# Project Document Information

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| **Project name:** | Trekking App |
| **Date:** | 03/02/21 |
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| **Owner** | Jason Quinlan |
| **Version:** | v0.2 |

# Definition

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| **Main Goal:** | To provide an easy to use mobile application for finding walking paths. |
| **Desired Outcomes:** | Easy to find trails near your location with the ability to customise the paths based on user needs. |
| **Constraints and Assumptions:** | App will be available on mobile devices, GPS compatibility, Google Maps limitations to available routes |
| **Interfaces:** | Google Maps, trails API |
| **Project Approach:** | Our team has decided to push comfort zones and decided to create a mobile application using a newly learned language, Kotlin. |
| **Management Team Structure:** | Due to our team’s similar experiences and coding backgrounds there are no seniority differences between members. Working on this project will allow us to develop roles naturally that are likely to change over time  Adam Evans - Application Developer  Eoin O’Connell - Application Developer  Oliwia Kobos - UI/UX Design  Pádraig Ó Cróinín - Software Tester  Adrian Lamug - Systems Architect |

# Outline Business Case

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Since the introduction of lockdown measures due to Covid-19 many people are finding themselves spending more time than normal at home. Therefore, there is a bigger interest in making up for lost movement through exercising at home. Our application identifies the possible market of mobile users who are stuck in the same monotonous routine that makes walking seem more burdensome than necessary.

The Trekking App intends to use the readily available Google Maps API to create and track customisable routes, allowing users to have a new experience every time they venture outside. Users can avail of features such as filters that allow them to set the maximum or minimum distance of a route, adhering to the exercise guidelines established. The application can include scenery or places of interest during the walk, tap into local weather news to predict path conditions, track user stats, and more.

Unlike other applications on the market, the Trekking App’s main benefit is in combining both rural and urban landscapes, minimising the need for major travel and creating something available to all without limiting features based on someone’s locations.

# Product Description

Our project is a reaction to the health crisis being caused by the covid-19 pandemic. In order to try and promote exercise and help people get out of their homes to destress we plan on creating a mobile app that will pick out walking paths for people that abide by the Covid-19 guidelines at the time.

**Must-Have Features**

Certain features are vital to consider the project a success. These are so-called “must-haves”. These features underpin the main purpose and functionality of the product.

The app must provide users with trails that comply with the current Covid-19 guidelines effective in their area. For example only suggesting trails that will not take a user over 5km away from their home. As Covid-19 regulations change these changes will be reflected in the trails suggested to the user.

The user must be notified of changes to Covid-19 guidelines and weather warnings relevant to them. Weather warnings and changes to Covid-19 guidelines are liable to change depending on your locality.

GPS tracking will be used to keep track of a user’s completion of routes. A user will also be able to see how far along they are on a particular route.

A favourites tab will enable a user to save and rate trails. They will also be able to sort their rated trails based on their given rating.

**Should-Have Features**

The “Should Haves” aren’t completely necessary for the successful delivery of the project but they are definitely high-priority features that provide high value to the application. The app should have a feature for the user to filter route types such as “Scenic Routes”. This function will also work with the ratings feature, giving the user the option to filter by rating and popularity. Another feature that relates to this function is filtering routes by the length of the trail. For example, filtering under 5km, will only show trails nearby that have an approximate length of under 5km.

Stat tracking is an important feature that is common to fitness/health apps. For this application we will include user stats such as steps taken, distance travelled, average pace, etc. At the end of each week, there will be a user report, based on their performance. They will have the option to share this on social media.

**Could-Have Features**

Due to the limited amount of time available in the development of this app, some features have to be prioritised over others. The lesser prioritised items can be considered as “could have” elements, meaning elements that developers feel that they could implement in favourable circumstances or that are for vanity purposes mostly. Our application has some of these elements that we would like to implement in an ideal setting.

A path creator feature is our most ambitious feature which would allow the user to create the trails manually through the means of click and drag technology. While the application will use customisable filtering to search ready made paths, ideally a user could create a route if they already have a certain trail they like to follow.

“Marathon Mode” could allow a user to build up longer walking or running distances over time, while at the same time creating healthier habits. Similar to the “Couch to 5k” challenge, a user can push their limits and watch their achievements and goals steadily rise through the use of this app. Unlike the challenge, our application provides unique routes that can be undertaken instead of just distance goals.

To follow the Covid-19 safety regulations, our application could keep track of trail “traffic”; the amount of users that are currently using that particular route. The traffic system would be directly correlating to a simple to read heat map that shows the amount of users just by colour.

**Project Architecture:**

The interfaces that the application will be interacting with are the Trails API as well as the Google Maps API. Using a user’s location, Google Maps should filter trails from the Trails API, and return to the user the appropriate trails.

**Sequence Diagram**

