

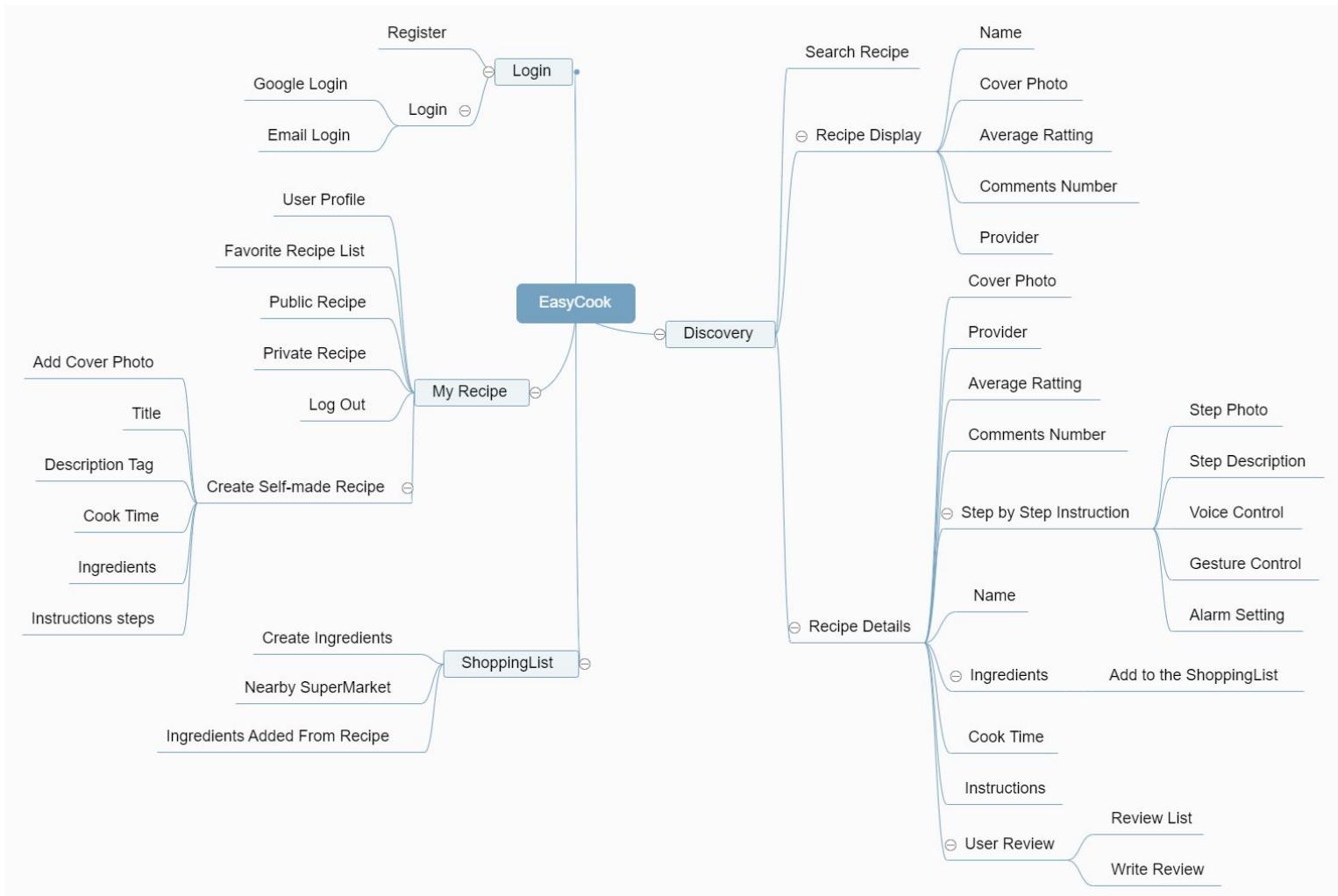
# EasyCook

Touch Free Group: Rui Chen; Justin Lee; Zhiyi Yang; Simin Zhai; Mengxi Wang

## 1. Project Description

EasyCook is a recipe app which aims at providing the easiest cooking experience for our users. It can mainly divided into three parts, Discovery, Shopping List and My Recipes. User could search for any recipes they want and use the shopping list as a reminder to buy missing ingredients. Most importantly, this recipe app provides step-by-step guide with voice control and gesture control which solves the problem of the user cooking with dirty hands and not wanting to dirty their screen. It can also serve as a cook social platform to let users share self-made recipes with the public and make comments on recipes to let other chefs know their thoughts on the recipe.

## 2. App Structure



### 3. Technologies

#### 3.1. Continuous Speech Recognition

- Implementation: Voice control during step-by-step guide
- Library: com.github.sachinvarma:Speech-Recognizer:0.0.1

#### 3.2. New Handwave

- Implementation: Gesture control during step-by-step guide
- Library: Newhandwave by Leean Raphaely + OpenCV3.1.0

#### 3.3. Spoonacular Recipe Api

- Implementation: Search recipes using natural language queries; Ingredient list with name, amount and unit; Break down instructions for step-by-step guide; Cook time

#### 3.4. Firebase

##### 3.4.1. Realtime Database

- User-Made Recipe info
  - Recipe name; Maker email; Recipe descriptors
- Recipe review stats
  - Number of reviewers; Average review rating
  - Have to store review information specifically for Spoonacular recipes

##### 3.4.2. Firebase Functions

- Finds recipe information from the Realtime Database for recipes that match the user's search query
- Does computations server-side to reduce the computations needed by the user as well as number of files that need to be transferred

##### 3.4.3. Cloud Storage

- User profile
  - User Info: Username ; Email ; Password ; Portrait Photo
  - User Activities: Favorite Recipes ; Comments ; Published Self-made Recipes ; Shopping List
- Recipes
  - Recipe Info: Recipe name; Creator name; Creator profile image; Recipe image; Rating; Number of reviewers; Cooking time; Ingredients; Instructions; Description tags
- Reviews
  - Review Info: Reviewer username; Reviewer email; Reviewer profile image; Review text; Rating of the recipe; Emails of users who've liked the review; Timestamp
- Images
  - Recipe cover images; Recipe step images; User profile images;

#### 3.5. Google Places Api

- Implementation : Obtain Current Location; Locating Nearby Supermarkets (Name, Street); Navigate With Google Map App

#### 3.6. Google Sign In Authentication

- Implementation: Google Account Login

### 4. Feature Specifications

#### 4.1. User Guide

In this app, we provide the welcome screen and splashing screen for introducing our app's three themes: Discovery, Shopping List and My Recipe.

## 4.2. User Authentication

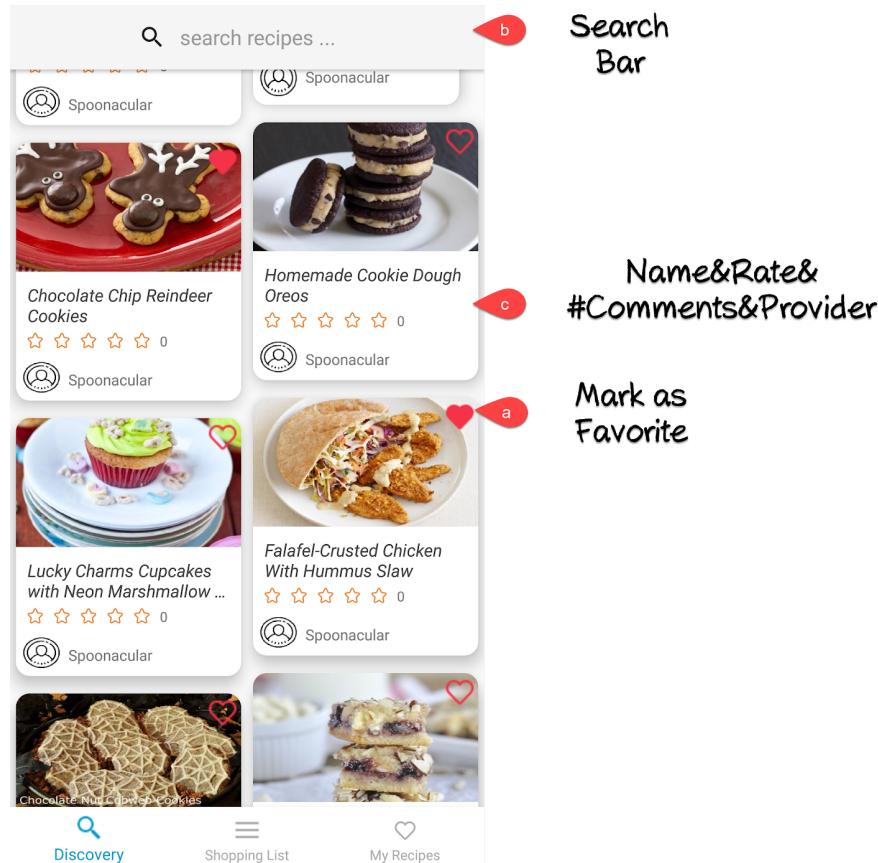
For the users who use our app for the first time, we provide two ways to login into our app. First, users could use Google Account to login without register. Second, users could register with an username, email, and password to obtain an account, then login with the combination of email and password.

- Registration validation:
  - nickname should not be null
  - email should be in the proper format
  - The password enter for twice must match
  - The length of password should not be less than 6 characters

## 4.3. Discovery

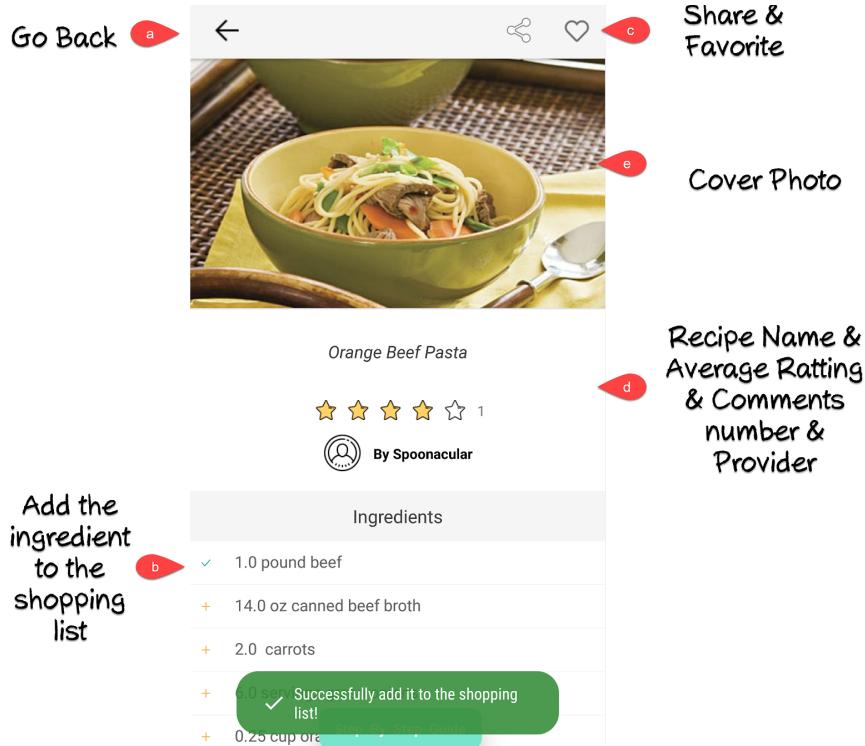
Find new recipes to cook.

### 4.3.1. Recipe Search & Result Display

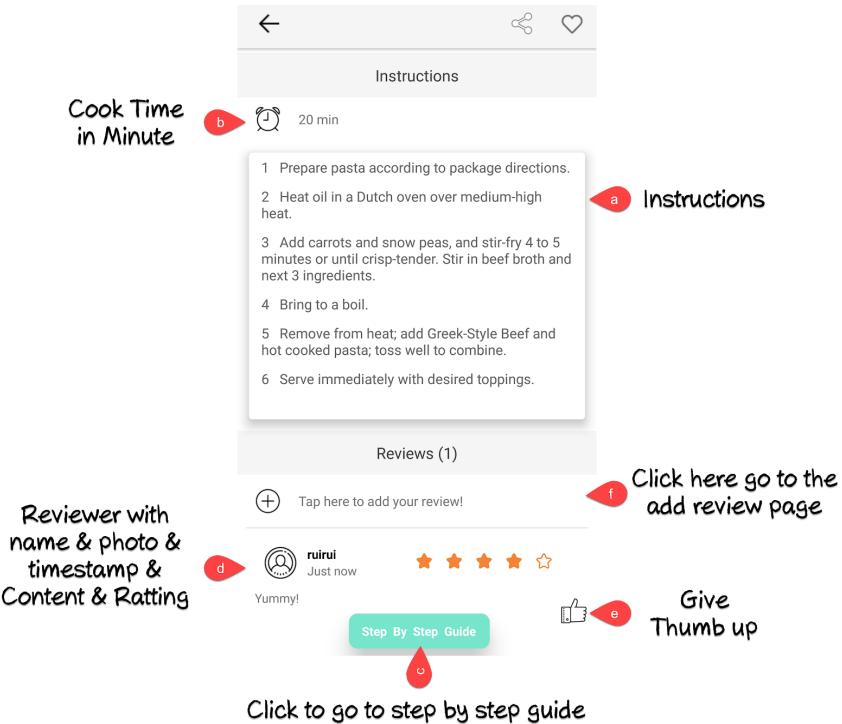


- Search with keywords like "Soup" or natural language queries like "Low Fat Meat Cupcakes"
- Display the search result with recipe cover photo, user comments number, average rating, and the recipe providers. The providers would be spoonacular (api) or app users.
- Mark the recipe as favorite or undo it.

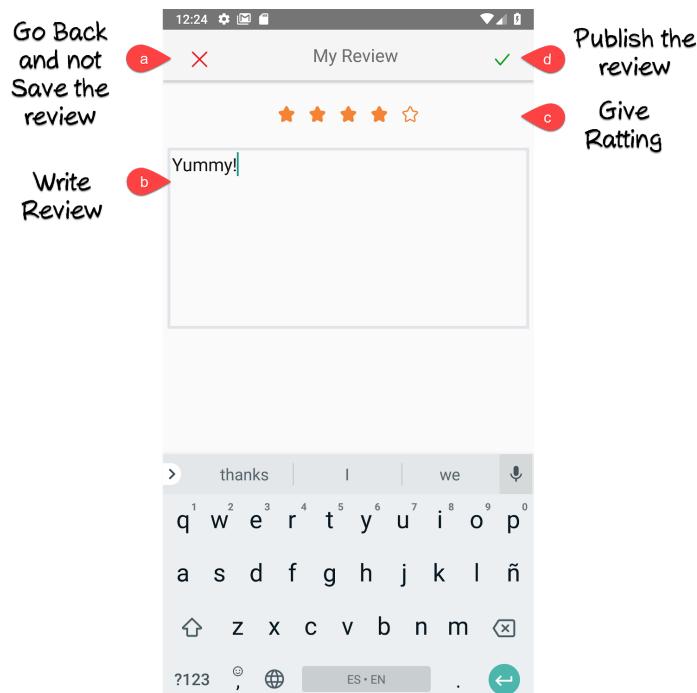
### 4.3.2. Recipe Details



- Display all the details of the recipe when user click in. Like cover photo, title, average rating, comments number, recipe provider, ingredients, instructions, cook time and the review list of this recipe.
- Click the “+” button in ingredients and add that ingredient to the shopping list
- Mark the recipe as favorite or undo it
- Share the recipe instructions to any social media app like gmail or slack, etc.



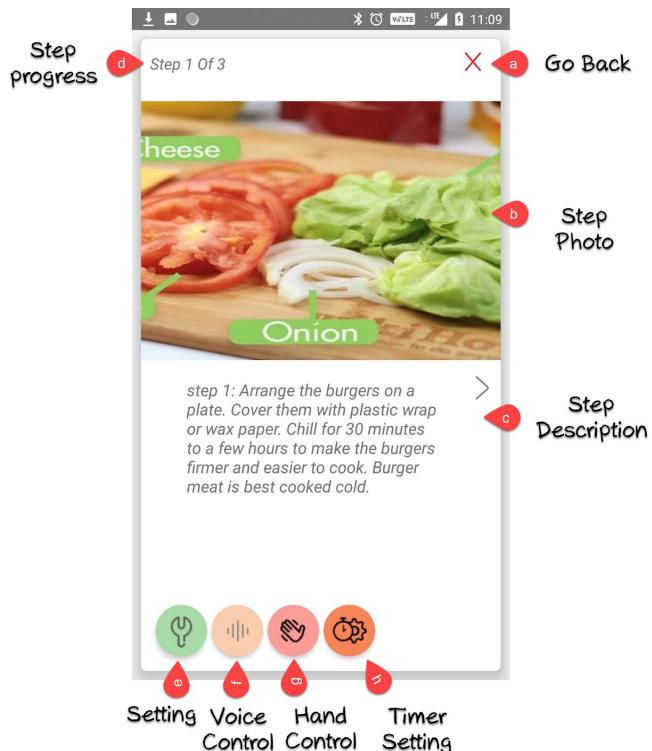
- See other users reviews and click the “thumb up” to express approval
- Click the floating action button in the bottom of recipe page to start step by step guide



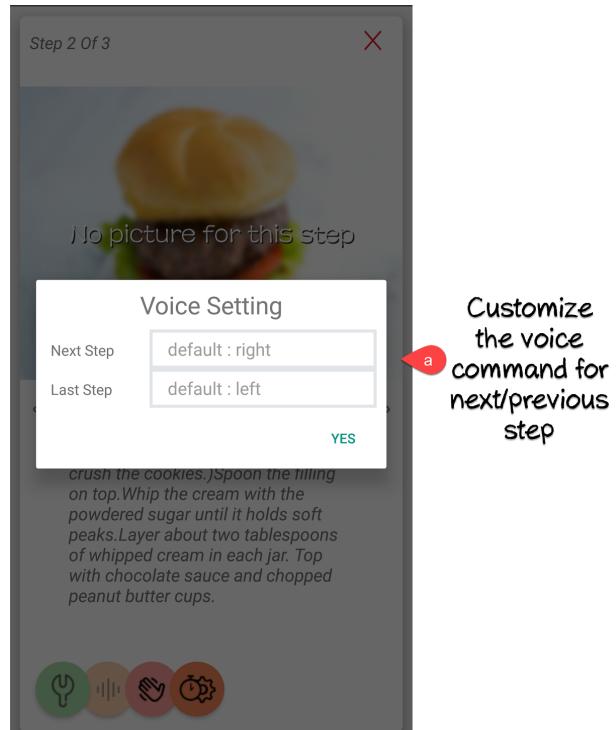
- Give your own review and rate the recipe
- Click check button to publish it, click go back will not save the review.

### 4.3.3. Step by Step Guide

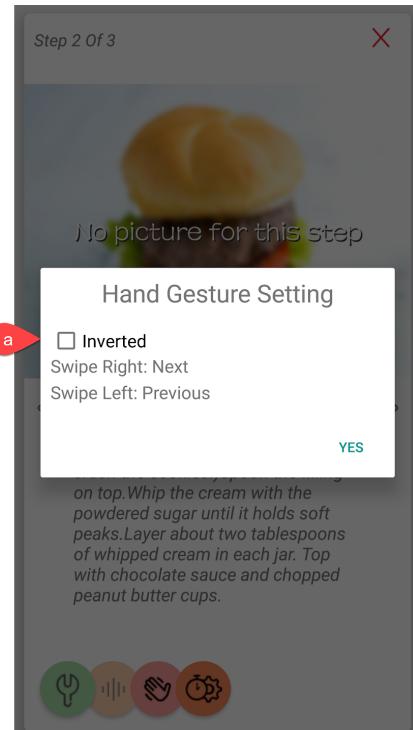
We aimed to provide the touch-free experience when in the process of guiding.



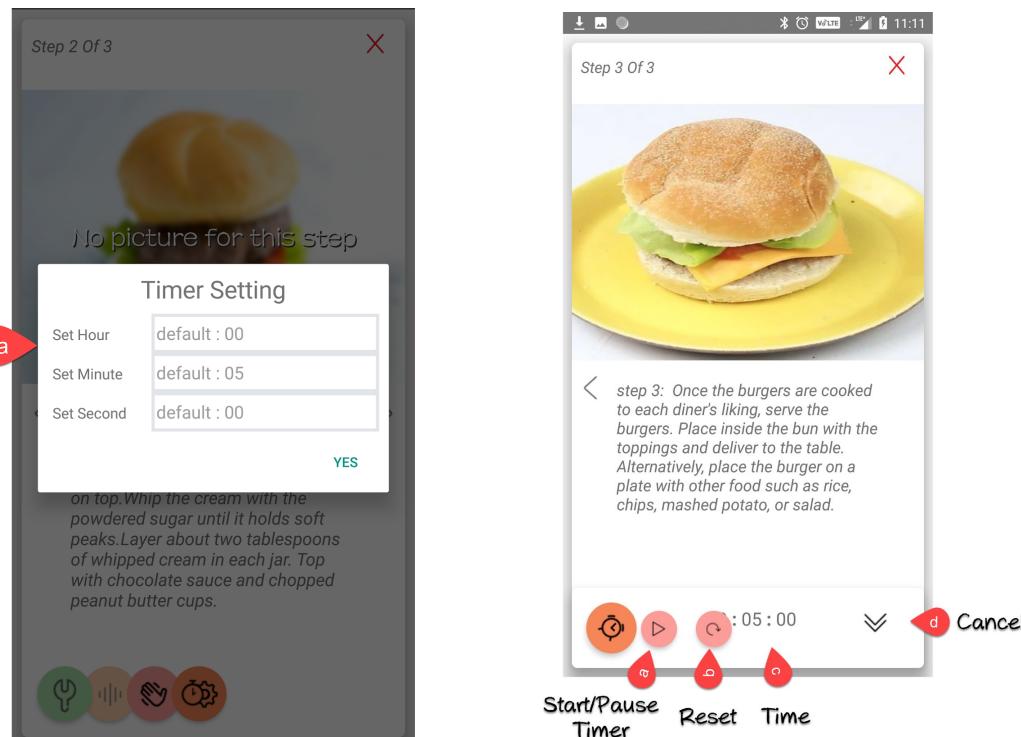
- In each step, display the step photo and description.
- Click the next/previous button to move steps.
- Clicking the setting floating action button in the bottom of corner left to enable the following functions



- Clicking the “voice” button to enable the voice control or disable it
  - As default, users could use the voice command of “Right” to move to the next step or use “Left” to back to the previous step
  - Customized the voice command in the voice setting page for next/previous step and click “Yes” to save it.



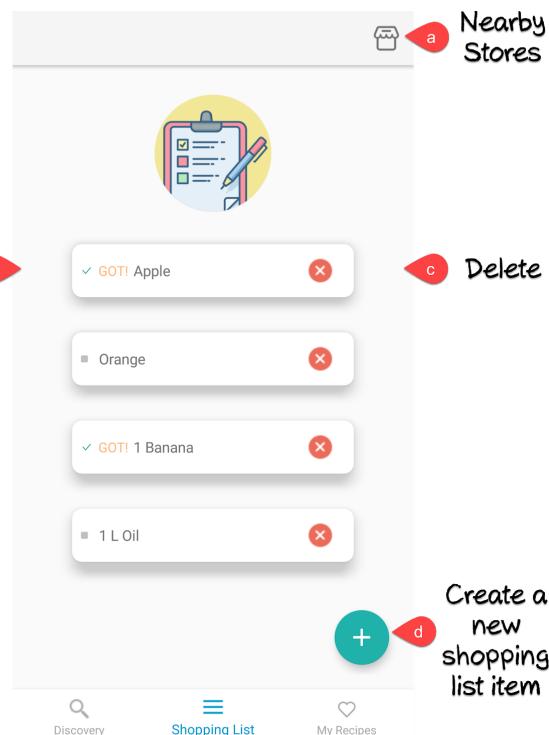
- Clicking the “hand” button to enable the hand control or disable it
  - As default, users could use the gesture of swiping right to move forward and swiping left to move back
  - In the hand gesture setting page, click “inverted” to change the hand wave direction for moving to next/previous step.



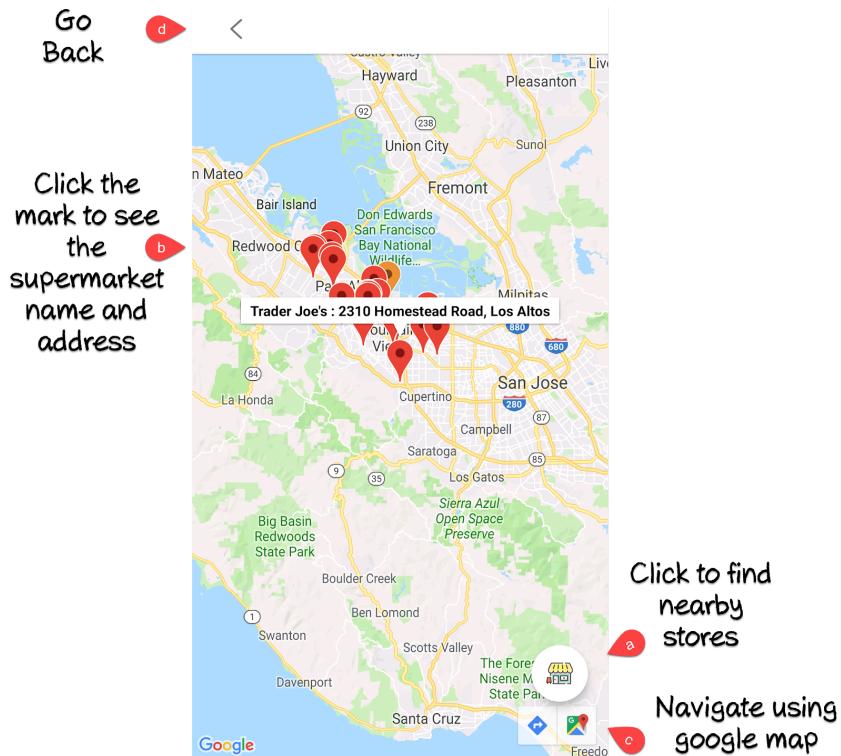
- Clicking the “clock setting” button to enable the alarm
  - Pick one field of “hour” “Minute” “second” in the time setting and click yes to start timing, the default setting is 5 min.
  - Swipe down the timer to terminate
  - The timer could suspend and reset.

#### 4.4. Shopping List

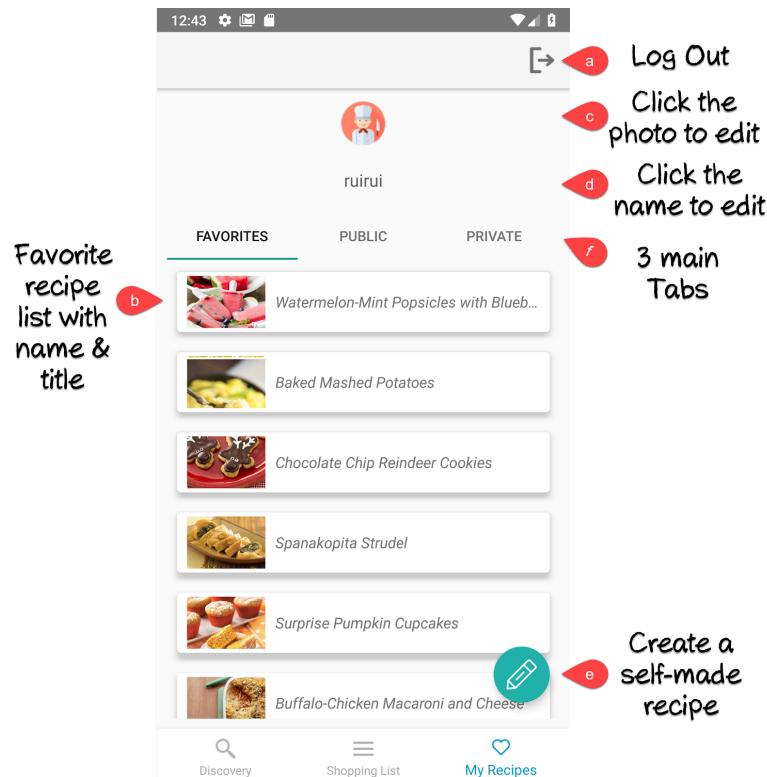
It works as a reminder for the missing ingredients but with powerful functions.



- Display the ingredients added from the recipe page.
- Click the floating action button to create the ingredients and add to the shopping list
- Click checkbox of ingredients to mark as “GOT!” if you bought that
- Click the delete button to remove them.
- Click the store button in the top of right corner to prompt to the map page



- Click the floating action button to locate your current location and find nearby supermarkets with name and street address.
- Select a store spot and click the google map symbol in the bottom of right corner to open up the google map app on your phone to navigate.



## 4.5. My Recipes

### 4.5.1. User Profile

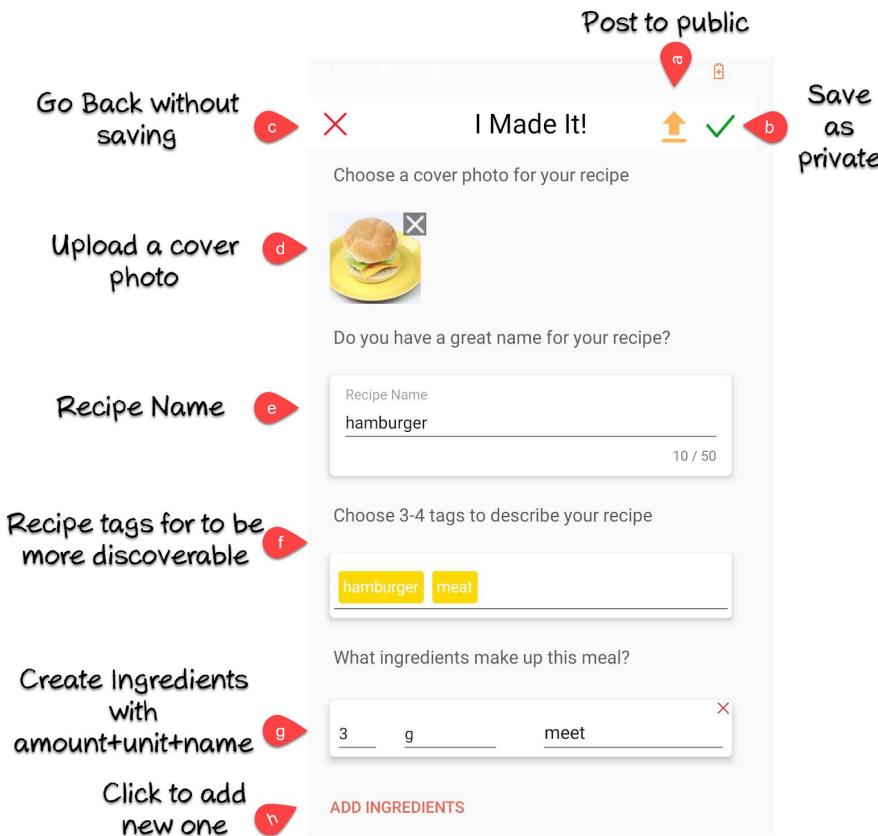
- Click user photo to upload a new portrait photo
- Click user name to edit the nickname
- Click the top right button to log out

### 4.5.2. My Recipes

- In each tabs, respectively display saved favorite recipes, public recipes and private recipes
  - Public recipes means after user creating the recipe, he/she shares that to the public and you could be able to search that recipe in the discovery page.
  - Private recipes means this recipe is only visible to the user himself/herself
- Click the floating action button in the bottom of corner right to create your self-made recipes

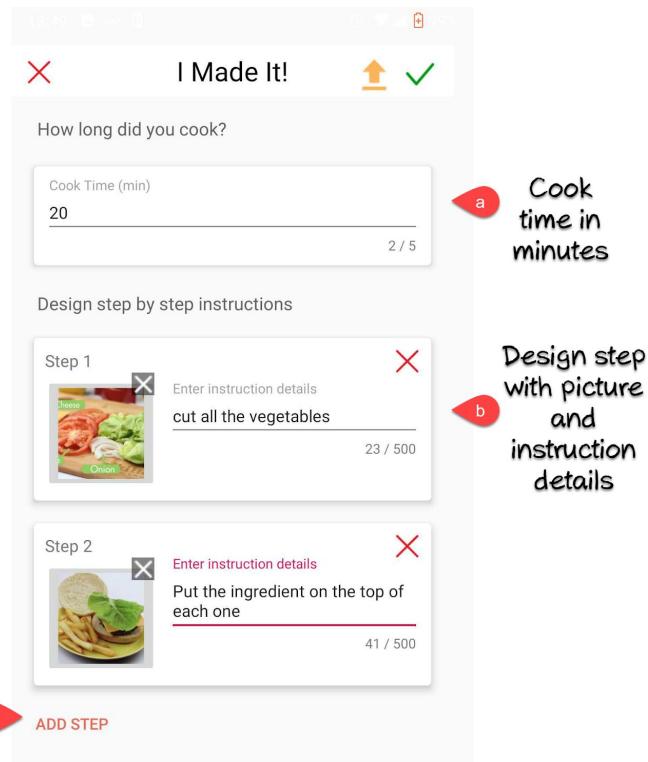
### 4.5.3. Create Self-made recipe

In this part, users would be able to create the self-made recipe with detailed information.

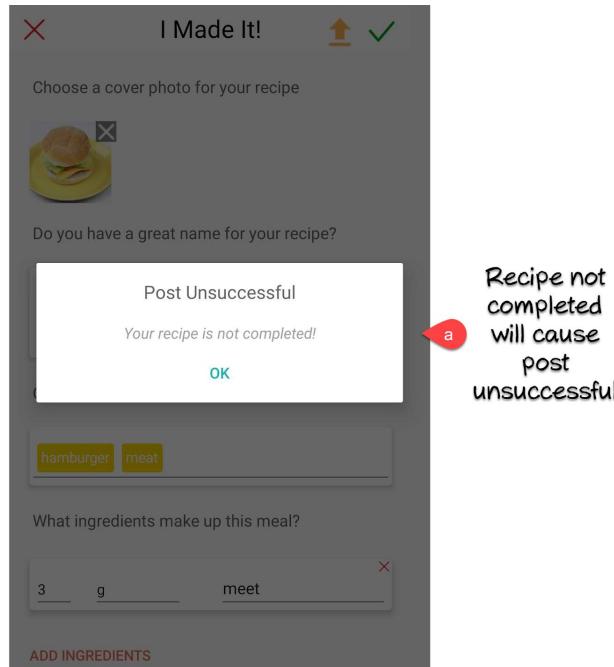


- Choose the cover photo for the recipe, user could upload the photo in the album or take a picture and crop it to fit.
- Customize the recipe title

- Create some description tags for the recipe to make it more discoverable when searching.
- Add ingredients with the combination of amount, unit and name. Click “Add Ingredients” to create a new one or click the delete button to remove that ingredient.
- Click the yellow upload button to share to public or click the green check button to save that as private recipe.



- Enter the cook time in minutes.
- Add instructions for each step, including photo and description. Click “Add Step” to create a new step or click the delete button to remove that.
- After you finish the recipe and post to public. You could be able to search this recipe with tags or title in the discovery page.



- Error Check: if the user upload the recipe with a incomplete recipe, such as the title is empty. It will display the warning and post unsuccessfully

## 5. Future Plan

In the future, we plan to continue add more features to this app. It would benefit from adding more hands-free functions using our voice/gesture control to give the user more control while their hands are dirty. We may also support uploading short videos for each step of the instructions, which will help clarify each step for user to follow our step-by-step guide. Due to database storage limits, we can only upload photos for now. Another useful function would be to add a chat room feature for users to get in touch with other chefs to get more in depth hints and tips on how to improve their recipes. The main goal is still be making our app more user-friendly and useful.