



NATIONAL UNIVERSITY OF IRELAND,
GALWAY

BSC. COMPUTER SCIENCE AND IT

Final Year Project

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19 March 2020

Declaration

I hereby certify that the material, which I now submit for assessment on the programmes of study leading to the award of Master of Science, is entirely my own work and has not been taken from the work of others except to the extent that such work has been cited and acknowledged within the text of my own work. No portion of the work contained in this thesis has been submitted in support of an application for another degree or qualification to this or any other institution.

Student Name
19 March 2020

Acknowledgements

Personal acknowledgements and/or dedications may be included by the candidate directly after the declaration page. Where possible these should be kept to one page and be of a tone appropriate to a higher degree.

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Abstract

Present thesis abstract here, typically there are no references, figures or tables in the abstract.

1 Introduction

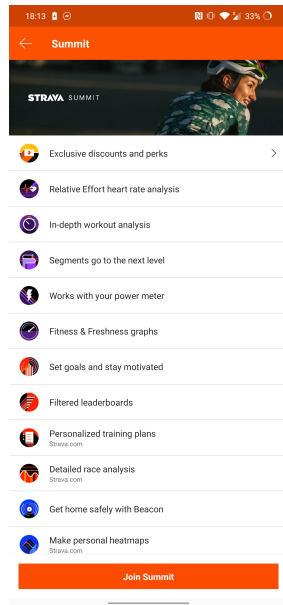
1.1 Background

My final year project was based on the premise of creating a 'Healthy App,' the aim of my project was to create an application that encouraged people to improve their overall fitness through going for runs. I wanted to provide a platform that people of all experiences could find beneficial, through the use of charts and graphs where users can accurately monitor progress while also providing sample exercises for newcomers to the running game.

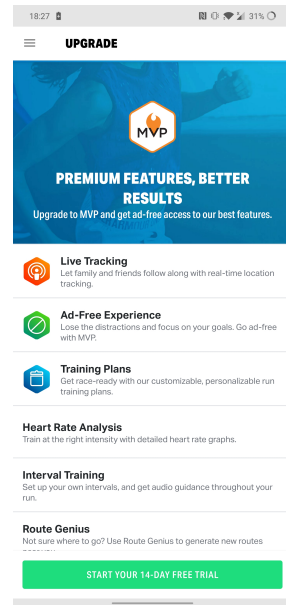
My personal interest in the area is enhanced by the interest my mother has in the sport. She has recently completed her 100th ParkRun event and has run in multiple half marathons. When I saw her enter her times into a tattered copy with half torn out pages in, that's when I began investigating the current market of running applications and companion applications.

After investigating the most popular applications like Strava, Runkeeper and Under Armour Run with Map my Run, each of which have over ten million downloads, I found that most of the best features were hidden. Although the application itself was free to download from the App Stores, once you launched the application, most of the features were kept behind a paywall for "Premium" users. Strava keeps "Fitness graphs" and "Set goals" features only available to Strava Summit™ users. You have to "Upgrade to MVP" for an ad-free experience and custom features on the Under Armour Map Run application, as you can see in Figure 1.

Applications polluted with ads and unprofessional, poorly designed interfaces dominated the next tier down in popularity. Having studied these applications and seeing on a personal level the lackadaisical approach of people, I decided that for my final year project I wanted to create a mobile running companion application with an intuitive design and provided features that could compete with the most popular fitness trackers.



(a) Strava



(b) UnderArmour Map with Map my Run

Figure 1: Screenshots from popular mobile Fitness applications

1.2 Stakeholders

According to Concepta Inc, the term “stakeholder” refers to the people or groups affected by a software development project [1]. Anybody that is impacted or could possibly be impacted by the project. I’ve divided my stakeholders into three sub-sections.

1.2.1 Users

The first stakeholder group and definitely the most important will be the users themselves. Without users there is no point working long hours to create, develop and improve the application.

Users will be very important to the initial stages of the application’s development because we will be able to get genuine and honest feedback on what the users liked and disliked when using the app, what features they found themselves using, what features they neglected. That type of information is imperative to the future of any mobile app. It allows the developers to focus in on a few ‘core’ features that

the users really enjoy while also improving features that may have not been liked as much.

Going into more detail on the type of users, I will be targeting people with interest in running and improving their overall fitness. The level of interest though will not be targeted, I am going to provide an app with global features that work equally as well for beginners as it does for the most advanced runners.

1.2.2 Developers

Developers are the next stakeholder group that I thought would be the most influential. The developers are in charge of monitoring, maintaining and developing the app. Initially they would have to be in direct communication with the users to get their opinions and plan the next stages of development.

Another role for the developers in the early stages of production would be promotion of the product. The developers will need to attract funding from businesses in order to improve the app.

Developers are major stakeholders in the app because without them, there is no growth or future.

1.2.3 Potential Third Party Companies

As mentioned in the developers section, the app and developers will need funding in order to grow. But in order for the companies to provide funding, they will need to see a potential benefit from endorsing the app.

Fitness Watch Companies

As you've seen with companies that sell fitness watches like FitBit, Garmin and Samsung, they each have their own high-powered fitness app. It would be unrealistic to try and target those high-end companies for a funding partnership but there are many smaller, cheaper fitness watches and bands on the market. The only interface many of the cheaper options come with is on the band itself, there was no accompanying mobile app. That is where a potential collaboration could come in to play.

Parkrun

Parkrun is a collection of 5 kilometre running events that take place every Sat-

urday morning at over 1400 locations in twenty-two countries across five continents [2]. According to their own website, there are ninety-six locations in Ireland and almost two hundred thousand people have ran in a Parkrun event in Ireland. After some research, I found that the only mobile application that Parkrun has on the market is one for volunteers to help track the times of the runners.

There is a huge potential market there to potentially branch in to. Providing all the functionality that the app will already have, while also providing news and unique parkrun related features.

Clubs

My final, potential company or group that could get benefit out of using the app would be social clubs, running clubs, any gathering of people. Developers could create customised apps for specific clubs and groups with unique and personalised features.

1.3 Document Outline

In the rest of the report, I will discuss the journey that I went on while undertaking this project. With emphasis on stages such as research, design, implementation, testing and future work.

2 Requirements

2.1 Functional and Non-Functional Requirements

2.1.1 Functional Requirements

I am a subsection

2.1.2 Non-Functional Requirements

2.2 Use Cases

I am a sub subsection

2.3 Data

2.4 Constraints

3 Design

3.1 Development Method

I am a subsection

3.2 Architecture

I am a sub subsection

3.3 Data

3.4 Interaction/Prototypes

3.5 Design

4 Implementation

4.1 Architecture

I am a subsection

4.2 Technologies

I am a sub subsection

5 Testing and Evaluation

5.1 User + System

I am a subsection

6 Project Management

6.1 Schedule

6.2 Documentation

6.3 Communications

7 Challenges and Future Work

7.1 Subsection Example

I am a subsection

7.2 Sub Subsection Example

I am a sub subsection

References

- [1] Concepta. *How to Define Stakeholders for Your Software Development Project*. 2020. URL: <https://www.conceptainc.com/blog/how-to-define-stakeholders-for-your-software-development-project>.
- [2] Wikipedia. *Parkrun*. URL: <https://en.wikipedia.org/wiki/Parkrun>.