Project Proposal “Dish Master”

Course: CS 411 - Database Systems

Professor: Abdussalam Alawini

TA: Hunter DeMeyer

Group member: Yining Cheng yining16@illinois.edu
Kuo Jiang kuoj2@illinois.edu
Yicong Mo yicongm2@illinois.edu Tianze
Xu tianzex4@illinois.edu

1 summary:

This cookbook’s recipe collection gives a comprehensive presentation of the recipes of various dishes, as well as the ingredients needed and the steps to make them. In addition to the most basic query functions, our application also has functions for users to rate, upload their own recipes and delete their own recipes. And we also show the existing recipes in the user's home page. In order to manage a large number of recipes, we designed an manager interface, where the manager can login to the manager interface by using a special username. Here, the manager can review the newly uploaded recipes and the manager has the permission to delete any recipe.

2 description of application

Our project aims to develop a recipe recommending application, it includes dishes with their ingredients and the procedure of cooking, the users can register accounts and once they log in, they can upload dishes and recipes, they can also update or delete the existing dishes created by themself. The application also provides general searching functionality. Users can search by dishes’ name or ingredients’ name or some other attributes, they can also set filters for the searching results. The users can also choose how the results are shown, for example, users can choose the results shown in order of time for cooking or the dishes’ calories.

The most creative component in our app is refresh and recommend functionality. Once a user creates an account, the app will recommend dishes randomly, and the recommendation will be updated based on the reflection of users to different dishes. To implement this functionality, we can get the statistics of users’ likes and dislikes on dishes, for example, if the user like a dish, we will add 1 on all the ingredients contained in this dish, and we will minus 1 on all the ingredients contained in the dishes he/she dislikes,

then we can recommend dishes containing the ingredients which is mostly liked by the user.

3 usefulness

One similar app is Yummly. It is also a guide for cooking. The main differences between our project and Yummly is that Yummly simply shows the calories contains in the food while our project can show specific nutrition components. And also, Yummly only support for searching in recipe. Our project can search ingredients and recipe.

Our project focuses on helping users to find the best food fit for them and it has a description on how to cook it. It also provides estimated time for the user to cook on that so that the user can choose their food. This project is useful for several reasons.

First of all, nowadays life is at a fast pace. It is important to get the estimated time of cooking so that the users can arrange their time in a proper way. There won't be a condition that after cooking for a long time, users figure out they are going to work or hanging out with friends, which leads to a rush for their meal. With our project, users can have a clear understanding about how long it will take to cook for a specific meal. And then they can arrange it according to their timetable.

Secondly, our project can also help with ingredient selection. Some users are allergic to some of the ingredients which makes cooking annoying. Users can firstly input the time of food they want like hamburger, taco. Then they can just input the ingredients they do not want. And our product can filter out the foods that do not contain those. Then users can select from the list.

Last but not least, it also helps people to lose weight or keep fitness. Our database contains information about the nutrition in each ingredient. We can compute the total amount of fat and calories in the food and recommend foods that are suitable for people who want to lose weight or build muscle.

4 realness

Our data comes from data world's cookbook database.[1] it contains 4 tables which are Recipe, Quantity,Nutrition, Ingredients.

Recipe table contains 11 attributes. But we are going to use less of them. Because in some attributes there are many NULL values. Here is what we want to use. Recipe_id is the primary key of this table. It also contains food names, preparation time, cook time, source of the recipe, and directions.

Ingredients contain the 3 attributes which are ingredient id as a primary key, category for the ingredients and the name.

Nutrition contains 16 attributes. Recipe id references to recipe. Other attributes are just the same as the food nutrition contribution we saw. It has data for the amount of protein, carbo, alcohol, total_fat, sat_fat, sodium, etc.

The Quantity table helps with teaching users how to cook. It contains 8 attributes. It has quantity id as primary key. It uses recipe id and ingredient id to combine those two tables mentioned above. It has the max quantity and min quantity to add. The unit of adding. And also what users need to do to prepare. It also contains a boolean value optional to indicate whether the ingredients are optional.with the quantity table and recipe direction. Users can know how to cook the food and the quantity of each ingredient.

5 functionality description of application

Our project has following functions:

Simple Features:

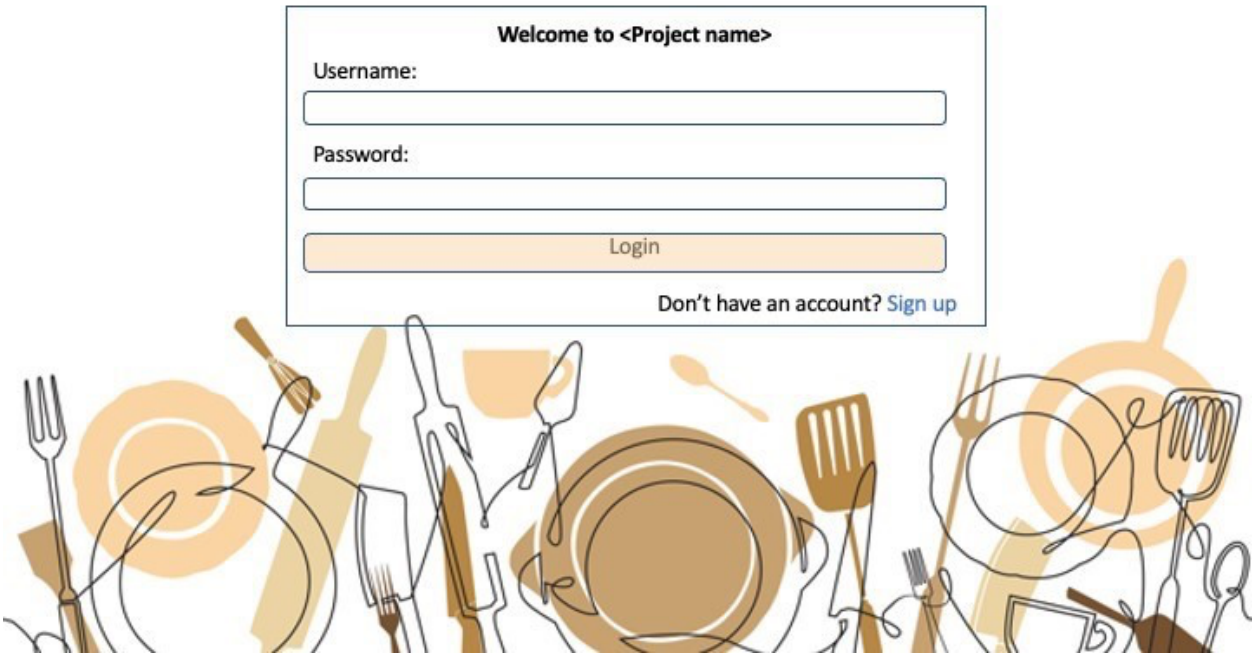
The basic functionalities are Sign in, Sign up, Log out, which allow the user to create an account, log in to the system and log out. Also, our project has search function, which allows users to search for dishes by single parameter or multiple parameters (i.e. Name, Ingredients). For each dish, users can click the recipe link to get into the other page which shows detail of the dish. The project also has a Comment-Post feature, users can post comments for any dishes. And for users, they are able to post new dishes, and can update and delete dishes details they upload.

For administrators, they can access the same features and things as a user. Besides that, administrators can review the dishes uploaded by users, only those which pass the review can be searched and viewed by people.

Complex Features:

On the main page, there is a random push function, users can swipe down to get more pushed dishes. And for each dish, users are able to vote like and dislike. For the single user, any dishes the user voted dislike will never be recommended again on the main page.

6 low fidelity UI mockup



Welcome, manager

There are some new recipes need to review:

Fried Beef Steak Chips Goulash Fish Soup

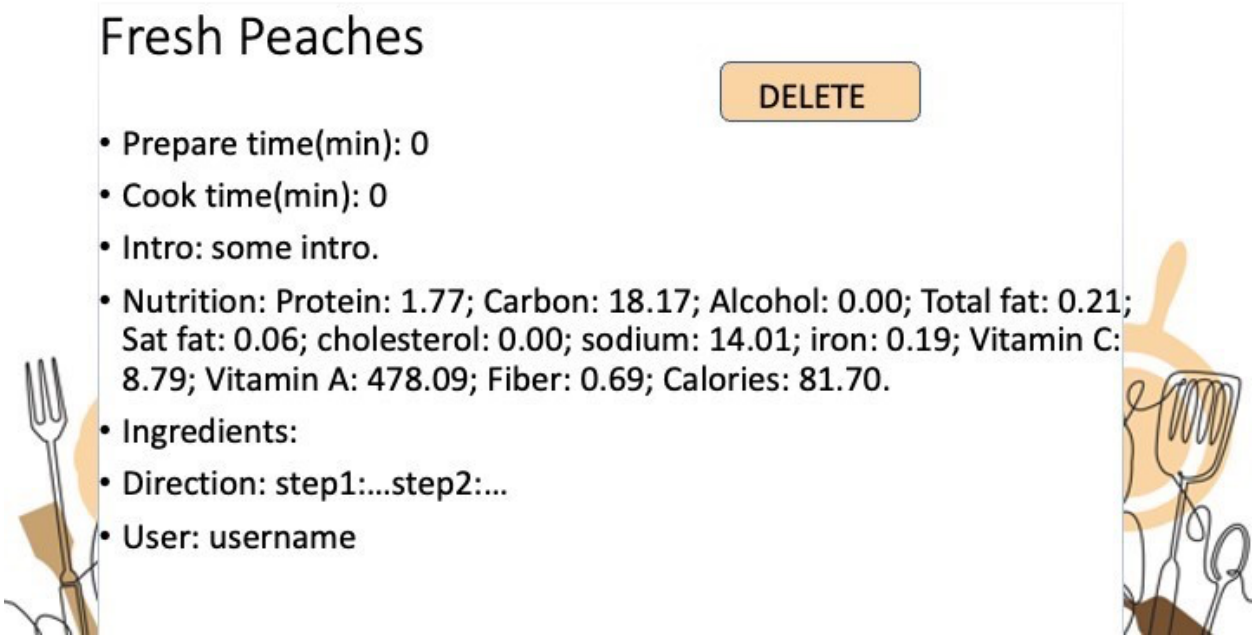
There are the recipes already posted:

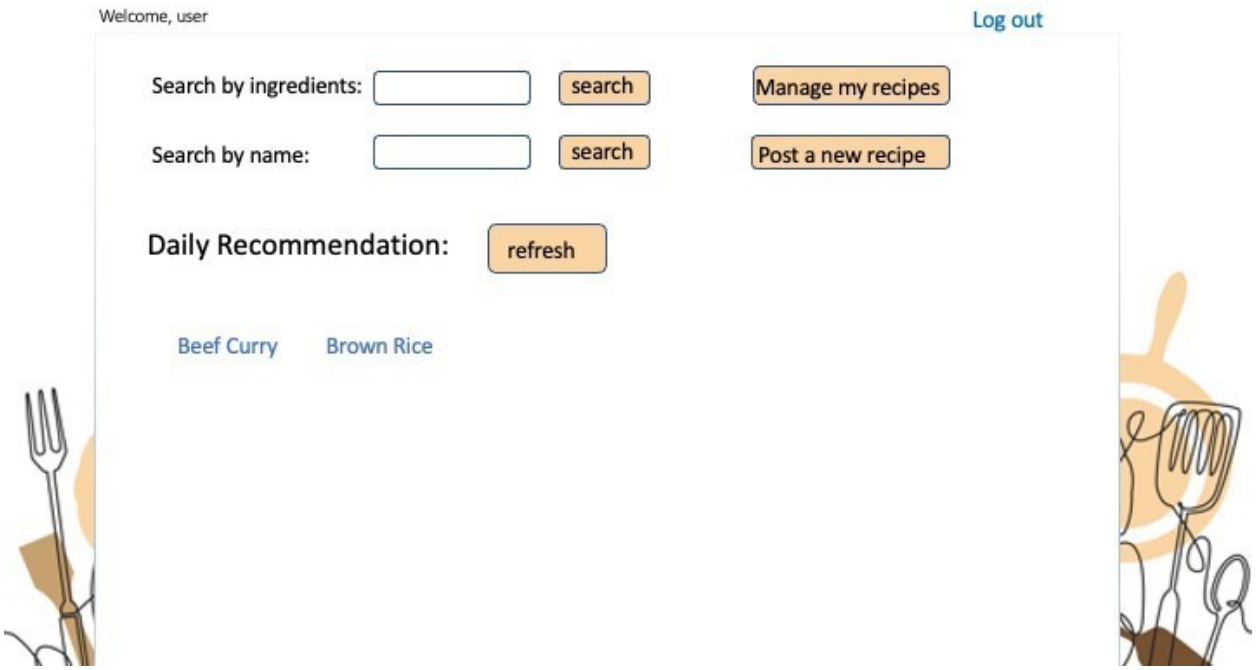
Beef Curry Brown Rice

Fresh Peaches

- Prepare time(min): 0
- Cook time(min): 0
- Intro: some intro.
- Nutrition: Protein: 1.77; Carbon: 18.17; Alcohol: 0.00; Total fat: 0.21; Sat fat: 0.06; cholesterol: 0.00; sodium: 14.01; iron: 0.19; Vitamin C: 8.79; Vitamin A: 478.09; Fiber: 0.69; Calories: 81.70.
- Ingredients:
- Direction: step1:...step2:...
- User: username

pass reject


Fresh Peaches
DELETE
• Prepare time(min): 0
• Cook time(min): 0
• Intro: some intro.
• Nutrition: Protein: 1.77; Carbon: 18.17; Alcohol: 0.00; Total fat: 0.21; Sat fat: 0.06; cholesterol: 0.00; sodium: 14.01; iron: 0.19; Vitamin C: 8.79; Vitamin A: 478.09; Fiber: 0.69; Calories: 81.70.
• Ingredients:
• Direction: step1:...step2:...
• User: username


Welcome, user
Log out
Search by ingredients:
search
Manage my recipes
Search by name:
search
Post a new recipe
Daily Recommendation:
refresh
Beef Curry
Brown Rice

Fresh Peaches

like dislike

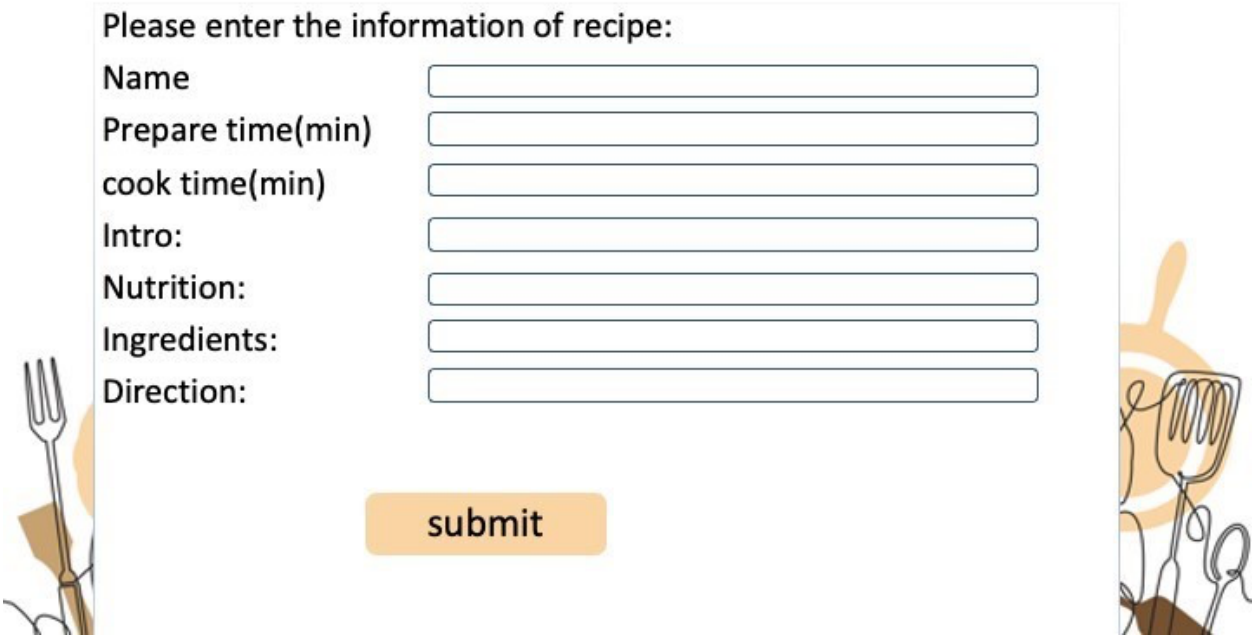
- Prepare time(min): 0
- Cook time(min): 0
- Intro: some intro.
- Nutrition: Protein: 1.77; Carbon: 18.17; Alcohol: 0.00; Total fat: 0.21; Sat fat: 0.06; cholesterol: 0.00; sodium: 14.01; iron: 0.19; Vitamin C: 8.79; Vitamin A: 478.09; Fiber: 0.69; Calories: 81.70.
- Ingredients:
- Direction: step1:...step2:...
- User: username

Search results for “dairy”

Peach Pita Sandwiches

It’s the Berries Pie

Noodle-Crusted Quiche Noel



7 distribution

In order to distribute properly and ensure that every member is involved in the work of the project, we decide to divide into two groups. Yicong Mo and Tianze Xu are the first group,

focusing on processing the external dataset and writing to the database. Kuo Jiang and Yining Cheng are the second group, working together on database initialization and front-end development.
For the backend part, the four of us will collaborate to do all the backend work. According to the functions we have listed, Yicong Mo will lead the implementation of special functions for administrators, Tianze Xu will develop the random push function of dishes, Kuo Jiang will have the task of implementing the functions of dish search and filter, and Yining Cheng will focus on dish comments and voting function development. The assignment of tasks may not be completely fair, so anyone who completes the assigned task will join others who are still in the development process to help.

8 reference

[1]https://data.world/atlas-query/cookbook