CHAPTER I

INTRODUCTION

1.1 Background

The availability of computer technology today with the power of the process has enabled the development of computer-based information systems. Computer-based information system is a processing system that turns the raw data into quality information and can be used as a tool to support decision-making in terms of accuracy and reliable, coordination and control as well as visualization and analysis basing on computer hardware and software technology for processing and disseminating information. By utilizing computer technology, the benefits obtained in the form of convenience store, organize and conduct of the various data collection. Powered by software and the proper hardware configuration, the company can build a reliable information system and significantly affect the overall performance of the company.

Computer technology now has shown a fairly rapid growth; therefore the technology is now not only a computer-based course but with a mobile-based which allows the user or the user can access the information at anytime and anywhere without limits as long as there is an availability of internet connection. In addition to Internet-based technology, the computer can be used as a means of fulfilling human needs among many others, such as communication with other computers by performing the processes which sometimes give constraint where man finding it difficult to solve it alone. However, with the current availability of

facilities that enable a variety of features that man just by running on the computer he had, for instance, preparation of reports, schedules and inputting data required can make life easy.

Education through computer-based system itself is not just to communicate with each other either by phone through voice call, via sms or other communication channels with computer, but base on accepted technology has now progressed and has a variety of some interesting features, for example, a manual information and computer-based information. Manual using paper and pencil technology while computer-based base on computer hardware and software technology for processing and disseminating information to fulfill their ambition. Again education technology plays a significant role as a means to obtain first hand information or knowledge therefore its technology and education are closely interrelated to disseminate its information to those who need to be given. Moreover the field of education is also of course requiring a convenience to be able to access the schedule of courses that exist in the study in a university program. Long distances sometimes make students constrained by time to know that sudden changes in the course schedule, with the development and advancement of communication technologies such as the Internet, this should not be a problem to access the schedule from a great distance though.

The process of accessing and manufacture class schedule is quite a difficult job, especially in the University where every day schedule is occupied. This is due to several factors that must be considered, such as the possibility of courses who will teach more than one subject, the presence of professors or lectures who cannot teach on a certain day. The current Scheduling system at the institution is

manual and old system used since the establishment of the institution. That manual is the installation process for the class scheduling of classrooms, classes, and courses are still made in writing form. Handling scheduling system in this process often causes problems, both for the admin who provides schedules for the class and students at the Physic Class at the University of Papua New Guinea.

The University of Papua New Guinea (UPNG) was established by ordinance of the Australian administration in 1965 and is the country's premier institution and for the nationals and Pacific Island countries as well. Many national and foreign students from the neighboring countries are attending studies at the university. The university has moved from departmental to a school structure to foster interdisciplinary and inter-school relationship. There are more than 15,000 students annually in Port Moresby main campus. The institution has two main departments know as Science and Social Science. In the science department is the Physic Class falls. Physic is the scientific study of matter and energy and how they interact with each other. In the Physic Class at the institution, there are eight sections (eight classes) which includes from the 1st semester to the 8th semester. However, here the researcher will only focuses on two classes which is from semester 1 and 2. On top of that, the Physic Class has only 6 lecture rooms and 10 lectures in the Physic department which is insufficient for the growing population of students each year and semesters. This means the workload of each lecturer is beyond normal duty lecturers which gives lecturers who are having less leisure time available and family's private time. Moreover, in one semester the students have more lectures in a single day, which give problems to the first group of students and those attending later. Finally this makes the students to wait longer

hours as expected to enter the following class and students become less interest and do not concentrate to the lecture.

Admin itself takes a long time to create a class schedule that will be used because they have to adjust the time available for lecturers, lecture hall, or a particular class accordingly. The process of making a long lecture schedules often make getting late professor and lectures teaching schedule, so it is not uncommon not entering the teaching of courses in the early weeks of college. For lectures and students to meet face-to-face interaction is overwhelming. A learning environment for academic studies must be therefore at some point in the Physic Class at UPNG must be created for course or course materials offer this interaction. To have students as well as teachers use on text-based communication for academic purposes seems to be very dangerous for the quality outcome for the higher education. Therefore, the development of courses and courses material given illustrate the need for better communication tools in web-based education to disseminate helpful information.

Based on any of the problems described above, the authors take a research title is "Creating a Scheduling Application for the Physic Class at the University of Papua New Guinea" web-based application scheduling this course, expected to manufacture class schedule at the Physic Class at UPNG that will speed up and can serve the needs of the students and can access it anytime and anywhere. This is a case where pedagogical intention of designing a good learning environment on web-based demands further technological development in the area of Internet communication tools.

1.2 Identification and Problem Formulation

The identification and formulation of the problem is as follows;

1.2.1 Problem Identification

From the background described previously, can be drawn identification problem as follows:

1. Scheduler is often find is complicated at times to make an accurate schedule of lecturer's availability due to the lecturers who can only teach at a certain time per day or suppose to be teaching more than one subject and that mean he/she must adjust the time available for lecturers, lecture room, or a particular class that is convenient.

2. Making existing class schedule often spend considerable time because the existing system only checks the clash, not improve or construct the course schedule. As a result of a long lecture schedule is released, it is often the student must make improvements and study plan form a powerful class schedule information, and lecturers are also often arrive late to get a schedule so that in the early weeks there is often a lecturer who does not enter or mass up a bit for the start which leads to students loose of interest.
3. Especially for students who want to know the schedule or change of courses schedule, sometimes long distances to make students plagued with time or end up getting late schedule which has negative impact on

the class attendance and also sudden change in the course schedule has those unwanted implication

1.2.2 Formulation of Problem

Based on the above, the importance of the formulation of the problem, namely:

1. How to describe the design of scheduling courses running in the Physic Class at UPNG.
2. How to make an application scheduling courses Client-Server concept on its server using its Web Client using PHP through On-line education that will be able to assist in the scheduling of courses that exist in the Physic Class at UPNG.
3. How to do the testing of applications based scheduling courses on-line education proposed in order to avoid functional errors system.
4. How to implement a scheduling application programming language courses are integrated into the database so that it becomes a ready-made package application in the Physic Class at UPNG.

1.3 The Purpose and Objective

1.3.1 The Purpose of the Research

The Purposes of the research are as follows;

The intent of this research is to create a course scheduling application which will then be applied to a mobile phone or android device in order to facilitate the students to see the schedule of lectures and can access them from anywhere and

overcome existing problems such as schedule clash the scheduling process existing courses the Physic Class so that in the course scheduling does not require a long time. Furthermore, the researcher aims to provide decision-makers with a cost/benefit analysis of the use of technology in teaching and learning at the university level.

1.3.2 The Purpose of the Study

The purpose of this study is as follows:

1. That describes a scheduling design courses that are running in the Physic Class of UPNG.
2. Creating an application scheduling courses Client-Server concept on its server using its Web Client using PHP through On-line Education that will be able to assist the process of scheduling courses in the Physic Class at UPNG.
3. Creating an application scheduling courses Client-Server concept on its server using its Web Client using PHP and android mobile devices through On-line Education that will be able to assist the process of scheduling courses in the Physic Class at UPNG.
4. And implement a course scheduling application that is integrated into a programming language with a database so that it becomes a ready-made package application in the Physic Class at UPNG. With the application to be made are expected to be useful for users, especially students and the lecturer and course scheduling process in the Physic Class at UPNG will be able to be done more quickly and in accordance with needs.

1.4 Usefulness of the Research

The usefulness of research is as follows;

1.4.1 Practical Uses

Research conducted for several parties have utility included in the practical field is as follows:

a) For Physic Class

Simplify the process of scheduling courses, thereby reducing errors in the process of scheduling subjects and minimize time of lengthy processing where it once takes a long time in the process of scheduling and scheduling application, android-based course is the one which the Physic Class can create scheduling in a timely manner.

b) For Student

Makes it easy for students to be able to know the schedule of courses via mobile android that can be accessed anywhere according to the schedule prescribed by the Physic Class.

c) For Lectures

With the application of android based scheduling each subject to a teacher or lecturer can control and adjust more quickly if there are courses arising to be clashed with other subjects and can rectify it to the scheduling or the admin of named institution.

1.4.2 Academic Uses

In the academic field, this study can provide usability as follows:

a) Knowledge for Development

Through the development of the knowledge gained in the Information Management System, especially in application building development of courses android-based scheduling will help the researcher in a better for position in the future if such a similar task appears.

b) For other Researchers

The results of this study are expected to contribute ideas to other researchers and can be a reference for the improvement or development of other researchers who will study in the field or the same problem that will be more assisting that will be available with the growing technology.

c) For Authors

With the assistance of this study, the authors will be able to further his/her knowledge in programming that possessed individually and can understand better on how to process optimization in scheduling courses.

1.5 Problem Limitation

Restrictions problems used in a discussion aimed in the discussion that is more focused and consistent with the objectives to be achieved. The restrictions include:

1. The system only makes scheduling application Web-based courses with the help of Internet in Physic Class Client-Server with the concept that the Web Server is using the language PHP and Client using the Web-based device application.

2. The application is mainly created or designed for the students who are taking up Physic Courses at the University through Web browser with the help of Internet.
3. Functional systems covers only the scheduling process for tenured faculty courses and create a mapping for lecturers, do not include document preparation course offerings.

1.6 Location and Time Research

Location and object of this study are as follows:

Name: University of Papua New Guinea (UPNG)

Address: Post Office Box 320, Port Moresby, National Capital District, Papua New Guinea

Telephone: +675 326 7200

Fax: +675 326 7187

1.6.2 Research Time

In this study, the authors chose a location in the University of Papua New Guinea (UPNG) in the Physic Class. Due to time limitation, the researcher did not allow a comprehensive survey of all universities, the researcher choose the University of Papua New Guinea. It was chosen because the institution was the forerunner of all other universities and was one of the first to use technology and introduced the internet early after the university was established. Therefore it provides a context where the use of technology is more established.

The research time is as follows:

Table 1.1 Research Schedule

Schedule	Month																			
	Nov 2014				Dec 2014				Jan 2015				Feb 2015				Mar 2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
a. Observing																				
b. Interview																				
c. Data collection																				
d. Document analysis																				
1. Create & Fix Prototype																				
a. Designing process																				
b. Database design																				
c. Programming																				
2. Testing Prototype																				
a. Black-Box Testing																				

1.7 Writing System

The Systematic Writing is as follows:

CHAPTER I INTRODUCTION

This chapter contains a description of the background research that underlies the importance of the research conducted, the identification and formulation of the problem, the intent and purpose of research, usability research, which consists of two purposes, namely, the practical usefulness and usability

academic. Furthermore, defining problem, identifying location and time of the study and systematic writing.

CHAPTER 2 TEROITICAL

This chapter contains a description of the theory - a theory that will be used in accordance with the title theme researchers used, among others, the notion of mobile apps, android, history android, android version, understanding scheduling, scheduling criteria, international understanding programs, databases, eclipse, java programming, Unified Modeling Language (UML), SQLite, and journal the results of previous studies that have been published to serve as a reference.

CHAPTER 3 OBJECTS AND METHODS

This chapter contains a description of the research object in it listed three points again, namely, a short company history, organization structure company, and job descriptions. Followed by a method comprising studies designs, types and methods of data collection is divided into two, namely the source of primary data and secondary data sources. Furthermore, the method of approach and system development, analysis and design tool consisting of a Use Case, Activity Diagrams, Sequence Diagrams, Class Diagrams, collaboration Diagram, Component Diagram, and Deployment diagrams. further testing and analysis software that runs the system is composed of document analysis, analysis of current procedures in which using the Use Case, Use Case Scenarios and Activity Diagrams, and the final evaluation of the current system.

CHAPTER 4 RESULTS AND DISCUSSION

In this chapter, contains the description of the main points of the concluding recommendation that need to be communicated to the parties concerned with the results of research and development for the purposes of the applications that can be created for the better.

CHAPTER 5 CONCLUSION AND RECOMMENDATION

In this chapter contains a description of the main points of the conclusions and suggestions that need to be communicated to the parties concerned with the results of research and development for the purposes of the application or the other .