**SW Engineering CSC648/848**

**Project name: Zesty**

Section 04, Team 05

| **Name** | **Role** |
| --- | --- |
| Xu Gu | Team Leader |
| Pasang Sherpa | Back-End Lead |
| Raymond Liu | Git Master |
| Dante Vercelli | Back-End Lead |
| Yonatan Leake | Scrum master |
| Junghyun Song (Katie) | Front-End Lead |
| Ruxue Jin | Front-End Lead |

Milestone 1

Due day: 3/6/2024

| History Table | | |
| --- | --- | --- |
| Version | Date | feedback |
| 1.0 | Mar 6 |  |

# Summary Executive

In today's health-conscious world, there's a growing emphasis on cooking nutritious meals, and young people are at the forefront of exploring innovative culinary styles with boundless creativity. Recognizing this trend, our application, Zesty, emerges as the go-to destination for individuals passionate about cooking wholesome, flavorful dishes while unleashing their culinary creativity. Our motivation stems from a deep-seated belief that everyone deserves access to delicious, nutritious meals that excite the taste buds and nourish the body. Zesty serves as the ultimate hub for creative cooking lovers, offering a comprehensive collection of recipes that inspire experimentation and innovation in the kitchen. By providing a platform where users can easily discover, create, and share a diverse array of recipes, Zesty empowers individuals to embrace cooking as a form of self-expression while promoting a healthy lifestyle. Whether you're a seasoned chef or a kitchen novice, Zesty welcomes you to join our vibrant community and embark on a culinary journey filled with endless possibilities.

To be more specific, our application is designed to cater to individuals who are seeking a convenient solution for discovering recipes, finding inspiration in their cooking endeavors, overcoming technical challenges, and accessing recipes of varying difficulty levels. Our platform offers users the ability to effortlessly explore a wide array of mouthwatering recipes based on the ingredients they have on hand, helping to reduce food waste while encouraging culinary creativity. With Zesty's customizable dish selection feature, users can easily tailor recipes to meet their specific preferences, whether it's accommodating dietary restrictions, selecting meal types, or adjusting spice levels. Our dynamic recipe ranking system ensures that users receive personalized recommendations that align with their unique tastes and cooking styles, providing ongoing motivation and inspiration. At Zesty, community engagement is fundamental, as we aim to foster a vibrant culinary community where users can connect, share their own recipes, and celebrate their passion for food together.

Our team, the Ridiculous 5, is composed of seven passionate individuals from diverse backgrounds, each bringing a unique perspective to the table with expertise spanning across culinary traditions from America, Italy, China, South Korea, and Mexico. As avid food lovers ourselves, we empathize with the needs of our users and embark on this journey with a shared passion for both technology and gastronomy. Our collective goal is to develop a platform that mirrors the way we think as customers, simplifying the culinary exploration process and empowering users to effortlessly discover and share delicious recipes. Together, we're committed to creating an inclusive space where culinary enthusiasts from all walks of life can come together, exchange ideas, and celebrate their love for food.

# 2. Personas & User Stories

User story priorities are represented by P0~P4, where P0 is the highest priority and P4 is the least.

**Grover Delacruz**



Twenty-four year-old Grover Delacruz is a software developer who has just moved into his first apartment with his cat Charlie. Grover weight-lifts everyday and pays close attention to the amount of calories and protein in what he eats. Grover doesn’t know many recipes and feels overwhelmed when he considers finding new meals to cook. Grover relies on the same five recipes he knows by heart, and he likes that he knows exactly how many calories and the nutrient breakdown of his recipes. Grover tends to go shopping once a week and buys the same ingredients for the recipes he knows. This works well for him- it makes shopping easy- and he has learned how much of each ingredient he needs to buy minimizing the food he wastes.

While Grover likes his meal, and shopping routine, he wants to expand his recipe knowledge. He wants to find new recipes that fit his calorie and nutrient needs. Knowing the nutrient breakdown of a recipe he is considering is important to him. Grover would also like to find recipes that use the same ingredients as his other recipes with a minimal amount of additional ingredients he doesn’t already buy.

User Story:

* As a software developer and fitness enthusiast, I want to find new recipes that align with my dietary requirements and use similar ingredients to my current meal plan so that I can diversify my diet without overwhelming myself with too many new ingredients or compromising my nutritional goals.
* Constraints
  + The solution must provide detailed nutritional information (calories, protein content, etc.) for each recipe, allowing Grover to make informed choices that align with his fitness and dietary goals.
  + The recipes suggested should prioritize using ingredients Grover already purchases, with a minimal list of new ingredients to avoid overwhelming him and to maintain simplicity in his shopping routine.

**Lily Zhang**

Lily Zhang, a 24-year-old international student from China. She just got to the U.S. from Beijing for further study. In China, Lily pretty much always had meals cooked by her family, so she didn't cook much. But now, she's gotta make her own food and she really wants to get good at it.

Lily misses the flavors from back home and wants to balance that with her school work. She's on the lookout for a cooking app that's super easy to use, with recipes that don't need pro skills. She likes ones with pictures and simple steps because a lot of cooking words and moves are new to her.

Getting used to life here, Lily's trying to figure out what to buy at American grocery stores. She needs an app that makes shopping easier, maybe one that shows her what to get with photos and suggests brands she can find nearby.

Now, Lily spends her weekends trying out recipes instead of just chilling. She'd really like an app that helps her keep track of what she needs for cooking and when to make it. And it'd be cool if the app let her share her food pics with her friends and family in China.

User Story

* As a novice cook and international student, I want to find recipes that are simple and quick to make, and of course with a good taste.
* Constrains
  + This app should sort recipes by the difficulty, for me to find the simple ones.
  + Each recipe should have a step-by-step or video guide, making it easier to understand the process without familiarity with cooking.
  + It should provide a estimating cooking time so I can manage my study and meal preparation schedule efficiently
  + It should give me the exact ingredient types and amounts, and also give me some advice on where I can buy them.

**Ryan Griffin**

Ryan Griffin is a 26-year-old student who lives with his parents. He has up to no knowledge of how to cook and wants to change that. But he is often too busy with his class assignments that he doesn’t have time to gather the ingredients at the nearest supermarket, which is quite the distance to walk. He is left with what his parent's ingredients have left. Thus he is curious about what he could cook based on what he has at home.

User Story

* I want to learn how to cook simple, time-efficient meals using only the ingredients available at home so that I can improve my cooking skills without the need for time-consuming shopping trips or extensive ingredient lists.
* Constrains
  + The recipes provided should be quick and easy to prepare, allowing him to fit cooking into his hectic student life.
  + The solution should offer recipe suggestions based on the ingredients Ryan already has at home, eliminating the need for additional shopping.

**Michael Reynolds**

Micheal Reynolds is a 72 year old retired school teacher. He lives alone and used to be very busy before he retired but now he has a lot of free time. He’s decided to get a hobby in cooking to pass all the extra time he has now. While he does know how to cook from occasionally making meals for himself, he’s now looking for interesting or more advanced recipes to cook. He also wants to be able to create his own recipes that he can share with others online. Michael doesn’t like to go grocery shopping too often so he makes a habit of getting everything he needs for the week on Sunday and refuses to change his schedule. This also means that if he runs out of an ingredient in the middle of the week, he’ll just wait until the next Sunday. This also means he may have to change his plans on what he’s cooking up on the days till Sunday.

User Story:

* As Michael Reynolds, a 72-year-old retired school teacher with newfound free time, I want to explore interesting and advanced recipes and create my own to share online, aligning with my weekly shopping schedule so that I can enjoy my cooking hobby without frequent trips to the store.
* Constraints
  + The solution should offer a variety of interesting and advanced recipes, allowing Michael to challenge his cooking skills and keep his hobby engaging.
  + Assist Michael in organizing his weekly shopping list to ensure he purchases all necessary ingredients for his planned recipes, minimizing the need for midweek store visits.
  + The solution should have a community where he can share his recipes with others and find others’ recipes

**Alexandra Kapell**

Alexandra Kapell is a 30 year old lawyer based in the Bay Area. She loves to travel around the world, visiting places all over Europe and backpacking through Australia after her undergraduate. Her love for cooking started early and has developed a famous social media brand for her baking, but wants to delve more into cooking meals and wants to expand her life. Becoming a lawyer has not allowed her to be creative with her dishes and she is not able to experience the trial and error, which is what made her so relatable to fans.

User Story:

* Is looking for dishes from different regions to connect with wider fanbase
* As someone who cooks, she has a lot of ingredients already.
  + Needs something that would mention which ingredients are missing
  + The solution should offer a wide range of recipes from various cultures
  + Offer a way for Alexandra to easily document and share her cooking adventures on her existing social media platforms, maintaining her brand's engagement and authenticity.

# 3. Data Definitions:

**Terms:**

**User**

* Meaning:
  + Basic information of users
* Data Structure:
  + User\_id
  + User\_name
  + Email
  + PasswordHash
  + User\_type
* Usage
  + Manage users's basic information

**Follow**

* Meaning: Friendship among users
* Data Structure:
  + Follow\_id
  + follower\_id
  + followee\_id
  + Status: active, inactive
* Usage
  + Manage user’s following and followed

**Recipe**

* Meaning:
  + recipe's basic information
* Data Structure:
  + recipe\_id
  + user\_id: recipe's owner
  + recipe\_name
  + details: contains ingredients and steps
  + recipe\_type: system-inclusion, user-defined, ...
  + tag: vegan/spicy/gluten-free/...
  + difficulty:
  + calories:
* Usage:
  + manage recipe's owner and information including ingredients, steps

**Post**

* Meaning:
  + Blogs posted by the users to share their recipe/dishes/others, which can be connected to one or more recipes
* Data Structure:
  + post\_id
  + post\_title
  + user\_id: owner's user\_id
  + recipe\_ids: recipes connected with the blog
  + details: contents of the blog
* Usage:
  + Manage contents and relationship with users and recipes

**Ingredient**

* Meaning: ingredient
* Data Structure:
  + Ingredient\_id
  + Ingredient\_name
  + calories
  + type
  + related\_recipe\_ids
* Usage:
  + Provide ingredients info for a recipe
  + Find recipes that includes this ingredient

**Meal Plan**

* Meaning:
  + User’s meal plan
* Data Structure:
  + recipe\_ids
  + total calories
  + total time to cook
* Usage:
  + Find ingredients that are needed
  + Find missing ingredients to shop for
  + Hold user selected recipes

# 4. Functional requirements:

Requirement priorities are represented by P0~P4, where P0 represents the highest priority while P4 the least.

Requirement IDs are represented by 8-digit numeric values, where digit 1-3 represent class number 648, 4-5 represent group number 05, 6-8 are requirement numbers

Requirement 1:

* **ID**: 64805001
* **Description**: User should be able to search recipes by the ingredients, and find recipes by the ingredients in a quick way
* **Priority**: P0
* **User Stories**: Grover Delacruz, Ryan Griffin,Alexandra Kapell

Requirement 2:

* **ID**: 64805002
* **Description**: User should be able to get recipes from various cultures
* **Priority**: P0
* **User Stories**: Grover Delacruz, Ryan Griffin,Alexandra Kapell

Requirement 3:

* **ID**: 64805003
* **Description**: Recipes should contain required ingredients (type, amount), cooking steps, estimated time
* **Priority**: P0
* **User Stories**: Lily Zhang

Requirement 4:

* **ID**: 64805004
* **Description**: Recipes should contain difficulty level to meet the requirement with various cooking experience
* **Priority**: P0
* **User Stories**: Lily Zhang, Ryan Griffin, Michael Reynolds

Requirement 5:

* **ID**: 64805005
* **Description**: Recipes should contain nutrition information
* **Priority**: P2
* **User Stories**: Grover Delacruz

Requirement 6:

* **ID**: 64805006
* **Description**: User should have an account and be able to edit their basic information, add ingredients they have, set recipe preferences, post and manage blogs & recipes, follow/unfollow other users
* **Priority**: P1
* **User Stories**: Michael Reynolds, Alexandra Kapell

Requirement 7:

* **ID**: 64805007
* **Description**: User should have a community to post blogs and recipes, and browse others’ posts.
* **Priority**: P1
* **User Stories**: Michael Reynolds, Alexandra Kapell

Requirement 8:

* **ID**: 64805008
* **Description**: App should have a ranking list based on recipe popularity.
* **Priority**: P1
* **User Stories**: Michael Reynolds, Alexandra Kapell

Requirement 9:

* **ID**: 64805009
* **Description**: User should be able to get recommendations based on their recipe preference
* **Priority**: P1
* **User Stories**: Michael Reynolds, Alexandra Kapell

Requirement 10:

* **ID**: 64805010
* **Description**: User should be able to make diet plans
* **Priority**: P3
* **User Stories**: Michael Reynolds

Requirement 11:

* **ID**: 64805011
* **Description**: User should be able to rate recipes
* **Priority**: P1
* **User Stories**: Michael Reynolds, Alexandra Kapell

Requirement 12:

* **ID**: 64805012
* **Description**: User should be able to share recipes and posts to external apps
* **Priority**: P2
* **User Stories**: Alexandra Kapell

Requirement 13:

* **ID**: 64805013
* **Description**: User should be able to create recipes with a template
* **Priority**: P0
* **User Stories**: Michael Reynolds

Requirement 14:

* **ID**: 64805014
* **Description**: User should be able to search recipes based on nutrition information
* **Priority**: P2
* **User Stories**: Grover Delacruz

Requirement 15:

* **ID**: 64805015
* **Description**: User should be able to make a meal plan that displays aggregate recipe information such as nutrition, and cooking time.
* **Priority**: P2
* **User Stories**: Michael Reynolds, Grover Delacruz

Requirement 16:

* **ID**: 64805016
* **Description**: User should be able to get a ingredient list of missing ingredients they need for their meal plan
* **Priority**: P2
* **User Stories**: Michael Reynolds, Grover Delacruz

Requirement 17:

* **ID**: 64805017
* **Description**: User should be able to get recipes based on ingredients they already have, and should get recipes that the User already has most of the ingredients for already
* **Priority**: P0
* **User Stories**: Ryan Griffon, Grover Delacruz

# 5. Nonfunctional requirements

1. **Timing constraint**: the web page response time should be within **1s**
2. **Scalability:** The website should be able to handle **2000** users and **10,000** recipe submissions without a significant drop in performance.
3. **Throughput:** The system should be capable of handling **500** concurrent users and requests, especially during peak times.
4. **Availability:**The website should be available **24/7** with minimal downtime for maintenance or upgrades.
5. **Security:**Implement measures to protect user data, such as encryption for sensitive information like passwords and personal details.
6. **Maintainability:**Ensure the codebase is well-structured, modular, and documented to facilitate ongoing maintenance and updates.
7. **Responsiveness**:Ensure compatibility with various screen sizes and devices.
8. **Interoperability**:Support integration with third-party services such as social media platforms for sharing recipes.
9. **Resource Utilization:** Efficiently utilize server resources such as CPU, memory, and bandwidth to ensure optimal performance.
10. **Reliability**:The system should be robust and resilient to errors and exceptions.

# 6. Competitive analysis

| **Feature** | **allrecipes** | **Simply RECIPES** | **epicurious** | **Zesty (Our app)** |
| --- | --- | --- | --- | --- |
| **Get recipes by ingredients** | Keyword searching | Keyword searching  and get recipes by clicking usual ingredients | Keyword searching, can include/exclude ingredients | Keyword searching,  Support a quick search by the ingredients that users have |
| **Recipe details** | Detailed recipe with ingredients, directions, nutrition facts, cooking time | Detailed recipe with ingredients, directions, nutrition facts, cooking time,serving suggestions | Detailed recipe with ingredients,  Cooking tools,  directions, cooking time | Detailed recipe with ingredients,  Cooking tools, directions, nutrition facts, cooking time |
| **Create recipes by users** | Has a template for creating recipe | Not available, only by staff | Not available, only by staff | Has a template for creating recipe |
| **Cooking and dish community** | Users can save recipes and make comments | Users can save recipes and make comments | Users can save recipes and make comments | Users can save recipes and make comments, and users can follow each other |

The key advantages of "Zesty," our planned recipe app, include an advanced ingredient-based search function that allows users to quickly find recipes using the ingredients they already have at home. This feature streamlines the search process and is particularly useful for users looking to cook with what they have on hand, reducing food waste and the need for additional shopping. Additionally, Zesty enhances user interaction by enabling users to not only save recipes and make comments but also to follow each other. This creates a more dynamic and engaging community aspect, encouraging social cooking experiences and the sharing of culinary ideas. Furthermore, Zesty stands out by providing users with the ability to create their own recipes using a template, which encourages creativity and sharing within the community, a feature that is not available in Simply RECIPES or epicurious. Overall, Zesty offers a more personalized, community-driven experience, catering to both individual cooking needs and the desire for social engagement.

# 7. High-level system requirement

* Server Host: Amazon Web Server 1vCPU 1 GB RAM
* Operating System: Ubuntu 20.04 Server
* Database: MySQL 8.0
* Web Server: Nginx
* Front-end Framework : React
* Server-Side Language: Python
* Web Application Framework : Flask
* Additional Technologies:
  + front-end: Axios, Vite, jest, bootstrap
  + back-end: uWSGI (flask server), flask-restful, sqlalchemy, unitest
  + tools: DataGrip (database management tool), postman (REST api test tool)
* IDE: Visual Studio Code & Pycharm

# 8. Team

| Team members | |
| --- | --- |
| name | role |
| Xu Gu | Team Leader |
| Pasang Sherpa | Back-End Lead |
| Raymond Liu | Git Master |
| Dante Vercelli | Back-End Lead |
| Yonatan Leake | Scrum master |
| Junghyun Song (Katie) | Front-End Lead |
| Ruxue Jin | Front-End Lead |

| Back-end study group | |
| --- | --- |
| name | role |
| Xu Gu | Team Leader |
| Pasang Sherpa | Back-End Lead |
| Dante Vercelli | Back-End Lead |
| Ruxue Jin | Front-End Lead |
| Raymond Liu | Git Master |

| Front-end study group | |
| --- | --- |
| name | role |
| Gu Xu | Team Leader |
| Junghyun Song (Katie) | Front-End Lead |
| Ruxue Jin | Front-End Lead |
| Yonatan Leake | Scrum master |

# 9. Checklist

| Tasks | | Status(Done/On track/ Issue) |
| --- | --- | --- |
| Team found a time slot to meet outside of the class. | | Done |
| Scrum Master shares meeting minutes with everyone after each meeting. | | Done |
| Github master chosen | | Done |
| Everyone sets up their local development environment from the team’s git repo. | | On track |
| Team decided and agreed together on using the listed SW tools and deployment server | | Done |
| Team ready and able to use the chosen back/front-end frameworks | | On track |
| Team lead ensured that all team members read the final M1 and agree/understand it before submission | | Done |