Kitchen Magician

SW Engineering CSC648/848

FALL 2020

Team 01

Kevin Wei (Team Lead) : kwei3@mail.sfsu.edu

Jeff Cheng (Frontend Lead)

Allen Sun (Backend Lead)

Paul Asu (Github Master)

Nicole Pang (M2 Editor)

Kevin Ortiz (Developer)

Milestone 2

History Table

Version	Date
M2V1	11/01/2020
M2V2	11/18/2020

Table of Contents

Section 1: Data Definitions V2 2

Section 2: Functional Requirements V2 6

Section 3: UI Mockups and Storyboards 10

Section 4: High Level Database Architecture and Organization 31

Section 5: High Level APIs and Main Algorithms 37

Section 6: High Level UML Diagrams 38

Section 7: High Level Application Network and Deployment Diagrams 39

Section 8: Identify Actual Key Risks For Your Project At This Time 41

Section 9: Project Management 42

Section 10: Detailed List of Contributions 43

Section 1: Data Definitions V2

1. General User: Does not have to log in. Can register. Does not have a profile. Is able to browse the website including the home page, about page, search page, other user profiles, and recipes. Does not have access to groups and cannot join one, cannot give rating and comment.
2. Registered User: Does have to log in using username and password. Does have a profile. Is able to browse the website including the home page, about page, search page, other user profiles, own user profile, recipes, and groups page. Can join a group, but is not yet part of one. Can give ratings and comments. Can log out of account.
    a. UserID
    b. Username
    c. Password
        i. Password must contain at least 8 characters.
        ii. Poor password can't be entirely numeric.
    d. Profile
    e. Email
        i. Email must be unique.
    f. Favorite Recipes
    g. Number of Favorite Recipes
    h. User Recipes
    i. Number of User Recipes
3. Group User: A subclass of Registered User. Does have to log in using username and password. Does have a profile. Is able to browse the website including the home page, about page, search page, other user profiles, own user profile, recipes, and groups page. Is already a part of a specific group, but can join up to X groups. Groups that they are in allow access to the specific group's group forum and can comment in it. Can give ratings and comments. Can log out of account.
    a. UserID
    b. Username
    c. Password
    d. Profile
        i. Real Name
        ii. Birth Date
        iii. Gender
        iv. Ethnicity
        v. AccountCreationDate
    e. Email
    f. Favorite Recipes
    g. Number of Favorite Recipes

    h. User Recipes
    i. Number of User Recipes
    j. Groups
4. Admin: A subclass of Registered User. Does have to log in using username and password. Does have a profile. Is able to browse the website including the home page, about page, search page, other user profiles, own user profile, recipes, and groups page. Already is a part of every group and thus has access to all group forums to monitor activity in each. Can give ratings and comments. Can delete other users' comments and recipes at their discretion. Can log out of account.
    a. UserID
    b. AdminID
    c. Username
    d. Password
    e. Profile
    f. Email
    g. Favorite Recipes
    h. Number of Favorite Recipes
    i. User Recipes
    j. Number of User Recipes
    k. Groups
5. Profile: A supporting class of Registered Users. Contains all of a registered/group/admin user's personal information. The specific user whom the profile corresponds to is able to control what information other users can see on their profile page. In addition, various user settings only available to the specific user are here, such as the reset password option.
    a. Real name
    b. Avatar
    c. Birth Date
    d. Gender
    e. Ethnicity
    f. Account Creation date
6. Recipe: The bread and butter of our website. A complete guide to a dish made by registered, group, or admin users. Contains all the information below and registered/group/admin users can comment, upvote them, and favorite them. The 3-4 recipes with the most upvotes will be considered trending and will be displayed on the home page.
    a. Name
    b. RecipeID
    c. Author
    d. Meal Type

    e. Cuisine
    f. Ingredients
    g. Preparation Time
    h. Instructions
    i. Picture
    j. Optional Video
    k. Upvotes
    l. Comments
7. Comment: Text that can be given by registered/group/admin users to any recipe, comment, or post in group forums to display their opinion on the respective content.
    a. CommentID
    b. UserID
    c. Message
    d. Upvotes
    e. Replies
8. Search: Class that allows any user to filter down and specify what it is they are actually looking for in a recipe. Once filters and search words are applied and users click search, the results will appear on the same page below to filters.
    a. Results
    b. Keywords
        i. Name
        ii. Author
        iii. Meal Type
        iv. Cuisine
        v. Ingredients
        vi. Preparation Time
        vii. Diet
            1. Vegan Group
            2. Keto Group
            3. Vegetarian Group
            4. Gluten Free Group
            5. Pescatarian Group
            6. Paleo Group
            7. Low Carb Group
            8. Raw Diet
9. Group: A collection of users categorized by specific dietary needs. Registered users can go to the *overall* groups page to join a specific group. Once they have selected and joined a group, on that groups page they will gain access to the group forum of the group that they joined (and become a group user). They can join more groups up to a maximum of X groups. In the group forum page there will be a displayed list of users in the group, by

username, and the post section. Group users will be able to converse and chat in this section with other group users users of the specific group forum. These group users can also comment and upvote in the posts section.

a. GroupID
b. Group Name
c. Group Users
d. Total Comments

Section 2: Functional Requirements V2

Priority 1:

General User:

1. General User shall be able to register for an account.
2. General User shall register for an account using a registration form.
    2.1. General User shall see a user friendly registration form.
    2.2. General User shall see a login link in the registration form.
3. General User shall provide an email when registering for an account.
    3.1. General User shall provide a valid email when registering for an account.
    3.1. General User shall provide a unique email when registering for an account.
4. General User shall provide an username during registration
6. General User shall verify the password when registering for an account.
    6.1. General User shall provide the password when registering for an account.
    6.2. General User shall confirm the password when registering for an account.
7. General User shall see a navigation bar on all pages.
    7.1. General User shall see a logo on the navigation bar on all pages.
    7.2. General User shall see an input search on the navigation bar on all pages.
9. General User shall be able to search for recipes at the search page.
10. General User shall be able to view recipes.

Registered User:

14. Registered User shall be able to log in with a valid username.
15. Registered User shall be able to log in with a valid password.
16. Registered User shall be able to log out.
17. Registered User shall have only one profile page.
    17.1 Registered User shall see favorite recipes on the profile page.
    17.2 Registered User shall see groups involved on the profile page.
    17.3 Registered User shall see its own recipes on the profile page.
19. Registered User shall be able to change their password.
20. Registered User shall be able to reset their account password.
23. Registered User shall see a navigation bar on all pages.
    23.1. Registered User shall see a logo on the navigation bar on all pages.
    23.2. Registered User shall see an input search on the navigation bar on all pages.
24. Registered User shall be able to search for recipes at the search page.
25. Registered User shall be able to view recipes.
26. Registered User shall be able to create their own recipes.
27. Registered User shall be able to publish their own recipes.
28. Registered User shall be able to edit their own recipes.
29. Registered User shall be able to delete their own recipes.

32. Registered User shall be able to upvote any public recipe.
34. Registered User shall be able to add a comment on any public recipe.
38. Registered User shall be able to favorite a recipe.
40. Registered User shall be able to view existing groups.
41. Registered User shall be able to join a group.

Admin:

42. Admin shall be able to log in with a username.
43. Admin shall be able to log in with a password.
44. Admin shall be able to log out.
45. Admin shall have a profile page.
47. Admin shall be able to change their password.
48. Admin shall be able to reset account password at the profile page.
51. Admin shall see a navigation bar on all pages.
    51.1 Admin shall see a navigation bar on all pages.
    51.2 Admin shall see a different navigation bar on the administration page.
53. Admin shall be able to search for recipes.
54. Admin shall be able to view recipes.
55. Admin shall be able to publish their own recipes.
56. Admin shall be able to change contents of their own recipes.
    54.1. Admin shall be able to change any text of their own recipes.
    55.2. Admin shall be able to change any picture of their own recipes.
    56.3. Admin shall be able to change any video of their own recipes.
57. Admin shall be able to delete any public recipes.
60. Admin shall be able to upvote any public recipe.
62. Admin shall be able to add a comment on any public recipe.
64. Admin shall be able to favorite a recipe.
67. Admin shall be able to delete a group.
69. Admin shall be able to join a group.
70. Admin shall be able to delete messages from the group forum.

Recipe:

72. A recipe shall have a title.
73. A recipe shall have one or more recipe categories to be added for search.
78. A recipe shall have one or more ingredients to be added for search.
79. A recipe shall have one or more directions on how to finish the recipe.
80. A recipe should add zero or more photos.
81. A recipe should add zero or only one video.
82. A recipe shall be labeled trending when it is the recipe with the most upvote ratings

Group User:

84. Group User shall be able to view the forum.
85. Group User shall be able to search for recipes.
86. Group User shall be able to post to the forum.
87. Group User shall be able to comment on the forum.
89. Group User shall be able to change their password at the profile page
90. Group User shall be able to reset account password
91. Group User shall be able to log out
94. Group User users shall see a navigation bar on all pages.
    94.1. Registered User shall see a logo on the navigation bar on all pages.
    94.2. Registered User shall see an input search on the navigation bar on all pages.
96. Group User shall be able to search for recipes
97. Group User shall be able to view recipes
98. Group User shall be able to publish their own recipes
99. Group User shall be able to change contents of their own recipes
    99.1. Group User shall be able to change any text of their own recipes.
    99.2. Group User shall be able to change any picture of their own recipes.
    99.3. Group User shall be able to change any video of their own recipes.

Priority 2:

General User:

5. General User shall verify that the email used to register for the account is valid.
10. General User shall be able to view a Registered User's profile.
102. General User shall be able to report a comment.

Registered User:

18. Registered User shall be able to change visibility of their profile page.
21. Registered User shall be able to change the avatar for their profile page from the image database.
35. Registered User shall be able to report a recipe.
36. Registered User shall be able to report a comment.

Admin:

49. Admin shall be able to change the avatar for their profile page from the image database.
63. Admin shall be able to delete any comment on any public recipe.

Recipe:

75. A recipe shall have serving size information to be added for search.
77. A recipe shall have estimated time required to finish the recipe to be added for search.

Group User:

88. Group User shall be able to change visibility of their profile page.

92. Group User shall be able to change the avatar for their profile page from the image database.

Priority 3:

General User:

8. General User shall see a counter for the total number of registered users on the home page.
11. General User shall be able to share a recipe by email.
12. General User shall be able to download a recipe.

Registered User:

22. Registered User shall have an attribute for account creation time at the profile page.
30. Registered User shall have a counter for their number of public recipes on their profile page.
31. Registered User shall have a counter for their number of private recipes on their profile page.
37. Registered User shall be able to share a recipe by email.
39. Registered User shall be able to download a recipe.

Admin:

50. Admin shall have an attribute for account creation time on their profile page.
52. Admin shall see a counter for the number of registered users, where appropriate.
58. Admin shall have a counter for their number of public recipes on their profile page.
59. Admin shall have a counter for their number of private recipes on their profile page.
65. Admin shall be able to download a recipe.
66. Admin shall be able to create a group.
68. Admin shall be able to reset password for users.

Recipe:

71. A recipe shall be able to be made private.
74. A recipe shall have one or more keywords to be added for search.
76. A recipe shall have estimated costs to be added for search.
83. Only a public recipe shall be visible when searched for.
103. A recipe shall be able to be made public.

Group User:

93. Group User shall have an attribute for account creation time on their profile page.
95. Group User shall see a counter for the number of registered users, where appropriate.
101. Group User shall have a counter for their number of public recipes on their profile page.
104. Group User shall see a counter for their number of private recipes on their profile page.

Section 3: UI Mockups and Storyboards

Andrew Mockup:

Profile Page
Logo
About Groups Profile
Search
Log in / signup
Name
Recipes
Favorites
+Recipe
Andrew clicks creates recipe button in profile page
Create Recipe Page
Logo
About Groups Profile
Log in / signup
[Add title]
Images
Remove Image
Remove Image
Remove Image
Information
Author:
Recipe Type:
Summary:
Time
hrs
min
Serving
Ingredients
How to:
+ADD
Andrew adds plate information
Add recipe
textbox
list
textbox
list
list
textbox

text/name of dish
Recipe Page
Favorite button
Logo
About Groups Profile
Type of dish
Garlic Pasta
This is andrew's recipe page.
Information
• Prep time: 15mins
• Cook time: 15 mins
• Cuisine: Italian
Ingredients
• String pasta
• garlic
• Pepper
• butter
• olive oil
Instructions
comment section
Add Comment
wow! So cool! Loved it

Alice Mockup:

A2
At the sign up page, Alice completes info in 1, then click on link at bottom of page
Logo
About
Groups
Profile
Search
Log In / Sign Up
Full Name
Email Address
Password
Confirm Password
Sign Up
1
Sign Up

A3
Alice is redirected to Home.
To log in, Alice clicks on Log In on the Nav bar.
Logo About Groups Profile Search Q Log In Sign Up
trending recipes
Home

A4
Alice
completes info in ①, and click on Log In at bottom of page to log in
Logo About Groups Profile Search Log In Sign Up
Username
password
①
Log In
forgot Password?
Don't have an account? Sign Up!
Log In

A5
To create a recipe,
Alice clicks on +Recipes.
Alice is so happy
with the Kitchen
Magician Website
that she raves
about it to
her friends:
Kite, Emma,
Jim, and
Pamela.
Logo About Groups Profile Search Log In
Sign Up
Avatar
name
Recipes
Favorites
+Recipes

Kite Mockup:

Home
click on magnifying glass to search gluten dish.
Logo
About
Group
Profile
gluten
Log in/ sign up
Kite is discussing with Alice about different types of dishes. This reminds Kite that he needs to make a gluten free dinner for his parents.

Logo
About Groups Profile
Signin/ Signup
Search Results
Filter
Ingredients
Diets
Image of dish with description
These filters help kite find his dish
Kite uses the search Results filter to help him find the best dish for his needs

Emma Mockup:

Emma wants to make a juicy turkey. She goes to the website, and starts searching turkey related receipes.
Search "turkey."
Logo About Groups Login Sign up
Trending Recipes
With keyword search, she finds more than 10 related recipes. She cannot find a satisfied one after a thorough browse.
All of a sudden, she realizes she has favorited an exellent recipe before in her favorites list, so she decides to log in.
Logo About Groups Login Sign up
Find a Recipe
3 Recipes match "turkey"
Courses
Diets
Occasions
Juicy Roast Turkey
Time
Turkey Breasts
Time

On the log in page. she types in her user name and passwords.

After login. She goes to her profile page to find her favorite turkey recipe.

Jim Mockup:

Jim remembers the Conversation with Alice and reaches the Kitchen Magician Website. Jim lands on the website Home Page. He then presses the search button in the Navbar.
Home Page
(Logo)
About Groups Profile
Search
Log In/Sign Up
Trending Recipes
Search Page
Tom lands on the website Search Page. Ingredients are typed into the Search boy, filters are set and then he presses the Search button.
(Logo)
About Groups Profile
Search
Log In/Sign Up
Type in Keywords
Search
(Filters)

Search Page with Results.
The page refreshes with a list of recipe results. Jim clicks on the first recipe.

Recipe Page
Jim lands on the corresponding recipe's page

Pamela Mockup:

Pamela goes home and goes to the Kitchen Magician website out of curiosity from her conversation with her friends.

Trending Recipies

Home Page.

Login Page

Pamela then proceed to search for the recipe she likes

Search Results Page

Pamela tells her friend Sarah about Kitchen Magician and expresses how much she liked the website

Recipe page

Tom and Sarah Mockup:

Groups Page
Tom lands on this "Version" of the groups Page because he isn't a group yet. He selects a group from the available groups drop down menu and clicks Join group. The page then reloads.

Groups Page once joined a group.

Tom's group page will look like this after his reload. Since he joined a group. Sarah's page will already look like this since she was already in the group Tom joined. They both press the Forum button.

Group Forum Page
Tom arrives at this page and types his question in the comment section.

Tom then arrives at this page later to see Sarah's comment via the expand button under the original comment. He then clicks on the search button on the Navbar to go to the search page.

Group Forum Page replying to comment

Sarah arrives and see's Tom's comment and replies to it by clicking the reply button, typing her reply in, and pressing send.

Search Page

Tom lands on the website Search Page. Ingredients are typed into the Search boy, filters are set and then he presses the Search button.

Search Page with Results.
The page refreshes with a list of recipe results. Tom clicks on the first recipe.

Recipe Page
Tom lands on the corresponding recipe's page

Section 4: High Level Database Architecture and Organization

Part 1: Business Rules

1. A registered user shall be able to favorite zero or many recipes.
    a. A recipe shall be able to be favorited by zero or many registered users.
2. A registered user shall be able to comment on zero or many recipes.
    a. A recipe comment section shall be able to be commented by zero or many users.
3. A registered user shall be able to join zero or many groups.
    a. A group can have zero or many registered users.
4. A group can contain zero or many recipes.
    a. A recipe shall belong to zero or many groups.
5. A register user shall have zero or many comments.
    a. A comment shall belong to one registered user.
6. A recipe can have one or many recipes information.
    a. A recipes information shall belong to one recipe.
7. A recipe can have one or many recipes instructions.
    a. A recipes instruction shall belong to one recipe.
8. A recipe can have one or many recipe images.
    a. A recipe image shall belong to one recipe.
9. A recipe can have zero or one recipe video.
    a. A recipe video shall belong to one recipe.

Part 2: High level explanation
Entities: The ERD model consists of users, groups, recipes, group_recipes, recipes_comments,comments_reports,groups_comments,recipes_favorite, recipes_upvote.
Attributes: The attributes for the Entity Users are: id, user_name, email, password, avatar_path, created.
The attributes for Entity Groups are: id, group_name, group_type_id.
The attributes for Entity Recipes: id, name, user_id, preparation_time, created, updated
The attributes for Entity Group_Recipes are: id, recipe_id, group_id.
The attributes for Entity Recipes_Comments are: id, user_id
The attributes for Entity Groups_Comment are: id, user_id, group_id, comment, created.
The attributes for Entity Recipes_Favorite are: id, user_id, recipe_id
The attributes for Entity recipes_upvote are: id, user_id, recipe_id

The relationships in the ERD consist of users being able to create a profile that will allow users to join groups. The groups will consist of recipes and each group will consist of different types. The groups will have comments between users as well. We also have a recipe page that will allow users to favorite recipes so it is stored in their favorites. The recipes can also be upvoted

by users. Recipes will be of different types and shall include recipe ingredients, recipe information, recipe instruction, recipe image and recipe video. Users shall also be allowed to comment on the recipes.

Part 3: Database Model

ERD Diagram:

ERD Diagram cont.

ERD Diagram cont.

ERD Diagram cont.

EER Diagram:

Part 4: High level explanation

MySQL is the open source database management system used in this application because of its speed, flexibility and reliability.

Section 5: High Level APIs and Main Algorithms

Trending Recipe Algorithm:
For our Home Page we plan on having a slideshow that displays the five most popular Recipes our service has. We will figure out these five recipes by identifying which five recipes in our database have the most upvotes. Each recipe will have an upvote variable that will increase by one whenever a registered user clicks the upvote button on that recipe's page. We will have a function that sorts each recipe by the ones with the highest upvote number. Each time any recipe's upvote variable changes, the function will sort once again. The top five will be taken for display on the Home Page in the trending recipes slideshow.

Search Algorithm:
The search algorithm we will be implementing has two parts.

Case 1: existence of the filter name indicating the search is being conducted through the navigation bar via form input (0 or 1).
All existing criteria (i.e. name) will be initialized with the default value of "NONE," i.e. filter and keyword.
If no criterion has been chosen, a search of all available criteria will be conducted, permitted by the use of Q library, which enables simultaneous querying, i.e. OR.
Otherwise, a single-criterion (of all available criteria search) signified by the keyword name will be conducted, in which case the use of Q library is not required, but implemented as such for consistency.

Case 2: absence of the filter name indicating the search is being conducted through the search page.
All existing criteria (i.e. name) will be initialized with default value of "NONE" to prevent unconditional querying of the entire database. All existing criteria can be changed via user input via form input. Independent of number of user input via the form (0 to current max of 3), a OR search of all available criteria will be carried out using the Q library, i.e. OR.

Section 6: High Level UML Diagrams

Section 7: High Level Application Network and Deployment Diagrams

Application Network Diagram:

Deployment Diagram:

Section 8: Identify Actual Key Risks For Your Project At This Time

1. Skills: Many of us aren't familiar with Django and some of us aren't familiar with HTML and CSS. A solution to this problem would be to help and assist members who are having trouble working with whatever language they aren't familiar with.
2. Schedule: A lot of us can be busy with our other courses when it comes to making pop-up meetings when we need to talk about a certain topic. A solution to this problem would be setting up a third meeting in the week that works with everyone's schedule.
3. Technical: One issue that we ran into was that for our project we wanted to run Django in Python 3.8+. However, some individuals are in classes where their python version needs to specifically be an earlier version, causing conflicts. The solution to this would either be making sure everyone knows how to make their own python environments or know how to constantly change their PATH settings. Another solution to this problem would be creating different Python environments for each project. Each environment will be able to hold many dependencies that will be isolated from other Python environments. Compatibility issues between different projects can be avoided this way.
4. Teamwork: We are still getting used to working as a team and miscommunication still occurs. Meetings are getting better but still nowhere near the productivity of in-person meetings. I think utilizing a task management tool will help increase productivity and minimize confusion around project assignments and make meetings go through smoother.
5. Legal/Content: A risk for our project would be keeping original content original. Since it's a community based website, we might face copyright issues if a user were to publish a recipe from an author and claim it as their own. One thing we could possibly do to remedy this is to provide an email that people who have proof of plagiarism can contact us with and then have an admin take down the plagiarized content.

Section 9: Project Management

For Milestone 2, we didn't manage tasks in an efficient way. Tasks would be assigned to members at the end of meetings, but sometimes we wouldn't know who has finished their tasks unless they were checked up on individually. Some members had family emergencies and were having trouble completing their work, but I wasn't aware of their situation until I checked up with them privately. It led to some things not being as polished as other parts of the milestone. I also think we tunnel visioned on some parts of the project that didn't need much attention. For example, we spent a lot of time deciding on the basic format of our website. In retrospect, I believe that we could've better utilized our time in other sections of the project such as the vertical prototype. I think incorporating a task management tool will help the whole team get a better idea of all the work that needs to be done. It will also help us plan how much time we need to dedicate to different parts of our project. The task management tool will help the whole team be on the same page. We will be able to see who is assigned what, who has finished their tasks, and who might need some assistance with their work.

Section 10: Detailed List of Contributions

1. Nicole Pang
    a. Set up meetings, attended most meetings, sorted priority 2 and 3 functional requirements, gave feedback on mockups, gave feedback on database model, gave feedback on business rules, wrote section 9, wrote section 10, created interconnected story for mockups
2. Jeff Cheng
    a. Attended all meetings, created alice mockup, applied mockup feedback, created deployment diagram, created application network diagram, worked on section 5 explanations, implemented base search algorithm, assisted with section 8, helped implement trending recipe algorithm, updated Alice mockup
3. Allen Sun
    a. Attending all meetings, sorted and expanded priority 1 functional requirements, created Emma mockup, created applied mockup feedback, assisted with creation of business rules, created erd from business rules, created database for vertical prototype, deploying the website, helped implement search algorithm, helped with trending search algorithm outline, helped with vertical prototype, delped debug code, updated Emma mockup
4. Paul Asu
    a. Attended most meetings, created Pamela mockup, applied mockup feedback, updated Pamela mockup, worked on ERD Diagram
5. Kevin Wei
    a. Attended all meetings, assisted in running meetings, expanded data definitions, created Tom and Sarah mockup, created Jim mockup, applied mockup feedback, created high level uml diagram, worked on section 5 explanations, assisted with vertical prototype by helping debug code, assisted with section 8, helped implement search algorithm, implemented drop down search parameter functions, user interface implementation, exported m2 pdf, Updated Jim and Tom and Sarah mockup
6. Kevin Ortiz

a. Attended most meetings, assisted in running meetings, created Kite mockup, created Andrew mockup, applied mockup feedback, created business rules, worked on section 5 explanations, helped implement search algorithm, helped debug code, updated Andrew and Kite mockup, worked on ERD Diagram