CHAPTER I

INTRODUCTION

A brief description of this entire project to be developed will be discussed at the project background. After that, continued with problem statement that would be explain why this project is developed to version 2, the project objectives that should be achieved. The scope of this study should explain about the target user of the project. The Assumption Assumptions contain the author's thoughts and expectations about the project he is working on and limitation contain limitation about the developed application in this project. The significance of the project will be describe the expected result of this project as for the users.

1.1 Project Background

People have become accustomed to using computers and computer applications in the modern age of information and communication systems. However, the use and development of mobile applications is a new and rapidly growing industry. Mobile applications have a global positive impact. Developing countries' people and societies are upgrading themselves and creating a new type of IT infrastructure by using mobile applications(Islam & Mazumder, 2010). The technological advancement has become renowed for its effectivity, accuration to diagnose illness, and it has also affected all aspects including health and industries. In many developing countries, mobile devices have reached more people than power grids, road systems, waterworks, or fibre optic networks. Mobile telephony has quickly spread to communities that previously had little protection from government

agencies and little interest from private markets. Mobile services enable the public and private sectors to reach out to these communities, and health is one of the most important areas for this interactive contact(Qiang et al., 2012). Mobile based application is really helpful in health sector like can diagnosis a disease like dry eye disease, input data or backup data everywhere and every time, it is recommended to use in many industrial sector, like health sector.

Dry eye Disease (DED) is one of many eye diseases and it is dangerous if not treated properly, but some people does not know about the dangers of this disease. Dry eye is thought to have an affect 5%-35% of worldwide population at various ages with increasing frequency(Xu et al., 2016). This disease causes ocular discomfort, fatigue, and visual disturbances; it impairs quality of life and vision; and it lowers work productivity. Many people with dry eyes go undiagnosed(Inomata et al., 2020). If the patient not treated properly, dry eye disease can become conjunctivitis, surface damage, open sores on the cornea and visual disturbances. Accuracy in diagnosing dry eye syndrome is very important to determine patient's level of dry eye syndrome.

1.2 Problem Statement

Mobile based application technology has the potential to make the availability of health care to the public. Technological advances with increasing number of available mobile applications (app), as well as reduced costs, led to a massive use of smartphones.

Dry Eye Syndrome Diagnosis is really important to prevent someone

from getting dry eye syndrome as soon as possible. Dry eye is associated with a lot of risk factors, for example like environment, lifestyle, age, sex, drug history, and systemic diseases, among which the lifestyle factors may play an important role. Despite increasing understanding of the pathogenic factors involved in dry eye disease, there has been a lack of consensus on diagnostic criteria, classification of disease states, and the aims and interpretation of specific diagnostic tests. Diagnosis can be done by looking at that aspect before.

Based on problem above, the problem can be solved by mobile application for dry eye syndrome diagnosis.

Based on previous project The problem that author found in previous project are :

1. **Took some times and steps to complete the test**

   Based on mayoclinic website, there are 5 such as a comprehensive eye exam, a test to measure the volume of your tears, a test to determine the quality of your tears, A tear osmolarity test, tear samples to look for markers steps to complete test about dry eye disease and it take more time to complete test.

2. **Lack of consensus on diagnostic criteria, classification of disease states**

   Standardization of disease terminology and diagnostic tests is required to improve the utility of epidemiological and clinical research into this important ocular disorder(Brewitt & Sistani, 2001).

3. Educational and Treatment

There are some mobile application about eye care diseases in internet but not give education about how to prevent or treatment Dry Eye Disease.

1.3 Objectives

The project has the following objectives:

- To develop mobile application for dry eye syndrome diagnosis system that take less time than manual test that have 5 steps and to make it easier for patient for checking their eyes condition when the patient did not have time going to doctor

- To develop mobile application dry eye diagnosis with questionnaire standard criteria from OSDI

- To develop eye care diseases mobile application for dry eye syndrome diagnosis that can give education how to treatment dry eye syndrome.

1.4 Scope

The system developed is a mobile application, this application can be accessed by everyone. In this application, author reducing bright color in user interfaces for better interface. This application also can show the result diagnosis of dry eye by user tick questionnaire in the app. The result will be shown as percentage, graphic and suggestion. Users just tick the questionnaire data into the system, and see the results of the diagnosis.

1.5 Assumption and Limitation

    A. Assumption

        a. This application only show the result when user fill the questionnaire

        b. To help people have a healthy life style

        c. To help people diagnosis dry eye syndrome

        d. The data who entered by user is valid data

    B. Limitation

        a. This project focused are limited to :

        b. There is no additional equipment like sensor to diagnosis dry eye syndrome

        c. This mobile application can only use in android OS

        d. This application cannot ensure about user entered data is honest

1.6 Significance of The Project

This Mobile Application for Dry eye syndrome diagnosis System will be helpful for some people. They can follow the instructions and then users can using this application correctly. In addition, most people can get benefit from this application by following the instructions.