

**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: 106

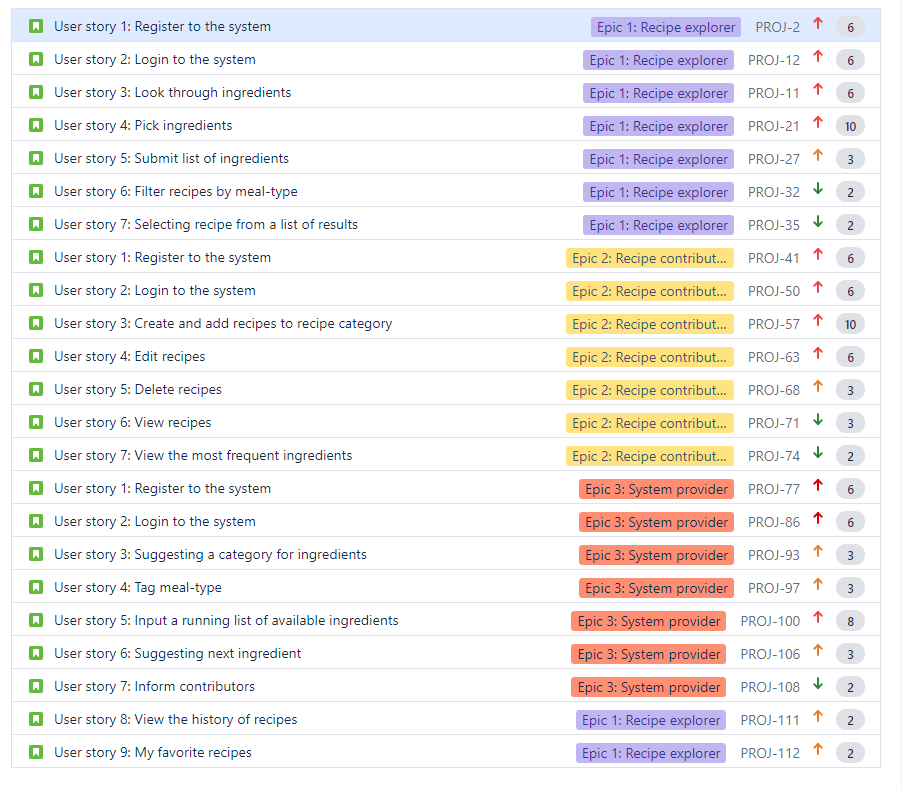
(1 SP = 1/2 day)

Priority Scale

Priority is judged by High, Medium, Low with High 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



#### Recipe Explorers

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| 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: 39 (1 SP = ½ day) |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

#### Recipe contributor

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| 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: 36 (1 SP = ½ day) |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 match on the home page after clicking 'ingredients without recipe' button |
| Priority: Low |
| Story points: 2 |

#### System Provider

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| Epic Story 3: System provider |
| As a system provider, I want to be able to provide a system so that i can give a platform for recipe explorers and contributors to communicate |
| Total User Story Points: 31 (1 SP = ½ day) |

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| E3 - User story 1: Register to the system |
| As a system provider, 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 |

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| E3 - User story 2:Login to the system |
| As a system provider, 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 |

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| E3 - User story 3: Suggesting a category for ingredients |
| As a system provider, i want to be able to suggest a category for each ingredients, so that it's convenient for recipe explorers to select their meals |
| Acceptance Criteria:   * Display the categories of ingredients. * Display a button that Categories of the ingredients can be expanded into specific items. * Provide suggested category that associated on other recipes with that ingredient |
| Priority: Medium |
| Story points: 3 |

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| E3 - User story 4: Tag meal-type |
| As a system provider, i want to be able to allow contributors to tag a recipe with meal-type, so that it's clear to manage different 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 |

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| E3 - User story 5: Input a running list of available ingredients |
| As a system provider, I want to be able to allow recipe explorers to directly input a running list of their available ingredients so that recipe explores can view their 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: 8 |

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| E3 - User story 6: Suggesting next ingredient |
| As a system provider, i want to be able to suggest the next ingredient or ingredients to input based on previous input so that it's convenient for recipe explorers to match a recipe |
| 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 |

# Interface & Flow diagram

A screenshot of a cell phone

Description automatically generated

# System Architecture

## Layers

### 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

A screenshot of a social media post

Description automatically generatedSQL Relational-Model

### Connection between font-end and back-end system

A screenshot of a social media post

Description automatically generated

## Description of External-User with Use Case Diagram

A close up of text on a white background

Description automatically generated

**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 “favourite 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 “favourite recipes”. Once done, our system will store the recipe to the explorers’ “favourite recipes” table in the database. Also, explorers can remove recipes in their favourite 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.