E-Fitness Buddy

Muhammad Amir Imran Abdullah[1], Mohamad Faiz Armi Riffa[2] and Nurul Zahirah Abd Rahim[3]

Faculty of Computer and Mathematical Sciences,
Universiti Teknologi MARA Melaka, Kampus Jasin, Melaka, Malaysia[1,2,3,4,5]
amirimran90210@gmail.com[1]
faiz.armie@gmail.com[2]
nurul1867@uitm.edu.my[3]

ABSTRACT

Many people are concerned with their bodies nowadays but struggled to visit the gym regularly due to their hectic daily schedules. In the era of technology, fitness application is getting more approval and praise for assisting the user in performing their workout routine independently. Unfortunately, workout without expert guidance can caused injuries since users who are lacking knowledge, unable to identify the most suitable routine to perform based on their body mass and goals. E-Fitness Buddy is a prototype of a mobile application that will recommend a suitable workout routine which reflects the user's preference and need. E-Fitness Buddy is designed to keep track the user's progress and henceforth users will be motivated by knowing their performance based on the recommended workout routine. However, it is recommended to consider on more related criteria to recommend on the workout routine to the user.

KEYWORDS: Fitness, mobile application, workout routine, recommendation, progress tracker

1   INTRODUCTION

In the era of technology, smartphone can be a good platform to be use by user which maintaining exercise requires daily routines and changes in lifestyle with a few nudges in the right direction from the mobile phone. Mobile application (app) is a software programs designed to run on smartphones and other mobile devices [1]. Mobile app offers similar services to those available on PCs for users in which it provides a solution for users in acquiring information from the internet [2, 3]. The demands and expectations of society for health enhancement and the promotion of healthy lifestyles make exercise a key element around which everything revolves [4]. Fitness is the desire to live in a balanced life. Overall fitness means the capacity of an individual to work more efficiently with their capabilities, and developed based on physical, mental, emotional, social and religious components [5].

Fitness application (app) are getting more approval and praise for assisting the user in performing their workout independently. It is used as a tool to monitor, control and track users' intake of calories [6]. Users are free to workout whenever they want due to several factors such as time, location and money based on their preference and need. There are more than 32,700

of health and fitness applications (apps) that has been released and available for free and purchase [7]. A research found that out of five smartphone users, one of them have at least one health app [8]. This shows the significant impact of the fitness app to the society in this era of modern world. However, there is uncertainty if these applications can help an individual to achieve or maintain their personal fitness. In this project, the mobile app is used as a platform to deliver the system. The existing fitness apps have its own limitation. Users who are lack of knowledge, unable to identify the most suitable routine to perform based on their body mass, goals and level of workout intensity. Moreover, several workout app does not have the capability to track the user's workout progress.

2   OBJECTIVE

The app's main objective is to provide a fitness mobile application called E-Fitness Buddy that will recommend a specific exercise along with a suitable workout routine based on gender, age, BMI, workout goal and workout location. This application also will keep track the user's workout performance along their work out journey.

3   SIGNIFICANCE (S)

This app is designed as a guidance for user to achieve their workout goal such as for fat loss, muscle gain or sport performance as it will prepare the most suitable exercise routine for user. It is efficient as this is a 3-in-1 workout app that provide three different workout environments, which are gym, home and park which is calisthenics workout to be specific. This apps will suggest a suitable workout routine to be done by the user whilst allow user to track their progress and keep them motivated throughout the journey of workout.

4   METHODOLOGY/TECHNIQUE

A set of questionnaire consists of eight questions was prepared. An online survey was conducted to gather and analyse the requirements on the fitness-related mobile app. The outcome from the survey was extracted and gathered to design and develop the system. Next, the result from the survey was used as the main reference to determine the main features of the system. The two important features of the app are recommendation on workout routine based on information filled by the user and progress tracker to show user's performance along their work out journey. The storyboard was used to visualize and arrange the contents and layouts of the app. Hence, the interface of the system has been designed.

The app is designed based on the requirements gathered by using rule-based technique where user needs to choose the place of working out session will be done such as gym, home or outdoor gym. Thus, choosing their level of intensity whether it is beginner, intermediate or advanced. Then the apps will generate workout routine that is suitable for the user. One of the functions is that it will be able to track progress of the user. The process of tracking progress will be done by notifying the user to enter their latest or current weight, by using the data of the user's height and weight. This will construct their new Body Mass Index (BMI), which shows a progress has been made by the user. E-Fitness Buddy was developed using Android Studio and Firebase as database. The android studio is used during the implementation of E-Fitness Buddy system. It is a platform that standard application for the Java coding. Firebase is a database used to store and sync data in milliseconds. This database is an online database which is Realtime Database.

5   RESULT

There are nine use cases are identified for the mobile application with the involvement of one actor, which is the user of the app. The user has the capability to register and update their profile. They need to enter their personal information such as name, email, age, weight and height. Next, the user will choose the workout type whether at the gym, home or outdoor gym which also known as calisthenics workout. Then, the user needs to choose their level of workout intensity which is beginner, intermediate and advance.

Fig. 1 shows the user interface of E-Fitness Buddy. The apps will generate workout routine that is suitable for the user based on their BMI, workout location and workout level. Each type of workout routine will cover the part of the human body such as back, chest, biceps, triceps, shoulders, legs, and abs. Different set of routine is generated for different type of user by using the rule-based technique.
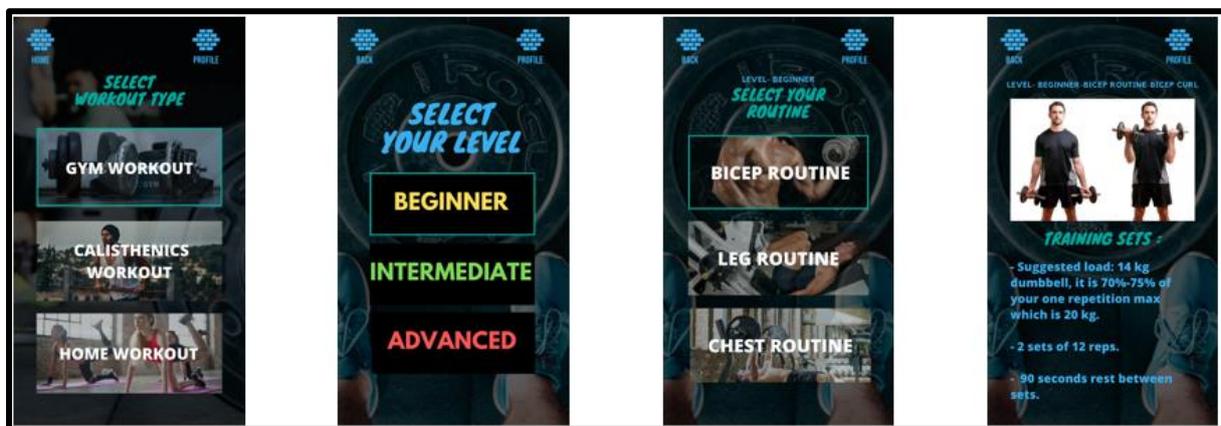

Fig. 1 The user interface of E-Fitness Buddy

The app is able to track the progress of the user based on their current BMI. The app will notify the user to enter their current weight and use the data of the user's height. Fig. 2 shows the user interface of the progress tracking process. User progress will be track by using their BMI as to detect either there are any changes in their body mass.

Fig. 2 The user interface on progress tracker

6   CONCLUSION

In conclusion, requirements that has been gathered and analyzed will be used to develop E-Fitness Buddy which will recommend a specific exercise along with a correct workout routine for the user based on information of them which is gender, age, BMI and also workout location either at gym or not. Thus, the developed mobile application will ease the user and provides different routine of different workout location for the user. The application also able to track the progress of the user throughout their journey of working out. There are few enhancements that can be made by other researchers who have an intention to continue this research or developing a similar type of apps. The application can be improved by considering different type of users with different capability to workout with different level of health condition. For future enhancement, it is recommended to conduct the usability and functionality testing on the developed mobile application.

REFERENCES

[1] E. Eshet, & H. Bouwman, "Addressing the context of use in mobile computing: A survey on the state of the practice," Interact Comput Epub February 14, 2014.

[2] Anthony. Wasserman., "Software Engineering Issues for Mobile Application Development," FoSER ACM, Santa Fe, New Mexico, USA, November, 2010.

[3] H. Kurniawan, M. Bettiza, & M. Yazir, Design and Simulation of Early Warning System for Border Areas Based on Mobile Application Framework.

[4] Paoli, & A. Bianco, "What Is Fitness Training? Definitions and Implications: A Systematic Review Article," Iran J Public Health 2015., vol. 5, p. 602, 2015.

[5] H. D. C. a. H. H. Clarke, "Application of Measurement Health and Physical Education," p. 3-10, 1989.

[6] J. P. Higgins, "Smartphone applications for patients' health and fitness" The American journal of medicine, vol. 1, p. 11-19, 2016.

[7] S. Yuan, W. Ma, S. Kanthawala, & W. Peng, "Keep using my health apps: Discover users' perception of health and fitness apps with the UTAUT2 model," Telemedicine and e-Health, vol. 9, p. 735-741, 2015.

[8] S. Fox, & M. Duggan, "Mobile health 2010," Washington, DC: Pew Internet & American Life Project, 2010.