Final Year Project Interim Report

Conor Thorne

17337490

1 Description of Planned Project

1.1 Overall Goal

This project aims to design, develop and implement a mobile application that provides easy instruction recipes, nutritional information, meal planning, shopping list and ingredient pricing all within one system.

The overall goal of the project is to provide a method for users to cook at home while saving money and eating healthier food. According to a 2020 survey by the Irish Heart Foundation, 68% and 53% of Adult Irish Males and Females, respectively, are overweight. Being overweight or obese creates a higher risk of death, chronic illness, disability, pregnancy complications and mental health issues. One major cause of obesity is an unhealthy diet. It is my belief that by providing an application that encourages and makes it easier for users to eat healthier, home cooked food while also saving money reduces the risk of having an imbalanced and unhealthy diet that leads to obesity.

Major objectives of the mobile application are to include features such as simple recipes, a dynamic shopping list, API supported ingredient pricing, nutritional information of each recipe, allowing users to search recipes by typing the ingredients they have and a meal planner.

1.2 Other Solutions

While many solutions exist on the Internet for food recipes, not one of the most popular applications posses all the features I have proposed. Many applications may have one or two of the features I have described above but none have created a totally encompasses experience. I believe some integral parts of the proposed application such as simplicity in design and presentation of recipes, locations and prices of ingredients are essential to the everyday user. The cooking applications that exist are also orientated towards revenue, the majority of them require a sign up account, subscription or have an interface that is covered in advertisements and walls of text that work to discourage users to pursue cooking at home because they are unusable.

1.3 Motivation

My motivation for this project is quite simple. I am interested in technology, software development and human computer interaction. The reason why I chose Computer Science as a discipline is because I have an immense fascination with the ways in which technology can make our lives so much better. Beyond that, I have worked as a Chef in multiple different kitchens for almost six years in order to support my studies. I love food, I firmly believe that anyone can cook and I want to create an application that provides people with the framework to cook food and maintain a healthy diet with such ease that they would rather that then order takeaway. I am frustrated at the currently available applications, I believe that they are not making use of the most modern technology and innovative design techniques I have learned in modules such as Human Factors, Software Engineering and Internet Applications.

2 Plan of Work

2.1 Structure of Project

First, I have created a general outline of the chapters in the final dissertation, in order to have a general goal in mind of how each action I take will end up in what chapter of the report. I have decided to maintain a copy of the report and code on Git, in order to maintain a copy of all my work to avoid any disasters. I will be using Overleaf to write the report in the formatted style with LaTex because I am familiar with the software.

2.2 Project Chapters

1. Introduction
    (a) Context of Problem
    (b) Aim of Project
    (c) Motivation
    (d) Project Goal
    (e) Personal Goals
2. Background Research
    (a) Papers Researched
    (b) Existing Applications
    (c) Ethics
3. Design
    (a) Synthesis of Existing Solutions
    (b) Synthesis of Studies Other Applications
    (c) Project Analysis
    (d) Design Phases / Prototypes
    (e) Final Design
4. Implementation
    (a) Architecture
    (b) Git Repository
    (c) Recipe
    (d) Price API
    (e) Database Search
    (f) Shopping List
    (g) Meal Planner
5. Evaluation
    (a) Usability Testing
    (b) Interface Heuristic Evaluations
    (c) Data Analysis
    (d) Challenges
    (e) Limitations of Work
6. Conclusion
    (a) Brief Review
    (b) Main Results
    (c) Future Work
    (d) Reflection
7. References
8. Appendendices

2.3 Gant Chart, Tasks and Milestones

I began planning by splitting the tasks of the project into distinct sections; Analysis, Design, Implementation, Testing and Write Up. Each main task has a number of sub-tasks, for example the Testing task consists of creating the tests, performing the low, high fidelity and system tests and evaluating the results. I document in the Gant chart when I hope to have each section (milestone) complete and where the dependencies may exist.

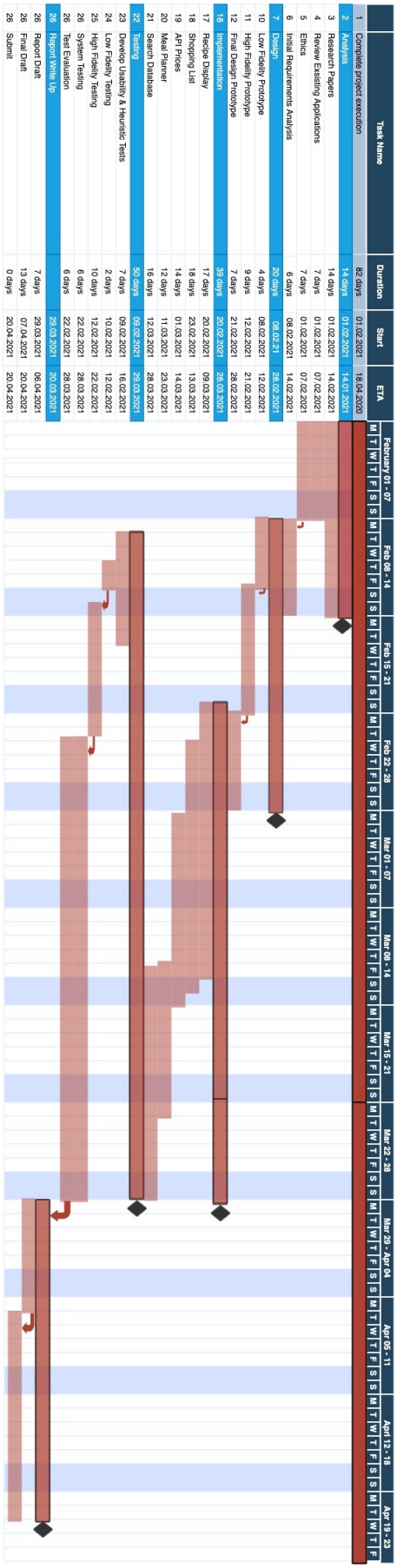

Figure 1: Gant Chart

3 Ethical Review

Broadly speaking, I believe my project's main goal is a morally ethical idea; to encourage healthier eating and saving money. I think it is integral to the project's ethical completeness that I focus on the following; handling of research participants data and ethical evaluation. By using an informed consent from, follow ethical interpretation and presentation of data, making sure a wide range of testers are from different ethnic, religious, gender and age distributions. I will be following the ethical steps learned from my Human Factors module to make sure during testing everything is performed in the most ethical way possible. I have also followed steps recommended by my supervisor to complete applying for ethical approval with the University. Below is an ethical canvas I completed.

3.1 Ethics Canvas

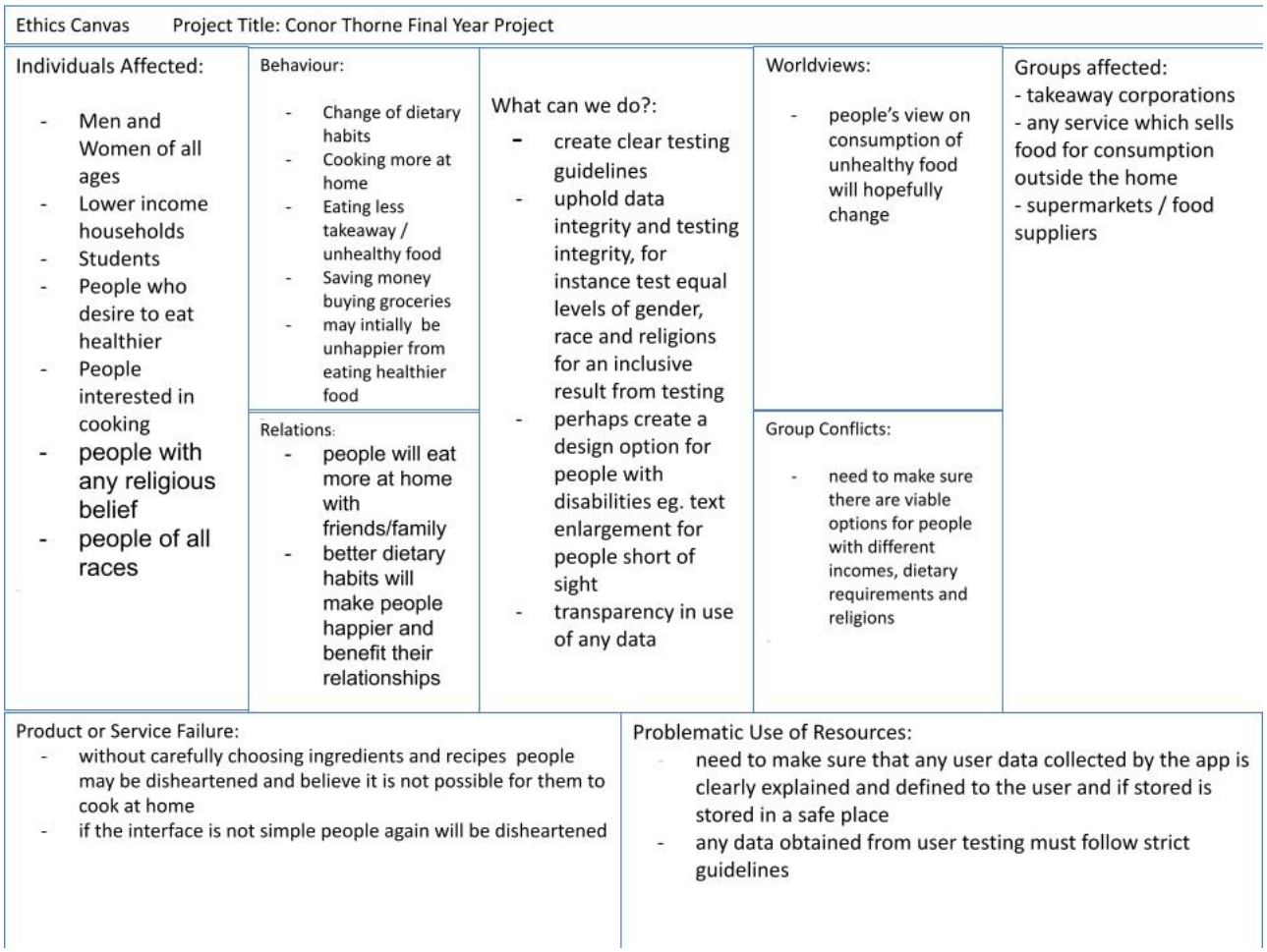

Figure 2: Ethics Canvas

4 Literature Review

4.1 Current Design Flaws in Food Applications

As noted in [Flaherty, et al., 2017] after conducting a study on the usability and quality of existing food applications "Reviewers noted that considerable time and effort were required to utilise many of the mobile apps". Hence, many applications on the market fail to provide a simple usability standard, which is absolutely necessary to the encouragement of users to obtain healthy diets. Additionally, it was found that "There was a distinct lack of guidance on how to use the mobile apps and the user was required to navigate through the different sections to learn its functions" [Flaherty, et al., 2017] as found in the user testing of the most popular food/diet applications available.

References

Flaherty, S., McCarthy, M., Collins, A., McAuliffe, F. (2018). Can existing mobile apps support healthier food purchasing

behaviour? Content analysis of nutrition content, behaviour change theory and user quality integration. Public Health Nutrition, 21(2), 288-298. doi:10.1017/S1368980017002889