Project proposal

[Project name]

[Name] [Surname]

[Student number]

(of each group member)

Problem domain

In this section, describe the real-world domain in which your proposed system will be implemented. This could be a description of a specific type of company, business, or real-world activity. Your description should be so detailed that a reader who has never heard of the domain completely understands it, what problem(s) plague it, or what opportunities there are to support/improve it. This should clearly highlight to the user why a system is necessary. If this section is shorter than half a page, it’s probably too short.

Proposed solution

In this section, describe the system you plan to develop. Think about

* What should the system do, and how should it do it?
* How would the system improve/support the current domain?
* Whether it should be desktop-, web- or mobile-based (or even a combination of some of them).
* What technologies do you think you’ll use to develop the system?
* A list of all (or at least some of) the screens or system functions you believe the system will need.

When devising your system, keep the following requirements in mind:

* Your system **must** include/be based on a database, regardless of which type of database you choose. Groups of two students must have the absolute minimum of the equivalent of at least 10 tables and groups of 3 at least 14.
* A login system will be needed.
* It should have multiple input (i.e. data capture) screens. A good rule of thumb for the number of screens/system size is around 1 per database table.
* It should include at least one interesting feature that isn’t just a simple data capture screen, such as consuming external data/services or using built-in device features (such as a camera or GPS).
* Be able to generate reports in some or other form.
* Have some form of help or guidance available.
* Incorporate security
* Be maintained via version control (to which I need access)

This section doesn’t require in-depth explanations, as all of this will be presented in later documents. The goal of this section (and document as a whole) is for you (and the reader) to think about what tasks/steps your system development will entail and whether or not the system will have utility. This section should be between half a page and a full page in length.

## Problem Domain

In today's fast-paced world, meal planning and cooking can become a daunting task for many individuals. Whether its balancing work, school, or personal life, this leaves little to no time for meal preparation, let alone cooking. However, when South Africans were asked about their attitudes towards food, only 16% picked “I do not enjoy cooking” (Bashir, 2024). This indicates that majority of people do enjoy cooking and are most likely hindered by the busy daily routines.

A study in the UK found that people waste roughly 43 minutes a day, amounting to 37 hours a year, deciding what to eat. Of the 2,000 adults surveyed, 57% noted that dinner was the hardest meal to decide on. The top reasons for this difficulty included a lack of inspiration and trouble finding the right recipes, with 30% attributing it to not having the necessary ingredients to make their desired dish. (Lumley, 2024).

Despite the vast amounts of data available online, one would think following recipes would be a no brainer. However for many, this process has become a stressful and time-consuming chore. These are some of the common grievances experience by users of recipe apps/site:

* Many recipes are usually accompanied by long-winded essays with ingredients listed at the very top of the page, often with absolutely no reference to their corresponding measurements when needed.
* Users often struggle to find the perfect recipe in a sea of thousands of recipes based on the ingredients they have available
* Recipes, often assume users are all at the same skill level, using jargon such as “creating a roux” without considering that some may not know what that means.
* There is nothing more frustrating then finally finding a recipe to only get confused because it uses the imperial system instead of the metric system, vice versa.
* The lack of personalization options such as being able to save recipes or planning meals for the future makes sticking with a single recipe app difficult.
* Existing recipe apps and websites often fail to cater to user preferences and dietary restrictions or remember them for future recommendations, making them less effective.

It is clear from the above, there is a clear need for a solution that simplifies meal planning and cooking, making it more enjoyable and accessible for everyone, regardless of their skill level. Allowing people to incorporate this activity into their busy lives without the added stress.

## Proposed Solution

The solution we propose is a website and a mobile app that is designed to make planning a meal and cooking easier and more enjoyable for all users, regardless of skill level or dietary preferences. This system aims to address the common issues faced by users when it comes to cooking, such as a lack of inspiration, trouble finding the right recipes as well as the need for dietary customization.

### What should our system do and how should it do it?

Being able to customize and set preferences:

* Users can set their dietary preferences upon first registering (vegan, vegetarian, etc)
* Home page is adjusted based on the selections made during the set up (if the user is not signed in, general home page is given)
* Filter recipes by available ingredients, time as well as overall difficulty level
* Offer personalized recommendations based on the user’s past activity
* Being able to change the recipe based on specific criteria (eg. Instead of 3tsp, the user could want 6tsp)

Incorporating Beginner-friendly features:

* Having recipes for beginners
* Having basic skill walk throughs on terms used in recipes
* Step by step instructions with images and videos (if possible) to guide users through the recipe

“Cook with Me” Mode (Further assistance):

* A feature that walks users through recipes step-by-step with built in timers and reminders for further guidance
* Ingredients and measurements displayed at each step to avoid the need to scroll back and forth

Ability to plan meals and access to recipes offline:

* Being able to save recipes for offline use (if there is no Wi-Fi present at a supermarket perhaps)
* An option to plan meals for future dates and generate shopping lists (based on the ingredients in the recipe)

Searching and categorization:

* Being able to find recipes based on their category (eg. Breakfast, dinner, student meals)
* Searching based on ingredients, meal type, dietary preferences and more.

Dedicated Student Section:

* Recipes made for students, made by students (Department at nmu)
* Filled with recipes that make use of affordable ingredients and leftovers

Community and sharing of recipes:

* Recipes can be shared with others
* Capture recipes and upload them (Scan paper recipes)

Additional Features:

* User ratings and feedback for recipes to help others with similar skill levels
* Help section focused on the navigation of website/app and cooking skills

### Whether it should be desktop-, web- or mobile-based (or even a combination of some of them).

Our group is considering a combination of the two. A web and mobile based system, as usually recipes are usually found on the web. Having a mobile app also aids in the market for users that use their phones for recipes.

### What technologies do you think you’ll use to develop the system?

For creating the mobile app and a website, we considered using Flutter, React Native(along with React) and Ionic, We considered using different apis such as MealDB and suggestic. We also came across recipe datasets we could make use of for our database on Kaggle. For prototyping we considered using Figma. For version control we are using GitHub.

### A list of all (or at least some of) the screens or system functions you believe the system will need.

* Login screen and registration screen
* Preferences set up page
* Settings and Profile page
* Saved recipes page
* Help section
* Tutorial section
* Home screen which will have personalized recipes given that the user is a registered user if not, a generalised home page will be displayed.
* Recipe searching and filters for finding specific recipes.
* Recipe detail screen which will have the detailed recipe instructions with images. (“Cook me mode” activation from this screen).