



# IPrep&Cook

Phase 3 Report

Second Prototype and User Evaluation

3LEIC04 G04

Interação Pessoa Computador

Licenciatura em Engenharia Informática e Computação

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# Introduction

This project, developed for the IPC class, was focused on the development of an application with the *Health* theme.

The project had three phases (User and Task Analysis, First Prototype and Heuristic Evaluation and Second Prototype and User Evaluation) and each one of them played an essential role in the development of our project and in our learning process.

We would also like to express our gratitude to professor Thiago Sobral for helping with the development of our project throughout the semester.

## Part I - User and Task Analysis

### Idea Description

**IPrep&Cook** is a mobile app that presents itself as a solution for a daily problem: to have a healthier lifestyle without having to worry about it all the time.

Users will be able to create their own account using an email address, gaining access to a multitude of features designed to promote healthier habits, such as virtual recipe books, intake calories control or even forums to share one's experiences.

We intend to provide our users with a fun and enjoyable application, loaded with numerous features, that helps them to achieve their goal of having a healthier lifestyle.

## Related Services

### Social Network

Our app will have features similar to those you find in typical social networks, although more focused on health and cooking.

As many other apps, **IPrep&Cook** will contain features that will allow users to watch and upload content, as well as react or comment on it, with the goal of providing users with a familiar, yet innovative app that allows them to interact with each other and share their experiences with other people who are also seeking a healthier lifestyle. To achieve this, we will be influenced by some apps such as *Instagram* or *Twitter*, for instance.

## Fitness

As our objective is to help users to achieve and maintain a healthy lifestyle, we will have features related to fitness, such as a calorie intake tracker or water and food reminders. These will allow users to keep a record of what they have been eating and drinking, actively helping them to reach their goals. We believe that implementing this type of features — that are present in applications such as *Lifesum* or *Health & Fitness Tracker* — will improve the usefulness of our app.

## Cooking

Our main focus is to make an app that makes cooking not only easy and fun, but healthy as well; therefore, like in *Yummly*, *Cookpad* and others, ***IPrep&Cook*** will have implemented features that give anyone the possibility to generate, share and save recipes, effectively making cooking a more enjoyable experience for the users. By doing this, we aim to provide the most complete type of app in its market segment.

## Questionnaire

To get to know our potential users, we created a questionnaire to gather as much information in a fast and efficient way.

After gathering as many answers as we could in the time we had available, we were able to draw some conclusions.

### Personal Info

Of the 63 valid answers received in this survey, the majority are from women (52.4%). Most people are between 16 and 21 years old (50.8%), have either completed high school (41.3%) or possess a bachelor's degree (39.7%) and have never used a food-related app (84.1%).

### Experiences

Half of the users that had experience with food apps used them less than once per month; the app itself was used mostly to track one's calorie intake (60%), followed by searching for new recipes (20%) and looking for healthy eating recommendations (20%).

To adopt a healthier lifestyle, most rely primarily on internet searches, followed by using a food-related app.

The results obtained indicate that, despite being interested in health-related apps, most people had never used one and a significant amount of those who had rarely used them. This behavior could stem from the apps available on the market not being engaging enough to keep users invested in them.

## **Preferences**

Based on the answers we got, the most important feature is having a recipe generator, although alerts (such as reminders to drink water) and a calories tracker are also valued. Some suggestions we received also mention having diet planners based on user objectives.

Interestingly enough, there wasn't that much interest in having social features such as following users/pages or integration with other devices when compared to other features like the calories counter or the recipe generator, which allowed us to infer that the low usage rate of similar apps may be due to the fact that the health-related features simply aren't engaging or easy to use.

## **PACT Analysis**

### **People**

The target market of this app is people who want to have healthier eating habits and/or need ideas on how to cook specific meals, as well as people who don't have much time to focus on improving their diet. There is also a goal to attract food enthusiasts who more often than not don't have a place to share their own creations. Since the technology required to use the app is rather simple and user-friendly and the overwhelming majority of people have access to a smartphone nowadays, the app will be accessible and efficient.

- Destined to people who seek good habits to eat healthy or ideas for what to cook.
- People with little time to create better eating routines.
- The technology used is pretty user-friendly to people of all ages, requiring only a smartphone.
- People wanting to share their food creations..

## Activities

The app will have ways to check nutritional values, track calories or the quantity of water that the user drank; it will also allow them to plan their meals according to their specific needs and objectives. With notifications and reminders, the users will be able to have a balanced diet and maintain a healthier lifestyle without being overwhelmed.

- Achieving a balanced diet.
- Tracking nutritional values and calories that the user consumes daily.
- Having a healthier lifestyle.

## Context

When the user is struggling to find something to cook on special occasions or even on a daily basis, the app will play an important role by providing the user exactly what he needs. The app will also help the user with other tasks like managing their supermarket grocery purchases or checking a list of necessary items for cooking a previously saved meal.

- In the supermarket when buying groceries.
- Daily use.
- When preparing a meal.

## Technologies

As long as the user has access to a mobile phone, he can engage with all the functionalities provided by the application - accessing forums to check what other people have published or even to comment on their publications, creating his own posts and uploading pictures using the phone's camera. All of these features are very simple and easy to use, thanks to the app's user-friendly UI.

- Access to the user's mobile phone camera.
- Access to the internet.

# Personas

## Persona 1

**Name:** Ana Simões

**Age:** 21 years-old

**Gender:** Feminine

**Location:** Porto, Portugal

**Profile:** Ana Simões is a 21-years-old marketing coordinator. She's health-conscious and strives to maintain a balanced lifestyle. Ana is a skilled cook and enjoys experimenting with new recipes, often learning towards healthy options.

**Motivations:** Ana takes pleasure in sharing food creations on social media. Due to her busy work schedule, she values quick and easy-to-make recipes.

**Frustrations:** Ana may feel frustrated when she lacks a platform to interact with other food enthusiasts and share her creations.

**Goals:** Ana aims to expand her culinary skills and knowledge by trying new recipes and cooking techniques.

**Needs:** Ana needs a source of constant recipe inspiration that aligns with her health-conscious preferences.

## Persona 2

**Name:** José Alberto

**Age:** 55 years-old

**Gender:** Male

**Location:** Porto, Portugal

**Profile:** José Alberto is a 55-year-old lawyer. Due to his academic life, he gained habits that affect his health in terms of food, despite his love for cooking and eating healthy.

**Motivations:** Likes to cook in his free time and wants to have a healthier lifestyle. Saw some of his friends in a better health condition.

**Frustrations:** Struggles with time and to come up with ideas for healthy, yet tasty, meals.

**Goals:** José aims to gain a better understanding of the nutritional content of his meals and make informed dietary choices.

**Needs:** Improve his diet in order to prevent future health conditions. Starting to take more care of his health.

## Activity Scenarios

To be easier to understand what type of scenarios would lead to the use of our application by the personas we referred to previously, we idealized the following ones:

### Scenario 1

José wakes up in the morning and skips breakfast due to a lack of time to find and prepare something he enjoys. Therefore he decides to use ***IPrep&Cook*** to find something that not only suits his tastes but is healthy as well.

### Scenario 2

José would like to keep track of what he eats and how much water he drinks throughout the week; with that in mind, he started using ***IPrep&Cook*** to monitor his weekly calorie intake and remind him to ingest water, making it easier to make his diet healthier.

### Scenario 3

Ana wants to demonstrate her cooking skills to her family while showing them that a healthy meal can be a delicious one. To achieve this, she uses ***IPrep&Cook***, referring to the ingredients she has available. Ana then receives a list of ideas along with tasks involved and relevant data such as calories for each one.

## Scenario 4

Ana enjoys sharing her cooking tips and recipes. With interactive posts on ***IPrep&Cook***, she encourages viewers to try and provide feedback based on their experiences with her recipes. She values the insights and advice from her audience, aiming to enhance her cooking techniques and create a collaborative culinary community.

# Functionalities and Tasks

## Functionalities

Some of the main functionalities provided by our app are:

- **A Recipe Generator** based on available ingredients or user's objectives and tastes;
- **A Calories Calculator;**
- **A Weekly Meal Planner;**
- **Reminders** to help user to achieve objective such as drink water, gain/lose weight
- **Integration with other personal devices**
- **Login/Logout**
- **Follow** pages and users
- **Interactive posts** where users can like/comment/share

## Tasks

The system should handle the following tasks:

- The user enters the ingredients and selects a goal. After that, a couple of recipes will be available on the user's screen.
- A user sets reminders to help him achieve a certain objective, such as drinking water.
- The user shares a recipe, sets the ingredients and tags in order to make tracking easier.

- An user selects a target to achieve, based on that and the user's disponibility and data, such as weight or height, a weekly meal planner will be presented to him.

## Conclusion

Based on our research and the valuable feedback received through our questionnaire, it appears that existing food-related apps are not entirely meeting users' demands. The current landscape lacks a standout app that fully addresses users' needs, potentially contributing to a limited user base.

Our initial interaction with potential users has provided crucial insights, offering confidence that we can introduce something new and well-received. We now have a clearer understanding of the aspects our initial idea should emphasize and the new elements we should incorporate for a more compelling offering.

## Annexes

### Questionnaire

1- Indicate your age:

- <16
- 16-21
- 22-30
- 30-40
- 40-50
- 50-65
- >65

2- Indicate your gender:

- Feminine
- Masculine
- Prefer not to say
- Other

3- Indicate your highest level of education completed:

- 4th Grade
- 9th Grade
- 12th Grade
- Bachelor
- Master
- Doctorate
- Other

4- Have you ever used a food app?

- Yes
- No

(If the previous one is yes, proceed, otherwise jump to 9th question)

5- Indicate which of the following apps you have already used:

- SuperCook
- Mealime
- Recipe Keeper
- CookPad
- Yummly
- SideChef
- None
- Other

6- Indicate the frequency of use

- Daily
- Weekly
- Monthly
- Less than once a month

7- Indicate the objective of using this apps

- Search for new recipes
- Healthy eating suggestions
- Save/order recipes
- Count Calories
- Other

8- Pretend you want to adopt an healthy diet, what are the probabilities of adopting the following options (1- Unlikely 5- Highly Likely)

- Meet a dietician (1-5)
- Search on Internet (1-5)
- Use a Recipe App (1-5)
- Search on a book (1-5)
- Watch a television program (1-5)

9- Indicate your preference about the following functionalities, regarding an app of this type

- Follow users/pages (1-5)
- Recipe Generator (based on specific ingredients) (1-5)
- Integration with devices (clock, fridge, ...) (1-5)
- Calories Counter (1-5)
- Reminders (drink water, eat, ...) (1-5)

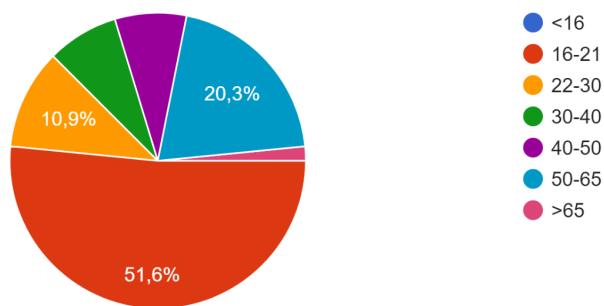
10- If you have any suggestion leave it them bellow

## Summary of Results

1- Indicate your age:

Indique a sua idade:

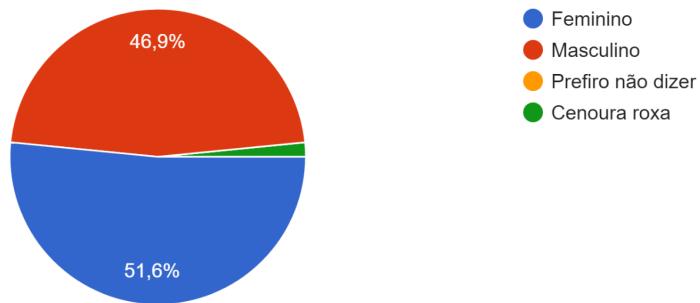
64 respostas



2- Indicate your gender:

Indique o seu género:

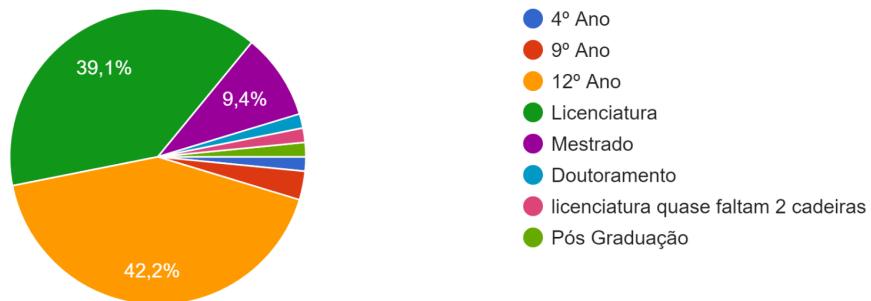
64 respostas



### 3- Indicate your highest level of education completed:

Indique o nível mais elevado de escolaridade que completou:

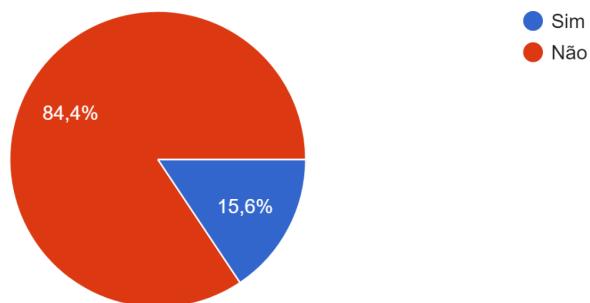
64 respostas



### 4- Have you ever used a food app?

Indique se já utilizou anteriormente uma aplicação sobre alimentação

64 respostas

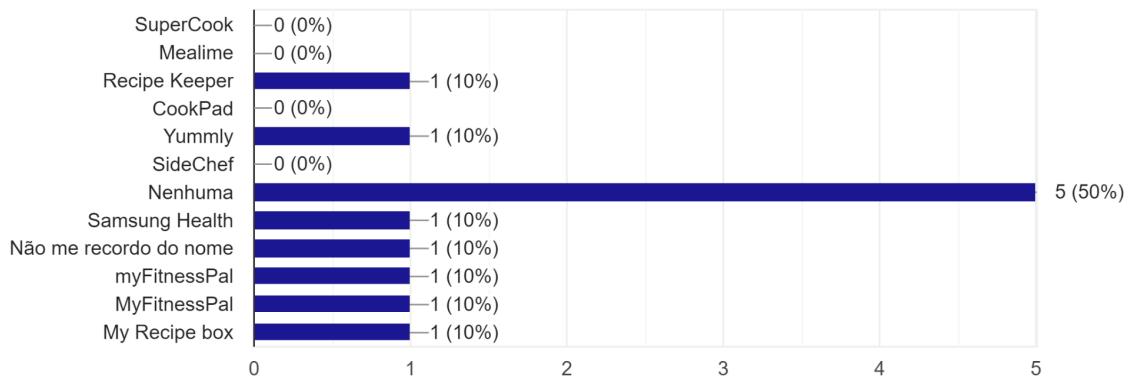


(If the previous one is yes, proceed; otherwise, jump to the 9th question)

### 5- Indicate which of the following apps you have already used:

Indique quais destas aplicações já utilizou:

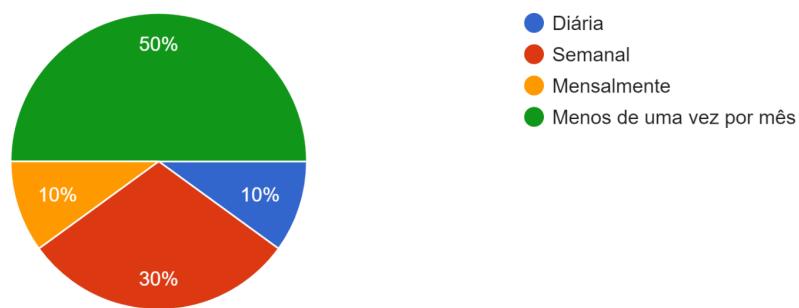
10 respostas



### 6- Indicate the frequency of use

Indique a frequência de utilização:

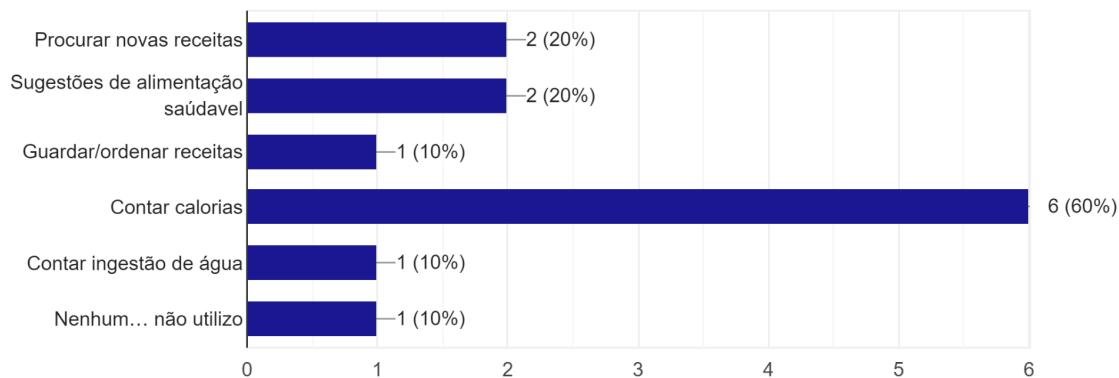
10 respostas



## 7- Indicate the objective of using this apps

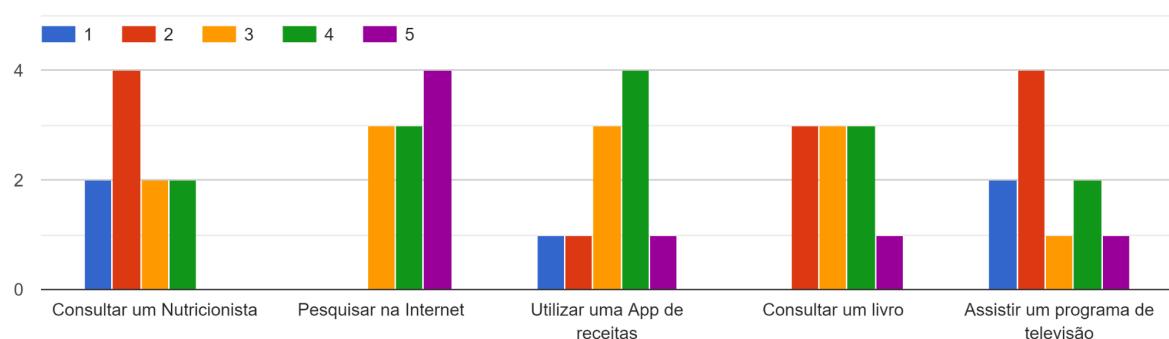
Indique o objetivo da utilização destas:

10 respostas



## 8- Pretend you want to adopt an healthy diet, what are the probabilities of adopting the following options (1- Unlikely 5- Highly Likely)

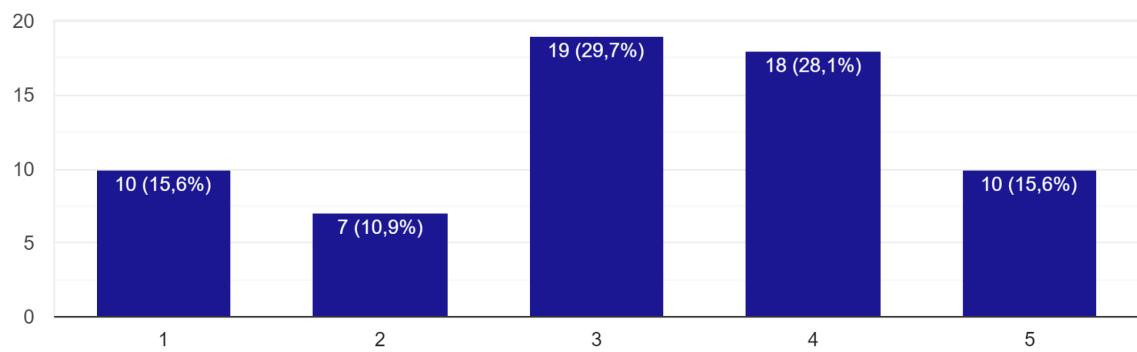
Caso pretenda adotar uma alimentação saudável indique a probabilidade de adotar as seguintes opções. 1- Improbável 5- Muito Provável



9- Indicate your preference about the following functionalities, regarding an app of this type (1-5)

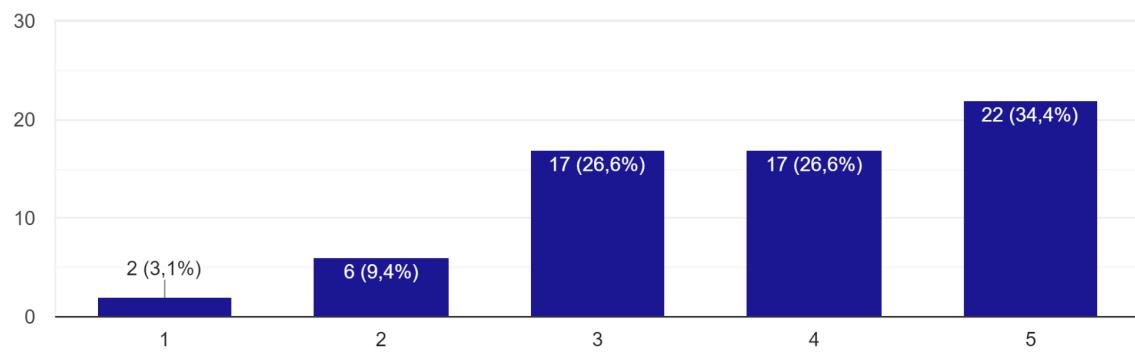
Seguir utilizadores/páginas

64 respostas



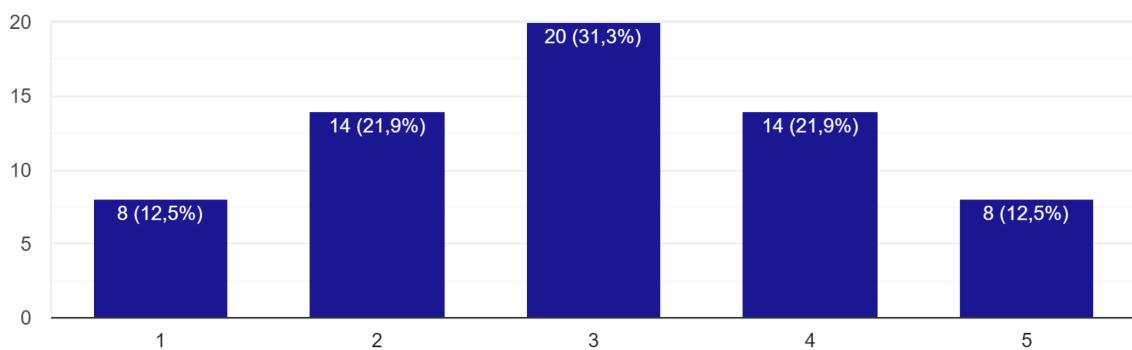
Gerador de receitas (baseadas em ingredientes específicos)

64 respostas

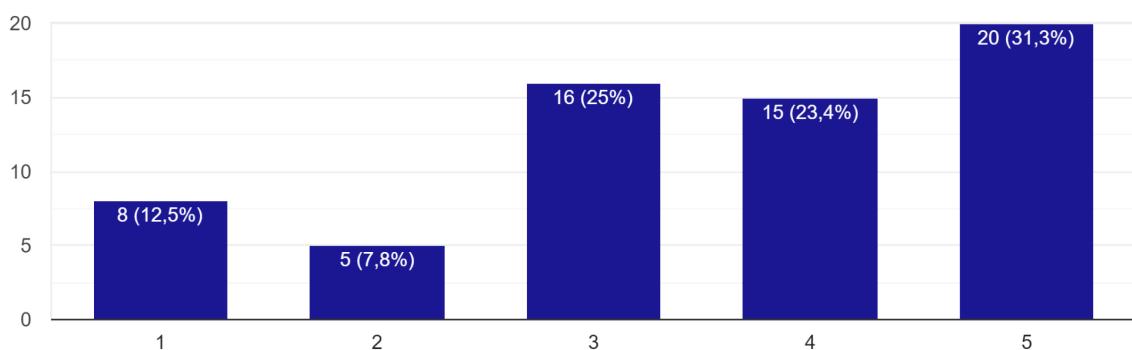


**Integração com dispositivos (relógio, frigorífico, ...)**

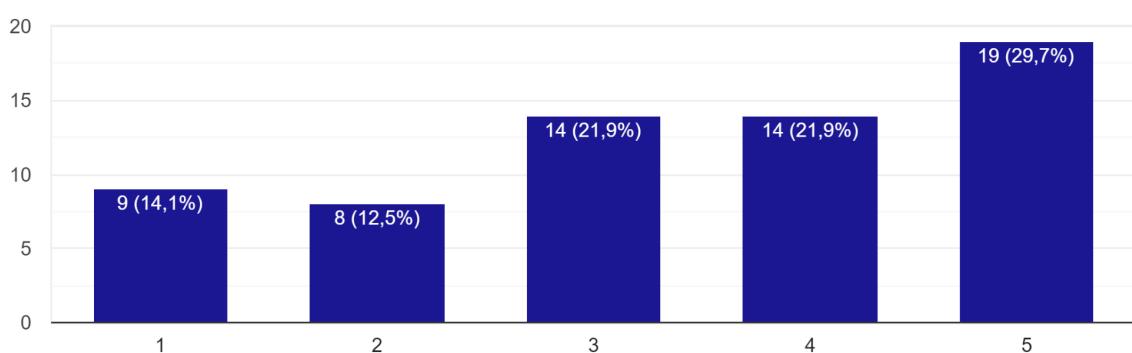
64 respostas

**Contador de Calorias**

64 respostas

**Alertas (beber água, comer, ...)**

64 respostas



## 10- If you have any suggestion leave it them bellow

Caso tenha alguma sugestão indique aqui em baixo.

Obrigado!

7 respostas

Sugestão de receitas baseado em objetivos alimentares (p.e. perda de peso, ganhar massa muscular, ...)

Sobre o forms: digam só no início da segunda parte do forms uma descrição da app que pretendem, like, queremos fazer uma app para promover uma alimentação saudável, dentro destas features, identifica o quanto útil seriam, ou qualquer coisa parecida, no inicio achava que era features em apps no geral

gerir peso

Feed de fotos, livro virtual de receitas, chats de partilha e posts de experiências

Era ótimo se pudéssemos ter planos para a semana do que comer e assim , assim como receitas

Sincronização com listas de compras, e dar para ter listas por supermercado. Pois acontece de gostar de alguns produtos de uns supermercados e outros de outros no que toca a alternativas mais saudáveis. Podia também dar para ter o inventário da dispensa, para sabermos sempre o que temos e o que precisamos comprar.

Com base no imc e outros dados relevantes (intolerâncias, preferências, etc.), bem como os objetivos do utilizador (ganhar/perder peso, etc.), sugerir dietas, hábitos e receitas adequadas, e outros utilizadores/páginas que vão de acordo com as necessidades do utilizador

## Part II - First Prototype and Heuristic Evaluation

### Project Description

***IPrep&Cook*** is a project that presents users with a fun and enjoyable mobile application which helps them to achieve their goal of having a healthier lifestyle.

For this prototype phase, we decided to focus on the following three tasks:

- I. **Recipe Generator** - Allows the generation of different recipes based on both what the user's goals/tastes are and ingredient availability.
- II. **Calories Calculator** - Calculates the amount of calories the user has ingested based on what he has consumed throughout the day.
- III. **Weekly Meal Planner** - Provides the user with the ability to plan out an entire week of meals based on what their goals are and how much time they can spend on preparing meals.

The decision to focus on these specific tasks stemmed both from our desire to make our project stand out from other apps already widely available for download and the feedback we received in Phase 1, based on our potential userbase's needs.

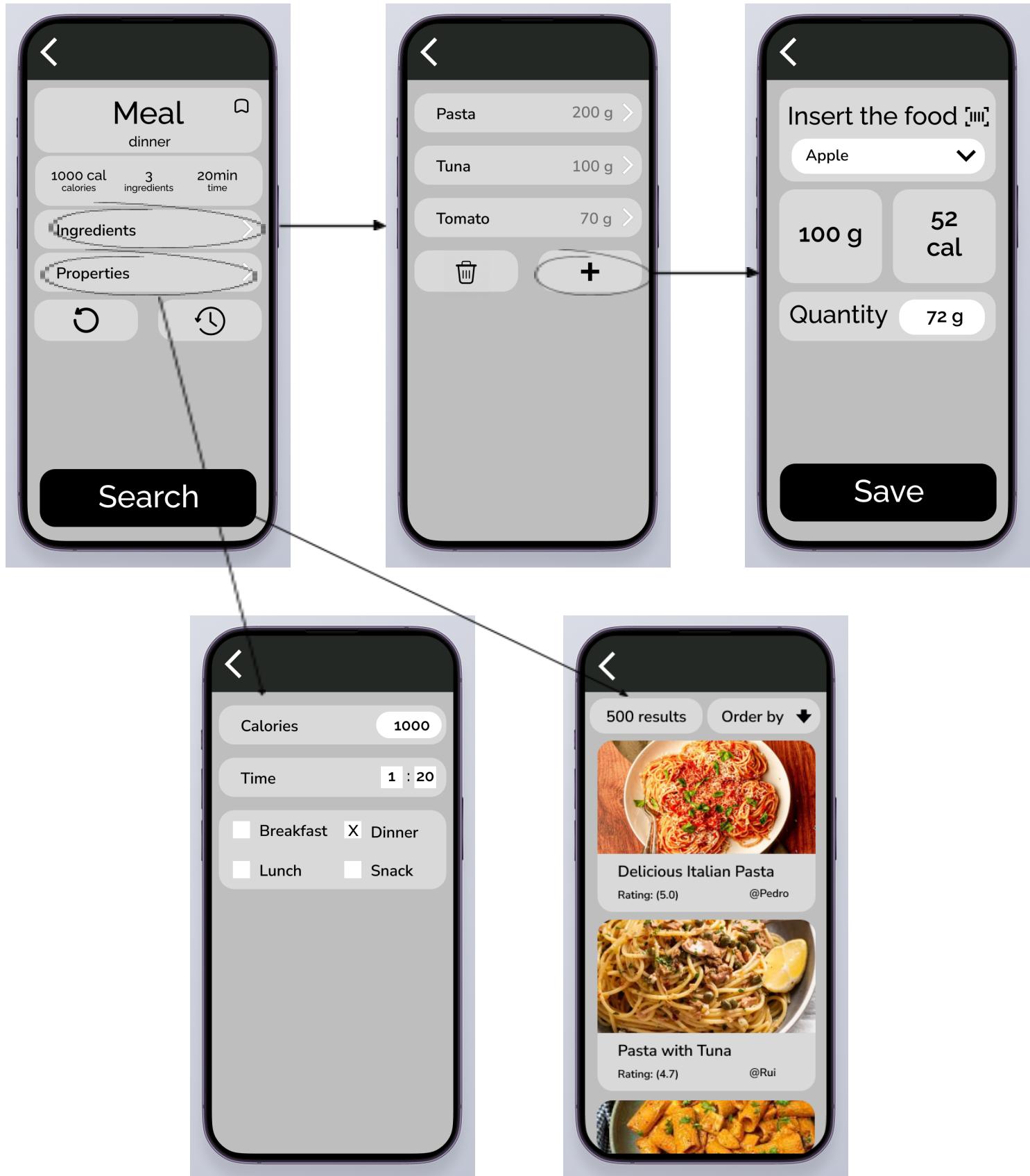
### Prototype's Wireflow

#### Recipe Generator

The *Recipe Generator* gives users access to delicious, nutritious, and/or quick meals with just a single click. Our approach was to provide comprehensive, yet user-friendly, solutions, ensuring that all types of users can effortlessly discover the perfect recipe to meet their preferences. Whatever meal the user is looking for - whether it be a specific flavor, a healthy meal or even just one that is quick to make - our feature is designed to cater to every user's culinary needs.

This feature offers a customizable menu, allowing users to input criteria for their desired meal search. Users can edit parameters such as available ingredients, expected calories, preparation time, and meal type. Additionally, they have the option to save presets for future use or load previously used ones. After inputting these preferences, the system generates multiple solutions based on the current information and the user's past preferences. Users can then

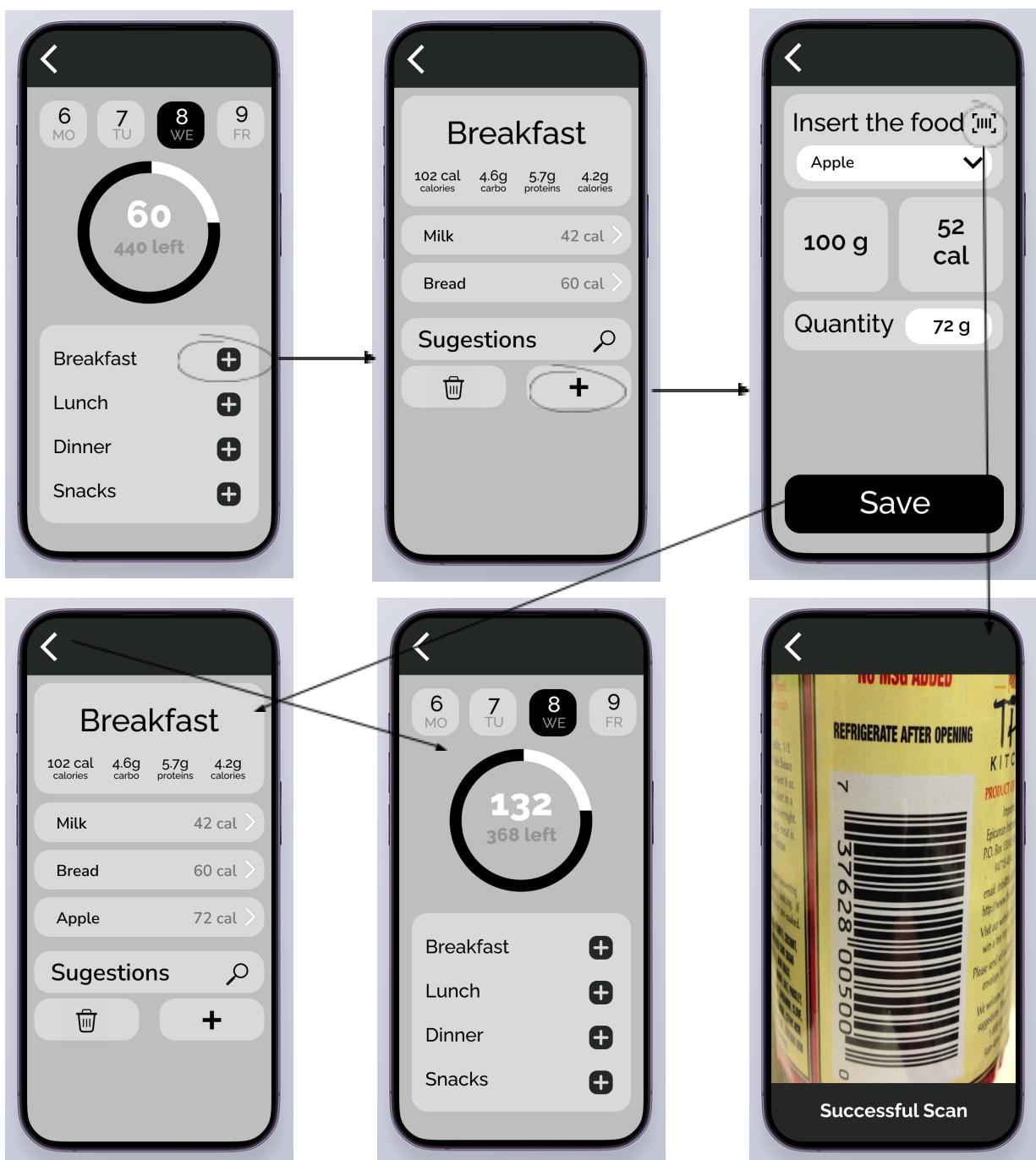
choose an option, after which a detailed post containing the recipe, nutritional information and other relevant details will be provided to them.



## Calories Calculator

The *Calories Calculator* feature encourages users to track their calorie intake, assessing whether they are below, within, or above their (calorie) goals. With an emphasis on simplicity, the feature utilizes our comprehensive database to provide users with the best and most accurate information about their nutritional choices.

When utilizing this feature, users will have their daily calorie intake on display, with the option to access detailed information for each meal, such as breakfast. Additionally, users can review their historical data, tracking their progress over a week or a month, for example. Within each meal, users have the possibility to add, remove, or edit what they consumed and how much, either by inputting manually or scanning the product.



## Weekly Meal Planner

The *Weekly Meal Planner* serves as a valuable tool for users to plan their entire week, delivering a well-balanced schedule aligned with their specific objectives. Its key feature lies in its ability to provide a diverse and user-friendly approach, ensuring a complete and healthy meal plan for every day of the week.

As the *Recipe Generator*, users are able to define not only their goals but how they pretend to have their week planned as well. Users can opt to begin with a new planner, select a template, or revisit a previously planned week. Once the plan is established, users can iterate through each day and meal, with the ability to add, modify, or delete entries. Additionally, users can access detailed information about each meal, including preparation steps, ingredients, and caloric content.



## Heuristic Evaluation Results

In this phase, our prototypes were evaluated by two other groups. We got their feedback in a heuristic report that contains the description of each of the problems and their severity level, ranked from 1 up to a maximum of 4.

With **level 1** of severity:

- **Flow error in the Figma prototype:** something to be aware of, so that when we show the prototype to someone else it looks consistent and clean. This is a simple fixable mistake made by us.
- **Usage of different pages with the same purpose, but different functionalities:** this could lead to some users that are used to a specific way of accessing a functionality simply being unable to do so in a different page/situation. We totally agree with this issue in our prototype, we should try to make the app easy to navigate and easy to find where the user is.
- **Lack of feedback:** one of the highlighted problems is that there is no way to distinguish the meals that have already been consumed from those that haven't been consumed yet. This would make the app less intuitive for the average user, when it should instead highlight the next meals and dispose of the ones that have already been consumed in an easy and user-friendly way. In our vision of the prototype there was no place where we could've implemented that visual feature, we should've thought this through when designing the task prototypes.

With **level 2** of severity:

- **Flawed functionalities:** some of our implemented functionalities are not intuitive or are missing something. We have a scanning feature that is supposed to read a product's barcode and save its details (such as its calories, for instance), but won't let the user choose the amount of the product that is being consumed; this could lead to wrong values being introduced, which have a direct influence on the user's diet. Other implemented features allow the user to add products either to a recipe or to the *Calories Calculator*, but don't possess an option to delete a specific product.
- **Lack of intuitiveness:** for example, one of the features requires the user to perform a swiping motion, but there is no tutorial to let them know what to do in that situation. This could lead to some users not being

familiar with some of the features that our app offers, such as marking a meal as *consumed* or, more importantly, the feature to generate a new meal (in the *Weekly Meal Planner* template), which could result in a downgraded user experience. As more experienced and biased developers of the application this was intuitive in our minds, after this heuristic evaluation this clearly was a wrong approach for us.

With **level 3** of severity:

- **Lack of clarity:** some pages in our application don't have a title that allows the user to know where he is at. Most importantly, in our *Calories Calculator*, the measure (*cal/kcal*) being used isn't displayed, which could lead to misleading values.
- **Lack of feedback to the user:** we've seen some examples of this before, but this one is more severe according to what the other groups reported. In our app the user has the option to delete a product from the *Calories Calculator*; however, the user might accidentally delete it, since there is no confirmation option available. This could result in unwanted behavior when the user interacts with the app. As a low-fidelity first prototype we tried to show the main ideas of the application, not regarding some minor but really important aspects.

## Corrections to perform in Phase 3

As we've seen before there are a few corrections to be made to our app's prototypes. We've listed them accordingly to the table we've shown before:

Problem	Correction
1	Correct the flow in Figma to point to the correct page.
2	Add an option to insert the amount of food ingested and convert it automatically to weight.
3	Change the color of the meal tickets that were already consumed.

4	Usage of the page with the scanner option for every prototype.
5	After scanning the product, select the amount of food from the registered product.
6	When the user goes to the <i>Meals</i> page for the first time, show a tutorial of how to generate a new meal (swipe).
7	Add a button in the foods previously inserted in the <i>Calories Calculator</i> to make it possible to delete them.
8	Show a confirmation pop-up when the user tries to delete a meal/ingredient.
9	Add a title to the page so the user knows where he is and display the “cal.” in the <i>Calories Calculator</i> .

## Conclusion

In this phase of our project, we started working on our application's prototype in Figma.

Our work was then reviewed/evaluated by two other groups and, although we were confident in what he had developed so far, it was clear that there were still features that were either missing, incomplete or just outright poorly designed; this process was really important due to the fact that it allowed us to quickly identify the major issues with our app's design find. Therefore, we will focus our efforts on trying to fix them so that users can enjoy the best version possible of *IPrep&Cook*.

## Annexes

### Received Heuristic Evaluation Reports

#### Report 1 (by Group 3)

HCI Winter Semester 2023 - 2024

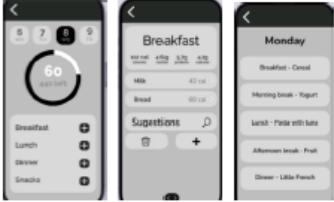
## Heuristic Evaluation Report

Class Nr.: LEIC04 – 9/11 – Thiago Sobral

Group evaluated: 04 – Iprep&Cook

By group: 08

Problem #	Issue (include screenshot)	Heuristic(s)	Severity (1-4)
1	Missing "calories" to indicate what is being measured. Lack of clarity.	1, 2, 6	3
			
2	Missing documentation to assist users use the system: the scroll to the left is not intuitive.	6, 7, 10	2
			
3	Two types of "insert the food" (first without scanner, second with scanner)	4	2
			

4	Could have an option to delete a single food component, if inserted by error.	3, 5	3
			
5	Could distinguish the meals that have already been taken from the ones that haven't.	1	1
			
6	When the "trash" button is clicked, the prototype flows to the daily meal menus. Probably should flow back to the first page.	1	
			

## Report 2 (by Group 8)

HCI Winter Semester 2023 - 2024

# Heuristic Evaluation Report

Class Nr.: LEIC04 - 09/11/2023 - Thiago Sobral

Group evaluated: 4 - IPrep&Cook

By group: 3 (Nuno Silva e Tiago Azevedo)

Problem #	Issue (include screenshot)	Heuristic(s)	Severity (1-4)
1	Poderia ter uma opção para introduzir número de ingredientes em vez de quantidade em g para calcular as calorias	2	1
			
2	Código QR não especifica a quantidade	7	2
			

3	Não dá para anular calorias inseridas	3, 9	3
4	Opção para gerar nova refeição não está muito intuitiva	6	2
5	Opção para apagar refeição/ingrediente não pede confirmação	5	2

# Part III - Second Prototype and User Evaluation

## Changes to Parts I and II

In **Part I** of the report, we made changes to the *Related Services* section, since we felt that our analysis of similar apps/services was relatively shallow. We also made some effort to rework some parts of the *PACT Analysis*, though this wasn't particularly extensive; in a similar fashion, we also attempted to put more emphasis on the discussion of the results obtained in the *Questionnaire*.

In addition to this, we also focused on improving the formatting and the writing of the report itself.

In **Part II** of the report, we made some adjustments to the formatting of the report and the writing itself and added some comments regarding the heuristic evaluation.

## Prototype's Wireflow

The prototype wireflow's live version is available at:

<https://www.figma.com/file/O8Q227dFjZuUoHS9tn4UYm/IPC?type=design&node-id=237%3A2&mode=design&t=N3xYX0sGlfrmjLxZ-1>

### Task 1 - Generate a new meal plan in the *Weekly Meal Planner*

The task consists in creating a new weekly meal plan from the available templates - one designed to lose weight - and generating a new meal for the Tuesday breakfast.



Path to complete task 1

- **Step 1:** Go to the *Weekly Meal Planner* and select the option to create a new plan from the existing templates.
- **Step 2:** Select the template designed specifically to lose weight.
- **Step 3:** Select “Tuesday”.
- **Step 4:** Entering the “Tuesday” meals, there will be a tutorial on how to generate a new breakfast; swipe to complete the task.

## Task 2 - Add an item to the *Calories Calculator*

The task consists in adding an apple to the breakfast and checking the new calorific value.

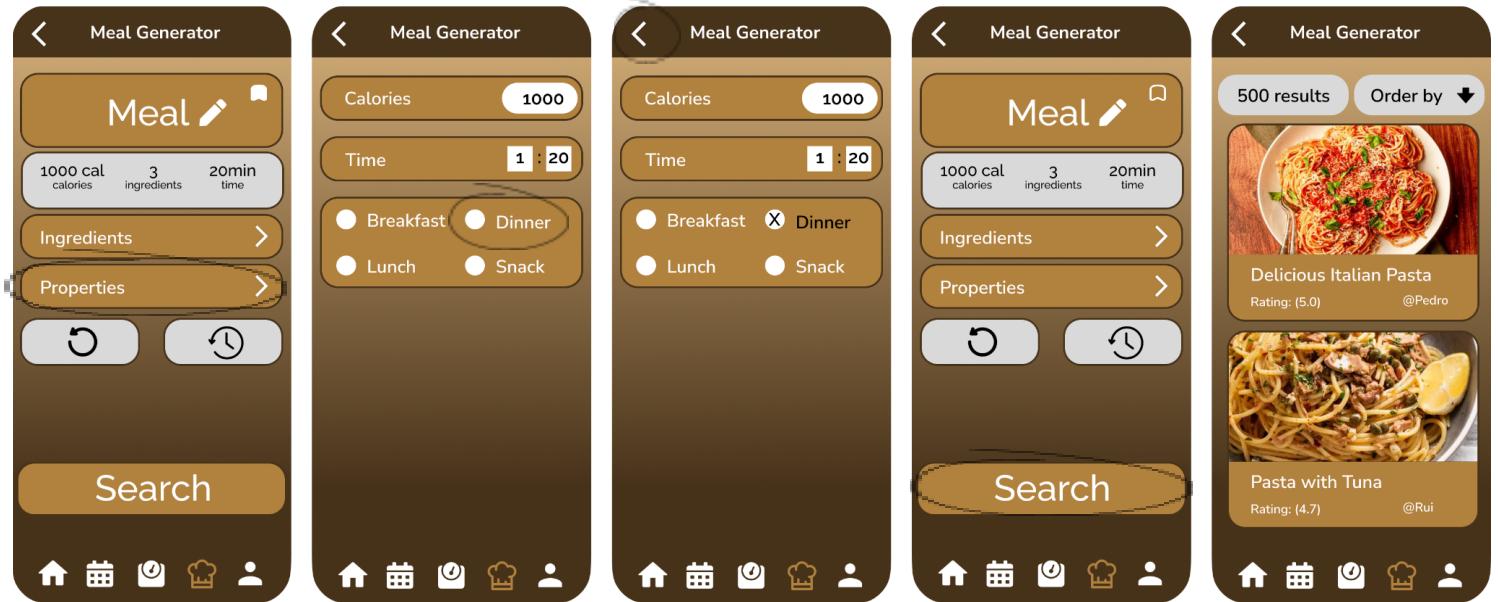


Path to complete task 2

- **Step 1:** Go to the *Calories Calculator* and select the “Breakfast” option for adding items.
- **Step 2:** Select the button to add a new item in the “Breakfast” page and then save the newly added item.
- **Step 3:** Go back to the *Calories Calculator* and verify the updated calories value.

## Task 3 - Generate a new meal

This task consists in changing the properties to dinner and searching for a new meal.



*Path to complete task 3*

- **Step 1:** Go to the *Meal Generator* and select the “Properties” button.
- **Step 2:** Set the meal to “Dinner”, go back to the *Meal Generator* and search for a new meal.

## User Evaluation Protocol

### Objective

The objective of this evaluation protocol was to gather user feedback on our application in terms of usability, efficiency and design.

The protocol encompasses 3 different tasks - the same ones from the first (lo-fi) prototype, but this time represented by a high-fidelity prototype. The user’s goal is to complete the 3 tasks, while data on the time it took him to complete each task and the actions performed is collected. In the end, the user is supposed to fill out a survey with their thoughts on each individual task.

The user is expected to take about 10 minutes to perform this evaluation.

## Users

The users who participated in the evaluation sessions were mostly people between the ages of 16 and 30, although any person from any single age group was eligible for testing.

To reach them, we shared the *Maze* (platform chosen to perform the evaluation sessions) link, containing our prototype, on various social media platforms, alongside the link to the user survey forms.

## Method

*Maze* initially presented users, for each of the three tasks they had to execute, with the description of the respective task, after which it displayed its initial page; since the platform itself collects data like the number of total clicks, the number of mistakes/misclicks or the time it took a user to complete a specific task, there was no need to monitor these measurements.

After the user completed each of the tasks, we provided them with a questionnaire containing questions about themselves, the user experience, the design, usability and overall satisfaction.

## Tasks

1. Generate a new weekly meal plan using the existing templates.
2. Add an item to the breakfast and check the new calories value.
3. Generate a new meal using the available products.

## Measures

We registered the following metrics in each user's execution of a specific task:

- Time to execute the specific task.
- Number of clicks.
- Number of misclicks.
- Success rate.

In addition to the metrics above, we also collected some information regarding not only the implementation and design of each individual feature, but their overall experience while using *IPrep&Cook*.

In these links you can find a preview of our *Maze* prototype testing and the user questionnaire, respectively:

<https://app.maze.co/maze-preview/mazes/207816607>

<https://forms.gle/GRm5L3sP2cfLAQbp8>

## Results

Although using *Maze* made it easier to evaluate the results, we had a reality check regarding how these inquiries work and, in turn, learned from some mistakes we made while doing this.

We consider that the results were below expected; although our initial expectations were too high, this was due to us overlooking some variables such as concentration or will. It was also clear that many of our respondents had never answered something like this.

Even though *Maze* helped us, it brought an extra challenge to them - not only because it was in English (probably a non-native language for most of the people who participated), but also because most of the people were not aware of how the prototype would actually behave, with some of them believing that it would respond as a real app. One last factor we noticed might have had an impact on the results was the fact that some didn't notice how important the results were to us, as most of them didn't really take the evaluation process too seriously.

After every task had been completed, we provided a simple questionnaire where we asked people what they thought of each task and the app as a whole.

### Task 1

We already knew that this task was probably going to be the one that would be the most difficult to complete. Besides being the first interaction with the app and *Maze*, it was probably the hardest and longest one - something we came to regret after the evaluation period.

When analyzing the execution time for this task, we noticed that the mean was actually good. In this same parameter, however, the standard deviation (*STDev*) had a high value, all but confirming our prediction: it was the first contact that many people had with both the app and *Maze*, so some of them were actually attempting to learn how things worked while trying to complete the task. Unfortunately, this led us to a success rate of only 75% (*Direct* - 50%, *Indirect* - 25%).

Regarding the number of clicks, this task could be completed within 5 clicks so, based on all circumstances, we were happy with the outcome; the *STDev* value

also confirmed our prediction that the intuitive design of the app and its functionality weren't the only things influencing the results.

Although it was not easy for most of the testers to complete the task, after finishing it most of them agreed it was, in fact, intuitive (58%), with 17% strongly agreeing with that statement and 8% disagreeing. The design was also well received: 58% of testers strongly agreed that the task had a good design, while no one disagreed with the statement.

## Task 2

The second task yielded overall better results, due to the fact that it was simpler and most of the respondents had figured out how the flow of the app and *Maze* worked. The parameter that brought some confidence about this task was the success of 100%, even though 16,7% of testers completed it in an indirect way.

Calculating the mean of misclicks, we verified that the number was way below that of the previous task - not only because it was easier, but also because users were becoming noticeably more comfortable.

The time it took testers to execute the task was expected to be below the value of the first task; the drop, however, was bigger than we had predicted (perhaps resulting from a certain bias towards what we had observed before). Despite the high *STDev* value (which was also verified in the number of clicks), we were a lot happier with the results.

91% of testers considered the task intuitive (50% agreed and 42% strongly agreed with that statement). In terms of design, 17% of the testers did not like it, even though 75% had the opposite opinion (33% liked it and 42% liked it very much).

## Task 3

Last but not least, this task received the most positive feedback. Not only were the results better than we had hoped for, but also we achieved a 100% direct success rate. This indicated that we were doing well not only in the task itself, but in the research/evaluation process as well.

Regarding the time to execute, we achieved the lowest mean, median and standard deviation values in this task, meaning that it was the one respondents felt most comfortable with.

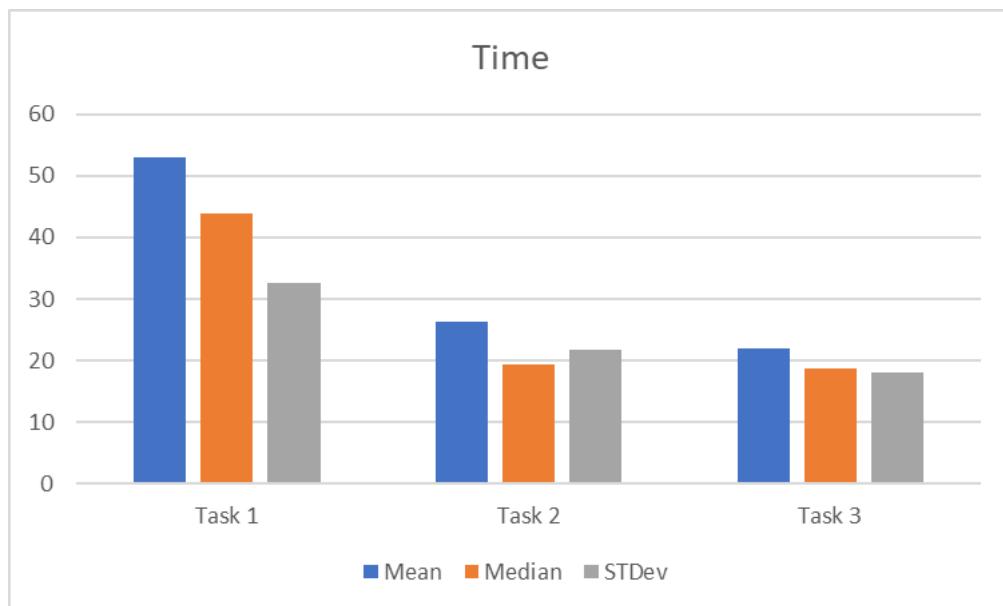
If we take a look at the number of misclicks, it seems a little odd that we would consider a task with such a high mean value the one with the best results. However, by taking a closer look at the median and *STDev* values, we noticed that some of the answers just felt out of place in terms of statistics - particularly an outlier with 113 wrong clicks, which bumped up our mean by almost 10 clicks.

The design of the task was welcomed by 75% of testers, with 58% liking it

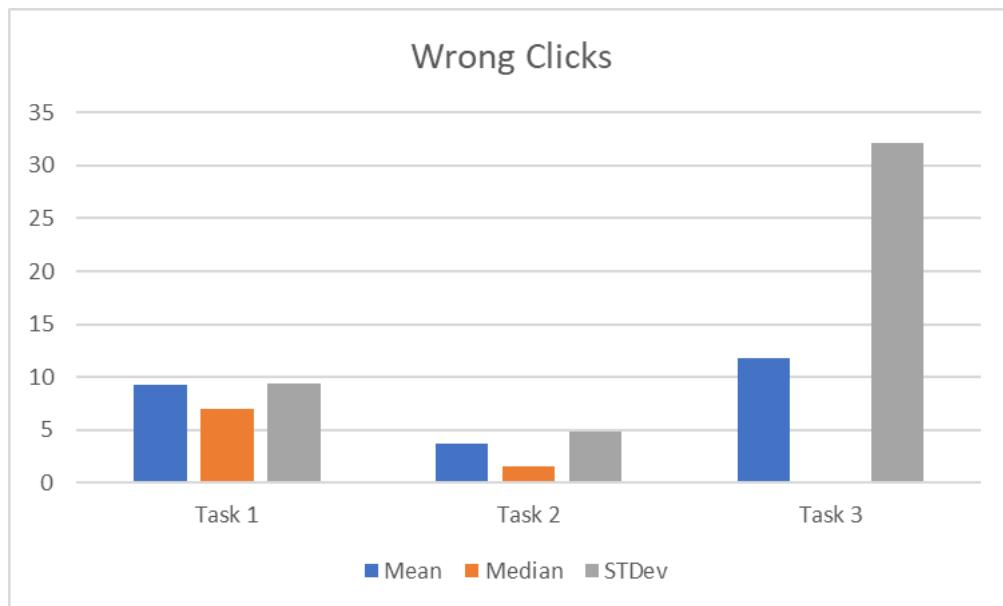
very much. This task was also considered intuitive - 83% either agreed or strongly agreed with the statement, while no one disagreed with it.

To conclude, we learned a lot on how to actually interpret these results. We can't just look at the values as absolutes; we also have to factor in all variables that influence the values themselves (the environment, the time, ...).

The app is not perfect and there is always room for improvement; however, a bad result shouldn't dictate a change if the app itself isn't the cause of the said result.



*Statistics about time on each task*



*Statistics about clicks on each task*

<u><b>TASK 1</b></u>	<u><b>TASK 2</b></u>	<u><b>TASK 3</b></u>
<b>TIME:</b> <i>Mean</i> - 53.07s <i>Median</i> - 43.95s <i>STDev</i> - 32.59s <i>Confidence Interval</i> ( $\alpha$ - 0.05) - (33.8, 72.4)	<b>TIME:</b> <i>Mean</i> - 26.4s <i>Median</i> - 19.46s <i>STDev</i> - 21.78s <i>Confidence Interval</i> ( $\alpha$ - 0.05) - (14.07, 38.72)	<b>TIME:</b> <i>Mean</i> - 21.92s <i>Median</i> - 18.65s <i>STDev</i> - 18.17s <i>Confidence Interval</i> ( $\alpha$ - 0.05) - (11.64, 32.2)
<b>WRONG CLICKS:</b> <i>Mean</i> - 9.237 clicks <i>Median</i> - 7 clicks <i>STDev</i> - 9.36 clicks <i>Confidence Interval</i> ( $\alpha$ - 0.05) - (3.74, 14.8)	<b>WRONG CLICKS:</b> <i>Mean</i> - 3.7 clicks <i>Median</i> - 1.5 clicks <i>STDev</i> - 4.85 clicks <i>Confidence Interval</i> ( $\alpha$ - 0.05) - (0.92, 6.41)	<b>WRONG CLICKS:</b> <i>Mean</i> - 11.83 clicks <i>Median</i> - 0 clicks <i>STDev</i> - 32.19 clicks <i>Confidence Interval</i> ( $\alpha$ - 0.05) - (0, 30.05)
<b>SUCCESS:</b> <i>Direct</i> : 50% <i>Indirect</i> : 25% <i>Unfinished</i> : 25%	<b>SUCCESS:</b> <i>Direct</i> : 83.3% <i>Indirect</i> : 16.7% <i>Unfinished</i> : 0%	<b>SUCCESS:</b> <i>Direct</i> : 100% <i>Indirect</i> : 0% <i>Unfinished</i> : 0%

*All statistics calculated for each task*

## Conclusion

In this last phase of our project, we developed the final iteration of our application's prototype.

Thanks to the feedback received from the heuristic evaluation, we were able to make some critical changes to the previous prototype and get it ready for user testing.

With this first experience with potential users, we now have new insights on our app, how it should be developed from this point forward and modifications that we still need to perform in the current prototype.

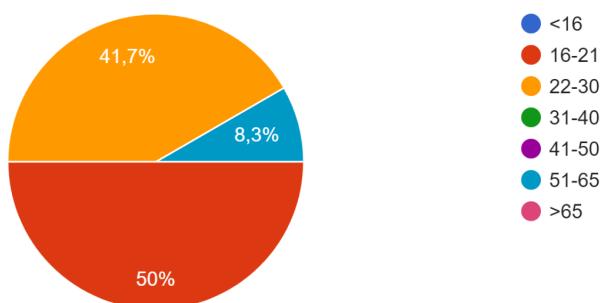
## Annexes

### Summary of Results

1- Indicate your age:

Indique a sua idade:

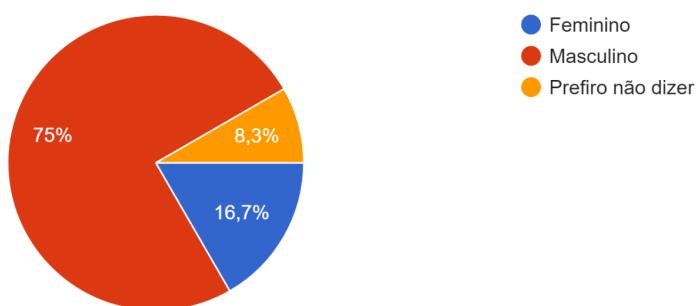
12 respostas



2- Indicate your gender:

Indique o seu género:

12 respostas



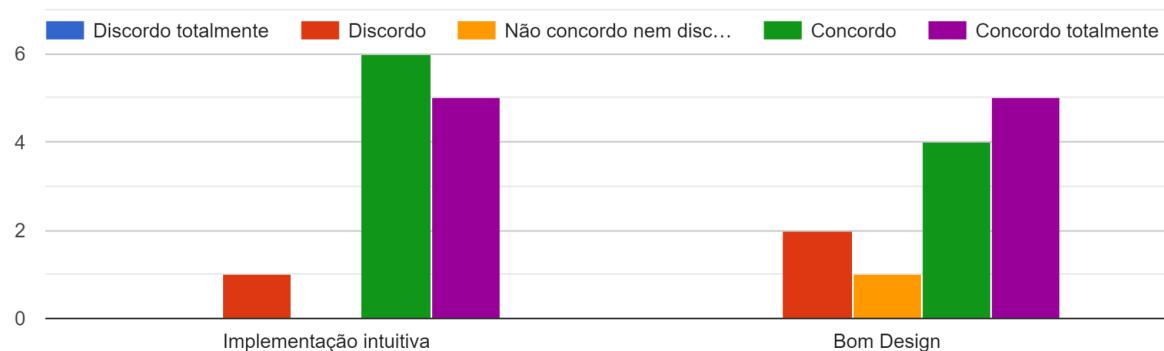
3- Regarding the "Weekly Meal Planner" functionality, select the option that best matches your experience.

Em relação à funcionalidade "Weekly Meal Planner", selecione a opção que melhor corresponde à sua experiência.



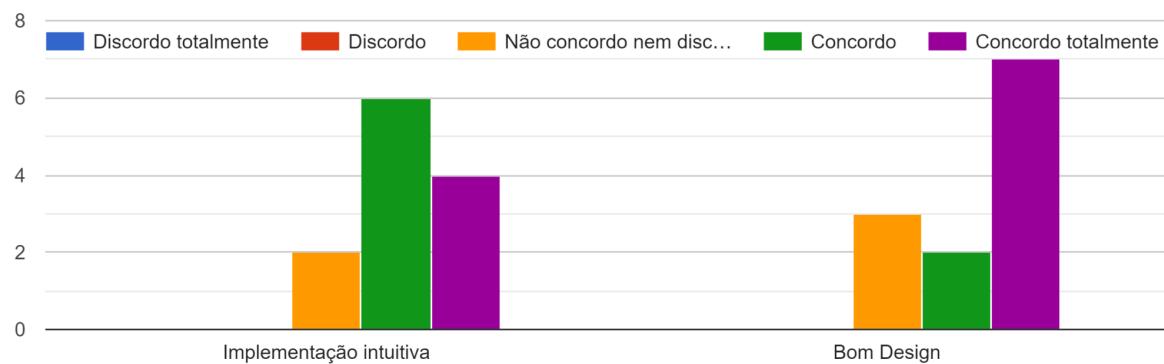
4- Regarding the "Calories Calculator" functionality, select the option that best matches your experience.

Em relação à funcionalidade "Calories Calculator", selecione a opção que melhor corresponde à sua experiência.



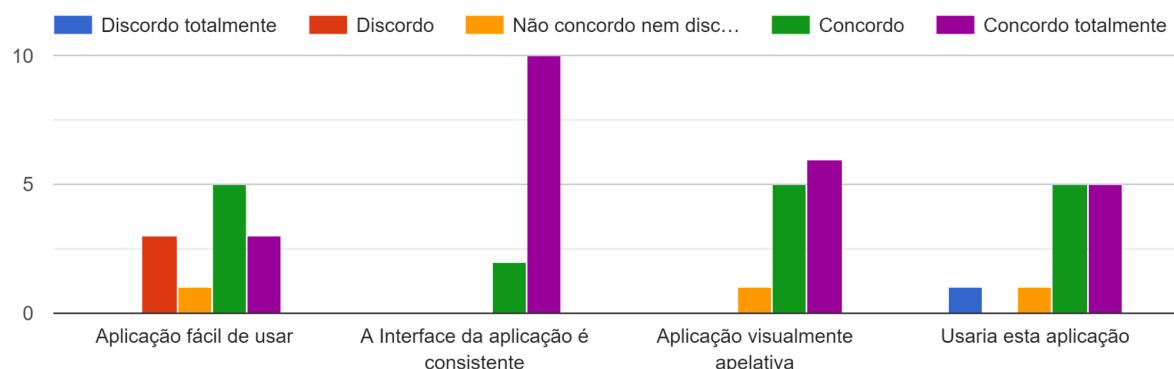
5- Regarding the "Meal Generator" functionality, select the option that best matches your experience.

Em relação à funcionalidade "Meal Generator", selecione a opção que melhor corresponde à sua experiência.



6- Select the option that best represents your overall experience with the app.

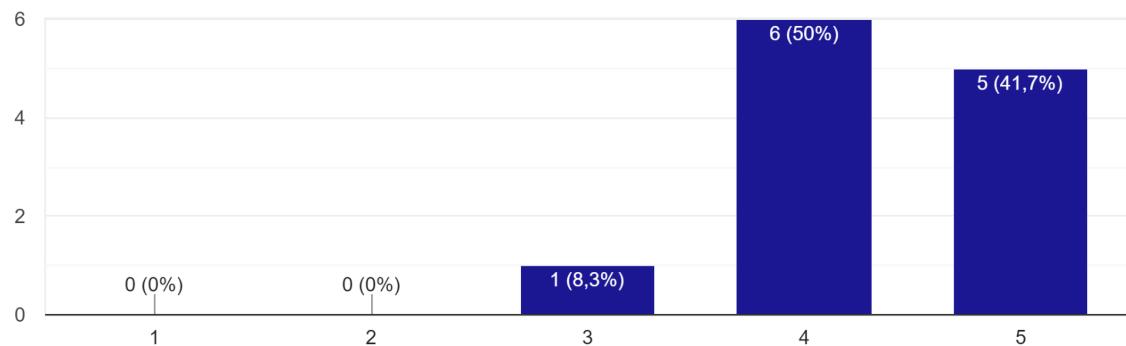
Selecione a opção que melhor representa a sua experiência geral com a aplicação.



## 7- How do you rate the app?

Como avalia a aplicação?

12 respostas



## 8- Additional Comments:

Comentários adicionais:

1 resposta

Considero que a existência de vários botões não interativos na primeira funcionalidade pode induzir em erro ou causar confusão no utilizador. Fora isso, na minha opinião, não há grande margem para erro, uma vez que as instruções no enunciado são explícitas, sendo fácil saber qual botão usar após efetuar uma leitura do mesmo. O design da aplicação está muito bem conseguido, sendo apelativo e não sobrecregendo o utilizador com detalhes possivelmente fúteis, ficando-se por um layout de fácil compreensão e com bom detalhe artístico, importante para manter a atenção do utilizador no essencial: a utilização correta da aplicação.