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SECURIN ASSESSMENT DOCUMENTATION

To run the code, do the following:

- 1) Navigate to the backend folder.
- 2) Execute "npm init -y" in the terminal.
- 3) Install dotenv, express, fs, mysql, mysql2, path, nodemon -D and sequelize.
- 4) In package-json change the scripts with the following:

"start": "node index.js",

"dev": "nodemon index.js"

- 5) Open db.js and replace with MySQL username, password, database as mentioned in the comments in the file.
- 6) In terminal paste "npm run dev".

Things done in the Assessment:

- 1) Read and parsed the provided JSON file that contains recipe data. Then Stored the data into a MYSQL database named securing in a table named recipes.

Logic:

- Read the raw json file.
- Converted json objects into arrays.
- Used sequelize to create a table and insert the data into the table.

```
mysql> select * from recipes order by id limit 5;
```

id	cuisine	title	rating	prep_time	cook_time	total_time	description	nutrients	serves
1	Southern Recipes	Sweet Potato Pie	4.8	15	100	115	Shared from a Southern recipe, this homemade sweet potato pie is easy to make with boiled sweet potatoes. Try it, it may just be the best you've ever tasted!	("calories": "389 kcal", "fatContent": "21 g", "fiberContent": "3 g", "sugarContent": "28 g", "sodiumContent": "254 mg", "proteinContent": "5 g", "cholesterolContent": "78 mg", "carbohydrateContent": "48 g", "saturatedFatContent": "19 g", "unsaturatedFatContent": "0 g")	8 servings
2	Southern Recipes	Fresh Southern Peach Cobbler	4.7	20	40	60	This peach cobbler recipe makes the perfect dessert. Sweet Georgia peaches are topped with homemade biscuits creating a bubbling Southern-style peach cobbler perfect for summer nights.	("calories": "362 kcal", "fatContent": "18 g", "fiberContent": "1 g", "sugarContent": "73 g", "sodiumContent": "480 mg", "proteinContent": "4 g", "cholesterolContent": "46 mg", "carbohydrateContent": "99 g", "saturatedFatContent": "11 g", "unsaturatedFatContent": "0 g")	4 servings
3	Southern Recipes	Best Fried Green Tomatoes	4.7	5	15	20	Fried green tomatoes are a quick and easy way to use up green tomatoes and make a wonderful late summer treat.	("calories": "510 kcal", "fatContent": "22 g", "fiberContent": "5 g", "sugarContent": "10 g", "sodiumContent": "1136 mg", "proteinContent": "13 g", "cholesterolContent": "95 mg", "carbohydrateContent": "56 g", "saturatedFatContent": "4 g", "unsaturatedFatContent": "0 g")	4 servings
4	Southern Recipes	Best Jambalaya	4.8	20	45	65	A spicy jambalaya with chicken, andouille sausage, rice and Cajun seasonings that's easy to make in one pot.	("calories": "465 kcal", "fatContent": "20 g", "fiberContent": "3 g", "sugarContent": "2 g", "sodiumContent": "1633 mg", "proteinContent": "28 g", "cholesterolContent": "73 mg", "carbohydrateContent": "42 g", "saturatedFatContent": "5 g", "unsaturatedFatContent": "0 g")	6 servings
5	Southern Recipes	Authentic Louisiana Red Beans and Rice	4.5	25	185	690	This easy authentic Louisiana red beans and rice recipe features Cajun seasoning and andouille sausage for hearty, comforting flavor.	("calories": "630 kcal", "fatContent": "24 g", "fiberContent": "10 g", "sugarContent": "73 g", "sodiumContent": "604 mg", "proteinContent": "24 g", "cholesterolContent": "33 mg", "carbohydrateContent": "79 g", "saturatedFatContent": "7 g", "unsaturatedFatContent": "0 g")	8 servings

5 rows in set (0.00 sec)

```
1 • use securin;  
2  
3 • select * from recipes  
4   order by id  
5  limit 5;
```

Alt Grid								
Filter Rows:								
Edit: Export/Import: Wrap Cell Contents: Fetch rows:								
id	cuisine	title	rating	prep_time	cook_time	total_time	description	nutrients
1	Southern Recipes	Sweet Potato Pie	4.8	15	100	115	Shared from a Southern recipe, thi...	{ "calories": "389 kcal", "fatContent": "...
2	Southern Recipes	Fresh Southern Peach Cobbler	4.7	20	40	60	This peach cobbler recipe makes t...	{ "calories": "562 kcal", "fatContent": "...
3	Southern Recipes	Best Fried Green Tomatoes	4.7	5	15	20	Fried green tomatoes are a quick a...	{ "calories": "510 kcal", "fatContent": "...
4	Southern Recipes	Best Jambalaya	4.8	20	45	65	A spicy jambalaya with chicken, an...	{ "calories": "465 kcal", "fatContent": "...
5	Southern Recipes	Authentic Louisiana Red Beans an...	4.5	25	185	690	This easy authentic Louisiana red b...	{ "calories": "630 kcal", "fatContent": "...

Result Grid	
	count(*)
▶	8451

2) Developed two APIs

- To expose an endpoint to get all recipes in a paginated and sorted manner.

Logic:

- Created a route for getting all recipes and a controller for it.
- Parsed the queries and handled errors like ≤ 0 by changing the page and limit values to default values.
- Found offset
- Used `findAll()` method to get the recipes based on offset and limit.

GET `http://localhost:5002/api/recipes?page=5&limit=10` Send

Status: 200 OK Size: 5.51 KB Time: 10 ms

Query Parameters

parameter	value
page	5
limit	10

Response

```
{
  "Page": 5,
  "Limit": 10,
  "recipes": [
    {
      "id": 41,
      "cuisine": "Southern Recipes",
      "title": "Chef John's Shrimp Étouffée",
      "rating": 4.8,
      "prep_time": 35,
      "cook_time": 20,
      "total_time": 75,
      "description": "Étouffée is a classic New Orleans seafood stew thickened with a roux. Chef John's easy recipe uses frozen shrimp and a delicious homemade spice blend.",
      "nutrients": {
        "calories": "424 kcal",
        "fatContent": "15 g",
        "fiberContent": "2 g",
        "sugarContent": "2 g",
        "sodiumContent": "1114 mg",
        "proteinContent": "41 g",
        "cholesterolContent": "369 mg",
        "carbohydrateContent": "30 g",
      }
    }
  ]
}
```

I added error handling by making the page and limit parameters to their default values when a value ≤ 0 is entered.

GET `http://localhost:5002/api/recipes?page=-10&limit=0` Send

Status: 200 OK Size: 5.66 KB Time: 13 ms

Query Parameters

parameter	value
page	-10
limit	0

Response

```
{
  "Page": 1,
  "Limit": 10,
  "recipes": [
    {
      "id": 1,
      "cuisine": "Southern Recipes",
      "title": "Sweet Potato Pie",
      "rating": 4.8,
      "prep_time": 15,
      "cook_time": 100,
      "total_time": 115,
      "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!",
      "nutrients": {
        "calories": "389 kcal",
        "fatContent": "21 g",
        "fiberContent": "3 g",
        "sugarContent": "28 g",
        "sodiumContent": "254 mg",
        "proteinContent": "5 g",
        "cholesterolContent": "78 mg",
        "carbohydrateContent": "48 g",
      }
    }
  ]
}
```

b. To expose an endpoint to search for recipes based on various fields

Logic:

- Created a route and controller to handle the search of recipes based on various fields
- Parsed standard query parameters like title, cuisine, rating, and total_time, and used Sequelize operators for proper SQL WHERE conditions.
- Fetched SQL-filtered recipes using the findAll() method from Sequelize with raw: true for better performance and raw data access.
- Converted nutrient strings like "562 kcal" or "400 mg" to numeric values using regex to extract digits for accurate comparison.
- Used a custom compare function to perform operations like <, <=, >, >=, = dynamically, based on the query.

GET <http://localhost:5002/api/recipes/search?calories=>=400&title=pie&rating=>=4.8&cuisine=Southern+Desserts> Send

Status: 200 OK Size: 1.67 KB Time: 19 ms

Query Parameters

parameter	value
<input checked="" type="checkbox"/> calories	>=400
<input checked="" type="checkbox"/> title	pie
<input checked="" type="checkbox"/> rating	>=4.8
<input checked="" type="checkbox"/> cuisine	Southern Desserts
<input type="checkbox"/> parameter	value

Response

```
1 {
2   "data": [
3     {
4       "id": 76,
5       "cuisine": "Southern Desserts",
6       "title": "Grandma's Iron Skillet Apple Pie",
7       "rating": 4.9,
8       "prep_time": 15,
9       "cook_time": 45,
10      "total_time": 75,
11      "description": "This cast iron apple pie is a modern version of an
12                    old-time Southern favorite that uses premade pie crusts to make
13                    this three-layer apple pie.",
14      "nutrients": {
15        "calories": "734 kcal",
16        "fatContent": "34 g",
17        "fiberContent": "2 g",
18        "sugarContent": "70 g",
19        "sodiumContent": "396 mg",
20        "proteinContent": "3 g",
21        "cholesterolContent": "49 mg",
22        "carbohydrateContent": "108 g",
23        "saturatedFatContent": "17 g",
24        "unsaturatedFatContent": "0 g"
25      }
26    }
27  ]
28 }
```