

1.Introduction

We will use the recipe dataset (<https://www.kaggle.com/datasets/shuyangli94/food-com-recipes-and-user-interactions>) to make an application for generating recipes from ingredients. We will also provide features to add more recipes from certain ingredients. The users of the application can be anyone who wants to cook from their available ingredients, or people who wants to share their recipes. The administrators of the database systems will be the application administrator.

2.System support

We will use our local machine to build the web application. We will be using Golang (Backend), Postgresql (Database System), and Svelte (Frontend) for our tech stack. We chose to learn new stack to make this project more valuable.

3.Design Schema

4.Sample data

The sample data is from the dataset we mentioned above, we used the top 25 rows of their CSV dataset as our example to test the feature we plan to implement. The sample data is stored in `\demo\data`, each file corresponds to one table we used in the database.

5.Features

We implemented 4 features so far, all the query templates are stored in `/server/database/queries/`, and all the sample data, queries, and output are stored in the data directory. Simply run the `'milestone1.sh'` file to see all the query definitions and expected output.

Feature 1: We allow users to sign up for accounts by creating their user names and passwords. Then, they can use the names and passwords they created to log in. On the main page, users can click on the 'signup' button to create their accounts. Later, after completing signup, they can type their names and passwords on the main page to log in their accounts.

Template:

```
create or replace function userSignup(text, text)
  returns void
  as $$
  insert into users(name, password) values ($1, $2);
  $$ language sql;
create or replace function userLogin(text)
  returns text
  as $$
  select password from users
    where name = $1;
  $$ language sql;
```

Sampled queries:

```
select userSignup('testuser', 'testpass')
select userLogin('testuser')
```

Sample output:

```
testpass
```

The first query ‘userSignup’ won’t produce any output as it returns void.

The second query will produce output—testpass—the password of username testuser.

Feature 2: We implemented autocomplete in the search bar to help users to search the recipes quickly. Users can only type part of the names of an ingredient, then the autocomplete function will help them to complete the names of the ingredients which helps the user create better searches, get better results, avoid type error, and save a lot of time.

Template:

```
create or replace function autocompleteSearch(text)
  returns ingredients
  as $$
  SELECT * FROM ingredients WHERE name LIKE $1;
  $$ language sql;
```

Sampled queries:

```
select autocompleteSearch('bac%')
```

Sample output:

```
(11,bacon)
```

Feature 3: We allow users to use the ingredients they have to search for any recipe that includes these ingredients. The user could simply type what ingredients they have at hand to search for what food they can do, and the step-by-step recipe for that food.

Template:

```
create or replace function matchRecipes(int[])
  returns recipes
```

```

as $$
SELECT * FROM recipes AS r
WHERE r.id NOT IN (
    SELECT recipe_id FROM recipe_ingredient AS ri
    WHERE ri.ingredient_id NOT IN (
        SELECT * FROM UNNEST($1)
    )
);
$$ language sql;

```

Sampled queries:

```
select matchRecipes('{38,102,29,33,91,82,39,10}')
```

Sample output:

```

(1,"arriba  baked winter squash mexican style","autumn is my favorite time of
year to cook! this recipe \r
can be prepared either spicy or sweet, your choice!\r
two of my posted mexican-inspired seasoning mix recipes are offered as
suggestions.",55,1,"""make a choice and proceed with recipe'", ""'depending on
size of squash'", ""'cut into half or fourths'", ""'remove seeds'", ""'for spicy
squash'", ""'drizzle olive oil or melted butter over each cut squash
piece'", ""'season with mexican seasoning mix ii'", ""'for sweet
squash'", ""'drizzle melted honey'", butter, ""'grated piloncillo over each cut squash
piece'", ""'season with sweet mexican spice mix'", ""'bake at 350
degrees'", ""'again depending on size'", ""'for 40 minutes up to an hour'", ""'until a
fork can easily pierce the skin'", ""'be careful not to burn the squash
especially if you opt to use sugar or butter'", ""'if you feel more
comfortable'", ""'cover the squash with aluminum foil the first half hour'", ""'give
or take'", ""'of baking'", ""'if desired'", ""'season with
salt'""}", "{51.5,0,13,0,2,0,4}")

```

The output includes the name of the recipe and the step-by-step instruction about how to cook the recipe.

Feature 4: We allow users to filter the result of the recipe they searched by tags. Users can click on the ‘filter’ button and select the tags they want, then a new page will display all recipes that have the tag.

Template:

```

create or replace function filterByTags(int)
returns recipes
as $$
select * from recipes
where id in (select recipe_id from recipe_tag
where tag_id = $1);
$$ language sql;

```

Sample queries:

```
select filterByTags(124)
```

Sample output:

```
(1,"arriba  baked winter squash mexican style","autumn is my favorite time of
year to cook! this recipe \r
can be prepared either spicy or sweet, your choice!\r
two of my posted mexican-inspired seasoning mix recipes are offered as
suggestions.",55,1,{"'"make a choice and proceed with recipe'",'"depending on
size of squash'",'"cut into half or fourths'",'"remove seeds'",'"for spicy
squash'",'"drizzle olive oil or melted butter over each cut squash
piece'",'"season with mexican seasoning mix ii'",'"for sweet
squash'",'"drizzle melted honey"',butter,'"grated piloncillo over each cut squash
piece'",'"season with sweet mexican spice mix'",'"bake at 350
degrees'",'"again depending on size'",'"for 40 minutes up to an hour'",'"until a
fork can easily pierce the skin'",'"be careful not to burn the squash
especially if you opt to use sugar or butter'",'"if you feel more
comfortable'",'"cover the squash with aluminum foil the first half hour'",'"give
or take'",'"of baking'",'"if desired'",'"season with
salt'"'}",{"51.5,0,13,0,2,0,4}"
```

6.Members

- Edward Ryan
 - Discussed the direction for the project (Schema design, features).
- Kevin Xu
 - Discussed the initial direction for the project (Schema design, features).
- Nicholas Suprpto
 - Discussed the initial direction for the project (Schema design, features).
- Shuyao Shi
 - Discussed the initial direction for the project (Schema design, features).
 - Write the report.
- Warren Elbert
 - Discussed the initial direction for the project (Schema design, features).

We will be using a **private** repository.

Github Link: <https://github.com/chic27/FindMyRecipe>