

Stage 1 Project Description: **RecipEZ**

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Project Summary

RecipEZ is a website for students to find suitable recipes they can make with the ingredients they already have in their refrigerators. It provides an easy way to find a list of recipes filtered for ones that only contain what they have on hand. Furthermore, the recipes can be filtered by characteristics such as caloric intake or dietary restriction. Once they have a list of potential recipes, users can choose the perfect one with information such as a description of the recipe, user ratings, etc. After finding and making a new recipe, they can also leave a rating or see the previous recipes they've viewed. This website encourages new cooks to practice their culinary skills while reducing food waste by using up the ingredients they own.

The backend supporting the website will be based on a Kaggle dataset aggregating recipe information from Food.com. This data contains useful information for recipes such as list of ingredients, the actual steps of the recipe, and much other information that can help us further filter results down. This data will be stored on our backend using Google Cloud Platform and MySQL.

Description

Oftentimes, students living in university apartments will open their refrigerators and realize they have nothing to eat. Instead of wasting valuable tuition money ordering delivery food, it would be nice to have a nice home-cooked meal. However, many students living on their own for the first time may not be familiar with many recipes. But simply looking up recipes on the internet can often lead to complex dishes that require an entire specialized trip to the grocery store in order to purchase the appropriate ingredients. Our project aims to provide a website which students can use to find recipes suited for the ingredients they already have on hand.

Users who access the RecipEZ website will be given a prompt to identify which ingredients they have on hand, easily discretized into specific categories. After selecting these ingredients, they will be taken to a list of search results for various recipes that include information such as reviews/ratings to help them make the correct decision. Also, users will be prompted to leave reviews themselves for recipes they have made. This is the general workflow for what a user might experience when working with our project.

Usefulness

There are many websites which are intended for discovering new recipes but none yet exist that satisfy the particular niche our project will. The website AllRecipes.com has an [Ingredients](#) tab but it does not actually filter out ingredients one by one or allow the user to specify which ingredients they have and would like to work with. Another website which aims to address a similar task, [Supercook](#), is catered more toward food connoisseurs and less towards beginners. Our website will focus on students with simpler ingredients who don't want to work with "snail" and "collagen".

Overall, our project will address an important demographic that is currently underrepresented in the space: college students looking to learn how to cook with the common ingredients they already have.

Realness

The data we're using for our website is from this [Kaggle Dataset](#). This data was generated using a crawler that looked through the website Food.com's online recipe aggregator.

This dataset contains a lot of information that could be very valuable to someone trying to find a new recipe to cook. The RAW_recipes.csv file contains the name of the recipe, a list of its ingredients, a description of the recipe, steps to make the recipe, the number of minutes it takes to prepare, and nutrition information such as calories. Furthermore, RAW_interactions.csv contains information pertaining to users' reactions to the dishes: a rating on a 5-star scale and a text review.

This data comes from real users of real recipes from a commonly used website, and the information contained in it is essential in helping our website's users discover what recipes they can make with certain ingredients, how long it will take, and how well-received the food was by other users. All of this information combined will result in an experience letting new cooks find exactly what they want to be eating.

Functionality

Data Storage

The data for our website will be stored on a MySQL cloud database hosted on the Google Cloud Platform. On a high level, we will have two major tables to store the information. The first table is a Recipes table which contains a unique recipe ID (the primary key), the recipe's name, user-provided recipe description, a list of ingredients, steps to prepare the recipe, nutrition information, and time it takes to make the recipe. The other table will be an Ratings table with the ID of the user which made the rating, the Recipe ID (foreign key), a numeric

rating on a 5 star scale, and a text review for the recipe. The User ID - Recipe ID pair will be our primary key.

The structure of these two tables will allow us to perform SQL actions to drive the functionality of our site. We can filter the Recipes table by ingredients and join to the Ratings table to give our users more information about the quality of the recipes.

This is our initial high level design plan for the data storage; our next steps include generating a UML diagram to explicitly define the tables and their attributes/relationships.

Functions of Website

The most basic functionality in our website will be the recipe search. Users can select (from a predefined list of ingredients) the ingredients that they currently have on hand, and we will return a list of recipes that can be made using a subset of those ingredients. This can be accomplished with a SQL query that filters based on the ingredients selected. Other helpful information about the recipes will be displayed to help users decide, such as the rating given by users, how long it takes to prepare the recipe, and calories of the dish. This information will be stored in the Recipes table or we can join to the Ratings table to show user reviews.

After making a recipe, users will be able to leave a star rating for how much they enjoyed the meal they made in order to help others find good recipes. To allow for this, when a user wants to submit a new review we'll perform a database update to include them in the Ratings table.

Cool Extensions

One extension that could improve user satisfaction is adding more specialized filtering capability beyond just ingredients on hand. Users will be able to filter by diet preferences such as vegetarian, vegan, etc. or by the culture of the cuisine such as Asian food. This will help people find a recipe exactly catered to their needs.

Another potential extension is keeping track of previously viewed recipes. This can help people return to a recipe they enjoyed or review ones they were interested in but have not tried yet. This information can be stored in the Ratings table when a review is left or perhaps maintaining some sort of wishlist.

UI Mockup

Theme: minimalism.

Ratings RecipeZ login

what do you have now?

I have...

Protein

Carbs

Fats

veggies

Ratings RecipeZ login

Here's what you can make...

sort by
- cooking time
- ratings

[] _____

[] _____

[] _____

[] _____

If website can't find any recipes:

Ratings

RecipEZ

login

Sorry,
we can't find any recipes
please try again with
different ingredients

Click here to search again

Work Distribution

Team Member	Responsibility
gglee2	Project Manager, Database UML Design and Implementation
dlg2	UI Design and Implementation, User Ratings and Reviews
rendyh2	Database UML Design and Implementation, Specialty/Diet Filtering
jeewonk2	UI Design and Implementation, Ingredients Filtering