# Recipes data collection and API development

## SECURIN_HACKATHON /

├── api/ # contains the script to routes.py, queries.py and flask app

├── app.py/

├── db.py/ # connecting to my database postgresql

├── db/ # contains the script for database schema and to parse the json format to postgresql database

├── database.py/

├── .env/ # To declare all variables in the environment before

├── venv/ # Virtual environment for dependencies

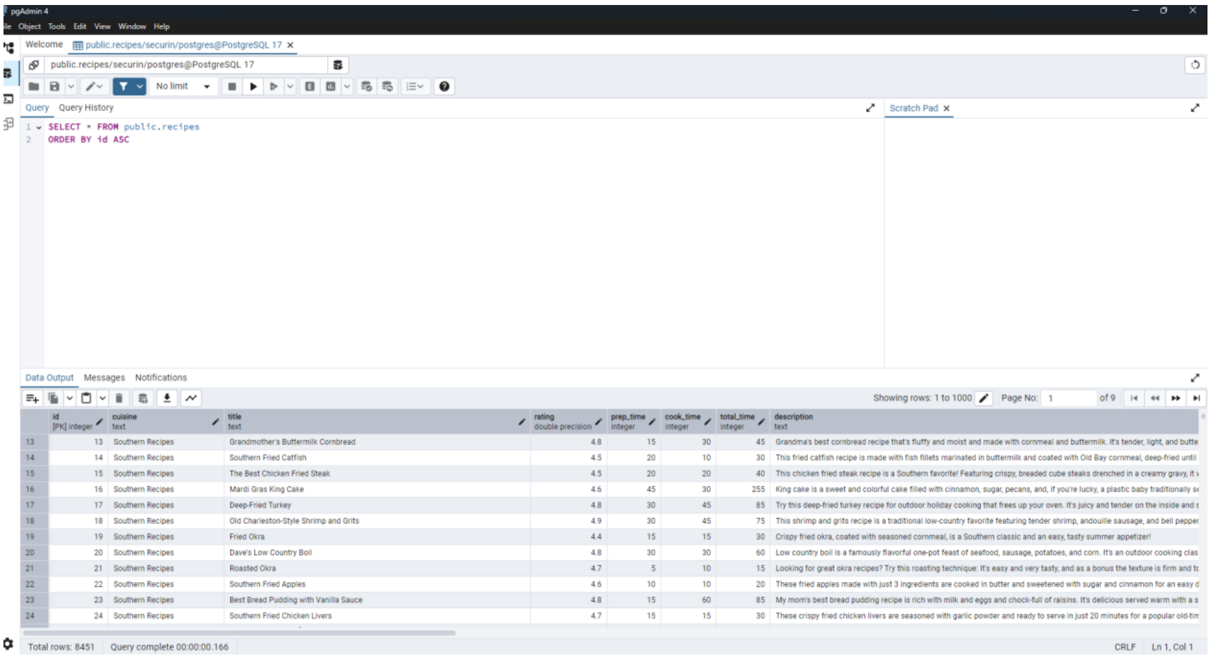
├── requirements.txt

├── US_recipes_null.json

## How It Works

- Database initialisation
- Flask api call

## Database Initialisation



pgAdmin 4
ile Object Tools Edit View Window Help
Welcome
public.recipes/securin/postgres@PostgreSQL 17
No limit
Query Query History
Scratch Pad
Data Output Messages Notifications
Showing rows: 1 to 1000 Page No: 1 of 9

```sql
SELECT * FROM public.recipes
ORDER BY id ASC
```

| | id<br>[PK] integer | cuisine<br>text | title<br>text | rating<br>double precision | prep_time<br>integer | cook_time<br>integer | total_time<br>integer | description<br>text |
|---|---|---|---|---|---|---|---|---|
| 13 | 13 | Southern Recipes | Grandmother's Buttermilk Cornbread | 4.8 | 15 | 30 | 45 | Grandma's best cornbread recipe that's fluffy and moist and made with cornmeal and buttermilk. It's tender, light, and butte |
| 14 | 14 | Southern Recipes | Southern Fried Catfish | 4.5 | 20 | 10 | 30 | This fried catfish recipe is made with fish fillets marinated in buttermilk and coated with Old Bay cornmeal, deep-fried until |
| 15 | 15 | Southern Recipes | The Best Chicken Fried Steak | 4.5 | 20 | 20 | 40 | This chicken fried steak recipe is a Southern favorite! Featuring crispy, breaded cube steaks drenched in a creamy gravy, it v |
| 16 | 16 | Southern Recipes | Mardi Gras King Cake | 4.6 | 45 | 30 | 255 | King cake is a sweet and colorful cake filled with cinnamon, sugar, pecans, and, if you're lucky, a plastic baby traditionally se |
| 17 | 17 | Southern Recipes | Deep-Fried Turkey | 4.8 | 30 | 45 | 85 | Try this deep-fried turkey recipe for outdoor holiday cooking that frees up your oven. It's juicy and tender on the inside and s |
| 18 | 18 | Southern Recipes | Old Charleston-Style Shrimp and Grits | 4.9 | 30 | 45 | 75 | This shrimp and grits recipe is a traditional low-country favorite featuring tender shrimp, andouille sausage, and bell pepper |
| 19 | 19 | Southern Recipes | Fried Okra | 4.4 | 15 | 15 | 30 | Crispy fried okra, coated with seasoned cornmeal, is a Southern classic and an easy, tasty summer appetizer! |
| 20 | 20 | Southern Recipes | Dave's Low Country Boil | 4.8 | 30 | 30 | 60 | Low country boil is a famously flavorful one-pot feast of seafood, sausage, potatoes, and corn. It's an outdoor cooking clas |
| 21 | 21 | Southern Recipes | Roasted Okra | 4.7 | 5 | 10 | 15 | Looking for great okra recipes? Try this roasting technique: It's easy and very tasty, and as a bonus the texture is firm and to |
| 22 | 22 | Southern Recipes | Southern Fried Apples | 4.6 | 10 | 10 | 20 | These fried apples made with just 3 ingredients are cooked in butter and sweetened with sugar and cinnamon for an easy d |
| 23 | 23 | Southern Recipes | Best Bread Pudding with Vanilla Sauce | 4.8 | 15 | 60 | 85 | My mom's best bread pudding recipe is rich with milk and eggs and chock-full of raisins. It's delicious served warm with a s |
| 24 | 24 | Southern Recipes | Southern Fried Chicken Livers | 4.7 | 15 | 15 | 30 | These crispy fried chicken livers are seasoned with garlic powder and ready to serve in just 20 minutes for a popular old-tim |

Total rows: 8451 Query complete 00:00:00.166 CRLF Ln 1, Col 1

Install postgresql and setup a new server named securin. Create this under server from the gui of pgadmin4 service

Install postgresql explorer extension and connect to the created database by entering declared environment variables . once connected ensure you have a concurrent session by running the db.py file under api folder
now create table for the database by running the script under db folder the database.py file .Run this including with the commented lines as where the table creation script is added. After this in the sub following lines script to open json file where the data is given can be found with open(). The json file can written in to the database  under different rows such as cuisine , title ,rating and such inlcuding the nutrients which will be saved as json.dumps

The database will be written with all the values from the json file

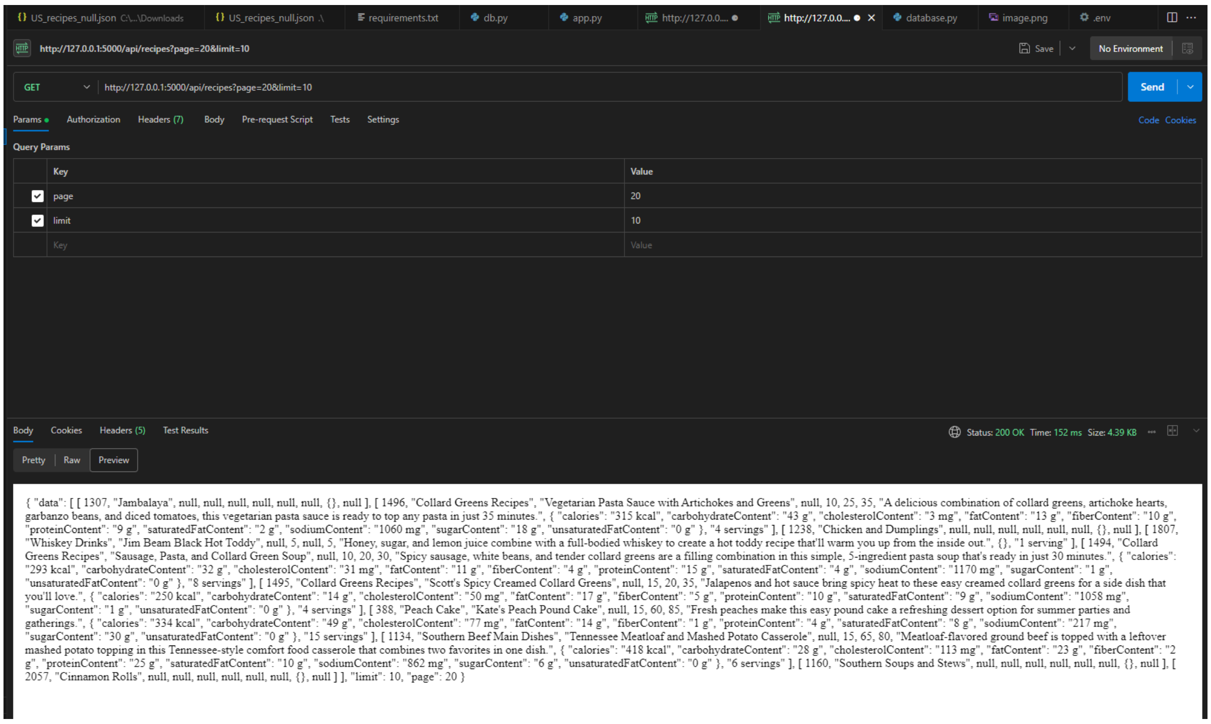
## app.py file under api folder

server running on port 5432

first validate the api key that will be passed in parameter of an api request by checking it with the declared environment variable

use postman api or extension to validate requests and fetch data from the database
there are two queries

- to fetch all data
- to fetch data with criteria using regex expressions



```
GET http://127.0.0.1:5000/api/recipes?page=20&limit=10
```

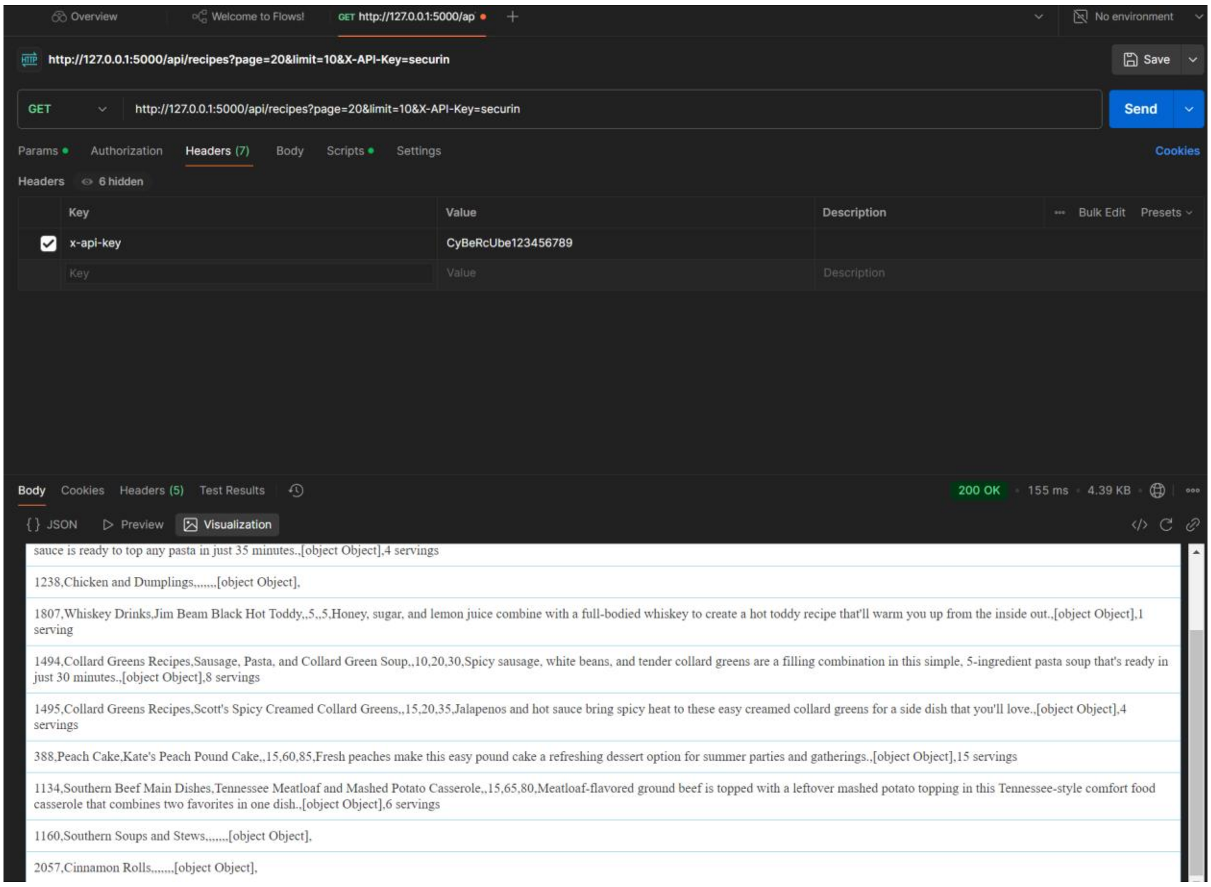
| | Key | Value |
|---|---|---|
| ✓ | page | 20 |
| ✓ | limit | 10 |
| | Key | Value |

Status: 200 OK Time: 152 ms Size: 4.39 KB

{ "data": [ [ 1307, "Jambalaya", null, null, null, null, null, null, {}, null ], [ 1496, "Collard Greens Recipes", "Vegetarian Pasta Sauce with Artichokes and Greens", null, 10, 25, 35, "A delicious combination of collard greens, artichoke hearts, garbanzo beans, and diced tomatoes, this vegetarian pasta sauce is ready to top any pasta in just 35 minutes.", { "calories": "315 kcal", "carbohydrateContent": "43 g", "cholesterolContent": "3 mg", "fatContent": "13 g", "fiberContent": "10 g", "proteinContent": "9 g", "saturatedFatContent": "2 g", "sodiumContent": "1060 mg", "sugarContent": "18 g", "unsaturatedFatContent": "0 g" }, "4 servings" ], [ 1238, "Chicken and Dumplings", null, null, null, null, null, null, {}, null ], [ 1807, "Whiskey Drinks", "Jim Beam Black Hot Toddy", null, 5, null, 5, "Honey, sugar, and lemon juice combine with a full-bodied whiskey to create a hot toddy recipe that'll warm you up from the inside out.", {}, "1 serving" ], [ 1494, "Collard Greens Recipes", "Sausage, Pasta, and Collard Green Soup", null, 10, 20, 30, "Spicy sausage, white beans, and tender collard greens are a filling combination in this simple, 5-ingredient pasta soup that's ready in just 30 minutes.", { "calories": "293 kcal", "carbohydrateContent": "32 g", "cholesterolContent": "31 mg", "fatContent": "11 g", "fiberContent": "4 g", "proteinContent": "15 g", "saturatedFatContent": "4 g", "sodiumContent": "1170 mg", "sugarContent": "1 g", "unsaturatedFatContent": "0 g" }, "8 servings" ], [ 1495, "Collard Greens Recipes", "Scott's Spicy Creamed Collard Greens", null, 15, 20, 35, "Jalapenos and hot sauce bring spicy heat to these easy creamed collard greens for a side dish that you'll love.", { "calories": "250 kcal", "carbohydrateContent": "14 g", "cholesterolContent": "50 mg", "fatContent": "17 g", "fiberContent": "5 g", "proteinContent": "10 g", "saturatedFatContent": "9 g", "sodiumContent": "1058 mg", "sugarContent": "1 g", "unsaturatedFatContent": "0 g" }, "4 servings" ], [ 388, "Peach Cake", "Kate's Peach Pound Cake", null, 15, 60, 85, "Fresh peaches make this easy pound cake a refreshing dessert option for summer parties and gatherings.", { "calories": "334 kcal", "carbohydrateContent": "49 g", "cholesterolContent": "77 mg", "fatContent": "14 g", "fiberContent": "1 g", "proteinContent": "4 g", "saturatedFatContent": "8 g", "sodiumContent": "217 mg", "sugarContent": "30 g", "unsaturatedFatContent": "0 g" }, "15 servings" ], [ 1134, "Southern Beef Main Dishes", "Tennessee Meatloaf and Mashed Potato Casserole", null, 15, 65, 80, "Meatloaf-flavored ground beef is topped with a leftover mashed potato topping in this Tennessee-style comfort food casserole that combines two favorites in one dish.", { "calories": "418 kcal", "carbohydrateContent": "28 g", "cholesterolContent": "113 mg", "fatContent": "23 g", "fiberContent": "2 g", "proteinContent": "25 g", "saturatedFatContent": "10 g", "sodiumContent": "862 mg", "sugarContent": "6 g", "unsaturatedFatContent": "0 g" }, "6 servings" ], [ 1160, "Southern Soups and Stews", null, null, null, null, null, null, {}, null ], [ 2057, "Cinnamon Rolls", null, null, null, null, null, null, {}, null ] ], "limit": 10, "page": 20 }

```
 cursor.execute("""
# CREATE TABLE IF NOT EXISTS recipes (
#     id SERIAL PRIMARY KEY,
#     cuisine TEXT,
#     title TEXT,
#     rating FLOAT,
#     prep_time INT,
#     cook_time INT,
#     total_time INT,
#     description TEXT,
#     nutrients JSONB,
#     serves TEXT
# )
# """)

@app.route('/api/recipes', methods=['GET'])
def get_all_recipes():
    page = int(request.args.get('page', 1))
    limit = int(request.args.get('limit', 10))
    offset = (page - 1) * limit

    conn = get_db_connection()
    cursor = conn.cursor()

    cursor.execute("SELECT COUNT(*) AS total FROM recipes")

    cursor.execute("SELECT * FROM recipes LIMIT %s OFFSET %s", (limit, offset))
    recipes = cursor.fetchall()

    conn.close()
    if page!=0 and limit!=0:
```

```
    return jsonify({
        "page": page,
        "limit": limit,
        "data": recipes
    })
```



Overview · Welcome to Flows! · GET http://127.0.0.1:5000/ap · No environment

http://127.0.0.1:5000/api/recipes?page=20&limit=10&X-API-Key=securin

GET http://127.0.0.1:5000/api/recipes?page=20&limit=10&X-API-Key=securin

Headers (7) — 6 hidden

| Key | Value | Description |
|---|---|---|
| x-api-key | CyBeRcUbe123456789 | |

Body · 200 OK · 155 ms · 4.39 KB · Visualization

```
sauce is ready to top any pasta in just 35 minutes.,[object Object],4 servings
1238,Chicken and Dumplings,,,,,,,[object Object],
1807,Whiskey Drinks,Jim Beam Black Hot Toddy,,5,,5,Honey, sugar, and lemon juice combine with a full-bodied whiskey to create a hot toddy recipe that'll warm you up from the inside out.,[object Object],1 serving
1494,Collard Greens Recipes,Sausage, Pasta, and Collard Green Soup,,10,20,30,Spicy sausage, white beans, and tender collard greens are a filling combination in this simple, 5-ingredient pasta soup that's ready in just 30 minutes.,[object Object],8 servings
1495,Collard Greens Recipes,Scott's Spicy Creamed Collard Greens,,15,20,35,Jalapenos and hot sauce bring spicy heat to these easy creamed collard greens for a side dish that you'll love.,[object Object],4 servings
388,Peach Cake,Kate's Peach Pound Cake,,15,60,85,Fresh peaches make this easy pound cake a refreshing dessert option for summer parties and gatherings.,[object Object],15 servings
1134,Southern Beef Main Dishes,Tennessee Meatloaf and Mashed Potato Casserole,,15,65,80,Meatloaf-flavored ground beef is topped with a leftover mashed potato topping in this Tennessee-style comfort food casserole that combines two favorites in one dish.,[object Object],6 servings
1160,Southern Soups and Stews,,,,,,,[object Object],
2057,Cinnamon Rolls,,,,,,,[object Object],
```

**@app.route('/api/recipes', methods=['GET'])**

first the connected session with the database is ensure then variables page , limit, offset are the only constraints

after checking with if condition the sql query

**cursor.execute("SELECT COUNT(*) AS total FROM recipes")**

**cursor.execute("SELECT * FROM recipes LIMIT %s OFFSET %s", (limit, offset))** is executed

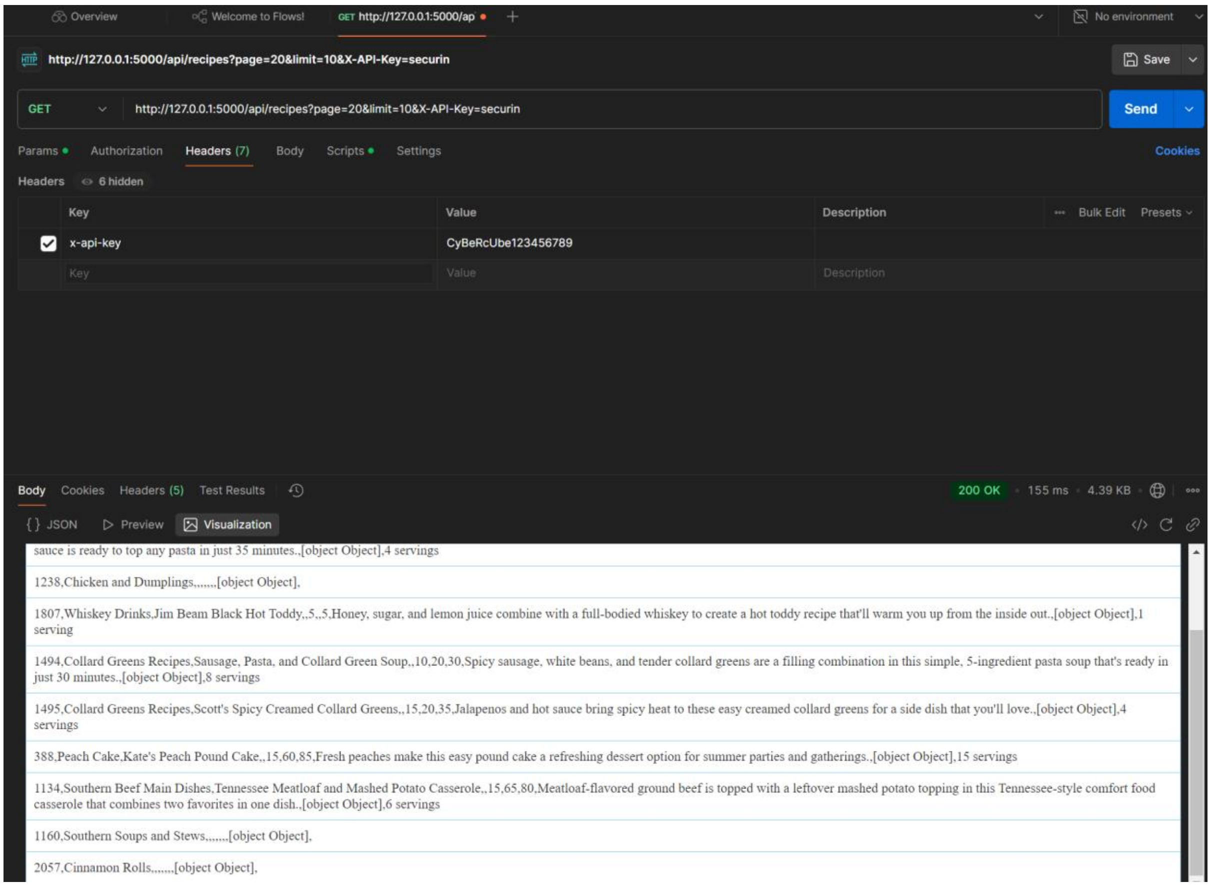
which fetches results and is viewed iusign visualization in the postman

we convert the fetched results to json and is displayed back to the user

it is also made sure the user cannot access or get to the backend workigns of the code by putting limit or page ==0 and studying the error notifications or code

**@app.route('/api/recipes/search', methods=['GET'])**

For this the argument that is passed after search query in the url is saved and checked to find all parameter and regex expression as are applied to select only the right data from the database



```
GET http://127.0.0.1:5000/api/recipes?page=20&limit=10&X-API-Key=securin
```

| Key | Value | Description |
|---|---|---|
| ✓ x-api-key | CyBeRcUbe123456789 | |

```
sauce is ready to top any pasta in just 35 minutes.,[object Object],4 servings
1238,Chicken and Dumplings,,,,,,,[object Object],
1807,Whiskey Drinks,Jim Beam Black Hot Toddy,,5,,5,Honey, sugar, and lemon juice combine with a full-bodied whiskey to create a hot toddy recipe that'll warm you up from the inside out.,[object Object],1 serving
1494,Collard Greens Recipes,Sausage, Pasta, and Collard Green Soup,,10,20,30,Spicy sausage, white beans, and tender collard greens are a filling combination in this simple, 5-ingredient pasta soup that's ready in just 30 minutes.,[object Object],8 servings
1495,Collard Greens Recipes,Scott's Spicy Creamed Collard Greens,,15,20,35,Jalapenos and hot sauce bring spicy heat to these easy creamed collard greens for a side dish that you'll love.,[object Object],4 servings
388,Peach Cake,Kate's Peach Pound Cake,,15,60,85,Fresh peaches make this easy pound cake a refreshing dessert option for summer parties and gatherings.,[object Object],15 servings
1134,Southern Beef Main Dishes,Tennessee Meatloaf and Mashed Potato Casserole,,15,65,80,Meatloaf-flavored ground beef is topped with a leftover mashed potato topping in this Tennessee-style comfort food casserole that combines two favorites in one dish.,[object Object],6 servings
1160,Southern Soups and Stews,,,,,,,[object Object],
2057,Cinnamon Rolls,,,,,,,[object Object],
```

## CHALLENGES AND SOLUTIONS IMPLEMENTED

My initial thought was to parse and store the data in to my database with primary key and separate tables for easy lookup and to eliminate the need for complex regex expressions byut the database didn't hold up

Handling of NAN values I cant remove NaN values as I have executed a script that saves the data into the database using while storing every row and its data values so If I ignore one then it means I am ignoring the entire row

Solutions
for security purposes I ensure another X-API-Key that to be submitted along with the request for security validation against which the user cannot fetch data from the database.