

CHAPTER 1. INTRODUCTION

1.1 Background

Fitness is defined as the quality or state of being fit. Around 1950, the word "fitness" grew in use in Western slang by a factor of 10, possibly in response to the Industrial Revolution and the aftermath of World War II. The ability of a person or machine to execute a certain function or a comprehensive definition of a person's adaptability to deal with numerous situations are included in modern definitions of fitness. Due to the relationship between physical attractiveness and human fitness, the global fitness and fitness equipment sectors have been stimulated. Personnel with strong aerobic or anaerobic capabilities, such as strength or endurance, are considered fit in terms of specialized function. Greg Glassman writes in the CrossFit journal that a comprehensive definition of fitness is "an enhanced work capacity across the board." [1]

It is important to maintain a healthy lifestyle to ensure a good quality of life. Regular exercise and a balanced diet are essential for maintaining physical and mental wellness. A sedentary lifestyle and unhealthy eating habits can lead to various health problems and diseases. Therefore, it is crucial to make fitness and health a priority in our daily lives. By Practicing smart nutrition, it can positively for next workout and even better for the one after that [2].

There are various ways to gauge your level of intensity, but for now, let's look at heart rate as one of them. You have a certain heart rate as you read this eBook while seated here. Your pulse can be felt by placing two fingers on your neck. Your resting heart rate can be roughly calculated by counting the number of beats in a minute. In reality, your resting heart rate needs to be measured with much greater accuracy, but for now, let's take this measurement as our guide. Please take a moment to calculate your current heart rate at rest. Your resting heart rate was probably. Regular physical activity is one of the most important things you can do for your health. Being physically active can improve your brain health, help manage weight, reduce the risk of disease, strengthen bones and muscles, and improve your ability to do everyday activities.

Since fitness also can help people to increase their metabolic like Blood pressure like involves indirect measuring the effectiveness of heartbeat, adequacy of blood

volume and presence of any obstruction to vascular flow through the use of sphygmomanometer and a stethoscope, pulse rate, and blood insulin, every people interested to join this healthy life.

Nowadays, fitness also encourage young people to reach their ideal body and weight because they have an aim to be good looking. So, fitness become most popular lifestyle which attracted many people. Understanding the benefits of physical fitness and knowing how active you should be can help you maintain good health and improve your overall quality of life. For Women, Nutrition and nutritional supplementation are biggies to avoid perimenopause woes [3].

Fitness also can help us to reduce the risk of injury, since regular exercise and physical activity increase muscle strength, bone density, flexibility, and stability [4]. Physical fitness can reduce your risk for and resilience to accidental injuries, especially as you get older. For example, stronger muscles and better balance mean that you're less likely to slip and fall, and stronger bones mean that your less likely to suffer bone injuries should you take a tumble. However, exercises has been shown to improve mood and mental health, and provides numerous health benefits. Of course physical fitness also allows you to do things that you may not otherwise be able to do.

This application make everyone improve their knowledge to learn about how they maintain their healthy life also learn about the movement to build the muscle both in gym or home workout, and not only with their workouts, this application also help the user to maintain their meal if needed.

1.2 Problem Identification

Based from the existing case written in background, the author identified the listed issues as follows :

1. How to Develop Android Application to help people to get healthy with this Application?
2. How to make a movement correction for their exercise without meet the personal trainer?
3. How can Fitness and Health Application System help people to chase their goals in healthy world?
4. How do the user can have the knowledge about their workout plan?

1.3 Limitation of the Problem

The Fitness and Health Application System Developed with the limitation :

1. Only Support English Language, so the user must understand English
2. The system database using SQLite for storing the data
3. The Role of application administrator only can add user information into database

1.4 Research Purpose

The purpose of the research in developing an application are listed below :

1. This research have a purpose to develop an Android Fitness Application with can be postpone correction when the user want to do a movement correction
2. The study aims for help the user in realizing the wrong workout program
3. This research aims to make a GYM or Trainer have a wide range to reach the user
4. The application developed for help people to train everywhere

1.5 Research Benefit

The benefit of Fitness Application will be developed as the following point:

1. This application can help the user who interested in Fitness have a efficient access
2. This application can help the personal trainer to train their customer more efficiently
3. This application can help more people to get more healthy in their life
4. This application can help more people to have a knowledge about the fitness and healthy life
5. This application can reduce the rate of people who have a health problem due of the lack of exercise and the lack of fitness information

1.6 Research Methodology

1.6.1 Research Type

In order to make a good data collection base from the problem identification, the research type this research using qualitative research which is the research is made from collecting data from user experience, perceptions, and behaviors through observation

and analysis of non-numerical data. The reason why the author choose this research type is, since the author always go to the GYM for exercise, almost 5-6 times a week, the author see this problem from what have been through by author from the environment.

1.6.2 Research Location

The research location for this project was carried in the GYM which is based from 2 country. The research was carried out in :

1. Grisenda clubhouse in Grisenda, kapuk, Jakarta, Indonesia
2. Re-Fit Epitome GYM in Pantai Indah Kapuk, Jakarta, Indonesia
3. 律之动健身, Nanjing, China
4. 菲跃健身, Nanjing, China

The research was taken by the author by make a communication with the customer in the GYM and observe on the people while they doing an exercise.

1.6.3 Research Flowchart

Figure 1.1 below shows how the research begin from start to finish in a flowchart with a detailed explanation.

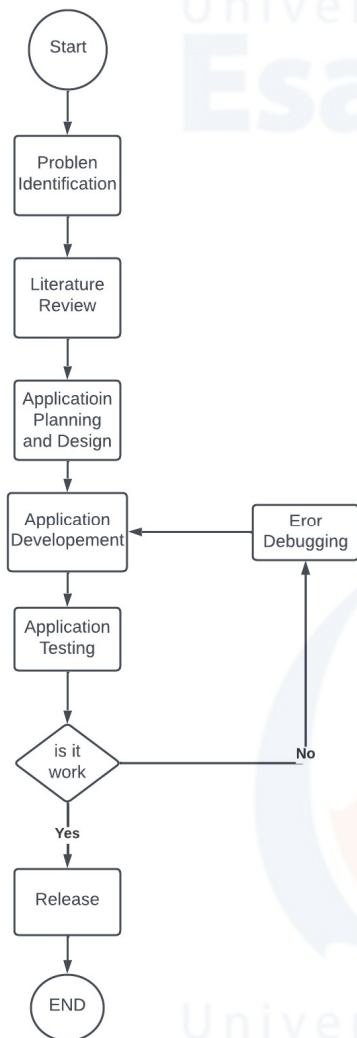


Figure 1.1 Research Flowchart

1. Problem identification

The author determine the problem which can be solved in research identification including its purpose, limitations, and advantages.

2. Literature review

The authors receive the theory and related work for this study such as fitness knowledge and environment which can fulfill research material

3. Application Planning and design

The first step to implement for the development of the application is planning. In this phase, the planning was done by observe the GYM environment from the place where already listed in Research Location on 1.6.2 subpart. Based from the observation that have been do by author, author plan the application requirement. The second step, the author design the application using use case diagram, relation between feature, and camera integration for movement correction which can be use by the user while they want to make sure their movement.

4. Application Development

In the next phase, for develop the application, or we can say it as coding. In this phase the application was developed using Android Studio to code the design and function, the author also use SQLite for save user information in database which SQLite already in Android Studio, and for the last development, the author use OpenCV integration file to make the android emulator can open the camera.

5. Application testing

The next phase is testing the application. The program that have completed will be test use the Black box System Testing Method. Since Blackbox system testing method only focuses on the inputs and outputs of the software system to ensure that it meets the specified requirements.

6. Application releasing

After the application development is completed, the Fitness and Health application will be released to the user in the form of an APK file to later be installed on both User's and Trainer's Android mobile phones. After that, the result will be analyzed whether the research has succeeded in solving the problem.

1.7 Writing Structure

CHAPTER I INTRODUCTION

In this chapter, the topic is talk about background of the research, problem identification, limitation of the problem, research purpose, research benefit, research methodology.

CHAPTER II REVIEW OF LITERATURE

In this chapter, the topic is about the discussion of the theories which have a role to support this research and related works

CHAPTER III ANALYSIS AND DESIGN

This chapter discusses the research result, and the system analysis and design of the application to be created.

CHAPTER IV RESULTS

This chapter discusses the application implementation result, including Black-box testing

CHAPTER V SUMMARY/CONCLUSION

This chapter discusses this paper summary, conclusions about the thesis and application which have been made by the author



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