MealMatch system

group name: nubility

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1. Background
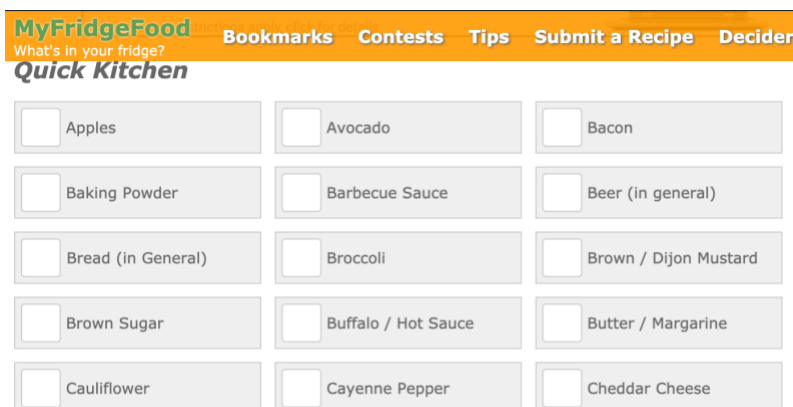
1.1 Problems being solved

Our product is built for individual clients inexperienced with cooking especially during the pandemic. The system will recommend a set of recipes based on the input ingredients. Some users with cooking experience called recipe contributors may also upload their own recipes to our website so that everyone are able to access. Each recipe includes a list of ingredients which belong to different categories. The system also allow recipe contributors to tag their recipes with a meal type.

1.2 Clear evidence of research as to existing work or systems in the same problem domain and what their drawbacks are.

Existing sample 1

myfridgefood.com

This website is to stimulate a bridge for user to use the quick kitchen function to choose from a set of simple ingredients and get the recipe users might need.

Drawbacks:

Lack of pictures of ingredients provided so users may find themselves hard to identify different ingredients. Ingredients are not grouped by categories.

Existing sample 2

foodwise.com.au/recipe-room/our-recipe-finder/

This recipe website enable user to search and view lists of recipes through selecting various ingredients. Users can add preferred ingredients to "My Ingredients" to search the related recipes. Users could also manage the added ingredients. This website also provides education tools for the recipe explorer.
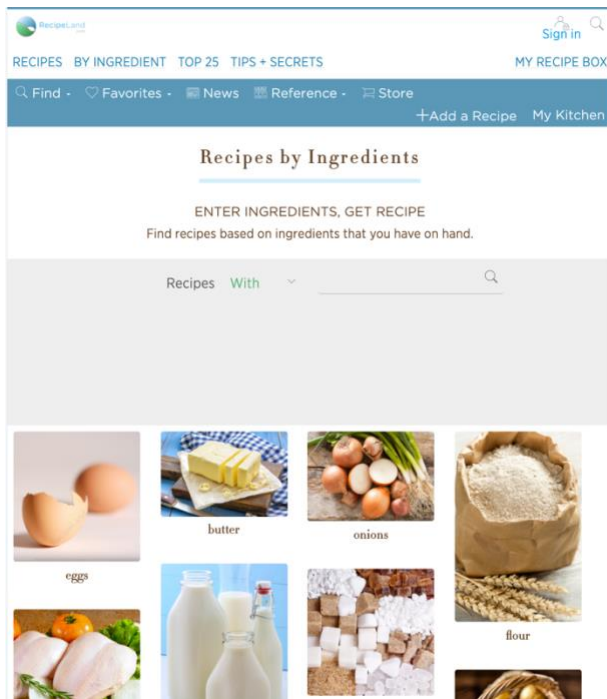

Drawbacks:

1. This website outline all ingredients in a single page, which makes explorer confused when searching and selecting ingredients.

2. This website did not provide images along with the ingredients, which makes explorer confused about the unfamiliar ingredients probably.

Existing sample 3

recipeland.com/recipes/by_ingredient

This website is a big recipe database that user can search for recipes and browse Health and nutrition news. The 'search by ingredient' subpage is similar to our project.
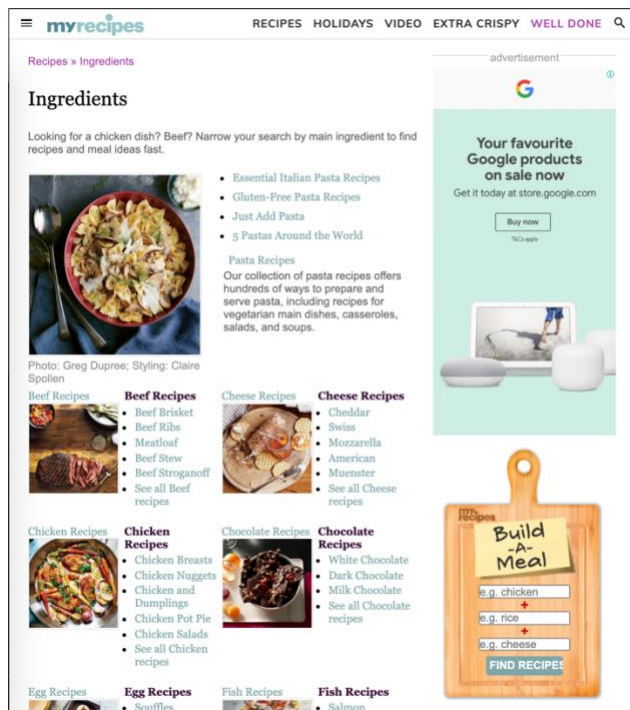
Drawbacks:

1. Users can only search for recipes by one ingredient

2. The searching engine have logical problem (i.e., click 'egg', the first result is with keyword 'eggplant')

3. Provide too many ingredient buttons in the same page

4. User are not provided filter to search recipes with tag(e.g., Low Carb, Sugar-Free)

5. User are not provided filter to search recipes with meals(e.g., breakfast, lunch)

Existing sample 4

myrecipes.com/ingredients

MyRecipe is a website that enables user to find various recipes by different ways. Users can find various recipes of different types of food such as baking food, healthy food, BBQ and global food. This website also provides the functionality that enable user to find recipes by ingredients which is very similar to our project.

Drawbacks:

1. Users can only enter three ingredients in the "build a meal" section which may limit users' choices and variety of meals. 2. The "build a meal" section is searched by entering keywords instead of choosing from ingredients which may cause error when user entering wrong spelling and may enhances the difficulty of using the software.

3. Some advertisements will displayed when using the website which may affects users' utility.

2. User stories

Epic stories:

1. **Customer can initialize the personal account.**

2. **Recipe explorer can customize the preferred recipe.**

3. **Recipe contributor can set up and manage the recipe.**

2.1 Customer can initialize the personal account

This epic involves adding functionality to the system to let customers register, set up and login the personal account – all to further enable them to view the system.

As a new customer, I can register a new account with a username and a password.

Customer can click "register" to set up the new personal account with unique username and password.

If the preferred username already been used, an error message is displayed to the customer: "Username already been used".

Customer can click "register" to finish the register process and forward to login page.

As a customer, I can login with my username and credentials.

Customer can input username and password to login the account.

If the input username and password fail to match, an error message is displayed to the customer: "Username or password is not correct, please check again."

Customer can click "login" to login the personal account and forward to homepage.

As a customer, I can view the homepage with different categories and functions.

This epic should take 20% of the allocated time for the project.

2.2 Recipe explorer can customize the preferred recipe

This epic involves adding functionality to the system to let recipe explorer search, view and select the preferred ingredients and view the details of preferred recipe, as well as manage the running list.

As a recipe explorer, I can view different categories of ingredients so that I can find the ingredient I want easily.

System could display different categories of ingredients available to select.

Explorer could click the preferred categories and forward to the related ingredients.

As a recipe explorer, I can choose some ingredients from the category list so that I can find some recipes with those ingredients.

System could display the list of ingredients of the chosen categories.

Explorer can click the preferred ingredients to add them to the running list.

As a recipe explorer, I can also type in ingredients and search the recipes associated with those ingredients.

System could display the recipes which related to the ingredients typed in.

As a recipe explorer, I can view the running list of ingredients so that I can check the ingredients I have chosen.

Explorer could click the "list" to view the running list of chosen ingredients.

System would display the running list shown the chosen ingredients.

As a recipe explorer, I can view the suggested ingredients base on ingredients in my running list so that I could add new ingredients to my running list easily.

Explorer could select the suggested ingredients based on the chosen ingredients to add them to running list.

System would display the suggested ingredients.

As a recipe explorer, I can remove the ingredient from the running list if an ingredient is inadvertently picked.

Explorer could click button "Remove" to delete the inadvertently picked ingredients

The removed ingredients would disappear from the running list.

As a recipe explorer, I can select a recipe from the searching results so that I can view its full details.

Explorer could click the preferred recipe from the searching results and forward to the full details page.

System would display the page with full details of the chosen recipe.

This epic should take 50% of the allocated time for the project.

2.3 Recipe contributor can set up and manage the recipe

This epic involves adding functionality to the system to let recipe contributor create and manage the recipes - all to further enable recipe explorer to view these recipes.

As a recipe contributor, I can add new recipes to the list of my contributed recipes so that the whole user community can view my recipes.

System could display different categories of ingredients available to select.

Contributor could create new recipes and click "add" to add them to the list of contributed recipes.

Explorer could search and view the new added recipes from the searching page.

As a recipe contributor, I can see a list of my contributed recipes, so that I can view details of each recipe I contributed.

Contributor could click "my contributed list" to view the full list of contributed recipes details.

System would display the list of all contributed recipes.

Contributor could click the specific recipe to view the details.

As a recipe contributor, I can remove a recipe from the list of my contributed recipes.

Contributor could click button "Remove" to delete the recipe from the list which previous added.

The removed recipes would disappear from the list.

As a recipe contributor, I can see the most frequently input set of ingredients for which there was no recipe match so that I can create new recipe that users needed.

Contributor could click the button "ingredients not matched" to view the set of ingredients which have not been matched to any recipe.

System would display the ingredients not matched yet.

Contributor could create the related recipe for those ingredients.

As a recipe contributor, I can view the category for each ingredient based on categories previously associated on other recipes so that I can choose a suggested category associated with the ingredient.

Contributor could view the suggested categories for each ingredient when adding them to the new recipe.

System would display the corresponding categories of the input ingredient based on categories associated on other existed recipes.

Contributor could click the most suitable category and match it to the input ingredient.

This epic should take 30% of the allocated time for the project.

2.4 Screenshots of Sprints:

Time planned: week3 – week4

Time planned: week5-week6

Time planned: week7-week8

Time planned: week9-week10

3 System Architecture and technical description:

3.1Description of the technologies being used:

For the **back end** of our software we will be using technology of Flask/Flask-RESTplus for the reason that all of our group members are familiar with flask. The language we are going to implement is python. Furthermore, flask is fast prototyping and we can connect front-end to database by that.

For the **database**, we will be using SQLite, for the same reason that we are mostly familiar with using that.

As for the **front-end**, we will be choosing HTML + CSS + javascript. And for CSS we will be using CSS Bootrap

For the **API document**, we will be using swagger.

For the **interface** design: Our interface will be built on React. React will be our tool for UI design. As React is a very popular too for design and it is easy to use. from there, we as designers can easily export your design into a clickable prototype.

3.2 Architecture design
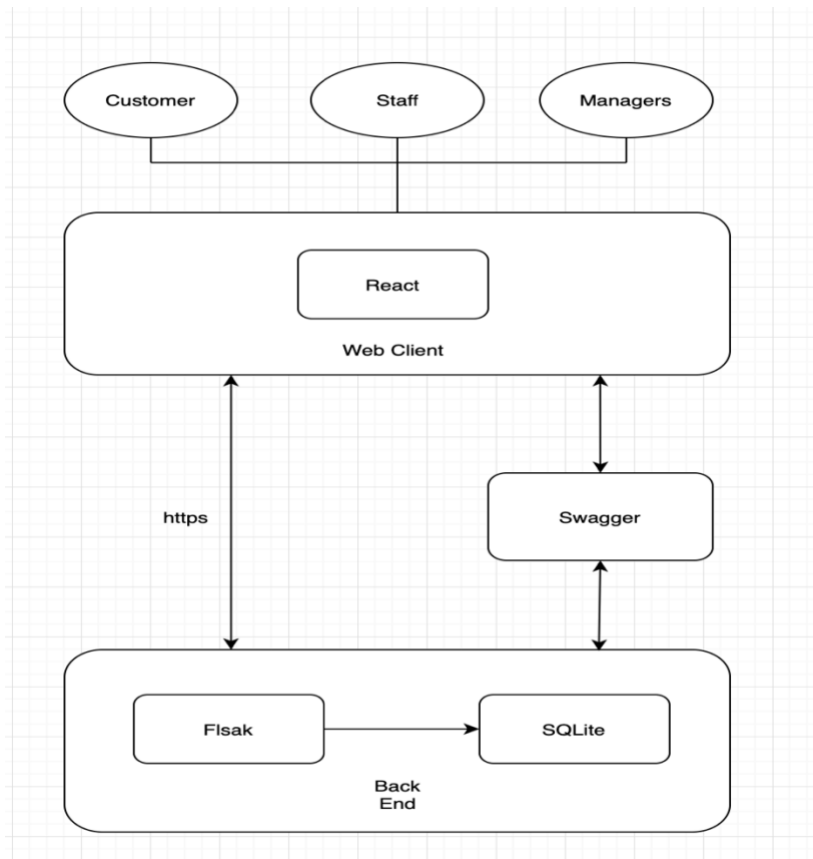
3.3 Interface and flow diagrams

Epic1: Login and Register

User are initially on the homepage, where they can click login to login. What's more, they can also register an account.

Register
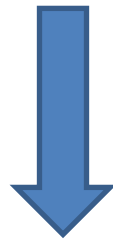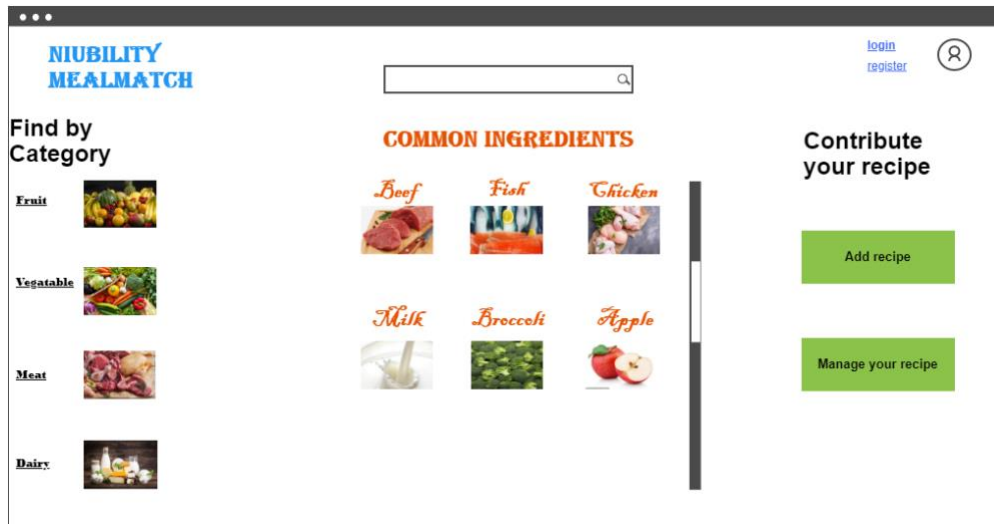
Click on "register"

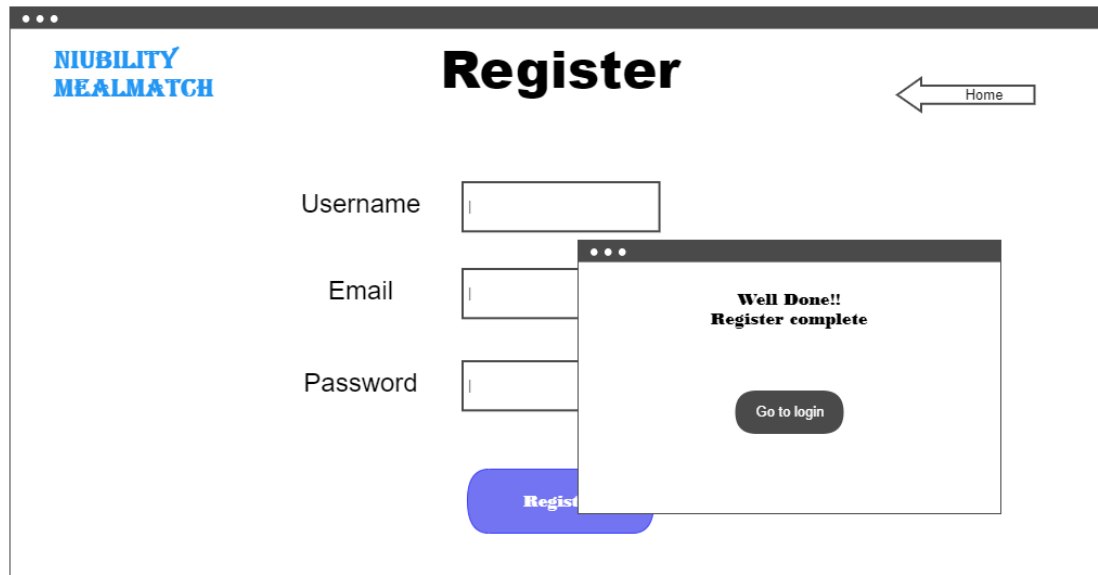Enter details and Click Register

If the username already exists:
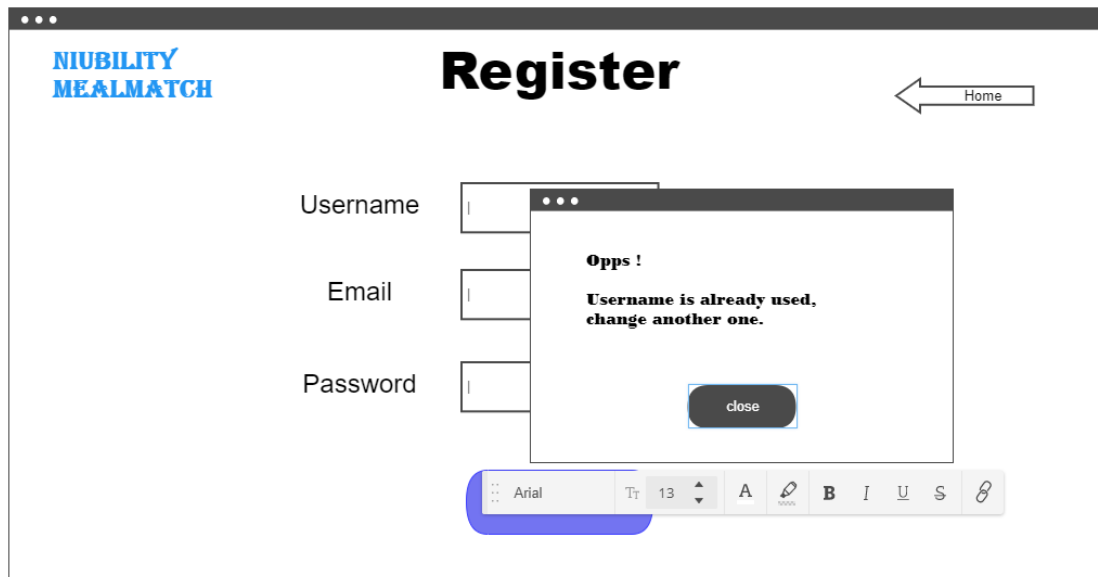
No error, complete register:

Click "login" in home page or click "Go to login" after register.

Login:

Wrong password:

Successfully login:

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Login

Home

Email

Password

Login successfully!!

Home Page

Login

NIUBILITY MEALMATCH

logout

Find by Category

COMMON INGREDIENTS

Contribute your recipe

Fruit

Vegatable

List

Meat

Dairy

Beef

Fish

Chicken

Milk

Broccoli

Apple

Manage your recipe
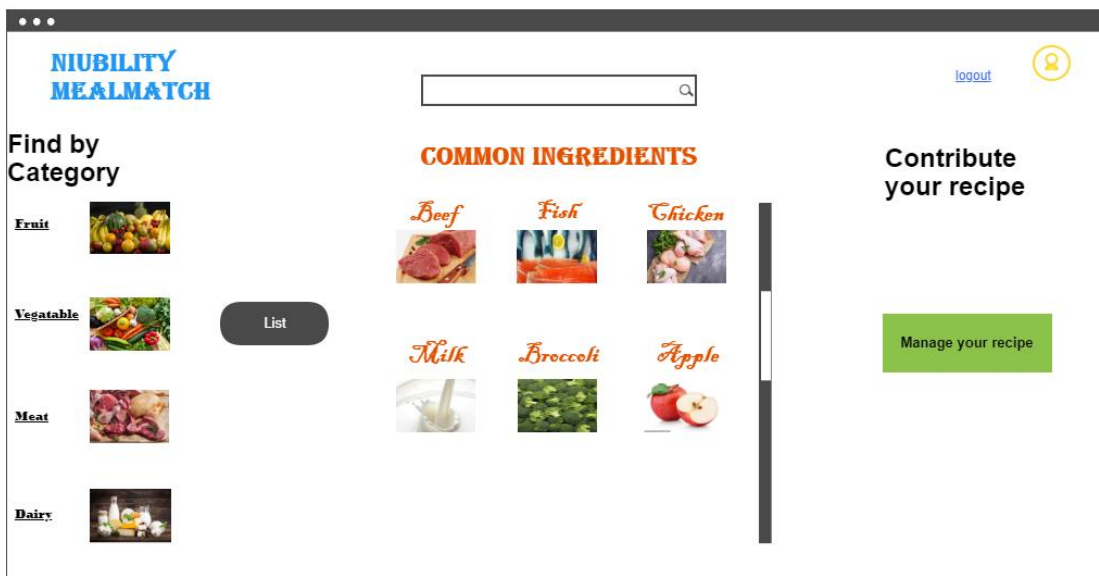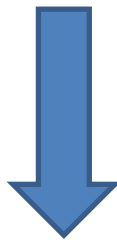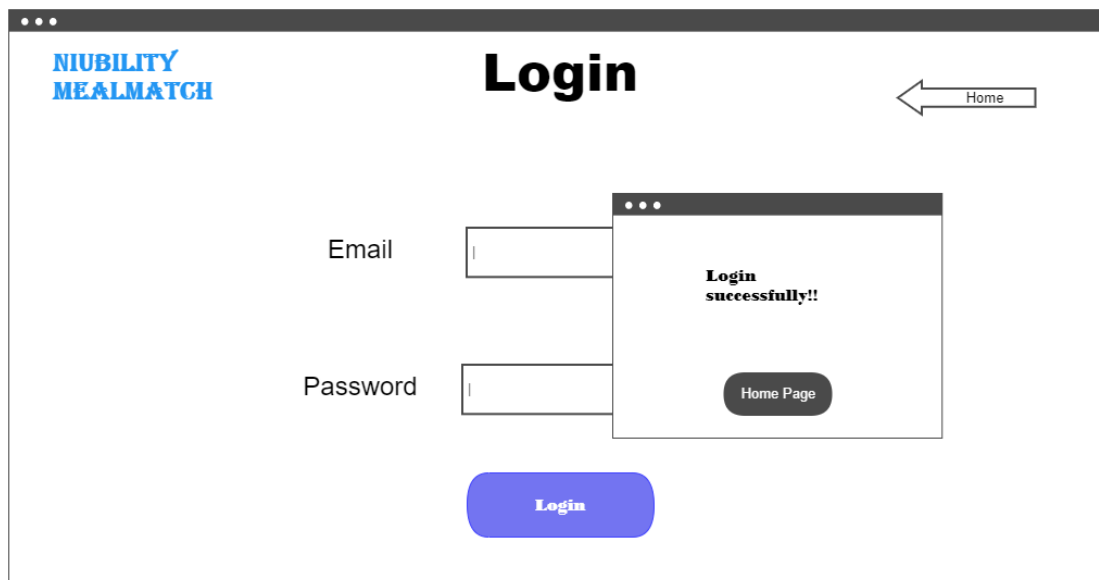
Epic 2: Recipe explorer

A recipe explorer can choose ingredients from the common ingredients or in find by ca tegory section. He can also find recipes by searching one ingredient. By clicking the reci pe, the explorer can view details of the list.
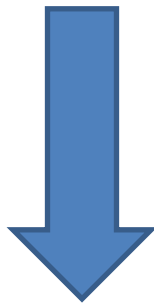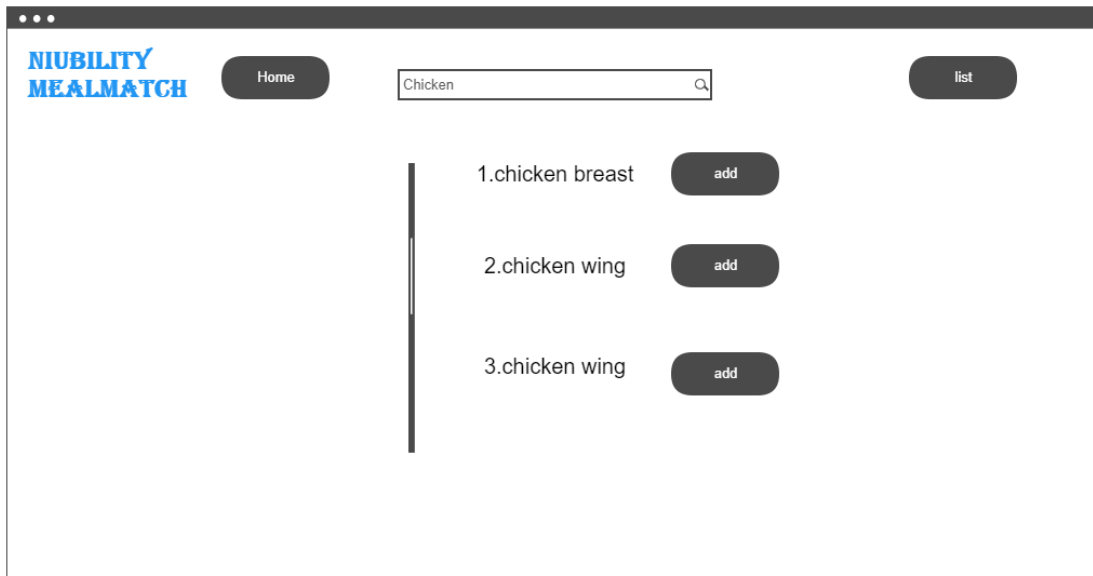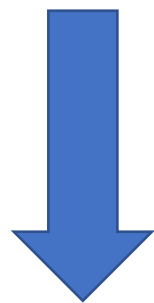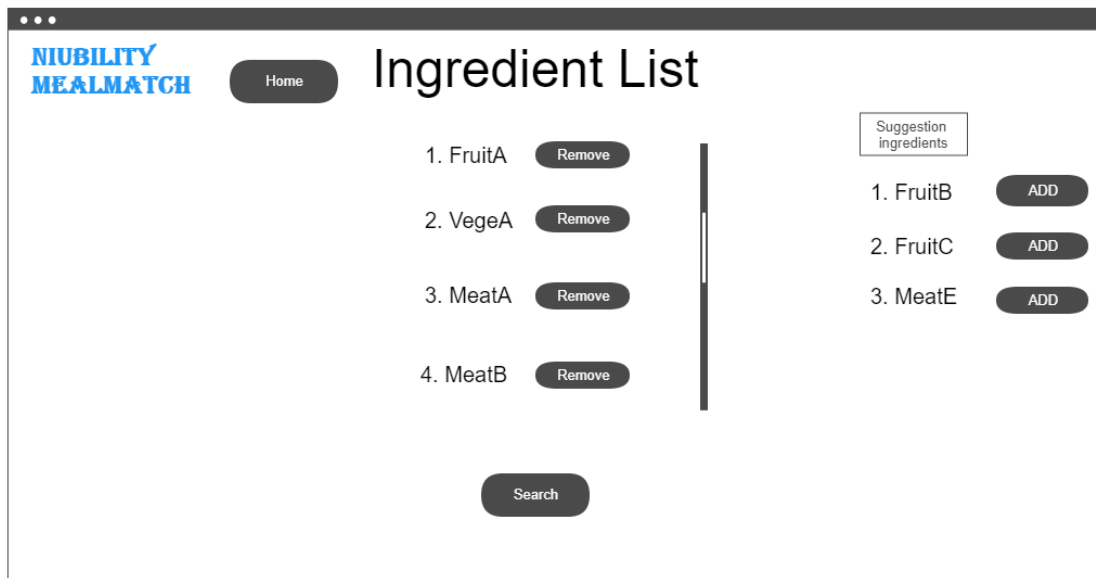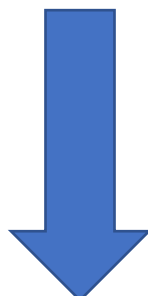
Choose a category:
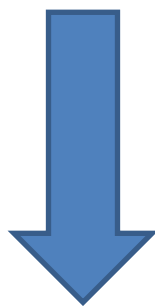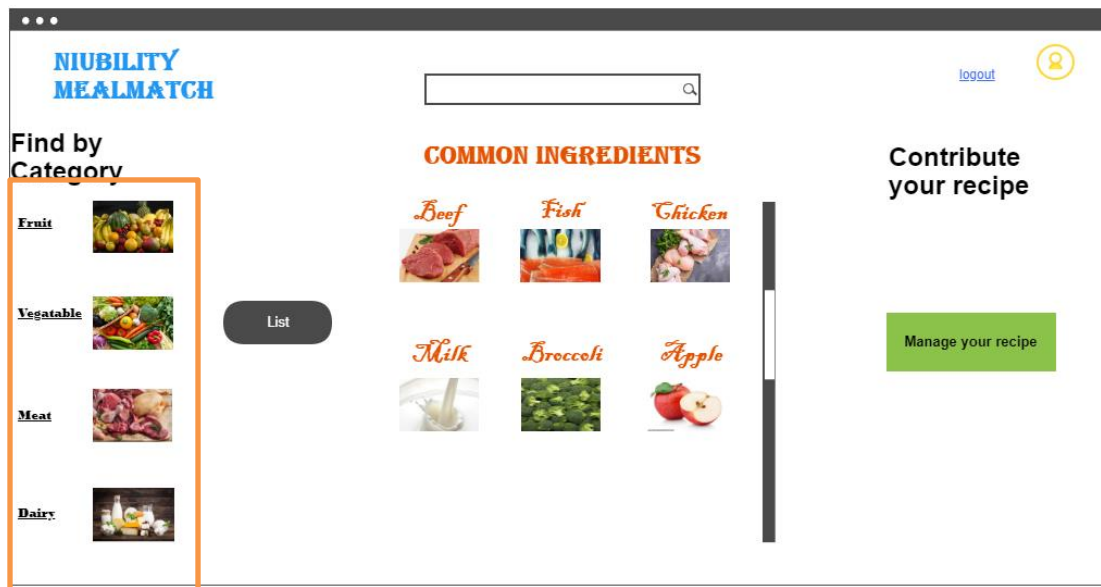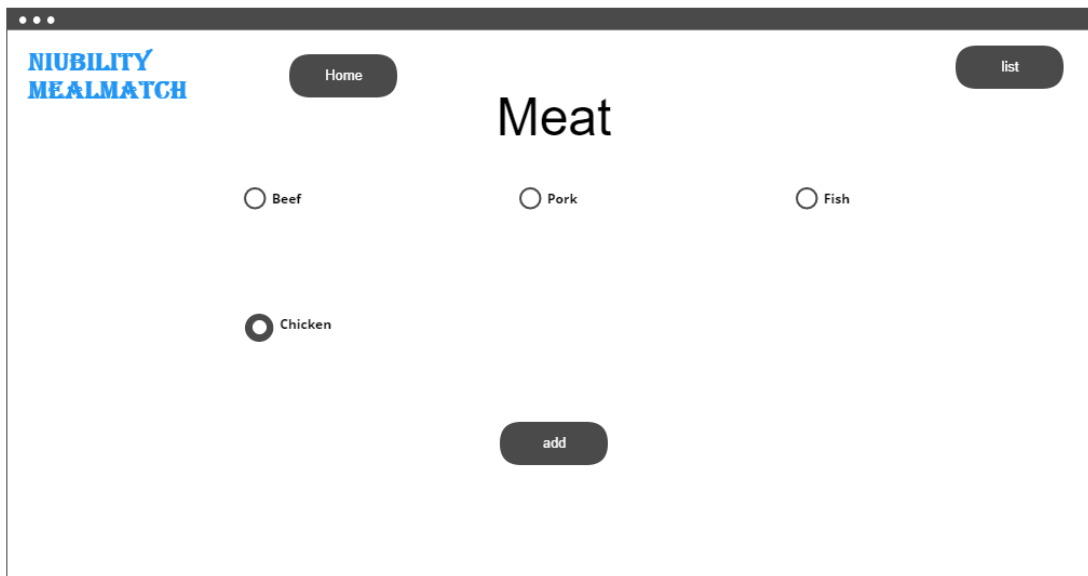
Search ingredients：
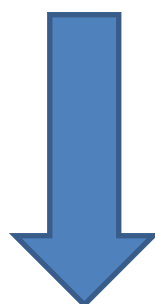
Search one ingredients

Click on "list" to view my running list, choose from suggest, and able to remove ingredients on the list

NIUBILITY MEALMATCH

Home

Ingredient List

1. FruitA Remove

2. VegeA Remove

3. MeatA Remove

4. MeatB Remove

Suggestion ingredients

1. FruitB ADD

2. FruitC ADD

3. MeatE ADD

Search

Click on "Search to find result"

NIUBILITY MEALMATCH
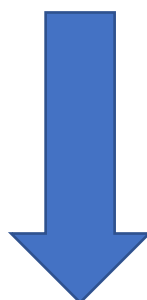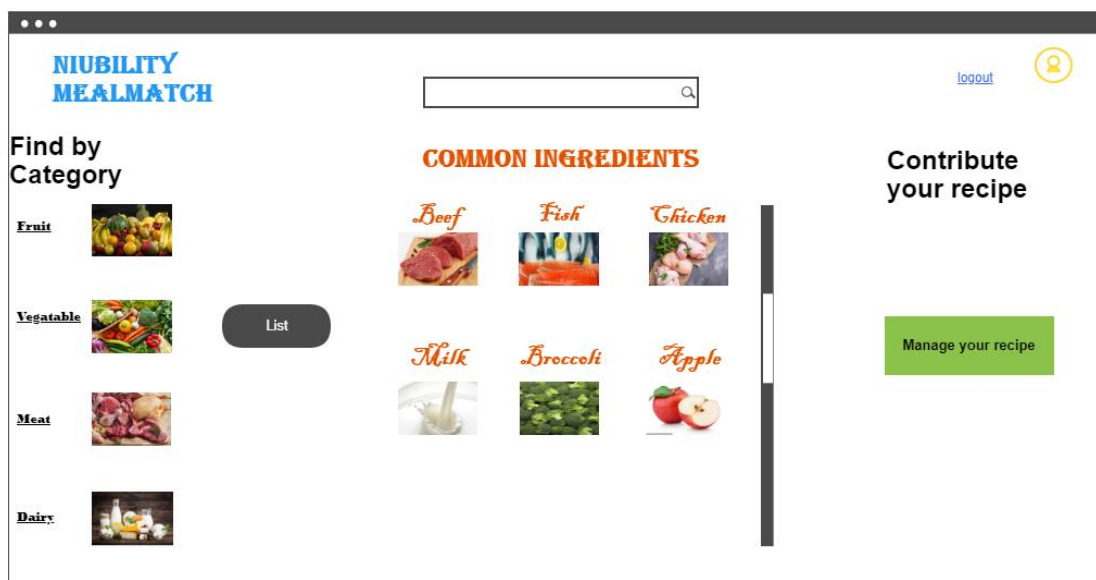
Home

Recipes

back

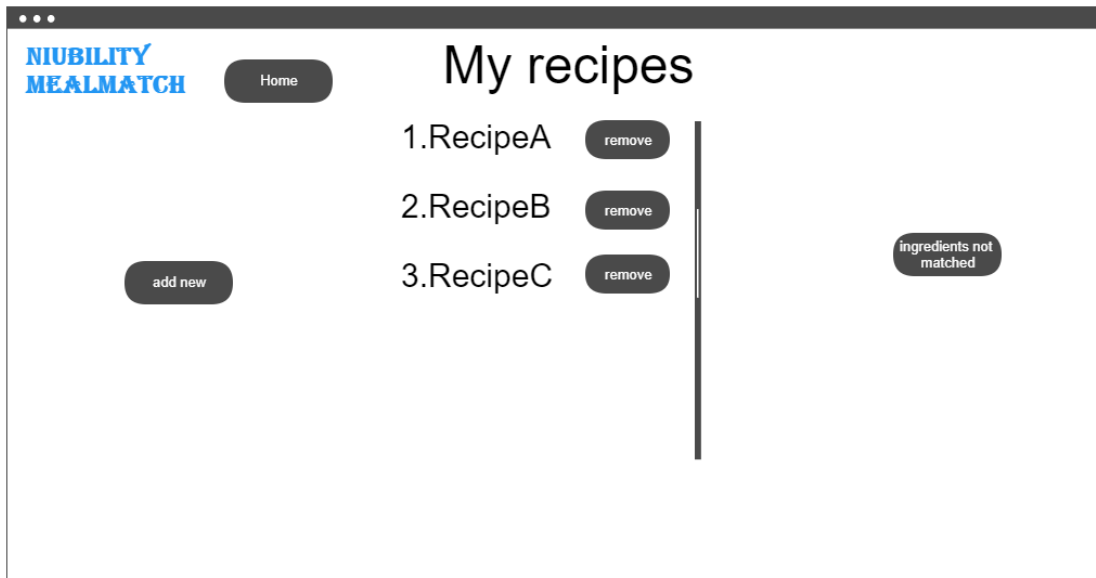1.RecipeA

2.RecipeB

Click one recipe to view details
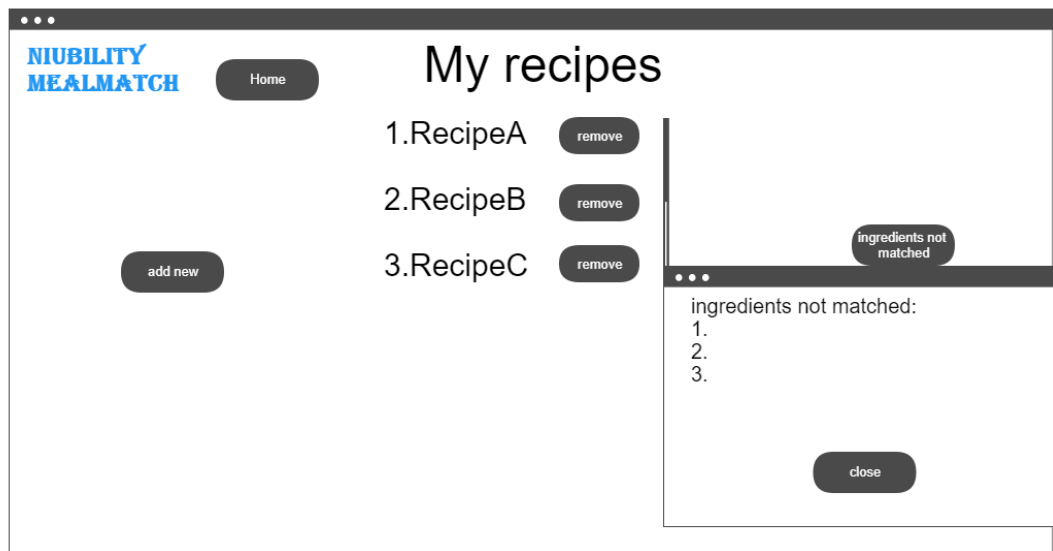
Epic3: Recipe contributor

A recipe contributor can view, add, and remove own contributed recipe.

Click on manage your recipe to view, add and remove recipes

Contributor could click the button "ingredients not matched" to view the set of ingredients which have not been matched to any recipe:

Contributor can add recipe by clicking add recipes and able to see category for each ingredient:

NIUBILITY MEALMATCH

Home

Add recipe

back

1.ingredients:

Save

A 500g `Fruit`

B 200g `Meat`

ADD

C 300g `Vege`

2.Steps:
  1)
  2)
  3)

3.upload video:

choose file