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Walk Around The World

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Abstract

For many, cardiovascular exercise is an activity that we do not get enough of[?] . Studies have shown that physical exercise between 1 hour a day for children over five years of age and as little as 2.5 hours a week for adults has a huge positive impact on our physical and emotional wellbeing[?,?] .

This project aims to encourage users to do oudoor cardiovascular exercise by positive encouragement through a Mobile Application. By tracking the distance the user travels in each exercise session through device GPS and translating this into well-known outdoor pursuits allows the user to quantify their exercise in terms of well known physical and cultural achievements. These achievements will take badge-like form and other metrics of success such as leaderboards will also exist.

Outdoor pursuits will contain: actual routes such as the West Highland Way and the climb to the top of Everest; popular culture references such as "Route 66" and the (approximate) distance that *Frodo* and *Sam* travelled in J.R.R.Tolkein's "The Lord of the Rings"; and Global distances such as the distance between capitol cities and simple metrics such as the first one hundred miles.

The user will exercise with a compatible device on their person. During exercise the device will track and log the distance that the user has travelled and add this to their accumulators. If this device is their smart phone then the Mobile Application will notify them immediately when they have completed an outdoor pursuit, otherwise they will be notified when data is collected from the dedicated hardware.

This application will encourage social exercise through outdoor pursuits that can only be completed through teamwork with other users that have met in real life. This intends to extend the influence of rewarding exercise by encouraging users to include their peer group in exercising with them and sharing their successes. For a user, this is incentivised by unlocking achievements only achievable through this social interaction.

An analysis of user trends such as: frequency and duration of exercise with regards to duration of application use; change in exercise duration when achievements are awarded during exercise; and quantity of social interaction with regards to application use life cycle will be used to indicate whether or not gamification techniques could have a valid application in cardiovascular exercise.

Contents

Chapter 1

Introduction

5 pages long

1.1 Motivation / Context

Explain the background and pretense of the work how it fits or deals with a particular problem

Consider putting an intuitive example - to high light or illustrate the problem

Supporting statistics of the problem - to create a case for support

1.2 Research Questions

General or overarching research question for the work A few specific research questions that need to be addressed

- Question one: .... ? explain the reasons for asking this question.

Objectives: what do you want to achieve or accomplish

1.3 Summary of the Contributions

Applications or Systems developed as part of the work Particular Novel findings from the results Creation of datasets, code, etc Methodologically: suggesting a new process or way to do things ?

1.4 The Structure or Outline of the Report

Chapter 2

Related Work or Background

2.1 Comparison of related applications

Incentivising exercise is not a new concept in the mobile market. From simple applications that mimic a pedometer to immersive alternate realities, there has been a varied approach to encouraging exercise. These approaches can be shown through the following applications.

Add in opinion from using the app

2.1.1 Charity Miles

Charity Miles encourages you to exercise by facilitating you to help others as you exercise. For every mile that you run $0.25 is donated to a charity of your choice, and for every mile you cycle $0.10 is donated. The money currently comes from a pool gathered by the parent company so you as an end user don't have to pay anything.

The incentive here is clear - run to donate. In essence, you are both being paid to exercise and exercising to help out a charity. The monetary backing allows you to quantify your exercise in terms you are very familiar with whilst generating the feeling of satisfaction about helping a charity.

2.1.2 Run Zombie Run

Zombie Run! is a companion app that encourages you to exercise through audio cues. As you run you are being "chased" by a hoard of zombies that get closer and further away from you as you exercise - the closer they are to catching you the louder they become. The game measures your running distance and this is used as a measure of your success.

2.1.3 WalkJogRun

Out of the other apps compared this far, WalkJogRun is the most similar to UrbanExplorer. WalkJogRun is also centred around routes but unlike UrbanExplorer is concerned with routes that are geographically close to where you are. From your current location it finds and proposes new exercise routes given a certain route length and helps to match you with other people in your area to help create running groups.

This app uses the social aspect of exercising alongside facilitating your discovery of new routes to incentivise exercise.

There may be limitations to the app's reuse if the routes provided are either not traversable or are consistently the same. The social aspect is a very good approach but also requires a user base to be useful to any end user.

2.1.4 Nike

2.1.5 Fitbit

2.1.6 Garmin

Name	Hardware	Requirements
Charity Miles	Mobile (iOS/android)	GPS
Zombies, Run!	Mobile (iOS/android)	GPS, headphones
WalkJogRun	Mobile (iOS/android)	GPS
Fitbit	Dedicated hardware and Mobile (iOS/android)	
Nike	Dedicated hardware and Mobile (iOS/android)	
Garmin	Dedicated hardware and webapp	GPS

Chapter 3

Design and Specification

3.1 Aim/vision

The idea of the game is to walk around the world. This goal cannot be achieved overnight so we break it up into routes such as Glasgow to Edinburgh and each route is broken up into manageable stages of a few kilometres each. Users are awarded badges based on stages/routes completed and overall distance and time. By doing this we allow the user to feel a sense of achievement as they are working towards a larger goal without making the user change anything about their exercise. The app allows a user to travel around parts of the world without physically having to be there, inviting them to realise the scale of the world whilst gaining the positives benefits of outdoor exercise.

This approach is to test whether or not this type of encouragement works with outdoor exercise. Metrics will be tracked for individual users to monitor their exercise duration and frequency and Encourage people to exercise Provide incentives that become intrinsically rewarding. Provide a platform to achieve this. Provide long and short term goals for a sense of achievement. Transform an abstract concept of distance and time into a physical goal that a user can get. This is used to facilitate the previous points.

Why do we need this application? High level vision - gist. ??

3.2 Specification

3.2.1 Platform

The mobile application is developed using PhoneGap which utilises javascript, css and html to package a web app as a mobile app. The decision to use PhoneGap instead of building a native app is so we can deploy to multiple platforms easily without needing to change the code base and because I come from a web app background which is ideal for PhoneGap.

The web application is written in Python and uses Django middleware for interfacing with the database and creation of specific workflow interactions, alongside Tastypie for managing and building a REST style API.

Implementation/Design specification How does the game run What are the metrics of success MoSCoW

3.3 Walkthrough of Wireframes

When the app is launched it silently registers with the server allowing the user to use the app immediately. The user is then shown the middle-top screen.

1. From the middle top screen, the user can follow arrow 1 by clicking on the middle button "Pick Mission" to pick a Mission (Run around Arran or Egg for example) and then pick a start and end location. After confirming these choices, the user is taken back to the middle top screen, or at any time can click the "Home" button to return.

2. The user can also view their current acheivements by clicking the "Achievements" button on the middle top screen, following arrow 2. These achievements will be grouped by tabs by category - Distance, Time, Stage and Mission based achievements.

3. The user can follow arrow 3 from the middle top screen to notify the app that they are starting an exercise period, telling the app to track their distance. If a Mission and start and end location are not picked (as in point 1) then they will instead be redirected to this screen and are unable to start exercising until this choice has been made. Once they have successfully advanced to this screen, it will display their current progress as they move showing the user how close to completion of their current stage and overall route they are.

4. When the user has finished exercising, they will click the "End Session" button and be taken to the first summary screen - following arrow 4. Here statistics from their exercise will be shown and the option to share this on several social media outlets.

5. The user can then move to the second and final summary screen, following arrow 5, where they will be shown any achievements they were awarded during that session. The user will also have the option to share these on social media outlets. From here, the user can click the "Home" button and be taken back to the middle top screen.

Latency of gps might mean that a user drops out of connection for finding their location. We should make sure that the game makes "reasonable" accommodations about this - first iteration will save the game object after a certain period of time if it isn't formally closed, other iterations might try and build on this.

Chapter 4

Results and Analysis

Chapter 5

Discussion and Conclusion

5.1 Acknowledgements

I would like to thank ...