POWER:

A Social Media Fitness App

Joshua Wan

BSc (Hons) Computer Science

Final Year Dissertation

Supervised by **Dr. Benjamin Kenwright**

Heriot-Watt University

School of Mathematical and Computer Sciences

Declaration

I, Joshua Wan declare that this work submitted for assessment is my own and is expressed in my own words. Any use of other authors' materials are properly acknowledged and cited.

A list of the references used within this document have been included.

Signed: _____

Date: _____

Abstract

Physical activity, a structured diet, and strong social connections are all extremely powerful tools that can be used to benefit a person's mental and physical health. Over the course of the Covid-19 pandemic, people have been confined within their own homes, leading to an increase in physical inactivity figures and a decrease in social interactions. Over the course of this paper, I shall present a possible solution in the form of an application. The purpose of the application will be to help people of every level of fitness reach their personal goals with social incentives and gamification. The application will also include tutorials and learning tools for exercising and dieting to teach beginners in a friendly, non-intimidating environment.

Power: A Social Media Fitness App

Table of Contents

1. Introduction

1.1 Motivation

Maintaining a regimen of exercise and a healthy diet are paramount whenever it comes to a person's overall health and wellbeing. Exercise plays an integral role in lowering the risk of obesity, coronary heart disease, stroke, breast cancer and many more (NHS, 2021). In 2019 The Health Survey for England found that 28% of adults were obese and a further 36.2% were overweight (Baker, 2021).

Exercising and dieting can be a painstaking process that drives many people to quitting before seeing any real progress. A study was conducted to see if gamification and social incentives increased physical activity, it was found that people given incentives such as gamification, competition and support increased their physical activity when compared to those who had no incentives. (Jakicic and Rogers, 2020).

1.2 Aims

- This project aims to design and develop an easy-to-use social media fitness application with the purpose of creating a community that inspires each other to strive to reach their fitness goals.
- Provide a tool that users can utilise to track their progress, increase self-confidence and learn the essentials of fitness.
- Provide the user with in-app social incentives and rewards that will increase the user's desire to continue exercising.
- Provide a platform for users to keep in-touch with and make new friends who are interested in fitness.

1.3 Objectives

- Review literature relevant to the project and highlight successes and downfalls of applications with similar aims.
- Provide valid reasoning as to why this application is different to the other applications on the market and why it will be successful.
- Develop an iOS and Android compatible application.
- Research how to calculate a user's estimated calories burned, dependant on the type of exercise, effort and the user's statistics.

Power: A Social Media Fitness App

- Research ways to safely store a user's personal information and implement it.

- Create a platform that allows users to interact with other users.

- Develop an application that users can track and log meals and exercises into.

- Develop an application that provides users with knowledge of physical activity and dieting.

- Develop an application that uses gamification as a way to allow users to compete against one another.

- Create an in-application economy with earnable points and rewards.

2. Literature Review

The purpose of this section is to provide an in-depth literature review of topics relevant to the project to establish the functional and non-functional requirements necessary in order to develop a successful application. This section will also review five popular fitness applications on the iOS app store, highlighting the strengths and weaknesses of each