

Recipedia

Final Project Proposal

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Github link: <https://github.com/CMPT-276-SUMMER-2025/final-project-16-moons>

Project Overview:

Recipedia is a recipe generator that enables users to search for recipes while providing nutrition information for every meal. The app proposes a solution to two questions users ask: "What should I eat?" and "What's the nutrition content of this meal?". It aims to cut down on time spent trying to find meals that fit their nutrition goals and makes it easier to plan meals for the day. The app also gives users a variety of meals to choose from, based on certain preferences, such as ingredient or intolerances, to target a variety of dietary needs.

The idea originated through a brainstorming session where each team member was trying to come up with a project that would provide the most value to its users. Although several ideas were mentioned, none of them addressed an issue that most people face.

Additionally, most people have busy lives and a never-ending to-do list. Meal planning is just one less thing to worry about. The app enables users to take control of their health by giving them the ability to choose nutrient dense meals so they can hit their micronutrient and macronutrient targets. It provides a quick and efficient way to meal plan so users spend less effort trying to decide what to eat and if it fits their goals. Additionally, the app acts as a great starting resource for nutrition education, especially for those who are less knowledgeable about nutrition. It encourages people to make better choices while providing a variety of meals that meet their preferences.

Furthermore, potential users include health-focused individuals such as, health and fitness coaches, business owners, teachers, and anyone looking to improve their overall health and find great recipes. The app fulfills these users' needs by providing a quick and efficient way to plan and make meals that fit their daily nutrition goals allowing them to achieve their long-term health goals. Additionally, the app also targets users with intolerances, sensitivities and allergies, so people with specific dietary restrictions have a way to access a variety of meals that fit their needs. Individuals with restrictions can plan and choose meals that provide variety so they don't feel as though their diet is restricted.

Personas:

Persona 1: Ismael, 19 (College Student)

Ismael is a college student living in on-campus accommodation. This is his first time away from home and so while they do have a meal plan, he wants to take this opportunity to learn how to cook and learn new recipes. Ismael just wants an easy button to press to get a recipe in front of them.

Persona 2: Ann, 34 (Frequent Business Traveler)

Ann needs to travel frequently for work. This makes cooking an issue when she might not have all the ingredients at hand. She needs a way to conveniently access recipes but filtered using the ingredients she has.

Persona 3: Omar, 28 (Fitness Enthusiast)

Omar is an avid gym goer who is deeply concerned about the food he puts into his mouth. Every calorie count and every piece of nutritional data is important to them, so he needs a way to get recipes and get in-depth data about them as well as anything he might find in the grocery store.

API Selection:

1) **The Meal DB:**

TheMealDB is a crowd-sourced database with hundreds of meals that include ingredients, preparation instructions, cooking times, etc. TheMealDB offers free API access with quite a few API calls that allow you to generate a recipe according to any desired trait, like filtering by cuisine, country, and ingredients. TheMealDB is relevant to our project as it serves as our primary recipe API which we will need to use in combination with our nutrition API.

2) **CalorieNinjas:**

CalorieNinjas is a robust nutritional data API that allows users to get important information about their food. By using the CalorieNinjas API, you can get the information about multiple ingredients at the same time. As well, the API offers a recipe search function to make it even easier on you. We will need to use CalorieNinja in our project as we plan to provide nutritional information for the recipes we provide.

3) **Chomp:**

Chomp is a multipurpose recipe and nutrition API that we plan on having as a backup. Chomp features multiple API calls that allows us to provide recipes to users, by either searching for recipes by name or by specified ingredients. As well, Chomp can provide accurate nutritional data by scanning barcodes of any items, which will prove quite useful to users who are savvy about their food intake.

4) Spoonacular:

Spoonacular is a multi-faceted API that offers many in-depth API calls to answer any questions users may have. In addition to searching recipes by ingredients, recipes can also be produced by supplying desired nutritional data. Spoonacular can also provide in-depth cost breakdowns for recipes, as well as creating balanced and fulfilling meal-plans for either a day or the week. As a bonus, Spoonacular can help the wine enthusiasts by suggesting the best wine to pair with any recipe.

API Features:

TheMealDB: (Primary)

Feature 1 – Generate a recipe for each meal of the day

What TheMealDB provides: It provides endpoints that can return meals by category (eg, Breakfast , Dessert)

Implementation : We will use `/filter.php?c=CategoryName` endpoint to get meals matching each category (e.g Breakfast). Then, the app will let the user pick from the results to suggest one for each meal of the day. If a category is missing (eg, 'Breakfast' is limited in the dataset), we will filter by cuisine or fallback to general meal suggestions.

Feature 2 – Generate recipe using user-specified main ingredient

What TheMealDB provides: The [filter.php?i=MainIngredient](#) endpoint lets us search for recipes containing a specific ingredient.

Implementation : The user inputs an ingredient (e.g., "chicken breast"), the app calls this endpoint, and shows a list of recipes that include chicken breast

Feature 3 – Generate recipes based on requested cuisine (specifying category or country of origin)

What TheMealDB provides: The API supports filtering meals by area (country/cuisine) via `/filter.php?a=AreaName`.

Implementation: The user picks a cuisine (e.g., 'Italian'), we fetch recipes for that cuisine and display them

CalorieNinjas: (Primary)

Feature 1 – Recipe search by name

What CalorieNinjas provides: The /recipe endpoint allows searching for recipes by keywords in the recipe name.

Implementation : The user types a recipe name (e.g., “Pizza”), we call the recipe search endpoint, and receive matching results with basic details (title, ingredients). Then used the input recipe name in the MealDB API to get image of the dish and detailed instructions.

Feature 2 – Nutritional information from image

What CalorieNinjas provides: Their API supports image analysis for food recognition and returns the nutritional facts.

Implementation : The user uploads an image of food or an ingredient label. The app sends this to the /nutrition image endpoint and returns data about nutrition like Sugar , Total fats , sodium , Potassium .

Feature 3 – Nutritional data from entered ingredients

What CalorieNinjas provides: The /nutrition endpoint accepts text input (ingredient name/quantity) and returns nutrition info per ingredient.

Implementation plan: The user can manually input ingredients (e.g., “1 cup cooked rice, 200g chicken breast”), the app sends this to the API, and returns combined nutritional data (fats, carbs, vitamins, minerals)

Chomp: (Backup)

Feature 1 – Recipe search by name

Feature 2 – Search for recipes using specific ingredients

Feature 3 – Nutritional data from scanning barcode

Spoonacular: (Backup)

Feature 1 – Generating a recipe by specifying desired nutrition or ingredients

Feature 2 – Price breakdown of ingredients

Feature 3 – Creating meal plan for the day or for the week

Feature 4 – Provides wine pairing suggestions for recipes

Feature 5 – Show a random, popular recipe

Chosen stack for this project:

Figma : Figma is used for creating wireframes and prototyping the user interface. Figma was chosen due to its ease of collaboration and because our team members responsible for UI/UX design have previous experience and familiarity with it.

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React JS + Vite : React is fast for making a production ready code compared to JavaScript and other frameworks. React provides a smooth integration with API and it is very beginner friendly, which is also a major reason for choosing React. We are going to use Vite with React because unlike traditional React it is much more simple and also provides features like faster startup, instant updates during development, and simpler configuration.

Tailwind CSS + DaisyUI : Tailwind provides easy to use predefined classes which along with Daisy UI provides a clean set of pre-styled UI components, saving time on design and ensuring consistency across the project. It also helps us focus more on app's core functionality rather than CSS design work.

Vercel : Vercel is a cloud platform used to deploy and host web applications, especially those built with front-end frameworks like Next.js, React, Vue, etc. These are the main reasons we are choosing Vercel as our website hosting service: it provides instant deployments by using code pushed to GitHub; apps are distributed across a global content delivery network, making it fast worldwide; every time a change is made to the code, Vercel provides a unique preview URL to test it before going live. Overall, Vercel is very user-friendly and well-suited for our project and group members.

User Story:

1) **Recipe search by name** (CalorieNinjas Feature 1)

As a home cook looking for meal ideas I want to search by dish name, so that I can explore recipes with its nutritional details.

2) **Nutritional information from image** (CalorieNinjas Feature 2)

As a diabetic with heart issues it makes life easier to know if an ingredient is potentially dangerous for my health.

3) **Nutritional data from entered ingredients** (CalorieNinjas Feature 3)

As a health conscious person I want to be able to click images of food and get its nutrition which makes nutrition much more convenient.

4) **Generate a recipe for each meal of the day** (TheMealDB Feature 1) :

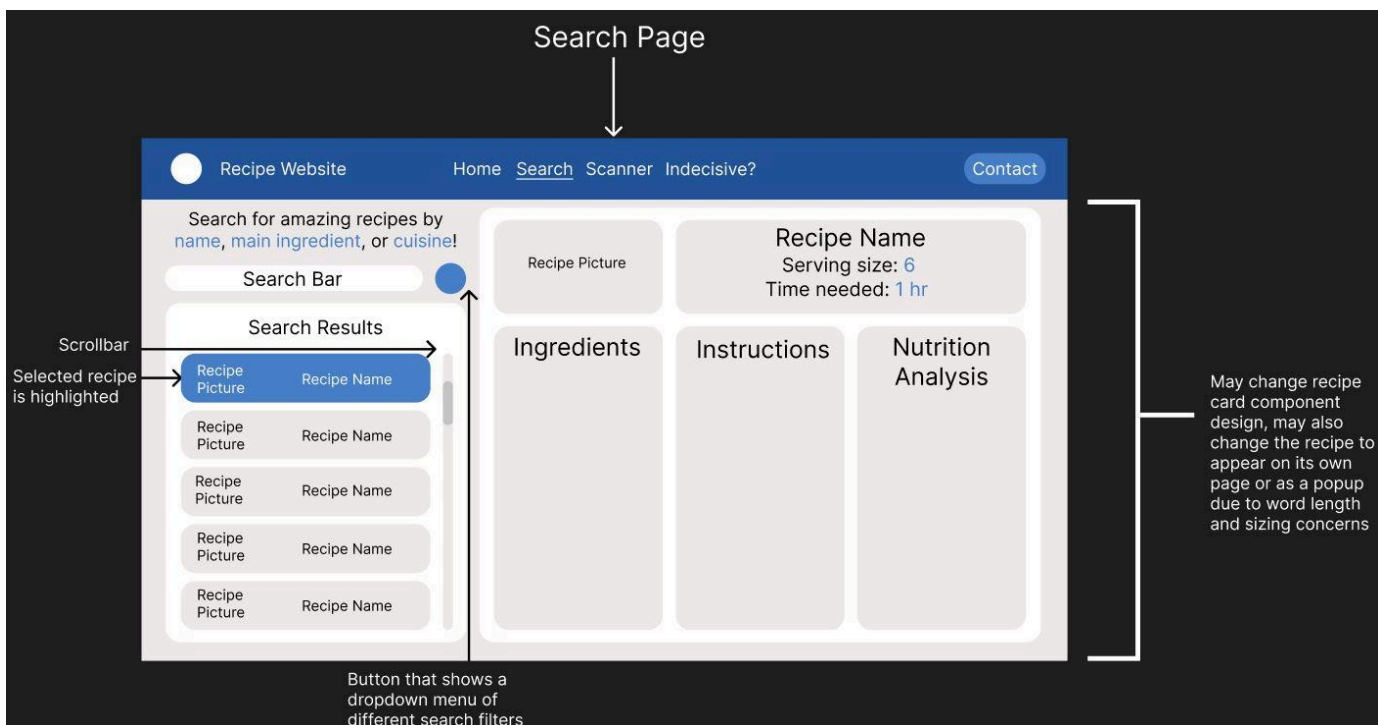
As a highly productive individual , I want a recipe suggestion for each meal of the day to reduce decision fatigue.

5) **Recipe using main ingredient** (TheMealDB Feature 2) :

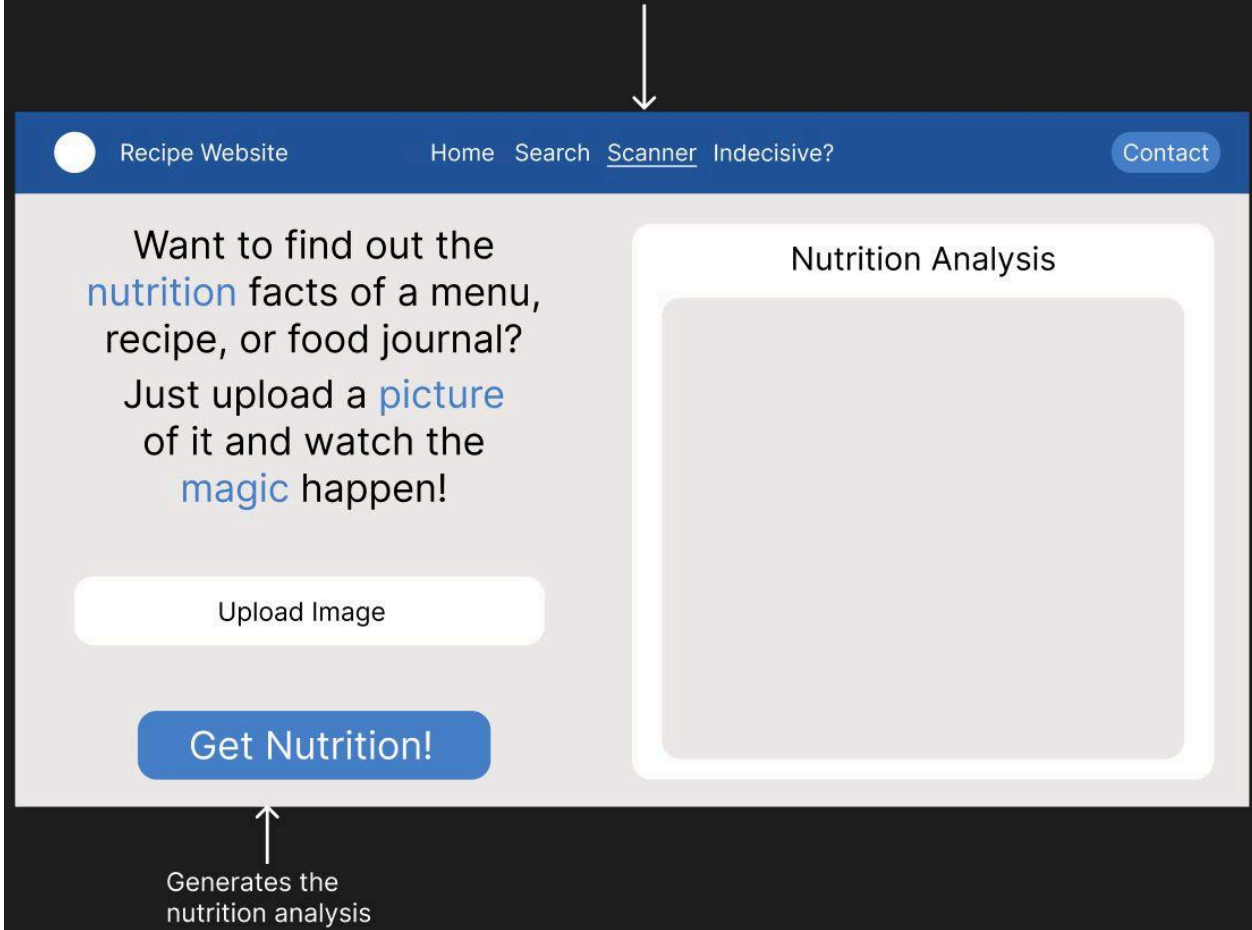
As someone who rarely cooks at home and often ends up with leftover ingredients, I want to easily find recipes based on specific ingredients I have available, so I can minimize waste and make cooking more convenient

6) **Cuisine-specific recipes** (TheMealDB Feature 3) :

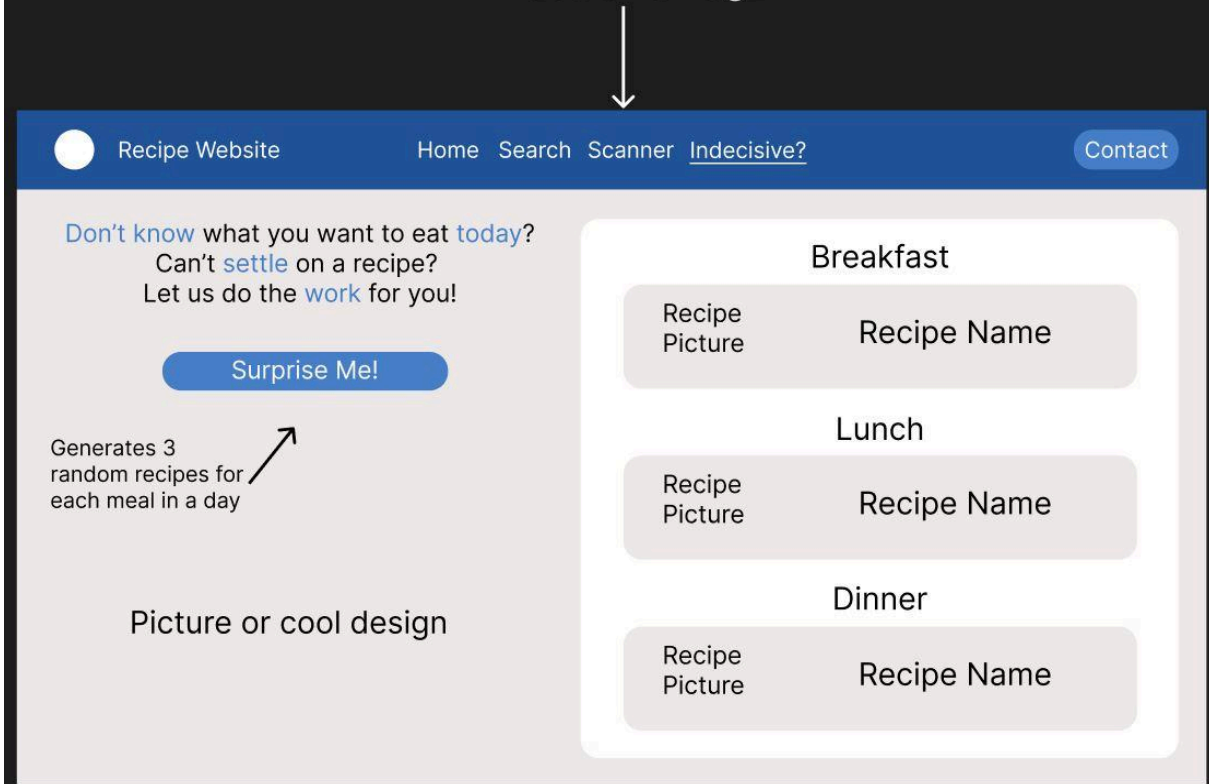
As someone who enjoys exploring foods from different cultures, I want recipes categorized by cuisine or country to discover diverse meals.



Scanner Page



Indecisive Page



The Indecisive Page features a dark blue header with a white circular logo and the text "Recipe Website". Navigation links include "Home", "Search", "Scanner", "Indecisive?", and a "Contact" button. The main content area is light gray. On the left, a text block asks "Don't know what you want to eat today? Can't settle on a recipe? Let us do the work for you!" with a blue "Surprise Me!" button. An arrow points to the button with the text "Generates 3 random recipes for each meal in a day". Below this is the text "Picture or cool design". On the right, a white box contains three sections: "Breakfast", "Lunch", and "Dinner". Each section has a light gray box with "Recipe Picture" and "Recipe Name" labels.

Recipe Website Home Search Scanner Indecisive? Contact

Don't know what you want to eat today?
Can't settle on a recipe?
Let us do the work for you!

Surprise Me!

Generates 3 random recipes for each meal in a day

Picture or cool design

Breakfast

Recipe Picture Recipe Name

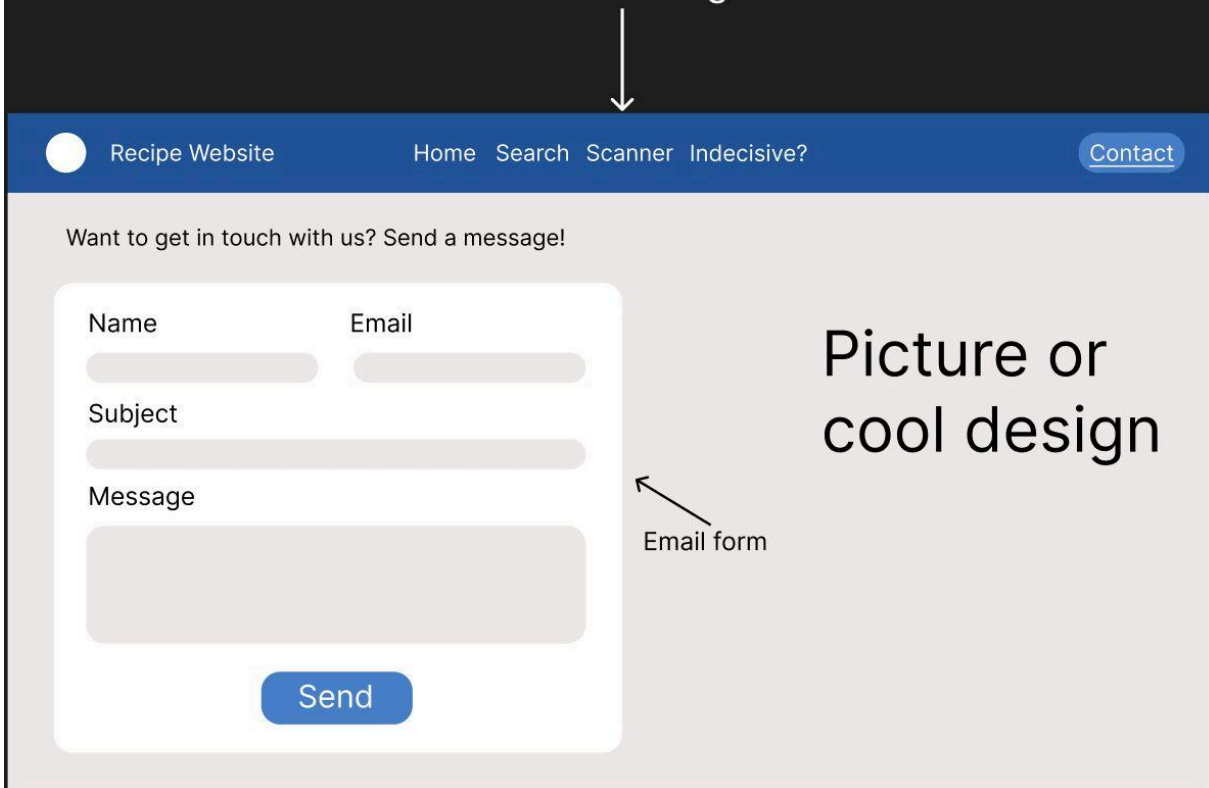
Lunch

Recipe Picture Recipe Name

Dinner

Recipe Picture Recipe Name

Contact Page



The Contact Page features a dark blue header with a white circular logo and the text "Recipe Website". Navigation links include "Home", "Search", "Scanner", "Indecisive?", and a "Contact" button. The main content area is light gray. On the left, a text block says "Want to get in touch with us? Send a message!". Below this is a white form with fields for "Name", "Email", "Subject", and "Message", and a blue "Send" button. An arrow points to the form with the text "Email form". On the right is the text "Picture or cool design".

Recipe Website Home Search Scanner Indecisive? Contact

Want to get in touch with us? Send a message!

Name Email

Subject

Message

Send

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Picture or cool design