COMP 3900
Information Technology Project
2020 Term2

Project Name: MealMatch

Group Name: ProjectDoubleFlies

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Background

People love cooking, but many of them always get lost in hundreds of methods to make delicious meals. Our website aims to solve this problem. We provide a great variety of ingredients so that users can choose what they have on hand. Each time users choose a new ingredient, our system will update the results. Users can get a large number of recipes for their own ingredients, following the instruction and description, and food can be easily cooked. Our website can make every user become a recipe contributor. Users can also upload their own recipes and ideas about cooking, adding images for their meals. They can not only explore but also provide cooking methods to the public.

Existing system and its Problem

One example of a website in the same problem domain we found is taste.com. They provide recipes but lack of a user-friendly searching way. Users must type the name of ingredients by hand, but not just by clicking from a list of ingredients, which cost their time. Also, there are no categories or a list of ingredients displaying on the main page. For those who forget the name of ingredients, it is hard for them to search by ingredients name, but instead, it is easier for them to search through the list of ingredients which is implemented in our website.

User stories & Sprints

Total user story points: 86
(1 SP = 1/2 day)

Priority Scale
Priority is judged by High, Medium, Low with Highest being the most urgent priority and Low being the least urgent priority.
Story point is used to estimate how much time needed to complete specific task.

Screenshots of user stories in Jira

	User story	Epic	ID		SP
🗒	User story 1: Register to the system	Epic 1: Recipe explorer	PROJ-2	↑	6
🗒	User story 2: Login and logout	Epic 1: Recipe explorer	PROJ-12	↑	6
🗒	User story 3: Look through ingredients	Epic 1: Recipe explorer	PROJ-11	↑	6
🗒	User story 4: Pick ingredients	Epic 1: Recipe explorer	PROJ-21	↑	10
🗒	User story 5: Submit list of ingredients	Epic 1: Recipe explorer	PROJ-27	↑	3
🗒	User story 6: Filter recipes by meal-type	Epic 1: Recipe explorer	PROJ-32	↓	2
🗒	User story 7: Selecting recipe from a list of results	Epic 1: Recipe explorer	PROJ-35	↓	2
🗒	User story 8: View the history of recipes	Epic 1: Recipe explorer	PROJ-111	↑	2
🗒	User story 9: My favorite recipes	Epic 1: Recipe explorer	PROJ-112	↓	2
🗒	User story 10: Get a suggested ingredient for next ingredients	Epic 1: Recipe explorer	PROJ-119	↑	3
🗒	User story 1: Register to the system	Epic 2: Recipe contrib...	PROJ-41	↑	6
🗒	User story 2: Login and logout	Epic 2: Recipe contrib...	PROJ-50	↑	6
🗒	User story 3: Create and add recipes to recipe category	Epic 2: Recipe contrib...	PROJ-57	↑	10
🗒	User story 4: Edit recipes	Epic 2: Recipe contrib...	PROJ-63	↑	6
🗒	User story 5: Delete recipes	Epic 2: Recipe contrib...	PROJ-68	↑	3
🗒	User story 6: View recipes	Epic 2: Recipe contrib...	PROJ-71	↓	3
🗒	User story 7: View the most frequent ingredients	Epic 2: Recipe contrib...	PROJ-74	↓	2
🗒	User story 8: Tag meal-type	Epic 2: Recipe contrib...	PROJ-120	↑	3
🗒	User story 9: Get informed	Epic 2: Recipe contrib...	PROJ-123	↓	2

Epic Story 1: Recipe Explorers
As a recipe explorer, I want to be able to select a set of ingredients so that I can follow the recipe provided by the system to prepare my food.
Total User Story Points: 45 (1 SP = ½ day)

E1 – User story 1: Register to the system
As a recipe explorer, I want to be able to register an account with a username and password so that I can log in to the recipe system.

Acceptance Criteria:
    • Display a username and password text boxes under the heading 'Login'.
    • Provide a create account button under the text boxes which validates the entered details with the system
    • Display username and password that need to be entered after clicking 'Create account' button.
    • Display "username is invalid" if the username is already exist
    • Display "password is invalid" if the length of password is less than 6 characters
 	
    • Display "Please enter a username and password" if either a username or password has not been entered, upon pressing 'Create account' button
    • Link to the login page if register is successful.
    • Display error message if the system is not responding/timeout

Priority: High
Story points: 6

E1 – User story 2: Login to the system
As a recipe explorer, I want to be able to login with a verified username and password so that I can securely access my account
Acceptance Criteria: • Display username and password text boxes under the heading 'Login'. • Provide the login button next to the text boxes which validates the entered username and password with system. • Display "username or password is incorrect" if the username or password is incorrect after clicking 'login' button. • Display "please enter username or password" if either username or password has not been entered after clicking 'login' button. • Link to the welcome page if login is successful. • Display error message if the system is not responding/timeout
Priority: High
Story points: 6

E1 – User story 3: Look through ingredients
As a recipe explorer, I want to be able to look through a catalogue of available ingredients so that I can choose them by picking categories (like dairy, vegetables, grains, etc.)
Acceptance Criteria: • Display the categories of ingredients.. • Display a button that Categories of the ingredients can be expanded into specific items.
Priority: High
Story points: 6

E1 – User story 4: Pick ingredients
As a recipe explorer, I want to be able to pick the ingredients so that I can build my own list of ingredients

Acceptance Criteria:
    • Provide an option to pick the ingredients that the user likes.
    • Display the list of ingredients that the user picks.
    • Display the category of ingredients that the user picks.
    • Provide an option to remove the ingredients that inadvertently picked from the running list.
    • Display "The amount of ingredients is over-limit" message if the amount of ingredients exceeds the limit.

Priority: High
Story points: 10

E1 – User story 5: Submit list of ingredients
As a recipe explorer, I want to be able to submit my complete list of ingredients so that I can have the recipe generated by the system.

Acceptance Criteria:
    • Provide 'submit' button once the user selection is complete.
    • Provide 'go back' button once the user needs to change the ingredients he picks.
    • Display the set of the recipes possible given by completed list of ingredients.
    • Display the most popular recipes on the top of the set.

Priority: Medium
Story points: 3

E1 – User story 6: Filter recipes by meal-type
As a recipe explorer, I want to be able to filter my recipes by meal-type, so that I can select desired meal-type

Acceptance Criteria:
    • Provide 'meal-type' button once recipe explorers submit complete list of ingredients.
    • Display different meal-type once recipe explorer clicked 'meal-type' button.

Priority: Low
Story points: 2

E1 – **User story 7: Selecting recipe from a list of results**
As a recipe explorer, i want to be able to select a recipe from results to view its full details, so that i can choose which to cook
Acceptance Criteria: • Provide selected recipe photos that can be clicked • Display number and types of ingredients that recipe needs • Display total and cook time that need to be spent • Display directions that help recipe explorer to cook
Priority: Low
Story points: 2

E1 – **User story 8: View the history of recipes**
As a recipe explorer, i want to be able to view the history of recipes so that i can easily review what i missed before
Acceptance Criteria: • Provide 'history' button on main mage in case recipe explorer viewed recipe ingredients and want to review in the future • Display different recipes that explorer browsed before when clicking button 'history' • Display specific recipe consists of ingredient once clicked related ingredient figure in history page
Priority: Medium
Story points: 2

E1 – **User story 9: My favorite recipes**
As a recipe explorer, i want to be able to collect recipes that i am willing to cook in the future, so that i can easily find recipes that i want to cook.
Acceptance Criteria: • Provide 'my favorite' button on header in case recipes explorers want to collect recipes and cook. • Display recipes that explorer collected before when clicked button 'my favorite'. • Display details and cooking process of a specific recipe once clicked related recipe figure in collect page.
Priority: Low
Story points: 2

E1 – **User story 10: Get suggested for next ingredients**
As a recipe explorer, i want to be able to get suggested for next ingredients based on previous input so that I can match recipes
Acceptance Criteria • Provide suggested 1 or more ingredients once recipe explorers has input 1 or more ingredients to their running list
Priority: Medium
Story points: 3

Recipe Contributor

Epic Story 2: Recipe Contributor
As a recipe contributor, I want to be able to upload my recipes so that i can share my recipes to others
Total User Story Points: 41 (1 SP = ½ day)

E2 - User story 1: Register to the system
As a recipe contributor, I want to be able to register an account with a username and password so that I can log in to the recipe system.
Acceptance Criteria: • Display a username and password text boxes under the heading 'Login'. • Provide a create account button under the text boxes which validates the entered details with the system • Display username and password that need to be entered after clicking 'Create account' button. • Display "username is invalid" if the username is already exist • Display "password is invalid" if the length of password is less than 6 characters   • Display "Please enter a username and password" if either a username or password has not been entered, upon pressing 'Create account' button • Link to the login page if register is successful. • Display error message if the system is not responding/timeout
Priority: High
Story points: 6

E2 - User story 2:Login to the system
As a recipe contributor, I want to be able to login with a verified username and password so that I can securely access my account

Acceptance Criteria:
    • Display username and password text boxes under the heading 'Login'.
    • Provide the login button next to the text boxes which validates the entered username and password with system.
    • Display "username or password is incorrect" if the username or password is incorrect after clicking 'login' button.
    • Display "please enter username or password" if either username or password has not been entered after clicking 'login' button.
    • Link to the welcome page if login is successful.
    • Display error message if the system is not responding/timeout

Priority: High
Story points: 6

E2 - User story 3: Create and add recipes to recipe category
As a recipe contributor, i want to be able to create and add my recipes to recipe category, so that i can share my cooking experience with others

Acceptance Criteria:
    • Provide 'create recipe' button which enable recipe contributor to create recipe including related steps and required ingredients to a recipe catalogue
 	
    • Display steps and required ingredients text boxes under the heading 'create your recipe'
    • Provide 'confirm' button which enables recipe contributor to upload their recipes
    • Display details of recipes after clicking 'confirm' button
    • Link to the 'My recipes' page if upload successfully

Priority: High
Story points: 10

E2 - User story 4: Edit recipes
As a recipe contributor, i want to be able to edit my recipes, so that i can make some changes to my recipes
Acceptance Criteria: • Provide 'edit' button which allows recipe contributor to edit their recipe • Display original steps and required ingredients text boxes after clicking 'edit' button • Provide 'save' button to allow recipe contributor save their changes of recipe • Display "You have successfully changed your recipe " after clicking 'save' button
Priority: High
Story points: 6

E2 - User story 5: Delete recipes
As a recipe contributor, i want to be able to delete my out of date recipes, so that i can provide users the latest recipe all the time
Acceptance Criteria: • Provide 'delete' button which allows recipe contributor to delete their recipes • Display "You have successfully deleted your recipe" after clicking 'delete' button
Priority: Medium
Story points: 3

E2 - User story 6: View recipes
As a recipe contributor, i want to be able to see a list of my contributed recipes, so that i can view the full details for each
Acceptance Criteria: • Display the list of recipes on 'My recipes' page • Provide photos of each recipe which allows recipe contributor to view the full details after clicking related photo
Priority: Low
Story points: 3

E2 - User story 7: View the most frequent ingredients
As a recipe contributor, I want to be able to see the most frequent input set of ingredients for which there was no recipe match on the home page, so that I can create related recipes to share
Acceptance Criteria: • Display the most frequently input set of ingredients which there was no recipe matched on the home page after clicking 'ingredients without recipe' button
Priority: Low
Story points: 2

E2 - User story 8: Tag meal-type
As a recipe contributor, I want to be able to tag a recipe with meal-type, so that I can manage my recipes

Acceptance Criteria:
  • Provide 'meal-type' button once recipe explores submit complete list of ingredients
  • Display different meal-type once recipe explorers clicked 'meal-type' button

Priority: Medium
Story points: 3

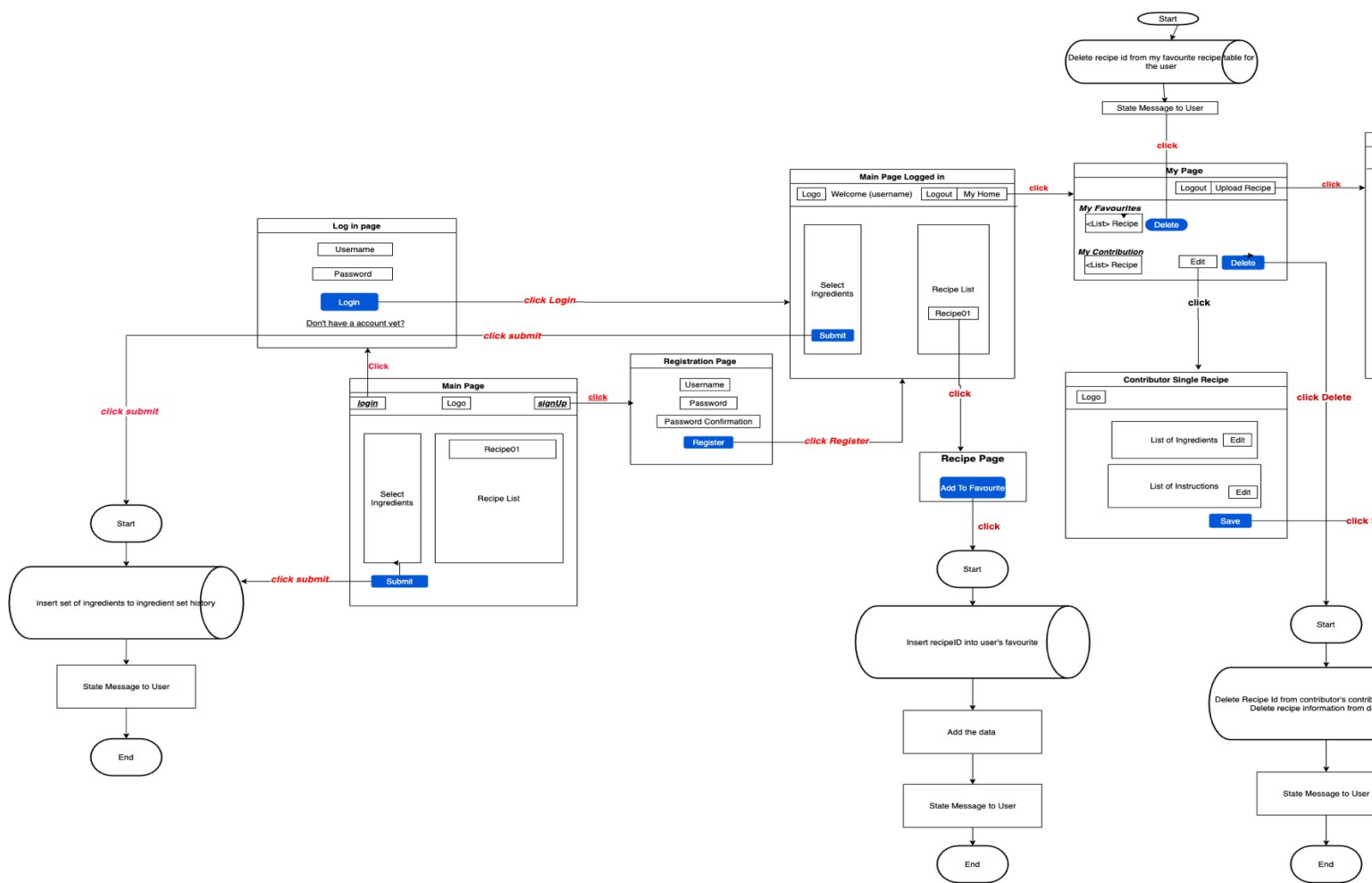| E2 - User story 9: Get informed |
|---|
| **As a recipe contributor, I want to be able to get informed of the combination of ingredients that at least someone often owns but cannot find so that I can create new recipes** |
| Acceptance Criteria:
  • Display the most frequently input set of ingredients which there was no recipe matched on the home page after clicking 'ingredients without recipe' button
  • Notify recipe contributor by notification when system received recipe requirements from recipe explores |
| **Priority: Low** |
| **Story points: 2** |

Project Plan

Sprint	Date	Implementation	User Stories Covered E: Epic U: User story
1	Week 3 (15/06 – 21/06)	**Account management** - Users can register - Users can login - Users can log out and switch accounts	E1U1 E1U2 E2U1 E2U2
2	Week 4 (22/06 – 28/06)	**Contributors Basic Functionalities** - Create/add recipes - View personal recipes - Edit recipes - Delete recipes	E2U3 E2U4 E2U5 E2U6
3	Week 5 (29/06 – 06/07)	**Explorers Basic Functionalities** - Look through a list of categorized ingredients - Pick and remove ingredients - Display running list of chosen ingredients	E1U3 E1U4 E1U5
4	Week 6 (07/07 – 13/07)	**Contributors QoL Features** - View the most frequents ingredients being searched with no matches - Tag meal-type - Get informed about popular searches by email	E2U7 E2U8 E2U9
5	Week 7 (14/07 – 20/07)	**Explorers Search Functionalities** - Filter search results by meal-types - Select recipe from search results - View history of selected recipes	E1U6 E1U7 E1U8

6	Week 8 (21/07 – 27/07)	**Explorers Extra Features** - Favourite recipes - Get suggested next ingredient	E1U9 E1U10

7	Week 9
	(28/07 – 03/08)
		Project Review
		- Review, test, and
		  fix existing bugs
		- Re-decorate
		  User Interface
			Review only

First Sprint

User Story	Task	Assignee	Reviewer
E1U1	Explorer Register	Shizuka, Danting	Sijie
E2U1	Contributor Register	Shizuka, Danting	Sijie
E1U2	Explorer Log In and Log out	Yu, Le, Sijie	Shizuka
E2U2	Contributor Log In and Log Out	Yu, Le, Sijie	Shizuka

Interface & Flow diagram

Log in page
Username
Password
Login
Don't have a account yet?

Main Page
login | Logo | *signUp*

Select Ingredients | Recipe01 | Recipe List | **Submit**

Registration Page
Username
Password
Password Confirmation
Register

Main Page Logged in
Logo | Welcome (username) | Logout | My Home

Select Ingredients | Recipe List | Recipe01 | **Submit**

Recipe Page
Add To Favourite

My Page
Logout | Upload Recipe

My Favourites
<List> Recipe | **Delete**

My Contribution
<List> Recipe | Edit | **Delete**

Contributor Single Recipe
Logo
List of Ingredients | Edit
List of Instructions | Edit
Save

Flow chart elements

Start → Delete recipe id from my favourite recipe table for the user → State Message to User → *click*

click Login · *click submit* · *click* · *Click* · *click Register* · *click submit* · *click Delete* · *click*

Start → insert set of ingredients to ingredient set history → State Message to User → End

Start → Insert recipeID into user's favourite → Add the data → State Message to User → End

Start → Delete Recipe Id from contributor's contrib... Delete recipe information from d... → State Message to User → End
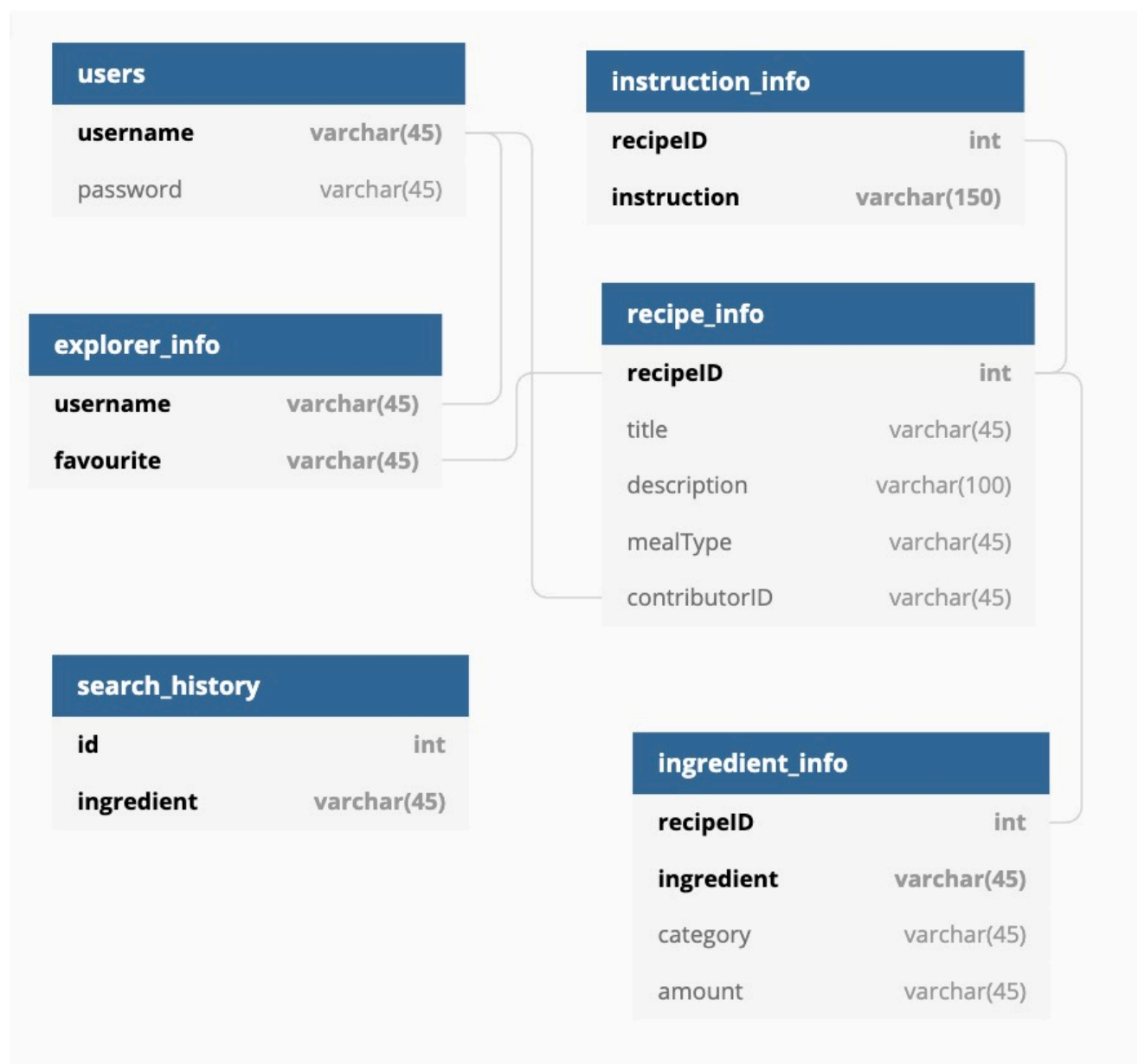
System Architecture

Presentation Layer
Presentation Layer is, as shown above, users can interact with the user interface.
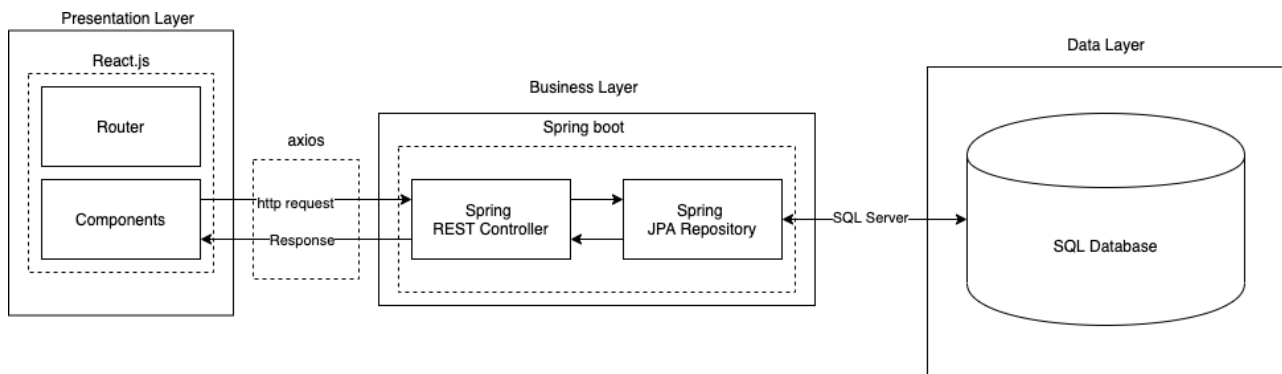
Business Layer
Our website's business layer will be written in Java, and whenever a user wants to post, get, put or delete it will receive a request from the presentation layer. It will fire the query required by the user in the SQL database.
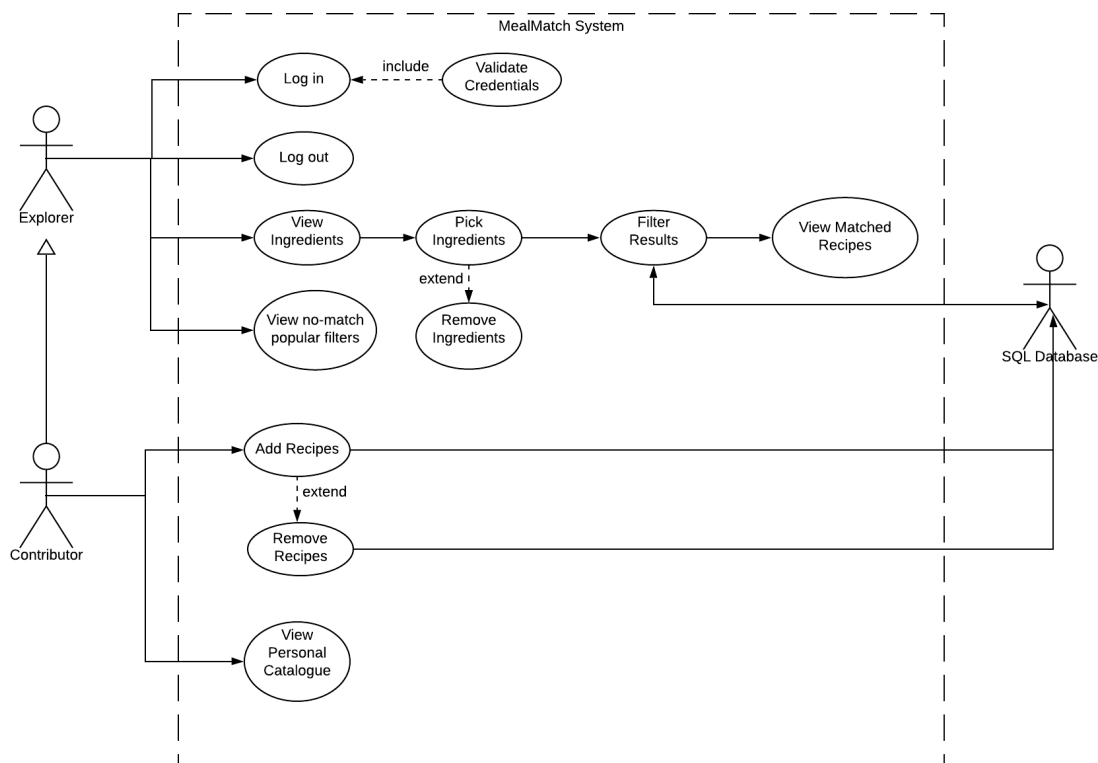
Data Layer
SQL Relational-Model

users

| username | varchar(45) |
| password | varchar(45) |

instruction_info

| recipeID | int |
| instruction | varchar(150) |

explorer_info

| username | varchar(45) |
| favourite | varchar(45) |

recipe_info

recipeID	int
title	varchar(45)
description	varchar(100)
mealType	varchar(45)
contributorID	varchar(45)

search_history

| id | int |
| ingredient | varchar(45) |

ingredient_info

recipeID	int
ingredient	varchar(45)
category	varchar(45)
amount	varchar(45)

Connection between font-end and back-end system

Description of External-User with Use Case Diagram

External User: Meal Explorers and Meal Contributors.
Interaction:
1. All public users are explorers. They can view, pick and remove ingredients then submit a list of ingredients they want to explore. Then they can get visualized recipes filtered by our database based on the ingredients they have chosen.
2. Public users can register if they do not have an account. After registration, users can be both an explorer and a contributor. They have their homepage, and the page shows their "favorite recipes", their "uploaded recipes". They can view, edit and delete the recipes. They can also upload new recipes. Once they enter 'Upload Recipe Page", they are free to input title, description, instruction, meal-type and choose ingredients with their category for the recipe. Once submitted, our system will insert the new recipe to the database and store corresponding recipe id to the contributor's recipe id table.
3. Meal explorers can add recipes posted on our website to their "favorite recipes". Once done, our system will store the recipe to the explorers' "favorite recipes" table in the database. Also, explorers can remove recipes in their favorite list if they lose interest.

Technologies/Languages planned to use

We are going to use React.js, axios, Java, Spring boot and SQL. We are writing REST API with Java and spring boot, and manage java object in SQL database with JPA. React.js is for writing front-end, and whenever we need to interact with the database, we use axios to call REST API then JPA will handle user API call.