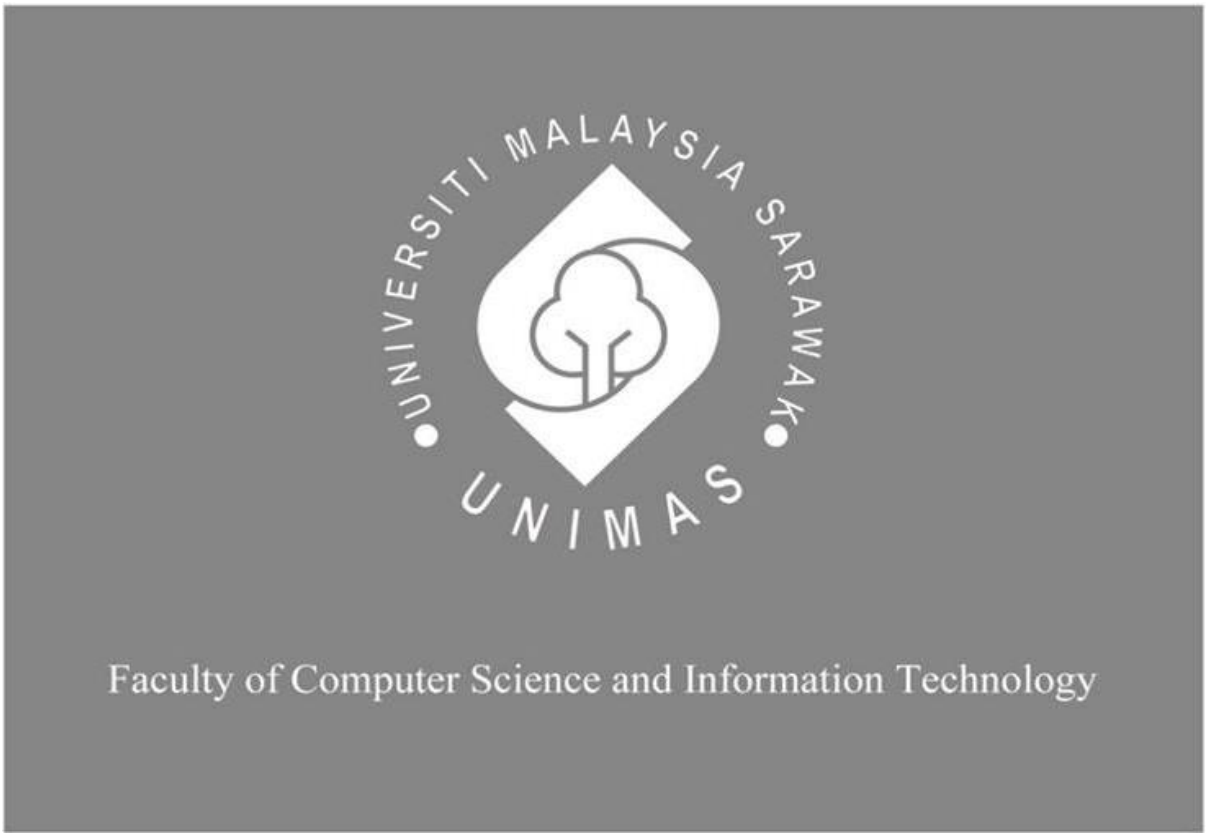


# HYPERTENSIVE PATIENT RECORD MOBILE APPLICATION

Farah Izzati Binti Abu Bakar

Bachelor of Computer Science with Honours (Information Systems)

2020

# HYPERTENSIVE PATIENT RECORD MOBILE APPLICATION

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This project is submitted in partial fulfilment of the requirements for degree of Bachelor of Computer Science with Honours (Information Systems)

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## Abstract

Hypertensive is one of the most common disease we hear in our daily lives. It often occurs from different range of ages. Therefore, people with hypertensive disease should always record their blood pressure readings to monitor their readings to avoid high risk. Mobile applications are very popular today. These apps help us greatly in our daily lives. So, we need to take this opportunity to use mobile applications to make our life easier. Since many people use mobile applications nowadays, this proposed application which is Hypertensive Patient Record Mobile Application is focused on hypertensive patients to make them easier to record their blood pressure reading. It helps them to record blood pressure reading more easily and can view the reading whenever and wherever without interrupted.

***Abstrak***

*Hypertensive merupakan salah satu penyakit yang sering kita dengar dalam kehidupan seharian. Ia sering terjadi dalam kalangan umur tak kira tua atau muda, masa mahupun tempat. Oleh itu, mereka yang menghidap penyakit hypertensive perlu selalu merekod bacaan tekanan darah mereka untuk memantau bacaan tersebut agar tidak tinggi. Aplikasi mudah alih sangat popular pada masa kini. Aplikasi tersebut sangat membantu kita dalam memudahkan kehidupan seharian kita. Jadi, kita perlulah mengambil peluang tersebut untuk menggunakan aplikasi mudah alih agar dapat memudahkan kehhidupan seharian kita. Oleh kerana ramai orang menggunakan applikasi mudah alih pada masa kini, rancangan projek ini memfokuskan kepada pesakit hypertensive bagi memudahkan mereka mencatat bacaan darah tinggi mereka. Ia dapat membantu mereka bagi merekod bacaan tekanan darah dengan lebih mudah dan dapat melihat kembali bacaan tersebut tak kira masa mahupun tempat.*

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# Chapter 1: Introduction

## 1.1 Introduction

Nowadays, many people use smartphone in their daily life. It is a platform for user to interact with other people around the world and some of the user use smartphone to perform their work. Some of them also use it to record some important note in their smartphone. Mobile application is (also known as mobile apps) is a software programs that developed for mobile devices such as smartphones and tablets for us to use in our daily life. They also can turn mobile devices into miniature powerhouses of function and fun (Viswanathan, 2019).

Hypertension is another name for high blood pressure. Nowadays, many people take slightly about this disease. On the estimated around 1.13 billion people in this world who have hypertension, fewer than only 1 in 5 have it under control (Cardiovascular disease, 2019). This disease can lead to severe health complications. It also can increase the risk of heart disease, stroke, and sometimes death. Blood pressure is the force that a person's blood exerts against the walls of their blood vessels. This pressure depends on the resistance of the blood vessels and how hard the heart has to work inside the body (Felman, 2019). Some of the patient record their blood pressure reading through the paper. So, it’s does not look organized because you won’t able to see the progress clearly. Furthermore, some of the patient forget the description their medicine and name of their medicine. It is because, each patient who have this disease they have different description and name of their medicine. Moreover, some patient does not know their info about their disease. For example, they do not know how they got the disease.

Based on this project, this application will help hypertensive patient to record their blood pressure reading every day. Patient need to enter their reading blood pressure and after that they can monitor their blood pressure reading. So, it can make patient task become easier. Nowadays, many people use smartphone in their daily life, this application is the best way for

patients to record their blood pressure reading, monitor their blood pressure reading and at the same time learn deeper about hypertensive disease to prevent that disease from rising. Furthermore, patient also able to explore how they got hypertension and able insert name of their medicine because different patient has different type of medicine and description.

### 1.2 Problem Statement

Hypertensive patient needs to attend their appointment with doctor whether at hospital or at clinic. After they do the treatment, doctor will see their blood pressure and the doctor will ask them to record their blood pressure reading only if patient have sphygmomanometer also known as blood pressure monitor at home. If patient have sphygmomanometer, doctor will ask them to record their reading every day until next appointment. They need to record their blood pressure reading on the paper and give to the doctor. Some of them might forgetful and did not bring that paper when arrived at the clinic or the hospital. When patient did not bring that paper doctor also cannot see their blood pressure reading every day and unable to see the progress of their patient whether their blood pressure is high or not. Furthermore, when using paper patient does not clearly see the pattern of their reading and at the same time it's does not look organize. Moreover, some patient does not know what type of medicine that they had to take because different patient has different type of medicine and description. When using this application, patient able to insert name of their medicine and description so that they can look back if they forget.

## 1.3 Scope

This application is targeting for patient who have high blood pressure and patient that have using tools which called as sphygmomanometer also called as blood pressure meter at their home. User need to record their reading of blood pressure. They need to enter their reading of blood pressure after checking their reading using tools. After that, they able to insert systolic (the top number) and diastolic (the bottom number) blood pressure. Furthermore, user also able to insert their information about their type of medicine and description their medicine. Besides, user also able to read information about hypertensive disease. From that, user also can gain some information about that disease. This application has functionality such as able to enter the data of the patient. Furthermore, this application also has pop up notification to alert user. This application is targeting for android user.

## 1.4 Aims and Objectives

1. To develop a mobile application for blood pressure patients to access and manage information of blood pressure reading.
2. To generate graph for patient to keep track their blood reading.
3. To notify patient if their blood pressure reading is high and keep notify their medicine record details.

## 1.5 Brief Methodology

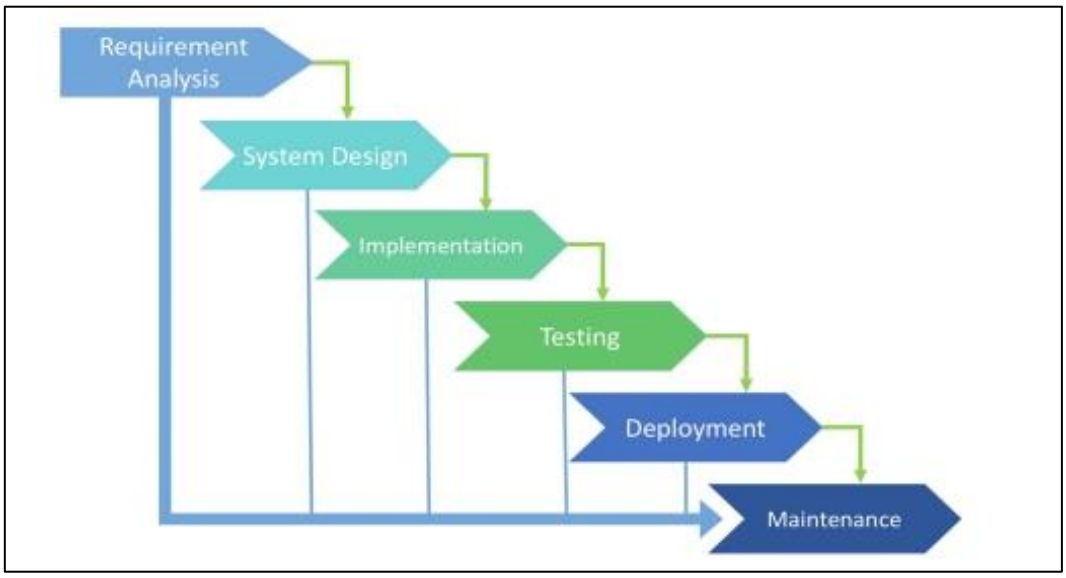


*Figure 1.1: Waterfall model*

### A. Requirement Analysis

At the first stage, information needs to be collected from the user or from the existing application that related with hypertensive disease.

### B. System Design

At this phase, the design for this mobile application was produce based on the prototype. This part must relate to the requirement analysis to produce mobile application that related with hypertensive patient record. Furthermore, design phase must meet the requirement from the first stage in order to produce hypertensive patient record mobile application.

## C. Implementation

At this stage, source code needs to be written to produce the hypertensive patient record mobile application using android studio. The coding needs to be based on the requirement.

## D. Testing

This phase is to make sure that the application is no error occur and ready to release to the user. If there is an error or critical issue occur, the application needs to fix until it is ready to be test by the user.

## E. Deployment

After completing the testing phase, the application should be release to the user to experience the system to make sure no error and debugging occur when user access the application. The application must need to meet all the requirement from the first phase.

## F. Maintenance

After the application release to the user, the application should be updated to make sure there is no debugging occur.

## 1.6 Significance of Project

This project will help hypertensive patient to keep tracking their blood pressure reading. It also makes their life easier because they do not need to write on paper anymore and at the same time to save the environment. Besides, user also able to update their blood pressure reading anytime and anywhere. Furthermore, this application also helps the patient to see clearly their blood reading by viewing the graph. From there, user can view the reading more organize. Moreover, user also able to get the notification when their blood pressure reading is high. So, it can help user to notify their blood pressure is high.

## 1.7 Project Schedule

This project schedule is attached in the Appendix A.

## 1.8 Expected Outcome

At the end of this project, hypertensive patient record mobile application will provide a platform for hypertensive patient to record their blood pressure reading. Moreover, it able to see their blood pressure pattern through graph. They also can see their blood pressure record anytime and anywhere especially when appointment day. Furthermore, it also helps patient to notify if their blood pressure is high when user insert their blood pressure reading and notify user if their medicine is run out stock.

## 1.9 Project Outline

### Chapter 1: Introduction

Chapter 1 is about the overall project which is Hypertensive Patient Record Mobile Application. In this part, introduction, problem statement, scope, objective, methodology, significant of project, project schedule and expected outcome are written in this chapter.

### Chapter 2: Literature Review

Chapter 2 is about the comparison between this project and the existing project. This part is about identify the weakness the existing system to improve in our incoming project. Furthermore, journal, articles and conference paper can be the reference to produce a better project for the user.

### Chapter 3: Methodology and Requirement Analysis and Design

Chapter 3 is about methodology that is used for this entire project. In this part, this application will create based on the requirement analysis and design.

### Chapter 4: Implementation

After the application finish develop, it will be tested to the user. In this chapter also provided a screenshot about the application also explanation on what going on in that application.

### Chapter 5: Testing

After complete implementation process, this application needs to be tested by user. This step is important to know user satisfaction when using this application.

**Chapter 6: Conclusion and Future Work**

In this chapter, the application develop is finished. Furthermore, this chapter is to make sure all the objective is achieved and improvement this application in future work.

## 1.10 Summary

Chapter 1 presented the idea of developing an application which is Hypertensive Patient Record Mobile Application in which focused on people who have blood pressure. This application is aimed to ease relevant people to manage their blood pressure reading. Furthermore, they are also able to know the pattern of their reading through graph. Thus, it looks more organize and patient able to see clearly their pattern of their reading whether it is high or low. User also able to get notification if their blood pressure high.

# Chapter 2: Literature Review

## 2.1 Introduction

This chapter will describe the existing system that had similar functionality for this proposed application. This application will be focused on high blood patient for them to monitor their blood pressure level. This application will give some benefit to them because from this application they are able to keep track their blood pressure reading from their home. There a lot of benefit when someone able to keep track their blood pressure. One of them is they able to prevent blood pressure become increase. If you record your blood pressure by yourself, its can provides an important baseline for your blood pressure that can be used to determine if you are in danger of developing hypertension or other potentially challenging diseases (WHY MEASURING BLOOD PRESSURE DAILY IS IMPORTANT FOR HYPERTENSION, 2016). So, it is important for users especially hypertension patient to keep track their blood pressure.

## 2.2 Review of the existing systems

Based on this project, there are three existing systems that has been chosen to review and come out with proposed application which are Blood Pressure Checker Diary-BP Info-BP Tracker, Blood Pressure Checking Info and My Blood Pressure. All the applications are be used on Android Operating System.

### 2.2.1 Blood Pressure Checker Diary-BP Info-BP Tracker

Blood Pressure Checker Diary-BP Info-BP Tracker (Tools, n.d.) is an online application that allowed user to enter patient blood pressure reading.

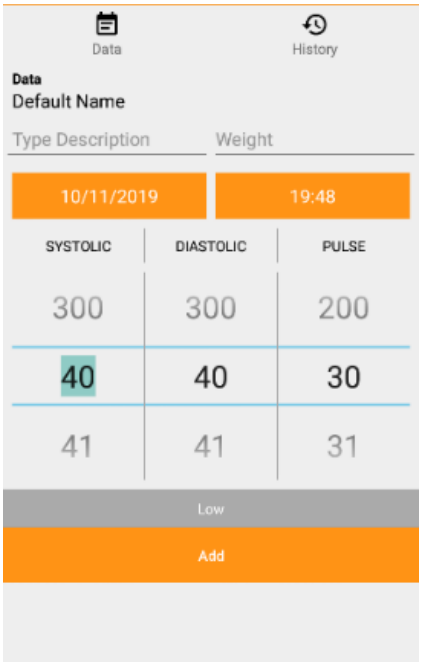


*Figure 2.1: Main Interface*

Figure 2.1 shows main page in this application. User able to enter their blood pressure reading. User also able to enter their weight and type of description. User need to scroll up down to select their reading. After user select their reading, it will show whether user blood pressure Low, Pre-Hypertension, High: Stage 1 Hypertension or High: Stage 2 Hypertension.

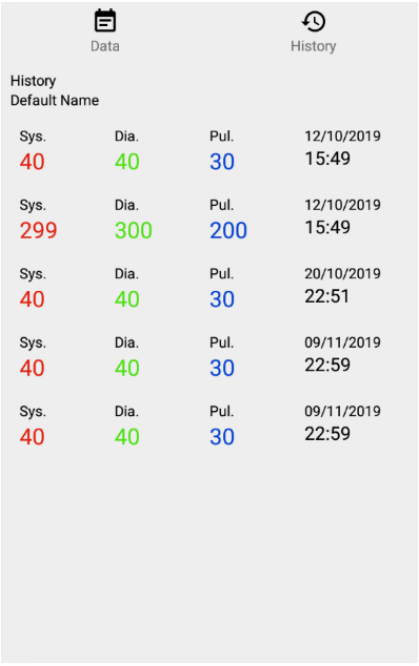


*Figure 2.2: History*

Figure 2.2 shows history page on that application. User also able see previous reading by click on history button. It will show the history of patient past reading. In this system, it does not show type of description, weight and level of hypertension whether it is Low, Pre-Hypertension, High: Stage 1 Hypertension or High: Stage 2 Hypertension that user enter at previous page.

### 2.2.2 Blood Pressure Checking Info

Blood Pressure Checking Info (Apps, n.d.) is an online application that allowed user to enter patient blood pressure reading. This application is compatible for Android Operating systems.

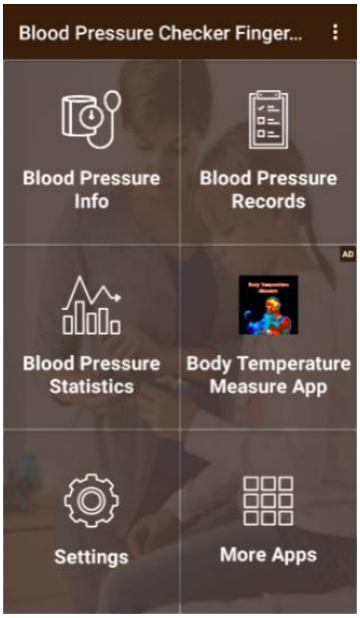


*Figure 2.3: Main Interface*

Figure 2.3 shows the main interface for the application. On the main interface, user able to choose any part that they want to choose.

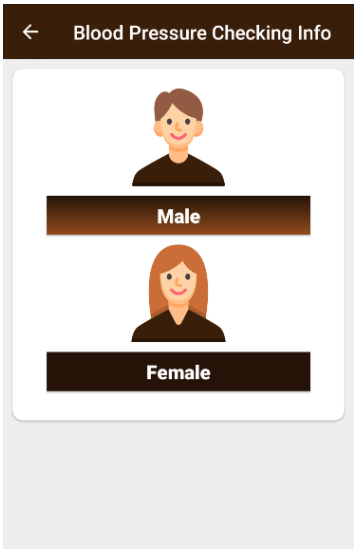


*Figure 2.4(a): Gender Selection*

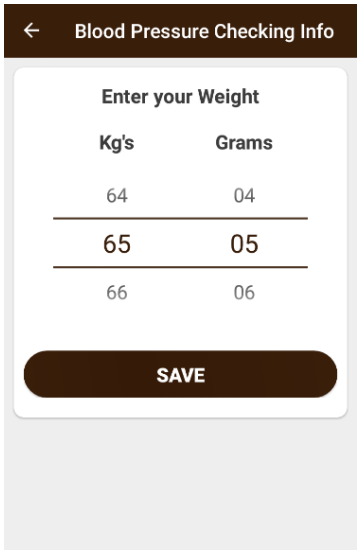


*Figure 2.4(b): Weight Selection*

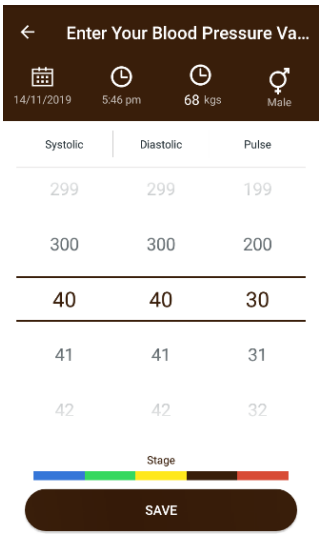


*Figure 2.4(c): Enter Blood Pressure*