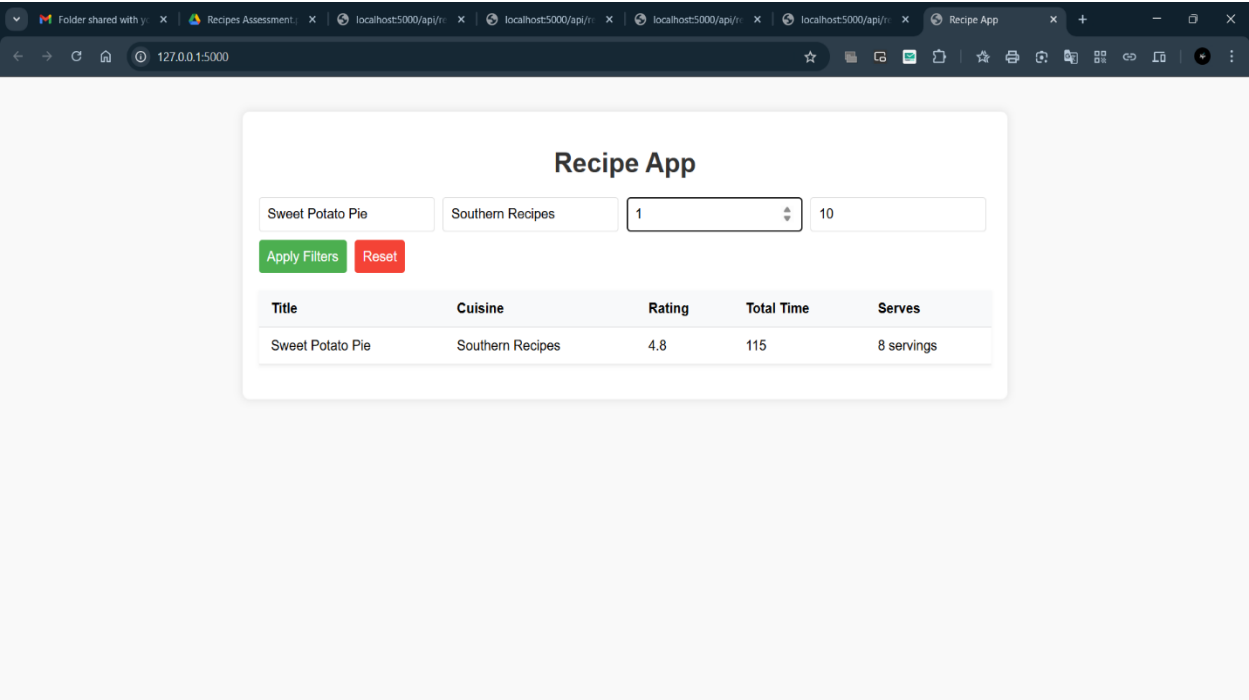
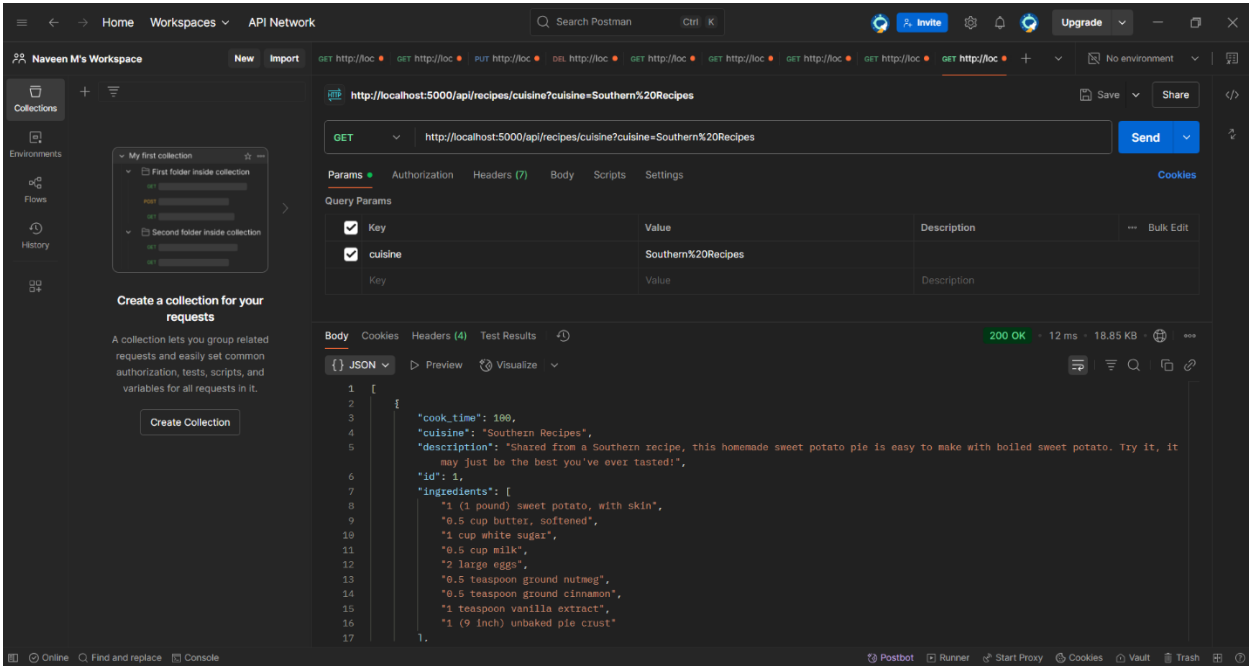
Searching by title:

GET http://localhost:5000/api/recipes /title/Sweet%20Potato%20Pie



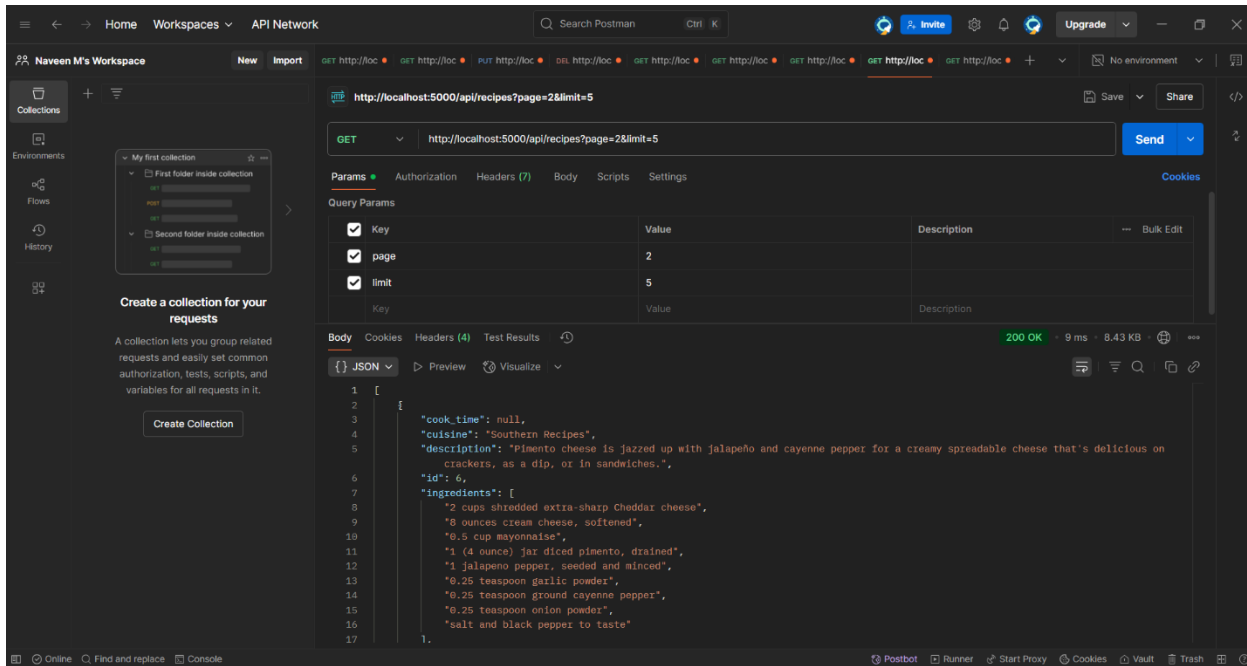
Searching by cuisine

GET <http://localhost:5000/api/recipes/cuisine?cuisine=Southern%20Recipes>



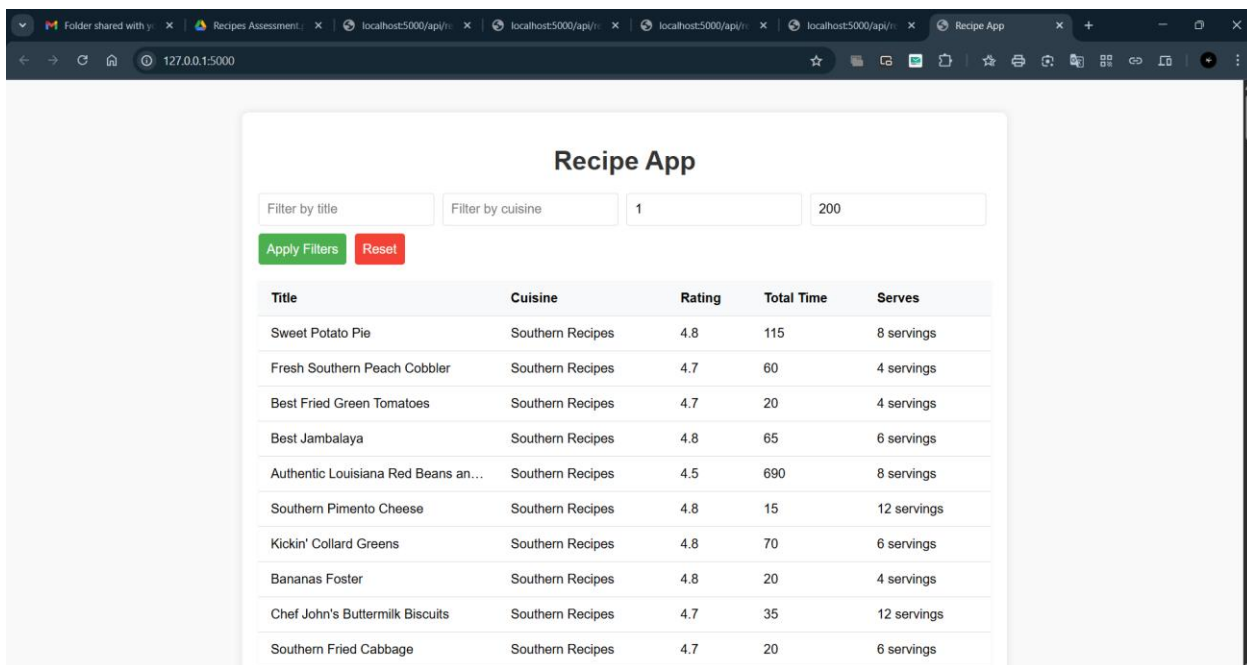
Page and Limiting

GET http://localhost:5000/api/recipes?page=2&limit=5



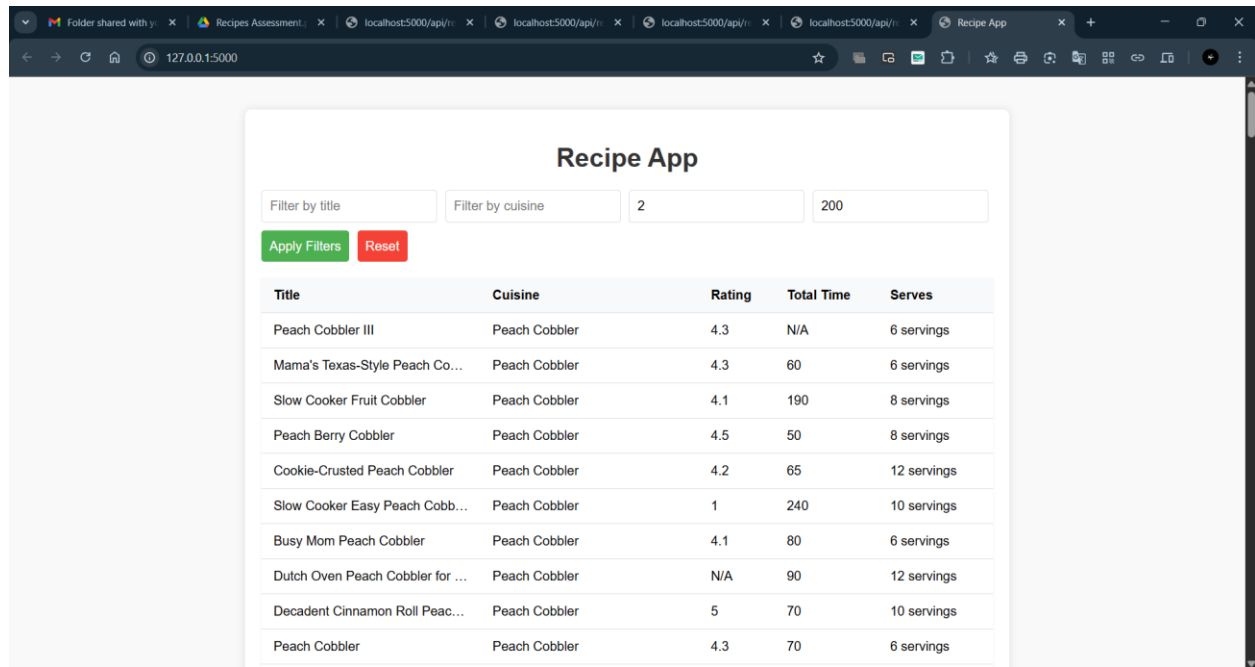
The screenshot shows the Postman interface with a GET request to `http://localhost:5000/api/recipes?page=2&limit=5`. The response is a 200 OK status with a 9 ms response time and 8.43 KB of data. The response body is a JSON array of 5 recipe objects.

```
1 [
2   {
3     "cook_time": null,
4     "cuisine": "Southern Recipes",
5     "description": "Pimento cheese is jazzed up with jalapeño and cayenne pepper for a creamy spreadable cheese that's delicious on crackers, as a dip, or in sandwiches.",
6     "id": 6,
7     "ingredients": [
8       "2 cups shredded extra-sharp Cheddar cheese",
9       "8 ounces cream cheese, softened",
10      "0.5 cup mayonnaise",
11      "1 (4 ounce) jar diced pimento, drained",
12      "1 jalapeño pepper, seeded and minced",
13      "0.25 teaspoon garlic powder",
14      "0.25 teaspoon ground cayenne pepper",
15      "0.25 teaspoon onion powder",
16      "salt and black pepper to taste"
17    ]
18  }
19 ]
```



The screenshot shows the Recipe App web interface. It has a filter section with inputs for 'Filter by title', 'Filter by cuisine', '1' (page), and '200' (limit). Below the filters are 'Apply Filters' and 'Reset' buttons. The main content is a table of recipes.

Title	Cuisine	Rating	Total Time	Serves
Sweet Potato Pie	Southern Recipes	4.8	115	8 servings
Fresh Southern Peach Cobbler	Southern Recipes	4.7	60	4 servings
Best Fried Green Tomatoes	Southern Recipes	4.7	20	4 servings
Best Jambalaya	Southern Recipes	4.8	65	6 servings
Authentic Louisiana Red Beans an...	Southern Recipes	4.5	690	8 servings
Southern Pimento Cheese	Southern Recipes	4.8	15	12 servings
Kickin' Collard Greens	Southern Recipes	4.8	70	6 servings
Bananas Foster	Southern Recipes	4.8	20	4 servings
Chef John's Buttermilk Biscuits	Southern Recipes	4.7	35	12 servings
Southern Fried Cabbage	Southern Recipes	4.7	20	6 servings



9. Conclusion

- **Backend:**

- Uses Flask for routing and API logic.
- SQLite for data storage.
- All JSON fields are stored as db using SQLite and parsed back to objects in the API.

- **Frontend:**

- JavaScript for dynamic content.
- Responsive CSS for all screen sizes.
- Fetches data from the backend API using fetch.