E – Prestasi Pensyarah

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DECLARATION

I hereby declare that the work in this technical report is my own except for quotations and summaries which have been duly acknowledged.

Date : 22/05/2013

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ABSTRACT

At present every job done will be assessed. Performance evaluation system has always been the focus of academics to assess its efficiency in learning. Similarly, lecturers who teach in the polytechnic in Malaysia will be assessed. Along with the development of information technology progress, there are problems in the conventional system it is file-based systems can be overcome. At each assessment time lecturers do often have difficulty in managing the questions that will be given to students. In addition, the time frame for completion of the evaluation takes a long time and interferes with learning and teaching time students and lecturers. At present, the assessment carried out using specific forms provided by the faculty. Use of the form is too much difficult for lecturers to store and update data for a long period. Lecturers Performance Evaluation System 'e-prestasi pensyarah' is a system developed for the convenience of lecturers, students and heads of departments. This system is the idea of the existing system. The main goal of this project is to create an alternative system to the existing system while increasing the effectiveness of staff performance evaluation process Polytechnic Sultan Mizan Zainal Abidin. Lecturers Performance Evaluation System incorporates some of the latest technology using Macromedia Dreamweaver MX 2004, as a programming language PHP5 and MySQL 4.1.12 as the database. "System Development Life Cycle (SDLC)" was chosen as the methodology with contact diagram and data flow diagram as a methodology in the development of this system. The system is also combined with the convenience of a short message system where after completing an evaluation of the lecturer will receive a report of their assessment scores directly to their mobile phone by text message. In general, this system can help lecturers and administrators to manage documents in a systematic performance evaluation of lecturers. In addition, it can be used to assess the performance of the particular academic staff work throughout the year.

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LIST OF ABBREVIATIONS

No	Acronym/Definition	Description
1	DBMS	Database management system
2	DBA	Database Administrator
3	SMS	Short Messaging Service
4	PSMZA	Polytechnic Sultan Mizan Zainal Abidin
5	PHP	Hypertext Preprocessor
6	HTML	Hypertext Markup Language
7	SQL	Structured Query Language
8	HTTP	Hypertext Transfer Protocol
9	UMP	University Malaysia Pahang
10	GSM	Global System for Mobile
11	USB	Universal Serial Bus
12	SDLC	Systems Development Life Cycle
13	ERD	Entity Relation Diagram
14	CD	Contact Diagram
15	DFD	Data Flow Diagram

CHAPTER 1

INTRODUCTION

1.1 Overview

Performance evaluation system has been the focus of academicians and practitioners. The main thing that is often discussed is how evaluation can be implemented effectively. The evaluation has become ineffective is not because of the system but it's because of the implementation. Performance evaluation is done by human things, at all times. Word assessment or evaluation (appraise) derived from the 'latin' word 'pretiare' which means to assess (in Coens & Jenkins, 2000). [1] Therefore we can say as a performance evaluation process evaluation to determine whether a person is working in carrying out a task. It refers to the processes in evaluating the performance of an individual. In other words, performance evaluation is considered as the process by which employee contributions to the organization in value over a period of time by a supervisor from the standards that have been set. Controversy over the performance appraisal system has long been a debate in which there are scholars say, the system more harm than good. According to Coens and Mary (2000), specifying the day-to-day performance appraisal leads to 'death' is approaching and they should be removed.[2] Additional the Deming (1982) says, have concluded that the performance appraisal system is a 'deadly disease' and suggested organization focused on the problems rather than the problems of mankind.[3] Performance evaluation system is particularly prone to fraud. On paper, this system looks easy to implement but it is not easy

as expected. Weaknesses in the implementation of many of these organizations had created negative to this system. Implementing performance assessment was not the problem but how to perform the perfect becomes the main topic. Performance evaluation is a very complex matter and to make it effective the new system must be designed and implemented with extreme caution. If not that's what it said would bring more disadvantages than advantages. The dismal implementation organizations fail to benefit from this system. Not one system but its implementation is at issue and high attention should be given to it. The person making the assessment must know how implement it. According to McGregor (1960), performance evaluation system can provide an orderly method in determining the outcome of the promotion, transfer, salary increase and to provide data that is useful to the organization in connection with their strengths and weaknesses.[4]

A system is a set of detailed methods, procedures and routines created to carry out a specific activity, perform a duty, or solve a problem. In concise Oxford Dictionary, it states that the system is a group of parts, working together according to a purpose. The use of computers nowadays has become such a part of our lives. Travel and everyday tasks become easier and without realizing we are becoming increasingly dependent on machines that we call this computer. Information must be sent quickly and swiftly to avoid any loss or leakage of information. For example, members of the business, fast delivery and safe information can produce profits multiplied. Database management system (DBMS) is a software package with computer programs that control the creation, maintenance and use of the database. It enables an organization to develop a database through a database administrator (DBA) and other experts. A database is an integrated collection of data records, files, and database objects other. Short Messaging Service or better known as SMS is a very popular service among mobile phone users. SMS was launched commercially in Malaysia for the first time in 1995. SMS is the text received by the cellular telephone users to communicate orders or instructions. SMS service is a facility that allows users to send messages in text form to other users. SMS has provided a breakthrough to a hosting service for cellular phone service has its huge market and take profits. During the service was first introduced, the telecommunications company held a promotion or activity on a large scale. This service has

attracted ambitious layer of various communities to the text message to a variety of patterns and can deliver the desired message without face to face with the receiver. Therefore, these SMS services have given the opportunity for consumers to interact with each other and accessing information more quickly facilitate communication. Statistics show the use of SMS in 2009 was 6.37 billion by Malaysian's citizen (Asia Pacific Digital Marketing Yearbook 2010).[5]

"Sistem e-Prestasi Pensyarah" is an application that designed based on the study of system "Penilaian Pensyarah" manually. Low cost is an important factor in information technology as a tool for operational and making the decision effective. Assessment of a lecturer at the polytechnic is still done manually. Students and head of department still need to fill out a form to evaluate performance of lecturer. This makes it difficult to evaluate department heads and get the information quickly. So that, to solve this issues a system called "e – Prestasi Pensyarah" will propose to be implement in "Polytechnic Sultan Mizan Zainal Abidin" PSMZA. "e – Prestasi Pensyarah" is a system that will be built to evaluate the performance of a lecturer in PSMZA. This system will help the heads of department and students to evaluate a lecturer with the minimum time and cost. This system will generate an accurate report at the end of the evaluation. The system will be used by students and administrators. Students will register as an assessor and may assess a lecturer, and provide any comments and suggestions, while administrators will be managing this system to register for the lectures will be evaluated, generate reports, update information on lecturers, removing information about the lectures. By the end of the evaluation lecturer will get the result by receiving the text messaging that is through Short Message Service (SMS) by their mobile phone. By develop this system it can provide many benefits to the community polytechnics.

1.2 Problem Statement

Evaluations of lecture performance have several significant weaknesses:

i. Lecturers have problems getting or knowing their assessment scores more quickly and accurately. The old system requires lecturers to meet the individual concerned to get their assessment scores. For lecturers who have limited time this is a problem for them because they may not have time to go to see the system administrator to get their assessment scores.

ii. Lack of a systematic calculation. In the conventional systems lecturer evaluation scores calculations less accurate. This is because the process is done manually. The administrator needs to spend more time process the results of evaluation of lecturers. This is because lecturer assessment report must be generated quickly for it to be submitted on behalf of superiors.This system can be constructed to benefit by accelerating the process of calculating scores of lecturers and lecturers to help students to assess more quickly and easily.

iii. Administrators have problems in managing the evaluation records. The conventional evaluation was done manually and base on using file-base system. The record was store by using paper. It is also really messy and hard to find lecture records. Evaluation forms need to print out to give to student and after finish evaluate the form need to store because is confidence.

1.3 Objective

The objectives to build this system are:

i. To develop the prototype of "e-Prestasi Pensyarah" for Polytechnic Sultan Mizan Zainal Abidin.

ii. To make performance evaluation process more effective and efficient.

iii. To develop a system which able to send a notification of the server to administrator via SMS.

1.4 Scope

Users of these systems can be divided into four users, namely:-

i. Students

   a. Students will use "e-Prestasi pensyarah" as evaluator to the lecturers who teaching their

ii. Administrator

   a. Administrator will manage the system such as register the student and lecturer into the system, updating, deleting, and adding the information in database.

iii. Head of Department

   a. Head of Department also use "e-Prestasi Pensyarah" as evaluator to the lecture.

   b. Head of Department also will get the overall results of the evaluation.

iv. Lecturer

   a. Lecturer can only review their evaluation scores sending by using SMS.

1.5 Project Significance

If the system is successful, it will be beneficial to the lecturer at the Polytechnic Sultan Mizan Zainal Abidin. First, it will provide an effective way and allows instant access to information and evaluation personnel by keeping all data in a database. This system will make the performance evaluation process easier to handle. This is because the system will process the information quickly and information can also be updated, added and deleted quickly. The most important, this system also makes the lecturer can receive and display information about evaluation score in minimum time. Lecturer evaluation scores will be sent using short message service SMS. The last thing is that all the information and can be accessed online via the internet. So they can complete their evaluation process at anytime and anywhere without any constraints.

1.6 Thesis Organization

This thesis consists of five (5) chapters. First chapter provides an initial overview of the project to be developed. It contains a brief explanation of the system will be developed. Aspects such as the problems, the objectives, scope, implementation and project benefits briefly but give the solid point of view about needs, why and how this system to be developed. Explaining about the benefits and advantages to be gained when the system was also set here what is too used later.

Chapter 2 is a literature review that discuss the existing system and technique or software that use in that existing system. In this chapter we will find and identify the constraint that was occurring on the existing or the conventional system.

Chapter 3 is methodology. The purpose of this chapter is to discuss what methodology will be used while develop this system. This chapter also explains about the justification of methodology used and hardware and software necessity.

Chapter 4 involves implementations that discuss about compilation of the data and table that is use based on SQL.

Chapter 5 is about result, discussion and conclusion. The elements that should have in this chapter include result analysis, the problems of build project and suggestion of the project approach to the next research. This chapter also includes summary of project.

CHAPTER 2

LITERATURE REVIEW

2.1 Overview

This chapter will discuss the scientific studies, research, observation and questionnaires are used as a reference for developing this system. This study involves the focus and the understanding and explanation of the elements involved and the relevant requirements in the development of this system later. Among analyze system requirements and evaluate and select software and hardware that will be used to develop the system. Focus of research is to get as many methods of implementation and mechanism of how the system was implemented.

"e-Prestasi Pensyarah" facilitates the coordination of lecturers' performance of a task, especially in connection with the calculation of point's scores and performance records for the lecturers. Therefore, many other systems of the questionnaire have been used in organizations by offering various benefits and facilities. This chapter will discuss the existing questionnaires system and linked to the "e-Prestasi Pensyarah".

2.2 Information System

According to Senn (1998), that information technology consists of three components: computer, communication and know-purpose.[6] The combination of these three components gives people and organizations the opportunity to acquire skills to be more productive, effective and successful. The era of information technology with the use of computer technology is very suitable for use in the operation of an organization. For example, management systems that involves a lot of data to accelerate the management and recording of information without having to do it manually. By using computer technology, information can be stored safely and effectively which will facilitate maintenance (Robert G. Murdick, 1977).[7]

Information systems can be defined as a set of elements or components of the gathering (input), process (the process) and store and disseminate (output) data and information that provides a feedback mechanism to achieve an objective and to support decision making and control within an organization. It is a combination of operations involving planning, observation, storage, management and analysis of data to produce information that can be used in the decision making process. Typically, it consists of a combination of hardware, software and telecommunications networks are built and used by humans to create, collect and distribute data typically useful in environments and organizations through an electronic network in accordance with certain procedures. In addition to make the decision-making, coordination and control, information systems can help employees to analyze problems of organization, drawing the complex and generate the new products. In information systems there are 5 key components that depend on each other: data, people, hardware, software, and procedures (O'Brien 2001)[8].

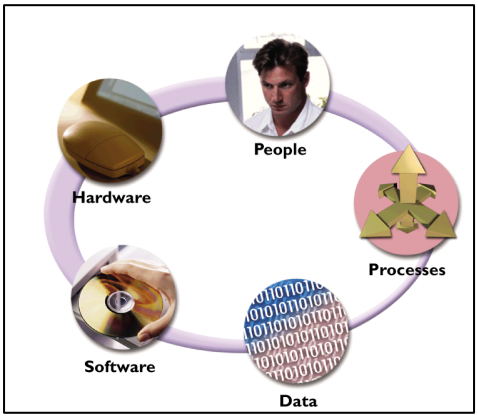


Figure 2.1 Information System Components.

2.2.1 Web Based System

Technically, web-based system is the application or service that exists on the server that can be accessed using a web browser and therefore can be accessed from anywhere in the world via the Web. According Conallen (1999), the architecture of a web environment consists of three basic components of a web server, network connectivity and one or more web browsers. Web-based system is a system that uses a Web server (Web Browser) to process any information or data. The system can be accessed using internet or intranet. It was built using the programming language PHP, Java scripts, and using MySQL as a database to store data.The important features of web-based environment are:

i. Data or content generated must be constantly updated.
ii. To be universally accessible to users through the web (subject to approval of an authorized user to access data).
iii. Most web-based applications are far more compatible across platforms than traditional installed software. Typically it takes a minimum specification to run in a web browser. Examples of web browser. (Internet Explorer, Firefox, Safari and others).
iv. Web-based system should only be installed on a server with minimum requirements on the end user workstation.

v. Web-based applications can dramatically reduce costs because reduced support and maintenance, lower requirements on end-user systems and simplified architecture.

2.3 Web Server

Web Server is a combination of software and hardware used for storing web content that can be accessed through the internet. The main function of the web server is to deliver web pages on request from clients using the Hypertext Transfer Protocol (HTTP). Web server is a computer program that receives HTTP requests from clients. Typically it replies the request in the form of HTML pages. The most common use of web servers is to host web sites, but there are other uses such as gaming, data storage or running enterprise applications. A web server serves web pages to clients across the Internet or an Intranet. The web server hosts the pages, scripts, programs, and multimedia files and serves them using HTTP, a protocol designed to send files to web browsers and other protocols (Ratha 2008).[9]

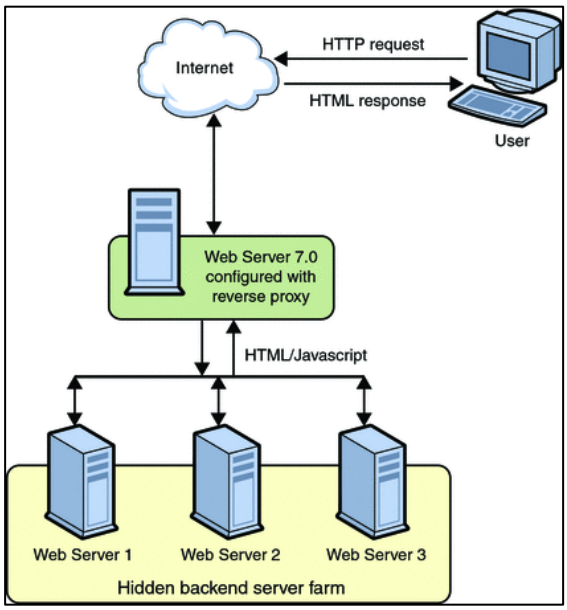


Figure 2.2 web server environment

2.4 Short Message Service (SMS)

Short messaging system or SMS is a service offered by mobile phone to send or receive short messages. By using the Short Message Service it can be a medium to delivering information quickly and easily. Since the growth of an increasingly technological SMS and seems like anyone can afford to have a mobile phone, it is possible to use SMS to send any information as reports or notifications from the system. To transmit the SMS to the mobile the GSM modem must been used. The function of GSM modem most frequently used to provide mobile internet connectivity, many of them can also be used for sending and receiving SMS and MMS messages. When a GSM modem is connected to a computer, this allows the computer to use the GSM modem to communicate over the mobile network. Regarding to Mark, S Thompson, once a neglected offerings, SMS is now a key part of marketing Strategies for wireless service providers in North America and around the world. (Mark S. Thompson, April 2002).[10] Every message sent through SMS messaging is not directly reach the destination mobile number, improvement, through some process first. in order to first base transceiver station. The message will be captured by the base transceiver station and sent to the base station controller. After which the order will be sent to the Short message service center. The SMS message center will be stored temporarily if numbers addressed in a dormant state. if the destination number is active, it will continue through the base station controller and a base transceiver station directly. The last process is sending the message to the receiver's mobile phone.

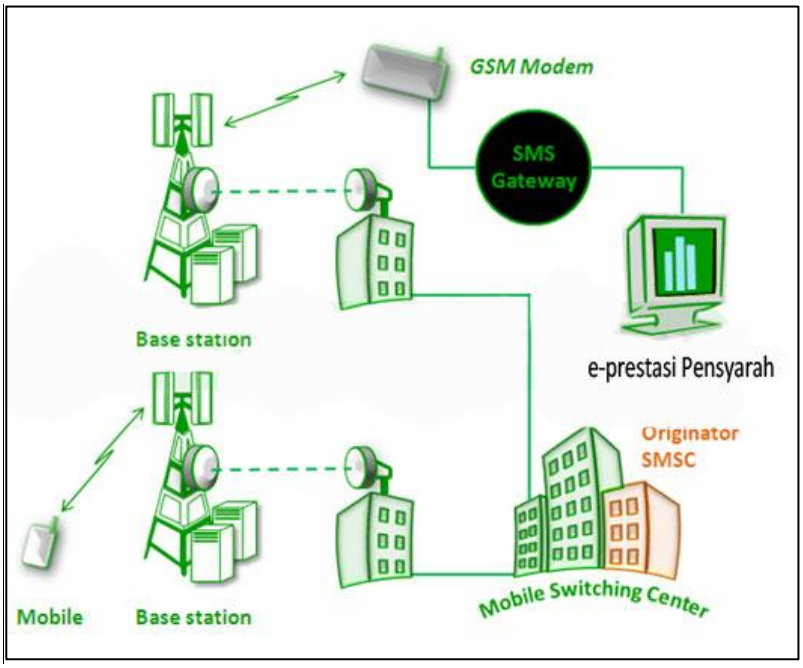


Figure 2.3 SMS delivery network

2.5 Review of Existing System

The manually system, still using a file-based system which will circulate the academic advisor lecturer evaluation form (PK (0).JPPKK.09 (L2)) to each student. Students need to fill in information about the lecturer who is in the form. Students need to understand the question granted and must choose one of four scores are provided. After which the student must score a total of all filled. Students are also required to give suggestions and comments about lecturers being evaluated.

The assessment made by the head of department, a lecturer evaluation form (PK (O). JPPKK 09 (L1)) will be available to be filled during the evaluation of a lecturer. Department heads are required to fill in information about the valuation officer and information about the lectures that will be assessed. Department heads need to choose one of scores of five scores that were available. There are four aspects of evaluation namely planning, classroom management, presentation and personality of lecturers. Thereafter, the head of the department should add up the scores have been marked. Lastly, the heads of departments

must provide comments or suggestions to the lecturer in order to improve their weaknesses and enhance their teaching performance. Each lecturer will receive a teaching evaluation form, the analysis of each lecturer. The form is a final decision concerning the teaching of each session.

2.5.1 Disadvantages of the Existing System

This system has its own disadvantage which the current evaluation process is slow and requires a long time to be generated. In addition, the system will be wasting a lot of paper because it requires a lot of paper to be printed and distributed to each student. Students need to evaluate their lecturers in the class during lecture session. By this would interfere with the ongoing learning at the time.

2.6 Computerized Information System Study

2.6.1 Sistem Soal Selidik Kepuasan Pegawai (Skim Perkhidmatan Pegawai Pendidikan)

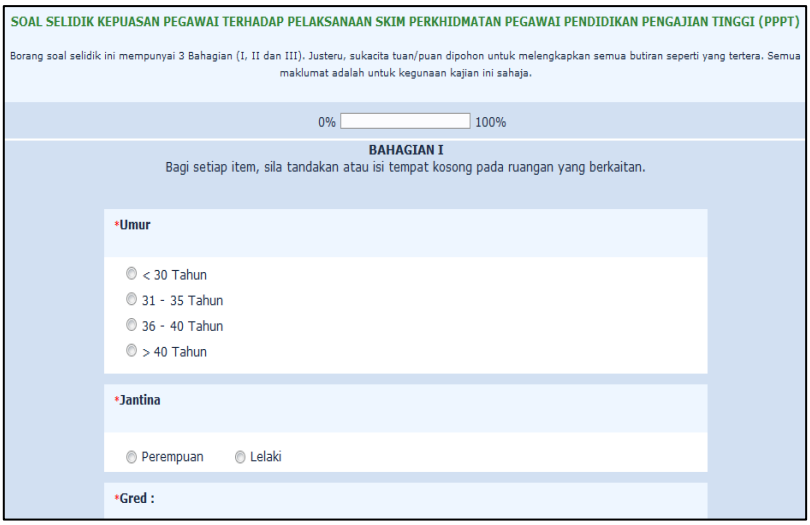


Figure 2.4 Interface of Sistem Soal Selidik Kepuasan Pegawai (Skim Perkhidmatan Pegawai Pendidikan).

Interface on the system shows the questionnaire for Skim Perkhidmatan Pegawai Pendidikan Pengajian Tinggi is used to guide evaluation of the services of higher education officials. This system is based database system. Users are required to fill out personal information before giving the score in the questionnaire. Users can also provide comments and suggestions on this system.

The advantages of this system is the system will be easier for the user to use and to generate the assessment of officers with more efficient. There are also weaknesses in the system as a less attractive interface. This is prosaic user to use this system.

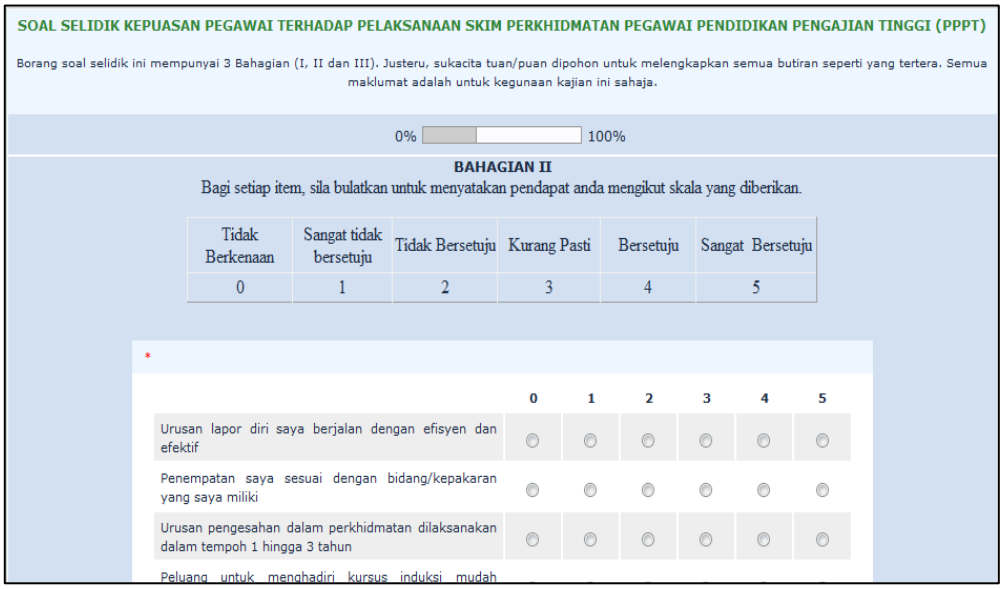


Figure 2.5 Interface of Sistem Soal Selidik Kepuasan Pegawai (Skim Perkhidmatan Pegawai Pendidikan).

2.6.2 e-PAT University Malaysia Pahang

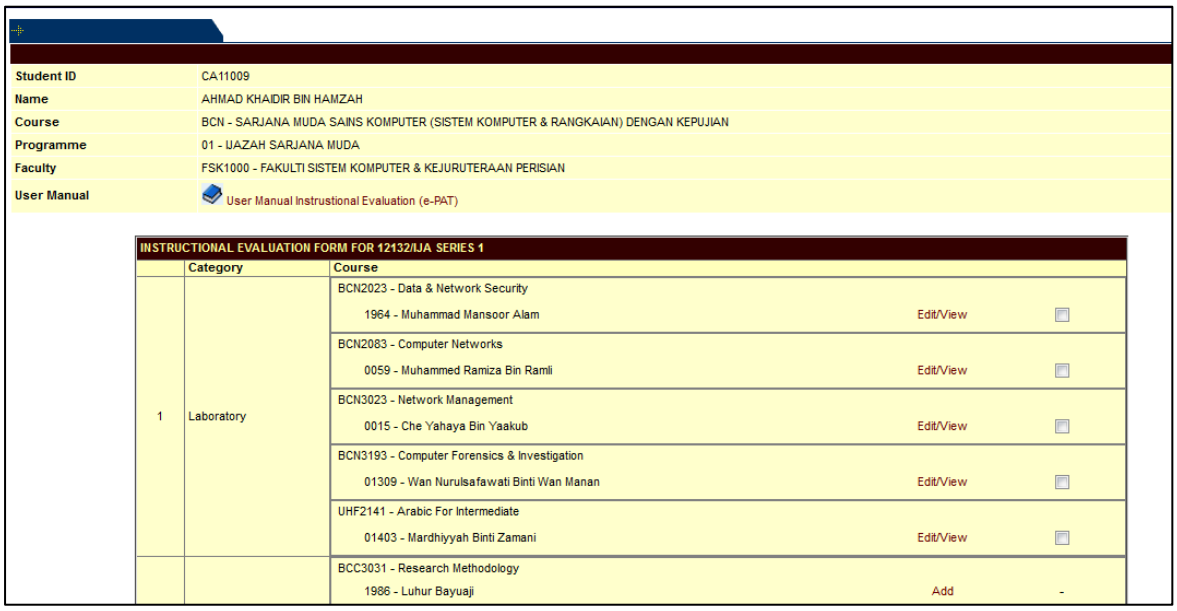


Figure 2.6 Interface of Instructional Evaluation (e-PAT).

e-PAT is the system use by student of University Malaysia Pahang to evaluate lecturers. This system is the web based system and was integrated in the system e-community of University Malaysia Pahang. Student need to evaluate their lecture in two categories that is laboratory and lecture. Students also need to give respond about question that given by giving the score to their lecture. The score student can give whether strongly disagree, disagree, natural, agree and strongly agree. At the end of the evaluation session student need to give comment about what he or she like and dislike about their lecturer lecture. After finish evaluate their lecturer student need to submit the evaluation score.

The advantage of this system is student can easily give their lecture score by choose the graphical icon that shows the emotional about the different between each score. Student also no needs to take long time to evaluate their lecture because of the entire question are located on one page. Their also has disadvantages in this system. The system not gives the notification to alert the students to do the evaluation and sometime students don't know the evaluation session was open to their do the evaluation.

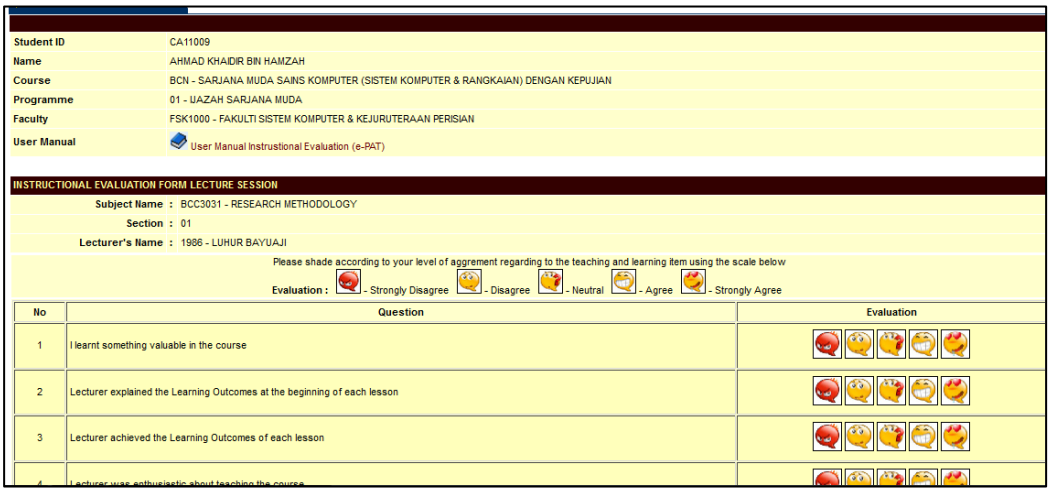


Figure 2.7 Interface of Instructional Evaluation (e-PAT).

In future, we will repair the weaknesses in the old system. Includes enhancing the ability of the systems and build an interface that is more attractive and professional. This system can also generate a report that will be sent to every lecturer as an assessment of its performance by using SMS.

2.6.2 Comparison of The Existing Systems

System	Sistem Soal Selidik Kepuasan Pegawai	e-PAT UMP	e-Prestasi Pensyarah
Login	User no need to login to answer the question.	Student need to login into UMP e-community by using student id and password to make an evaluation in e-PAT.	Student need to key in their student id and Ic number to make an evaluation. Head of department need to use username and password to uses the system.
Personal information requirement	User need to fill the form first with personal information.	Personal information already has in the system.	Administrator will manage the student and head of department personal information.
Interface	No graphical icons and less attractive. Graphical progress bar.	Graphical icons on the each score. No progress bar.	Uses radio button to choose the score. Interactive interface. Uses the graphical progress bar to know the percentage of the evaluation.
Technology used	No	No	Using Short Message Service (SMS) for sending report of evaluation to lectures.

Table 2.1 Comparison of The Existing Systems

2.7 Development Tools

This system will be developing using selected tools to support the development of the system. Above table is the description of the tools:

Description	Tools
Software	Adobe Dreamweaver CS5, Adobe Photoshop CS5
Programming Language	PHP 5.0
Database Management System (DBMS)	MySQL
Web Server	XAMPP (Apache HTTP Server)
Device	Mobile modem Huawei E161

Table 2.2 Development Tools

2.7.1 Software Tools

This section will discuss about tools that will be used on develop the proposed system. There are the software tools that will be used to develop the system.

2.7.1.1 Adobe Dreamweaver CS5

Adobe Dreamweaver is a proprietary web development application originally created by Macromedia. It is now developed by Adobe Systems, which acquired Macromedia in 2005. Adobe Dreamweaver is available for both Mac and Windows operating systems. it is also the software offers a comprehensive integrated environment in which to design, develop, test, and use the website and applications all flavors-cover the gamut from simple, static HTML page to complete sites built upon complex dynamic application frameworks. This software program using PHP and CSS can be written quickly and easily. This is because the software will display the interface immediately the coding was written. Adobe

Dreamweaver is a web design and application development that provides WYSIWYG visual editor.

Figure 2.8 Adobe Dreamweaver CS5

2.7.1.2 Adobe Photoshop CS5

Adobe Photoshop is a popular graphics editing application and has many features. At this time, Photoshop is the leading graphics editor software use. Photoshop is also an image creation and editing software. Photoshop can create any effect and style needed in a drawing, painting or layout. This application will be used to create portal banners and images needed for the system. Using Adobe Photoshop edit of a photo can be more beautiful and good quality.

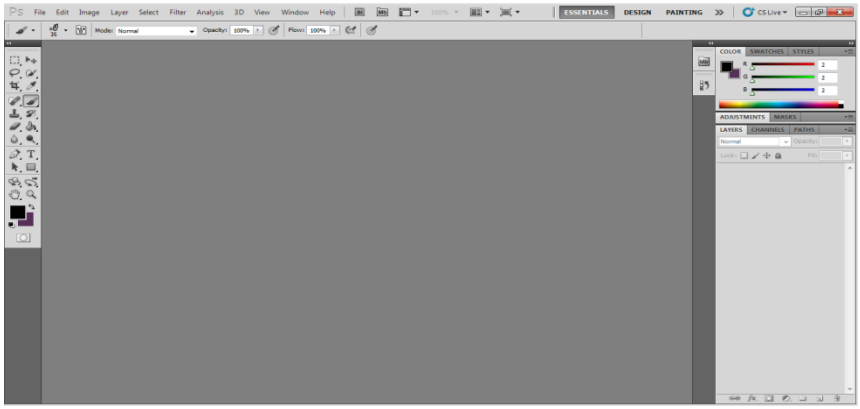


Figure 2.9 Adobe Photoshop CS5

2.7.2 Programming Language

Programming language is series of instruction and to communicate with computer. It is a tool used in software development to create, debug, maintain, and support other programs and applications. It is used in software development to create programs or application that serves end user. For this system, it will develop using PHP 5.

2.7.2.1 PHP 5

PHP or Hypertext Preprocessor is a server-based web programming language that can describe the source code of the web page code extension format (.php). It can produce a dynamic display of web pages to a web browser. PHP scripting language is also very suitable to develop the website and can be included in HTML. PHP doesn't use a lot of the system's resources so it runs fast and doesn't tend to slow other processes down. It can also be used for command-line scripting and client-side graphical user interface applications. PHP is open source software. PHP is free to download and use. Because it is free the PHP community works together to fix any bugs.

Advantages of PHP programming language:

i. PHP is considered to be the fastest of the scripting languages this is because

PHP is created to develop dynamic web pages.

ii. It is open source.

iii. Can run on many platforms. User just needs to have web browser to run the system that develop by PHP programming language.

iv. Does not require a lot of system's resources.

2.7.3 Database Management System

A collection of programs that allows to store, modify, and extract information from the database. There are many types of DBMS, ranging from small systems that run on personal computers to huge systems that run on mainframes. It allows organizations to conveniently develop databases for various applications. Advantage database is data and records contained in different files can be easily arranged and taken using special software called the database management database management system (DBMS) or database manager. A DBMS allows different user application program to concurrently access the same database.

2.7.3.1 MySQL

MYSQL database is an open source and the most popular open source database around. The MYSQL stands for "structured query language," which is a standard interactive and programming language for getting information from and updating a database. This language allows users to make queries about the information in your database in term of data selection, insertion, updating, and locating. MySQL can be used for a variety of applications, but is most commonly found on Web servers. A website that uses MySQL may include Web pages that access information from a database. A database is a collection if information that is organized to allow for easy retrieval. MYSQL offers both a Community Edition (open source) and a Network Edition (licensed).

Advantages of MySql ;

i. Free (Open source), fast and reliability because it can be run on many operating system like UNIX, Windows, and Mac Os.
ii. Databases setup on MySQL are very secure as all the passwords that are stored are in encrypted form, hence restricting unauthorized access to the database.
iii. Widely used for web applications.

2.7.4 Xampp (Apache Http Server)

Apache HTTP Server is web server software notable for playing a key role in the initial growth of the World Wide Web. Apache support the variety of features, many implemented as compiled modules which extend the core functionality. These can range from server-side programming language support to of authentication schemes. There is a common language interfaces support the Perl, Python, Tcl, and PHP.

Xampp is a source cross-platform web server solution stack package of free and open, consisting mainly of the Apache HTTP Server, MySQL database, and interpreters for scripts written in the PHP and Perl programming languages. Formally, the designers Xampp is intended for use only as tools of development, to allow website designers and programmers to test their work on their own computers without any access to the Internet. In practice, however, Xampp is sometimes used to actually serve web pages on the World Wide Web.

Advantage of Xampp:

i. Free and Easy to install
ii. Can carry a lot of local sites on our computer
iii. Able to perform testing, troubleshooting, demos or almost any web site without our real concerns into touch.

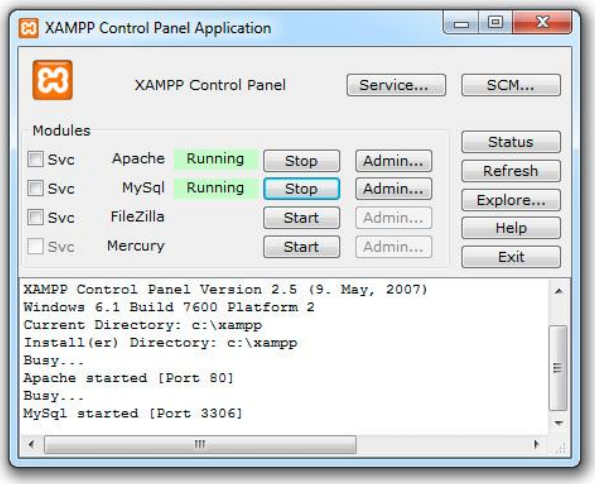


Figure 2.10 Xampp Interface

2.7.5 GSM Modem

GSM modem is a specialized type of modem which accepts SIM cards, and manages subscriptions to mobile operators, such as mobile phones. From the mobile operator perspective, a GSM modem looks like a cell phone. When a GSM modem connected to the computer, this allows the computer to use a GSM modem to communicate over the mobile network. Although the most common GSM modem is used to provide mobile internet connection, many of them can also be used to send and receive SMS and MMS. GSM modem can be a dedicated modem device with a serial, USB or Bluetooth connection, or it can be a mobile phone that provides GSM modem ability. The term GSM modem is used as a generic term to refer to any modem that supports one or more of the protocols in the GSM evolutionary family, including 2.5G GPRS and EDGE technology, as well as 3G technologies WCDMA, UMTS, HSDPA and HSUPA. Mobile operator charges for sending and receiving the message as if it were executed directly on the handset.

2.7.5.1 Mobile modem Huawei E161

HUAWEI E161 broadband usb modem is fully unlocked, supports 3.6Mbps high speed, compatible with all 3G networks frequency 2100MHz that can access whenever and wherever only the 3G networks converage.

HUAWEI E161 Unlocked 3G Mobile dongle specifications:

i. HSDPA DL up to 3.6Mbps
ii. HSDPA/WCDMA/UMTS 2100MHz
iii. GSM/GPRS/EDGE 850/900/1800/1900MHz
iv. Built-in antenna
v. HS USB & SMS service
vi. MicroSD card expansion slot
vii. Dimensions: 70 x 25 x 12mm
viii. OS: Windows XP/Vista/7/8, Linux, Ubuntu, Mac OS.

CHAPTER 3

METHODOLOGY

3.1 Overview

The Systems Development Life Cycle (SDLC), or Software Development Life Cycle in systems engineering, information systems and software engineering, is the process of creating or altering systems, and the models and methodologies that people use to develop these systems. The concept generally refers to computer or information systems. According to Irny, S.I. and Rose, A.A. (2005), "A methodology is usually a guideline system for solving a problem, with specific components such as phases, tasks, methods, techniques and tools".[11] In software engineering the SDLC concept underpins many kinds of software development methodologies. These methodologies form the framework for planning and controlling the creation of an information system the software development process. The phase that involve in the model is planning, analysis, design, implementation and maintained. There are several advantages of using SDLC models that produce a better system because the system is analyzed and thoroughly planned before being implemented. System developers can also expect a period of time to complete the development of the system. System development process can also be evaluated to determine whether the system meets customer requirements.

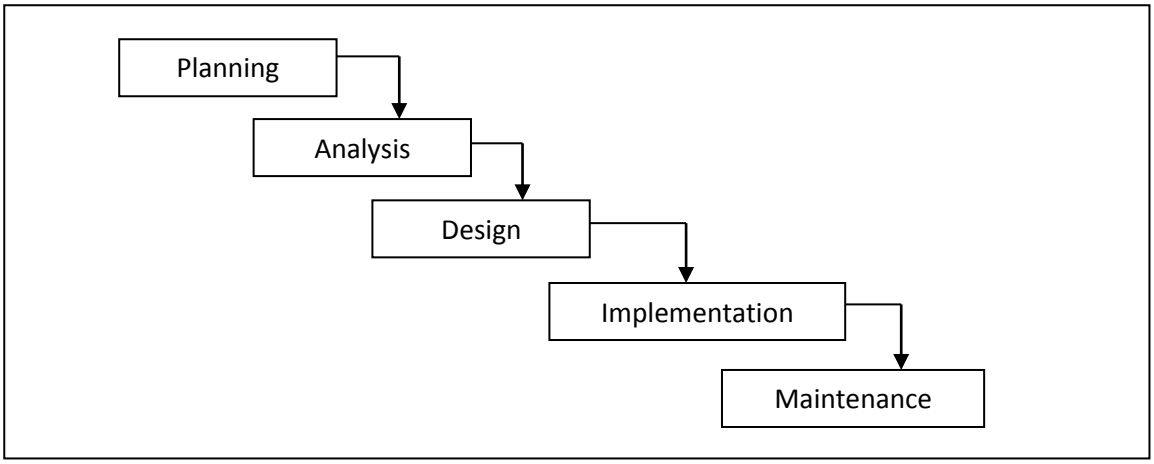


Figure 3.1 System Development Life Cycle (SDLC) Phases.

3.2 Phases of System Development

3.2.1 Planning Phase

The purpose of the analysis phase is to clearly understand the current system and weaknesses identify current problems and also to determine improvements that can be done. Realistic and useful planning will lead to a smooth development of information systems. In this phase, we have identified problems in the evaluation of lecturers manually. Objectives need to be built based on their problems faced in manual system. System development objectives need to be understood to solve the problem on the manual evaluation process. Other planning that is necessary as build schedule to finalize the construction of the system can be completed in the specified time. Scheduled to be built is the Gantt chart. Graphical representation of a project that shows each task as a horizontal bar, which is a long horizontal bar indicates the time of the task.

3.2.1 Analysis Phase

In this phase, we can understand the problems of existing systems and repair or improve the system better. We will use research methods to gather information. In this method, we need to do the research on the existing manual system. After analysis, we use a lot of needs in terms of software and hardware. The software will be used as Macromedia Dreamweaver MX 2004 to create and edit pages, PHP as a programming language, SQL database as a database server to store information, Adobe Photoshop to edit the banners and pictures. While the hardware that be used also as a scanner, barcode reader, such as identity card numbers of students, computers with specifications such as size of hard disk with capacity 160 Gb, 1Gb of RAM and Pentium 4 processor. Besides that to the need to determine the constraints of the existing system is a necessary thing in this phase. With this new system will be beneficial to consumers and is not same with the existing system.

3.2.2 Design Phase

In this phase, we study how the process of the system that will be built runs. Therefore, we implemented a model that roughly knows the structure of the logical model, including drawing entity relation diagram ERD, contact diagram CD, and data flow diagram DFD. In this case, we also produce the final summary of the work of all data, information, and existing entities. The software that uses to make the diagrams is Microsoft Office Visio 2008. This phase is very important because in this phase we can see clearly the flow of the system and who it works.

3.2.3 Implementation

During the implementation process, existing data entered manually or transferred to the new system. This phase is very important for system development because it involves process of converting a system specification from the previous phase made into an executable application. Confirm the accuracy of data entered and security configuration is an important part of the implementation process. Programmers often run the new system in parallel with the old system until they verify the accuracy and reliability of the new system. Administrators need to document any kind of programming, procedural, or configuration changes made during the verification process.

The Implementation phase involves changing from design phase to the system development and implementation like installation, configuration, and error correction. e-Prestasi Pensyarah system will be tasted from time to time during this phase.

3.2.4 Maintenance

Inevitably the system will need maintenance. System will definitely undergo change once it is delivered to the customer. There are many reasons for the change. Change could happen because of some unexpected input values into the system. In addition, the changes in the system could directly affect the software operations. The software should be developed to accommodate changes that could happen during the post implementation period. Maintenance on the system include fixing bugs that are discovering. Maintenance is crucial to ensure that the system can be uses smoothly and accurately.

3.3 System Requirement

The system requirement can be devide to two classes software and hardware requirements. This two reqiurement is important to complete this project.

3.3.1 Software Specifications

Software listed below to be uses into computer of administrator and student.

i. Window XP or above – window xp operating system and above is the most stable operating system. It provide safety features such as login and firewall. It also user friendly because it use the grafical user interface.
ii. Web browers – to run the system the user need to use web brower. This is because the system is the web bases system.
iii. Xampp – this software is uses to store all the record into the database.

3.3.2 Hardware Specifications

i. Intel Pentium III 800 MHz processor
ii. 128MB memory.
iii. 10MB hard disk space.
iv. Monitor
v. Cable
vi. Mouse
vii. Keyboard
viii. GSM Modem
ix. Mobile Phone

CHAPTER 4

DESIGN AND IMPLEMENTATION

4.1 Overview

This chapter describes the results of the analysis. The analysis is based on problems that have been set out in chapter 1 and the literature review was conducted on the current system. A good design will be evaluated by how it works and how users can interact with the system. Approach to analysis and design of object-oriented systems are used to model the current system and proposed system. In this chapter is consists of sections that show flow of the system, function of the system, menu, and others related information.

In implementation stages of system development is the process of implementing the system that can be used. In this state involves the process of converting a system specification from the design phase into an executable application. The purpose of this chapter also is to develop the functions of the system based on the problem that Design of graphical user interface (GUI), design of source code and design of database will be show in this section. occur.

4.2 Proposed Design

Ganerally, this system is divided into client side and server side. In the client side, in it involves the users of the system of students, lecturers and heads of departments. Student and lecturer department head will evaluate using a web browser. While lecturers will get record marks via SMS on their mobile phones. The server side, it involves the management server. System will be installed in apache server with the MYSQL database. System will be built using PHP programming as a programming language. to send the record marks the lecturer via SMS GSM modem is used and connected to the server.

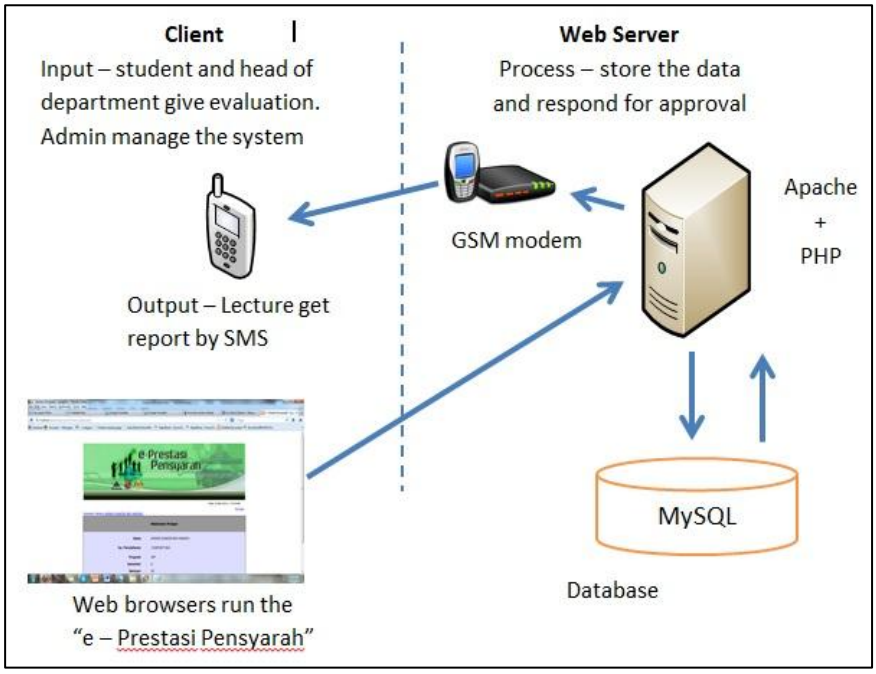


Figure 4.1 System Arhitecture

4.3.1 User Requirement

The most important step and is difficult to design a software product is to determine what the real needs of the customer and user expectations for the system. Communication with customers may cause misunderstandings without proper way because customers cannot tell exactly what their needs are and maybe the information they provide may be incomplete, inaccurate and contradictory. All required information must be gathered and documented in a model, which shows what functions, should be included in the software to meet the user requirement.

4.3.1 Contact Diagram (CD)

The context diagram is data flow diagram information that describes the system in a circle and describes the process in an overall system.

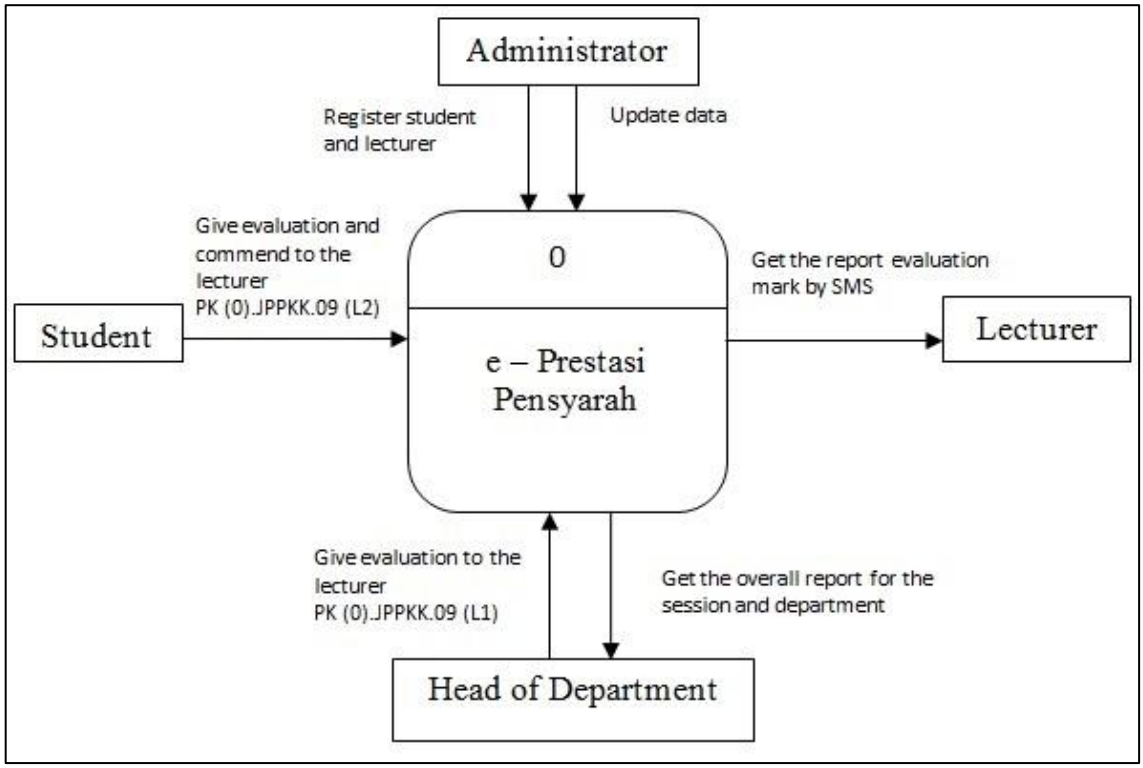


Figure 4.2 Contact Diagram (CD) for e-Prestasi Pensyarah.

4.3.2 Data Flow Diagram (DFD)

Data Flow Diagrams are used to describe systems that are available or that will be developed, regardless of the physical environment, data flow or data storage, with structured development orientation. Some symbols that are achieved by the Data Flow Diagrams are external entities, process and store data.

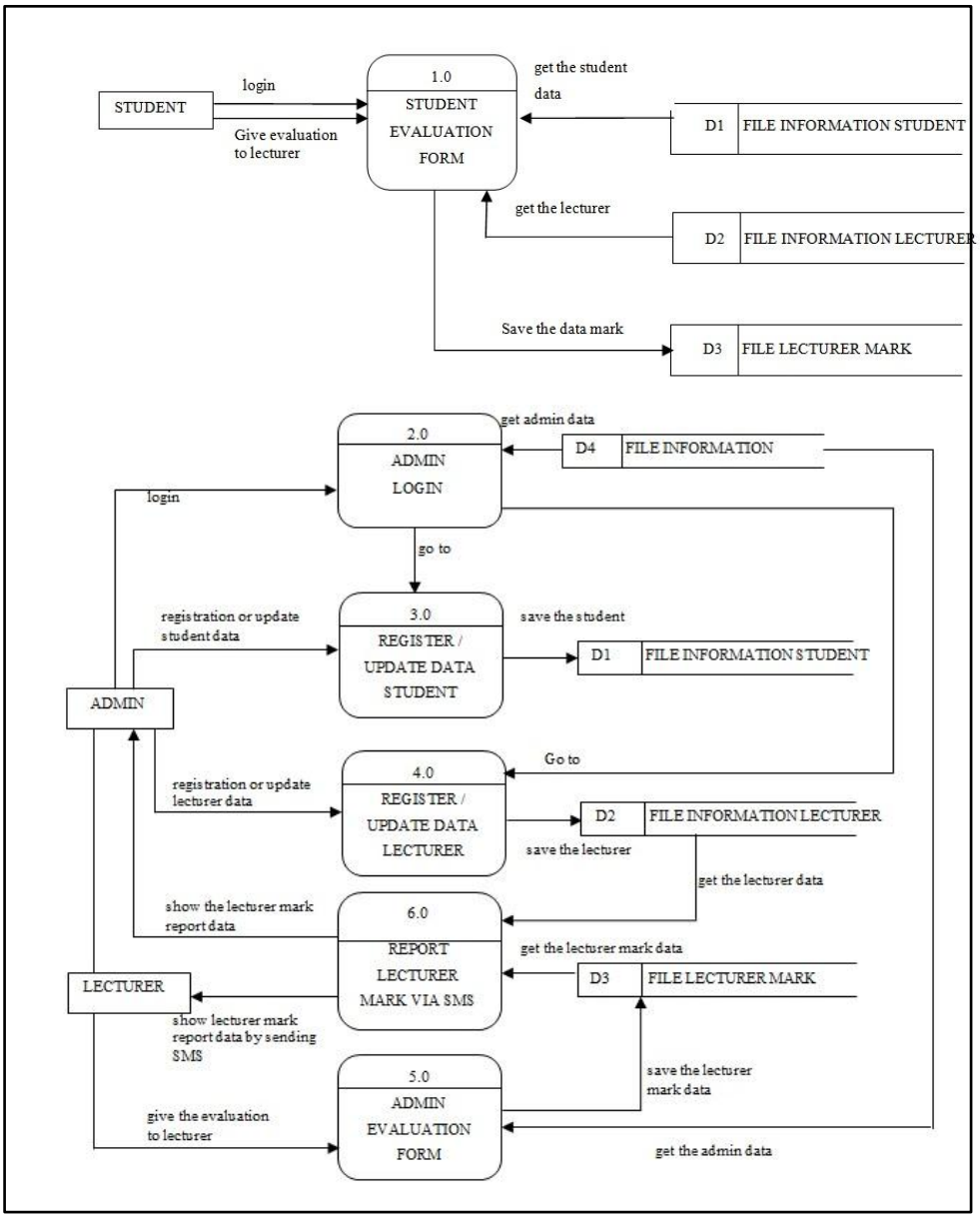


Figure 4.3 Data Flow Diagram (DFD) for e-Prestasi Pensyarah.

4.3.3 Use Case Diagram

Use Case Diagram represents system functionality and actors represent the people or user of the system. Figures below show interactions between use and actors for this system.

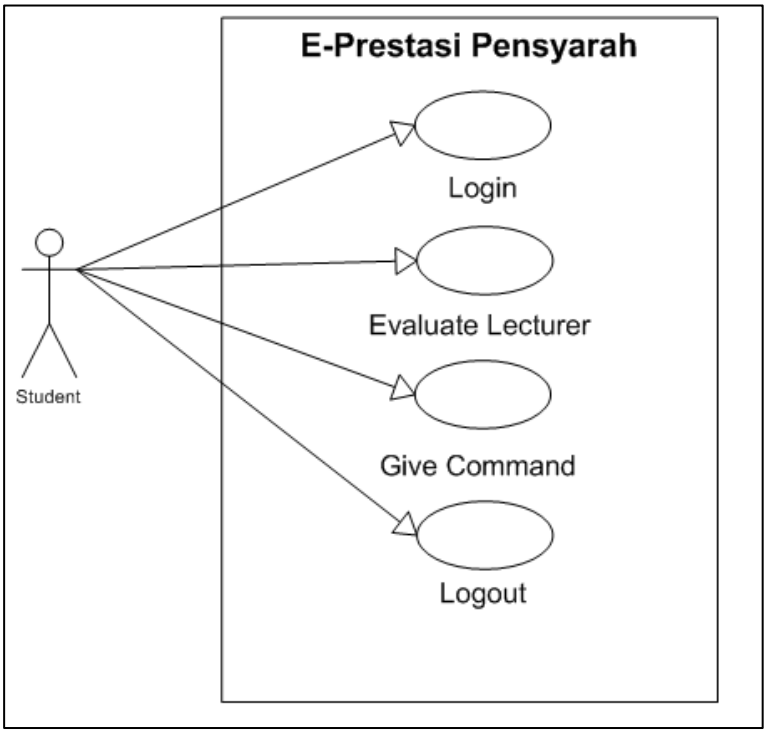


Figure 4.4 Use Case Diagrams for Student

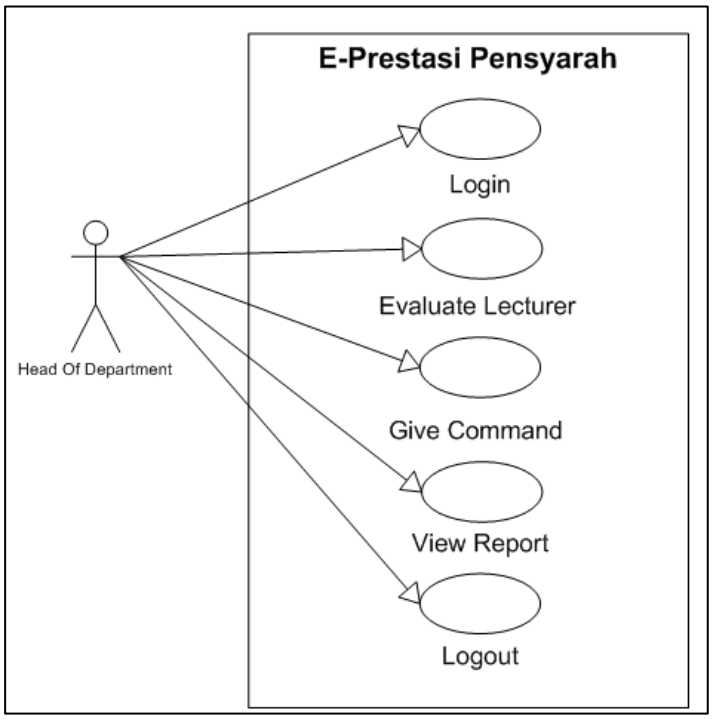


Figure 4.5 Use Case Diagrams for Head Of Department

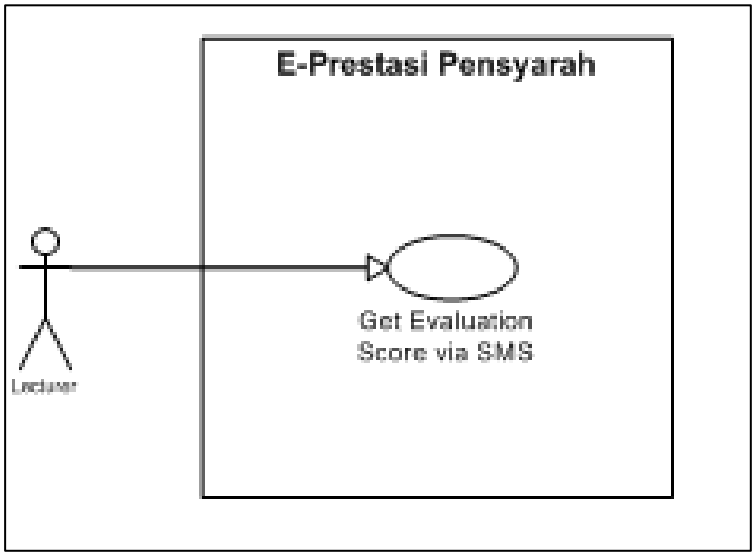


Figure 4.6 Use Case Diagrams for Lecturer

4.4 The Interface Design

The interface is an important part of the system to indicate the functions available in the system effectively. It must meet the needs of consumers. It because without the comfort of consumers will cause the system is not effective to been use. Therefore, the design and development of the interface should be seen as an important element in the overall system development. In order to create a effective system interfacce, there are certain characteristic that should be applied in the user interface. The features of the interface are as follows:

- The design is simple and precise.
- The language understandable.
- Clear feedback.
- Shortcuts
- Clear error message
- Support and documentation
- User friendly

Figure 4.7 Login Interface for student

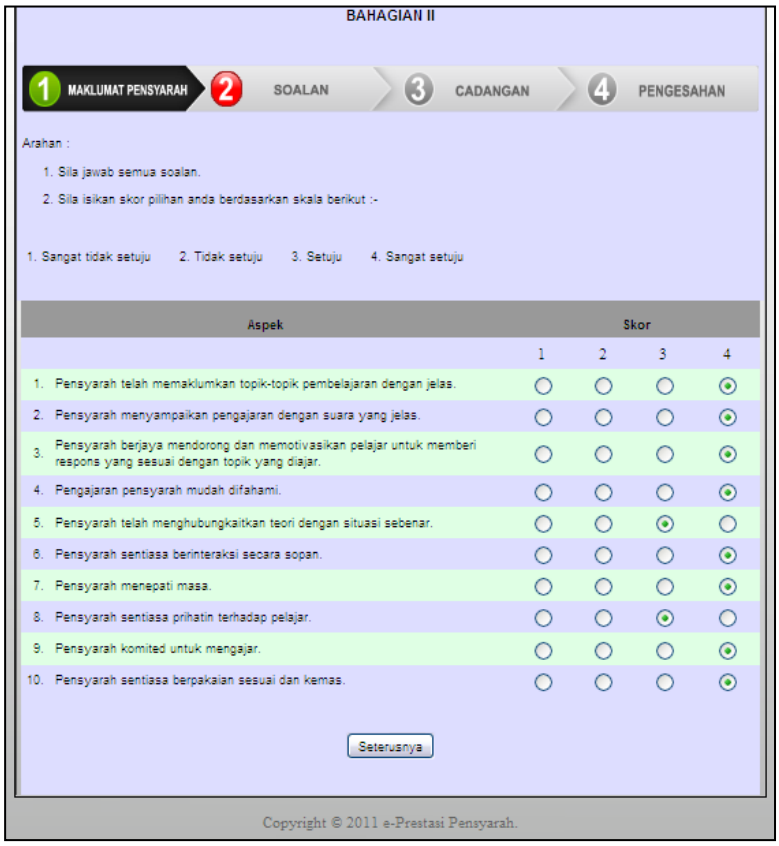
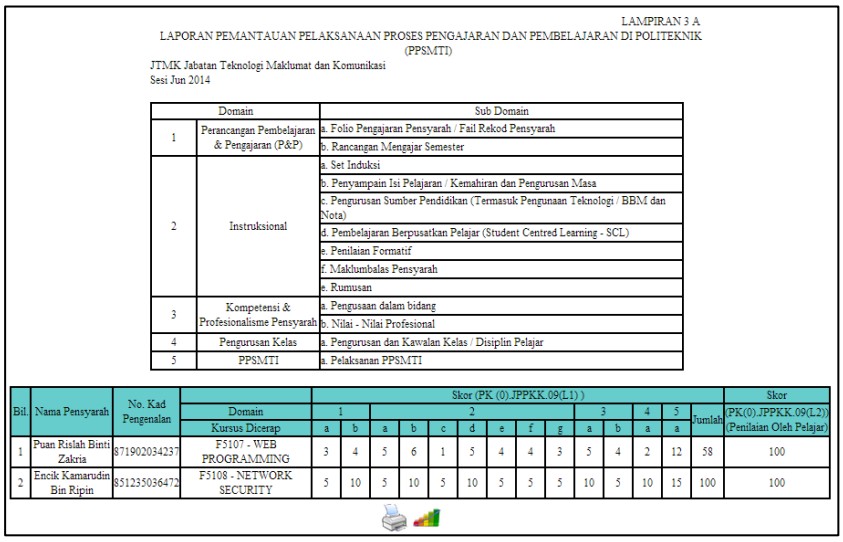


Figure 4.8 Interface of question lecturer evaluation

Figure 4.9 Interface of Menu page for Head of Department



LAMPIRAN 3 A

LAPORAN PEMANTAUAN PELAKSANAAN PROSES PENGAJARAN DAN PEMBELAJARAN DI POLITEKNIK (PPSMTI)

JTMK Jabatan Teknologi Maklumat dan Komunikasi
Sesi Jun 2014

Domain		Sub Domain
1	Perancangan Pembelajaran & Pengajaran (P&P)	a. Folio Pengajaran Pensyarah / Fail Rekod Pensyarah
		b. Rancangan Mengajar Semester
2	Instruksional	a. Set Induksi
		b. Penyampain Isi Pelajaran / Kemahiran dan Pengurusan Masa
		c. Pengurusan Sumber Pendidikan (Termasuk Penguna an Teknologi / BBM dan Nota)
		d. Pembelajaran Berpusatkan Pelajar (Student Centred Learning - SCL)
		e. Penilaian Formatif
		f. Maklumbalas Pensyarah
		e. Rumusan
3	Kompetensi & Profesionalisme Pensyarah	a. Pengusaan dalam bidang
		b. Nilai - Nilai Profesional
4	Pengurusan Kelas	a. Pengurusan dan Kawalan Kelas / Disiplin Pelajar
5	PPSMTI	a. Pelaksanan PPSMTI

Bil.	Nama Pensyarah	No. Kad Pengenalan	Domain	Skor (PK (0).JPPKK.09(L1))														Skor
				1		2							3		4	5	Jumlah	(PK(0).JPPKK.09(L2)) (Penilaian Oleh Pelajar)
			Kursus Diceraп	a	b	a	b	c	d	e	f	g	a	b	a	a		
1	Puan Rislah Binti Zakria	871902034237	F5107 - WEB PROGRAMMING	3	4	5	6	1	5	4	4	3	5	4	2	12	58	100
2	Encik Kamarudin Bin Ripin	851235036472	F5108 - NETWORK SECURITY	5	10	5	10	5	10	5	5	5	10	5	10	15	100	100

Figure 4.10 Interface of Report by Department

Figure 4.11 Interface of Menu page for Administrator

4.5 Database Design

Database is a collection of related data that is shared by various categories of consumers to meet the needs and requirements of an organization. According to David M. Kroenke, database is a self – describing collection of integrated records.[12] Database design can be used to describe several different section of the design for a database system. Conceptual scheme is the top level describes the structure of the database, representing all data requirements and is the central database. Conceptual design of the database schema for this study will be described using the ER model in a top-down strategy and model of semantic object with a bottom-up strategy.

4.5.1 Entity Relationship Diagram (ERD)

Entity relationship (ER) diagrams, graphical representations the entities and their relationships to each other, most commonly used in computing in case to the organization of data in a database or information system. Entity relationship (ER) diagram is the model that can describe the database design. In the entity relationship model these are the tables and views. ER model is used to interpret, analyze document requirements for data processing system. An entity is part of a data-objector the concept of where data is stored. Entities have attributes that describe the characteristics of the entity. Attributes can be either a single value or multiple values. The relationship is how data is shared between the entities The relationship is a union between two or more entities.

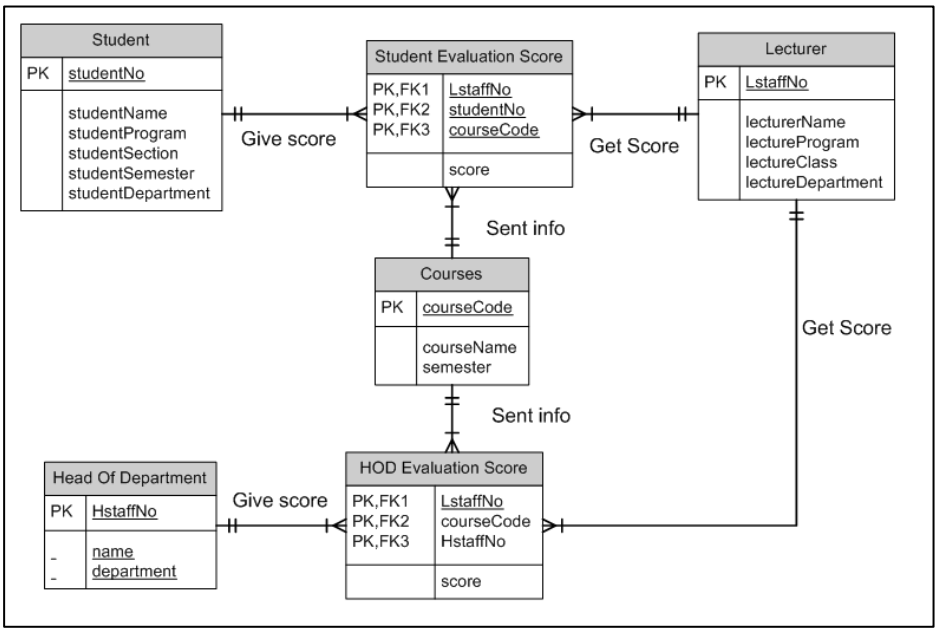


Figure 4.12 Entity Relationship Diagram (ERD) for e-Prestasi Pensyarah.

There are six main table used for e – Prestasi Pensyarah system. Those are Student details table, Lecturer details table, Head Of Department details table, Courses details table, Student Evaluation Score table, and Head Of Department Score table. Each table will be has one attribute as primary key. Primary key (PK) use to represent single row of data and make sure there are no redundancy data in the table.

4.5.2 Data Dictionary

Data Dictionary is a set of information that describes the content, format, and structure of the database and the relationships between the elements that are used to control access to and manipulation of databases.

Data Field	Data Type	Length	Description	Constraint
studentNo	VARCHAR	12	Student id / Matric no	PK
studentName	VARCHAR	20	Student Name	
studentProgram	VARCHAR	5	Student Program	
studentSection	VARCHAR	5	Student Section	
studentSemester	VARCHAR	5	Student Semester	
studentDepartment	VARCHAR	20	Student Department	

Table 4.1 Data Dictionary for Student detail table

Table 4.1 is data dictionary for student detail table in the database. This table will keeps all information about student. studentNo is the primary key for this table. This attribute data will be deferent with others. It will represent each student.

Data Field	Data Type	Length	Description	Constraint
LstaffNo	VARCHAR	12	Lecturer id / Staff no	PK
lecturerName	VARCHAR	20	Lecturer Name	
lecturerProgram	VARCHAR	5	Lecturer Program	
lecturerClass	VARCHAR	5	Lecturer Class	
lecturerDepartment	VARCHAR	20	Lecturer Department	

Table 4.2 Data Dictionary for Lecturer detail table

Table 4.2 is data dictionary for lecturer detail table in the database. This table will keeps all information about Lecturer. LstaffNo is the primary key for this table. This attribute data will be deferent with others. It will represent each lecturer.

Data Field	Data Type	Length	Description	Constraint
HstaffNo	VARCHAR	12	Head of Department id / Staff no	PK
name	VARCHAR	20	Head of department Name	
department	VARCHAR	20	Head of department Department	

Table 4 3 Data Dictionary for Head of Department detail table

Table 4.3 is data dictionary for Head of department detail table in the database. This table will keeps all information about Head of department. HstaffNo is the primary key for this table. It will represent each Head of department.

Data Field	Data Type	Length	Description	Constraint
courseCode	VARCHAR	12	Course Code	PK
courseName	VARCHAR	20	Course Name	
semester	VARCHAR	20	Course Semester	

Table 4.4 Data Dictionary for Course detail table

Table 4.4 is data dictionary for Course detail table in the database. This table will keeps all information about courses. courseCode is the primary key for this table. It will represent each course.

Data Field	Data Type	Length	Description	Constraint
LstaffNo	VARCHAR	12	Lecturer id from table Lecturer	FK
studentNo	VARCHAR	12	Student id from table Student	FK
courseCode	VARCHAR	12	Course id from table Course	FK
score	INT	10	Score given by Student.	

Table 4.5 Data Dictionary for Student Evaluation Score detail table

Table 4.5 is data dictionary for Student evaluation score detail table in the database. This table will keeps all information about student evaluation score. LstaffNo, studentNo, and courseCode is the foreign key for this table. The combination of this three attribute will be present the primary key in this table.

Data Field	Data Type	Length	Description	Constraint
LstaffNo	VARCHAR	12	Lecturer id from table Lecturer	FK
HstaffNo	VARCHAR	12	Head of department id from table Head Of Department	FK
courseCode	VARCHAR	12	Course id from table Course	FK
score	INT	10	Score given by Student.	

Table 4.6 Data Dictionary for Head Of Department Evaluation Score detail table

Table 4.6 is data dictionary for Head Of Department evaluation score detail table in the database. This table will keeps all information about Head Of Department evaluation score. LstaffNo, HstaffNo, and courseCode is the foreign key for this table. The combination of this three attribute will be present the primary key in this table.

4.6 SQL Statement

SQL stands for Structured Query Language, or also commonly referred to as the query is a language. PHP using SQL to access the database and to manipulate the data. This system provides many queries such as insert, update, and display data of the student, lecturer and other. This chapter will explain about the query that was applied in e-Prestasi Pensyarah though the student, lecturer, head of department, course, student evaluation score, and head of department evaluation score tables.

4.6.1 Student Table

Refer to figure 4.13 below, the SELECT statement is used to select data from a student table. All the data from student table was selected bases on student matric number and identification number. This query has been used to connect with login form to allow user to login into the system. This query also was applied for login process for Administrator and Head of Department.

```
$sql = "select * from pelajar where nomatrik = '$student' and noic ='$ic'";
    $result = mysql_query($sql) or die ("sql erorr!!!".mysql_erorr());
```

	Field	Type	Collation	Attributes	Null	Default	Extra	Action
☐	student_IcNo	varchar(12)	latin1_general_ci		No	*None*		
☐	student_MatrikNo	varchar(12)	latin1_general_ci		No	*None*		
☐	student_Same	varchar(50)	latin1_general_ci		No	*None*		
☐	student_Srogram	varchar(20)	latin1_general_ci		No	*None*		
☐	student_Semester	int(1)			No	*None*		
☐	student_Section	varchar(10)	latin1_general_ci		No	*None*		
☐	student_TelNo	varchar(12)	latin1_general_ci		No	*None*		
☐	student_Picture	varchar(200)	latin1_general_ci		No	*None*		

Figure 4.13 Student table with SELECT statement.

4.6.2 Lecturer Table

Refer to figure 4.14 below, the INSERT statement is used to insert data into a lecturer table. All the lecturer's personal data like lecturer id, lecturer name, lecturer identification number will be insert into lecturer table. This query also was applied for insert data for administrator, course, student, head of department, student evaluation score and head of department evaluation score.

```
$sql= mysql_query("INSERT INTO pensyarah (nostaff, nama_pensyarah, noic, kodjabatan, notel, gambar)
                   VALUES ('$nostaff','$nama','$noic','$jabatan','$notel','$gf');");
```

	Field	Type	Collation	Attributes	Null	Default	Extra	Action
☐	lecturer_noic	varchar(12)	latin1_general_ci		No	*None*		
☐	lecturer_nostaff	varchar(10)	latin1_general_ci		No	*None*		
☐	lecturer_nama	varchar(50)	latin1_general_ci		No	*None*		
☐	lecturer_kodjabatan	varchar(6)	latin1_general_ci		No	*None*		
☐	lecturer_notel	varchar(12)	latin1_general_ci		No	*None*		
☐	lecturer_gambar	varchar(200)	latin1_general_ci		No	*None*		

Figure 4.14 Lecturer table with INSERT statement.

4.6.3 Head of Department Table

Refer to figure 4.15 below, the UPDATE statement is used to edit data from Head of Department table. Admin can update data from head of department table by identification number.

```
$upd = "update admin set username ='$username2',nama = '$nama2',
        jawatan = '$jawatan2', notel = '$notel2', noic = '$noic2',
        password = '$password2' where noic ='$key'";
```

	Field	Type	Collation	Attributes	Null	Default	Extra	Action
☐	admin_username	varchar(50)	latin1_general_ci		No	*None*		
☐	admin_password	varchar(50)	latin1_general_ci		No	*None*		
☐	admin_nama	varchar(50)	latin1_general_ci		No	*None*		
☐	admin_noic	varchar(12)	latin1_general_ci		No	*None*		
☐	admin_jawatan	varchar(50)	latin1_general_ci		No	*None*		
☐	admin_notel	varchar(15)	latin1_general_ci		No	*None*		
☐	admin_gambar	varchar(200)	latin1_general_ci		No	*None*		

Figure 4.15 Lecturer table with INSERT statement.

4.6.4 Course Table

Refer to figure 4.16 below, the DELETE statement is used to remove data from Course table. Admin can delete course name and course semester from course table base on course code. Delete statement also have been use to delete student , lecturer and head of department information.

```
$del="delete from kursus where kod_kursus='$key'";
```

	Field	Type	Collation	Attributes	Null	Default	Extra	Action
☐	course_code	varchar(10)	latin1_general_ci		No	None		
☐	course_name	varchar(50)	latin1_general_ci		No	None		
☐	course_semester	int(1)			No	None		

Figure 4.16 Head of Department table with DELETE statement.

4.6.5 Student and Head of Department Evaluation Score Table

Refer to figure 4.17 below, the SELECT statement also can be used to display data from the database. This statement was use to get the score of student and head of department table and view in lecturer score report page. The data will be select base on staff number , course, and student program. Combination of this tree attribute will be represent as he primary key in this table. When the primary key was been selected all the information will be appear at the page in a table.

```
$aa=mysql_query("select * from markah_kj where nostaff='$nostaff'
 AND kursus='$kursus' AND program='$program'")or die (mysql_error());
```

	Field	Type	Collation	Attributes	Null	Default	Extra	Action
☐	student_program	varchar(50)	latin1_general_ci		No	None		
☐	lecturer_name	varchar(100)	latin1_general_ci		No	None		
☐	lecturer_nostaff	varchar(14)	latin1_general_ci		No	None		
☐	lecturer__noic	varchar(14)	latin1_general_ci		No	None		
☐	lecturer_score	int(11)			No	None		

Figure 4.17 Head of Department Evaluation Score table with SELECT statement.

Bil.	Nama Pensyarah	No. Kad Pengenalan	Domain	Skor (PK (0).JPPKK.09(L1))														Skor
				1		2							3		4	5	Jumlah	(PK(0).JPPKK.09(L2)) (Penilaian Oleh Pelajar)
			Kursus Dicerap	a	b	a	b	c	d	e	f	g	a	b	a	a		
1	Puan Rislah Binti Zakria	871902034237	F5107 - WEB PROGRAMMING	3	4	5	6	1	5	4	4	3	5	4	2	12	58	100
2	Encik Kamarudin Bin Ripin	851235036472	F5108 - NETWORK SECURITY	5	10	5	10	5	10	5	5	5	10	5	10	15	100	100

Figure 4.18 Lecturer Score report table.

4.7 Coding Explanations

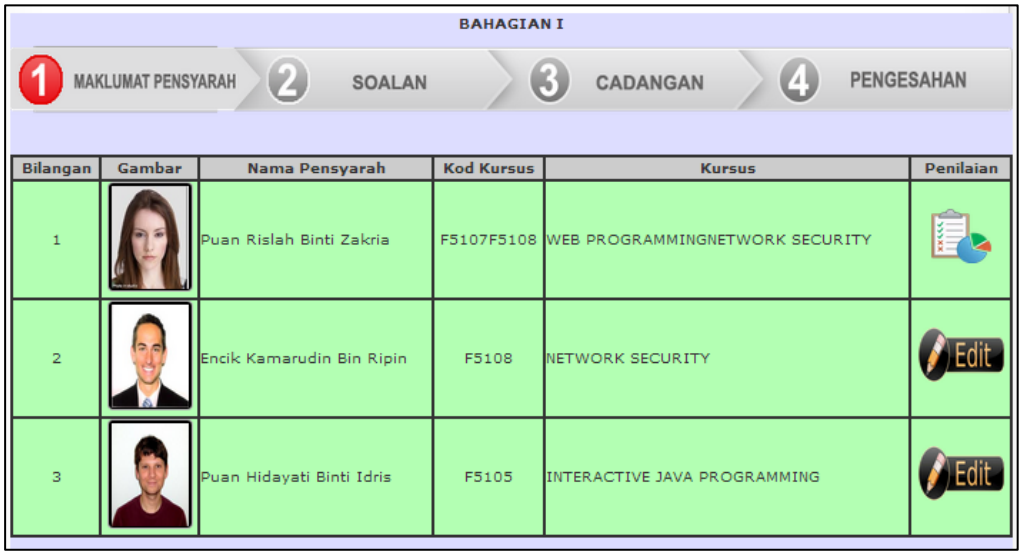
This system has provide system security by authentication user access. The student, head of department, and system administrator must login before use the system by insert username and password for head of department and system administrator. Student must use their student id and identification number to login into the system. If their enter wrong username and password access of the system will be denied.

Figure 4.19 Login page for student.

```
$sql = "select * from pelajar where nomatrik = '$student' and noic ='$ic'";
    $result = mysql_query($sql) or die ("sql erorr!!!".mysql_erorr());
    $bil_row = mysql_num_rows($result);

    if($bil_row >0)
    {
            session_start();
            while($r=mysql_fetch_array($result))
            {
                extract ($r);

                $_SESSION['nama_pelajar']=$nama_pelajar;
                $_SESSION['noic']=$noic;
                $_SESSION['nomatrik']=$nomatrik;
                $_SESSION['program']=$program;
                $_SESSION['semester']=$semester;
                $_SESSION['seksyen']=$seksyen;
                $_SESSION['gambar']=$gambar;

            }
            header("location:laman_pelajar.php");

    }
    else
```

Figure 4.20 Login source code.

Figure 4.20 shows the coding for student login into the system by press the 'login button'. Data for username and password will be obtained from the student table in the database. If it fill blank, or username and password false the notification message "Login tidak berjaya" will appear. If the login was success, the page will be redirect into student menu page and evaluation form.




```
<?php
$jj = mysql_query("select *from markah_pelajar where kursus = '".$kod_kursus.' - '.$nama_kursus."' and program =
'$programc' and nostaff='".$row['nostaff']."' and nomatrik = '".$_SESSION['nomatrik']."'")or die(mysql_error());

$bila = mysql_num_rows($jj);

if(empty($bila))
{
?><a href="soalan_pelajar2.php?key=<?php echo $row['nostaff'];?>&key2=<?php echo $_SESSION['nomatrik'];?>&key3=<?php
echo $semester;?>&key4=<?php echo $program;?>&key5=<?php echo $seksyen;?>&key6=<?php echo $kod_kursus;?>&key7=<?php echo
$nama_pensyarah;?>&key8=<?php echo $nama_kursus;?>">
  <img src='images/eva.gif' width='47' height='43' border='0' alt='Kemaskini' /> </a>
  <?php
}
else
{
    ?>
    <a href="soalan_pelajar_edit.php?key=<?php echo $row['nostaff'];?>&key2=<?php echo $_SESSION['nomatrik'];?>&key4=
<?php echo $program;?>&key6=<?php echo $kod_kursus;?>&key7=<?php echo $nama_pensyarah;?>&key8=<?php echo $nama_kursus;?>">
  <img src='images/edit.gif' width='67' height='43' border='0' alt='Kemaskini' /> </a>
  <?php
}?>
```

Figure 4.21 Lecture evaluation information and coding.

Figure 4.21 shows the page of lecture evaluation information in student module. This page will display information of lecturer to be evaluate by the student base on lecturer that teach their subject in that semester. The coding is about the icons that will change if the student already evaluate their lecturer. If the evaluation still not done the "form icon" will be

display. But if the student already give score to their lecture the “edit icon” will be appear. This function will be make the evaluation session more easy because student can know if they’re not done evaluate the lecture yet. Student also can change the score that their given to the lecture by press edit button.


```
<td bgcolor="#99FFFF"><center><?php
$upload=$row['gambar'];

  echo"<img src ='pictures/$upload' width='60' height='80' style='border:1px solid
#B0B0B0;padding:2px;background:#000;border-radius:5px'>";
  echo "<br>";
  ?>
  </center></td>
<td bgcolor="#99FFFF"><center>
    <?php echo $row['noic'];?>
</center></td>

<td bgcolor="#99FFFF"><?php echo $row['nama_pensyarah'];?> </td>

<td bgcolor="#99FFFF"><div align="center"><a href="edit_pensyarah.php?key=<?php echo $row['nostaff'];?>">
<img src='images/pencil.gif' width='47' height='43' border='0' alt='Kemaskini'/></a></div></td>

<td bgcolor="#99FFFF"><div align="center"><a onClick="return confirm('Anda pasti mahu padam Maklumat
<?php echo $row['nama_pensyarah'];?>')" href="delete_pensyarah.php?key=<?php echo $row['nostaff'];?>">
<img src='images/del.gif' width='47' height='43' border="0" alt="Hapus" /></a></div></td>
```

Figure 4.22 Lecture information page and coding.

Figure 4.22 shows the page of lecture information details page. In this page administrator can view every lecturer information by their department. The details of lecturer

also can be change or remove by press pencil button for update and dustbin button for remove information details. The image icons will be determine where the destination of the link using *"<a href="edit_pensyarah.php?key=<?php echo $row['nostaff'];?>"> "*. Staff number will be used to represent the details of the single lecturer it also referring as the primary key in the database. Figure 4.23 also shows how the control instruction is embedded to the image icons hyperlink using HTML instruction in the web application.

```
include "sambungan.php";

$hp = $notel;
$kand_pesanan = $kandungan;

$masuk = mysql_query("insert into outbox(InsertIntoDB,SendingDateTime,DestinationNumber,TextDecoded,SendingTimeOut,DeliveryReport,CreatorID)
Values(sysdate(),sysdate(),'$hp','$kand_pesanan',sysdate(),'yes','system')");

if($masuk){

echo "<script language='JavaScript'>alert('Pesanan SMS berjaya dihantar'); </script>";
    echo '<meta http-equiv="refresh" content="0;URL=laporan_pensyarah.php">';

    }
else
{
echo "<script language='JavaScript'>alert('Pesanan SMS gagal dihantar!!!!'); </script>";
    echo '<meta http-equiv="refresh" content="0;URL=laporan_pensyarah.php">';
}
```

Figure 4.23 SMS query for send SMS.

Figure 4.7.4 shows the coding for send SMS to lecturer as a report and to student and head of department as notifications. Firstly, the servicer phone number must be set that we retrieve from the lecture table in the database. Then, we need write the report message to send to the lecture. This two item we need insert to SMS query in SQL statement. This SMS query was connected with GAMMU SMS Gateway database to sending the message to lecture, students, and head of department. The SMS query will send by to outbox table in GAMMU database. The data will send to GMS modem. Figure 4.24 show the GAMMU outbox table.

	Field	Type
☐	UpdatedInDB	timestamp
☐	InsertIntoDB	timestamp
☐	SendingDateTime	timestamp
☐	SendBefore	time
☐	SendAfter	time
☐	Text	text
☐	DestinationNumber	varchar(20)
☐	Coding	enum('Default_No_Compression','Unicode_No_Compression','8bit',
☐	UDH	text
☐	Class	int(11)
☐	TextDecoded	text
☐	ID	int(10)
☐	MultiPart	enum('false','true')
☐	RelativeValidity	int(11)
☐	SenderID	varchar(255)
☐	SendingTimeOut	timestamp
☐	DeliveryReport	enum('default','yes','no')
☐	CreatorID	text

Figure 4.24 GAMMU SMS SQL outbox table .

CHAPTER 5

RESULT AND DISCUSSION

5.1 Overview

This chapter is describe about the output and result from the testing phase, discussion, advantage, constraints in completing the project and assumption for future development of the system. The main purpose of this chapter is explaining discovery or decision and data analysis that are achieved. Hopefully, this discussions can give a benefits and ideas to the future development to upgrade and enhance the performance and some other functions of the system and the interface can be redesign to become more users friendly and attractive with user need.

e-Prestasi Penyarah system was develop using web base platform by using PHP language. The system must be run on the web browser so the users can uses it anywhere. Student also can evaluate their lecture by using web mobile. Head of department will get the notification about evaluation session time and place. After end of the evaluation session lecturer will get evaluation result by SMS and paper form. The data and details in testing phase is not a real data. The testing was done by using a dummy data.

5.2 Result

e-Prestasi Penyarah can be used in two main concepts, by web-based application and web mobile. This system was successfully developed by using System Development Life Cycle (SDLC) methodology. During the testing phase the system was running in the local host at the personal computer. Although this system just a prototype, it gives the output and the result at the end of the evaluation session as that we expected. Three type of testing have been done to test e – Prestasi Pensyarah system output functionality and accuracy of the result, which are unit testing, integration testing and system testing. This system consist several module that is student module, head of department module, administrator module and SMS module.

5.2.1 Administrator Module.

Administrator is the first part of the system. The administrator will manages the system all the users of the system. Administrator will login into the system at head of department and administrator login page by insert username and password.

Figure 5.1 Administrator login page.

Administrator will manage all the students, lecturers, head of departments and other admins data information. Admin also will key in all the data like course, evaluation and session information into the database.

Figure 5.2 Administrator main menu page.

At administrator menu, there are several icons to go at student information page, lecturer information page, courses page, program page, admin information page, and lecture sessions page. Administrator need to manage all the data that system need like student, head of department, lecture, courses, and evaluation information. Administrator can add, edit or delete all of the information. Figure 5.3 show the lecture information page.

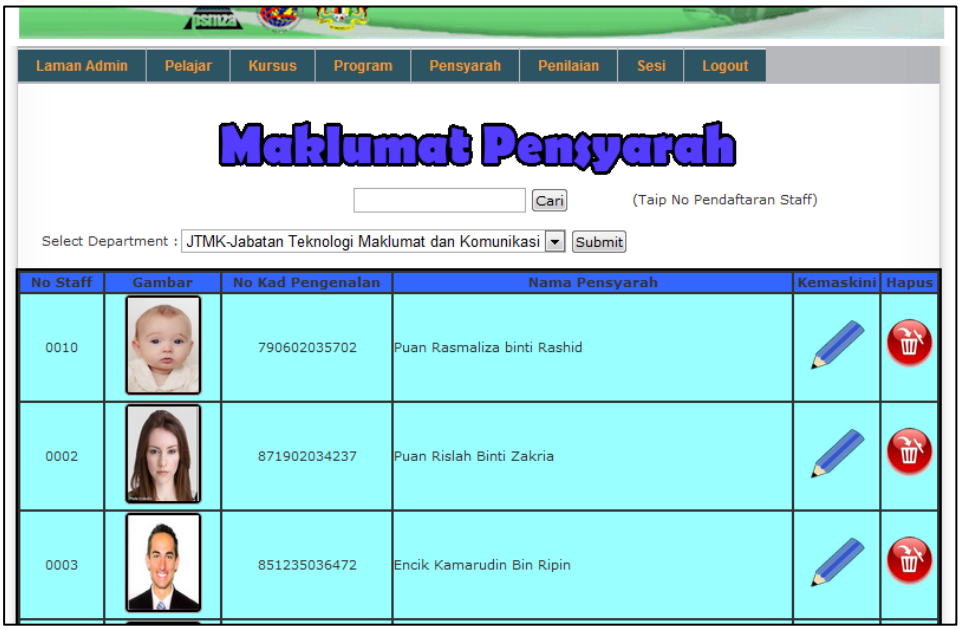


Figure 5.3 Lecturer information page.

Figure 5.4 show the student registration form for admin. Administrator can key in student by insert all the information into the student registration form or insert all the students by using student information excel file. Administrator also can delete or update student information details.

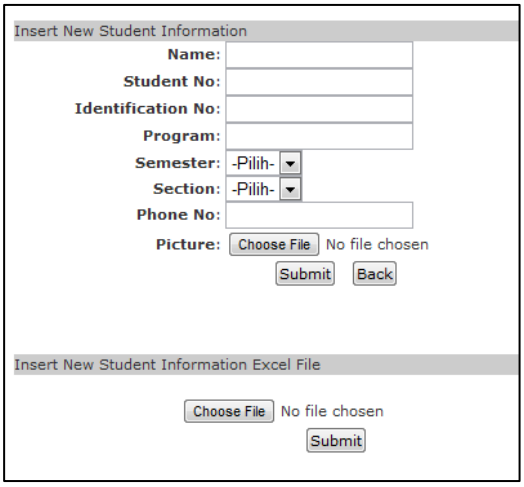


Figure 5.4 Student registration form page.

System administrator should also monitor the assessment went well. an administrator needs to ensure that students and some idea of the head of department will review sessions will be conducted. Figure 5.5 show the evaluation that need to be done by student and head of department. Every course need to be evaluate by head of department and at least fifteen persons of student from one class to evaluate their lecture. If the evaluation still not done by fifteen student and head of department cross icon will be show but if the evaluation already done the correct icons will be show.

Figure 5.5 Evaluation information page.

5.2.2 Head of Department Module.

Head of department will be register by administrator. After the registration was done Head of department can access the login system by insert username and password at the login page of head of department like in figure 5.1. After login was success the Head of department main menu page will appear. In this page there are two icon button that is “Penilaian” for go to evaluation form and “Keputusan Penilaian” for view the result of the evaluation.

Figure 5.6 Head of department main menu page.

Figure 5.7 show the lecturer details evaluation form for head of department. Head of department need to fill and select the department, lecturer name, lecturer program, courses and other lecture information’s. The list of lecture name will come out base on the department selection. For program and courses detail will list by only base on the lecturer name. the courses and program that are not related with that lecturer will not display in selection list.

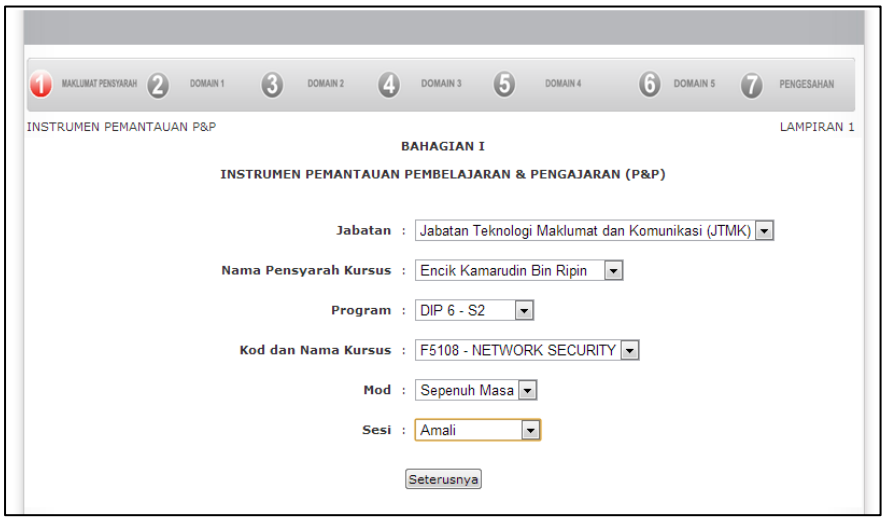


Figure 5.7 Lecturer evaluation form.

After all the lecturer information was filled, the page will go to the evaluation question form like at figure 5.8 The question was based on the document that provide by the polytechnic. This question consist several domain and sub domain base on several criteria. At a top of the page is the progress bar that show the progression of the evaluation session. This will make the evaluator is more easy to know the progression of the evaluation.

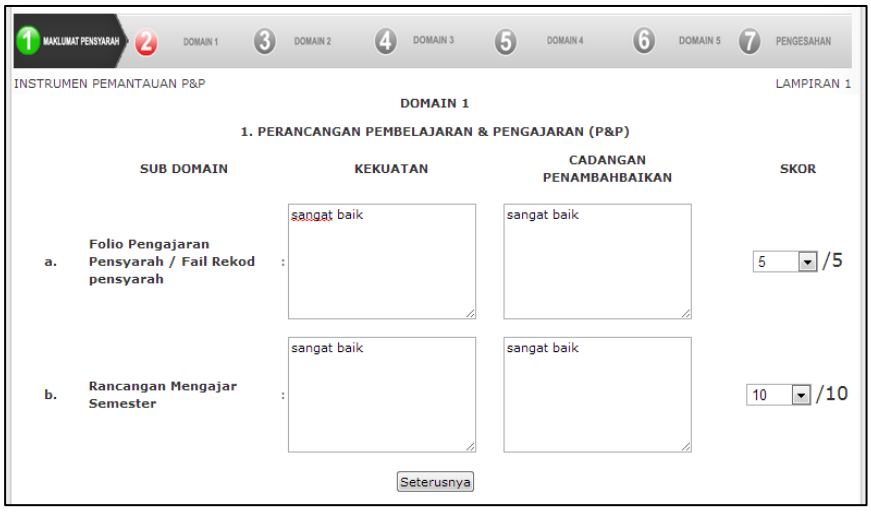


Figure 5.8 Head of department evaluation question form.

Figure 5.9 and figure 5.10 shows the page of the individual score of the lecturer's evaluation. Head of department will insert staff id and click the green icon to generate

lecturer's score report. This report also can be print by pressing the printer icons at bottom of this page. This page will show all the score and command that given by head of department and students.

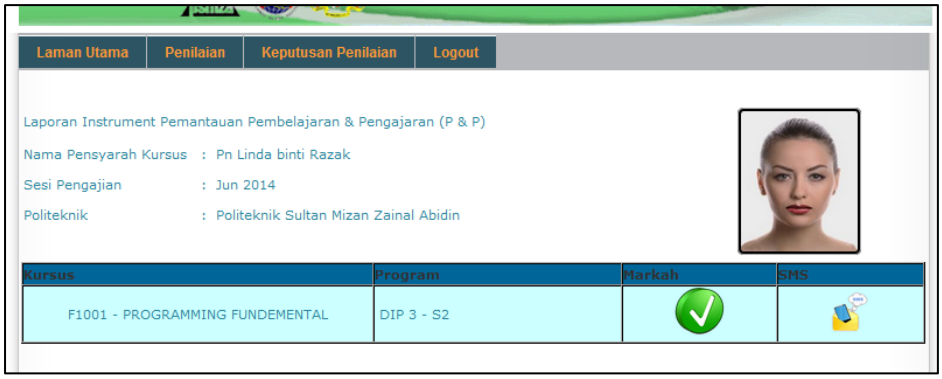


Figure 5.9 Individual lecturer's score menu page.

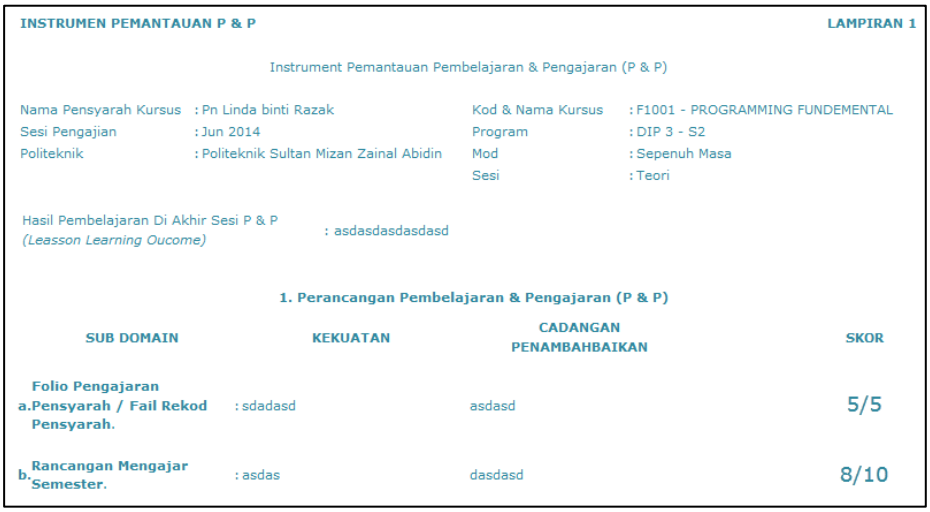
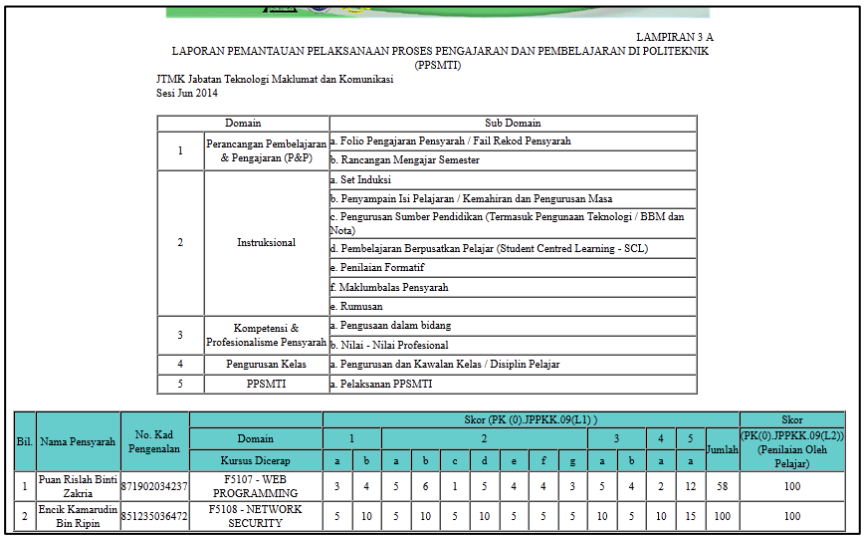


Figure 5.10 Individual lecturer's score report page.

Figure 5.11 show the score report base on the department. Head of department will select their department to generate this report. This report will show all the lecturer's mark given by head of department and students. This page also can be print out by press the printer icons at bottom of the page. At bottom of page also has graph icon. This icon to generate bar graph that show the lecturer's mark base on the percent of the mark. Figure 5.12 show the graph page of the lecturer's mark base on the department.



LAMPIRAN 3 A

LAPORAN PEMANTAUAN PELAKSANAAN PROSES PENGAJARAN DAN PEMBELAJARAN DI POLITEKNIK (PPSMTI)

JTMK Jabatan Teknologi Maklumat dan Komunikasi
Sesi Jun 2014

Domain		Sub Domain
1	Perancangan Pembelajaran & Pengajaran (P&P)	a. Folio Pengajaran Pensyarah / Fail Rekod Pensyarah
		b. Rancangan Mengajar Semester
2	Instruksional	a. Set Induksi
		b. Penyampain Isi Pelajaran / Kemahiran dan Pengurusan Masa
		c. Pengurusan Sumber Pendidikan (Termasuk Pengunaan Teknologi / BBM dan Nota)
		d. Pembelajaran Berpusatkan Pelajar (Student Centred Learning - SCL)
		e. Penilaian Formatif
		f. Maklumbalas Pensyarah
		g. Rumusan
3	Kompetensi & Profesionalisme Pensyarah	a. Pengusaan dalam bidang
		b. Nilai - Nilai Profesional
4	Pengurusan Kelas	a. Pengurusan dan Kawalan Kelas / Disiplin Pelajar
5	PPSMTI	a. Pelaksanan PPSMTI

Bil.	Nama Pensyarah	No. Kad Pengenalan	Domain	Skor (PK (0).JPPKK.09(L1))														Skor (PK(0).JPPKK.09(L2)) (Penilaian Oleh Pelajar)
				1		2							3		4	5	Jumlah	
			Kursus Diserap	a	b	a	b	c	d	e	f	g	a	b	a	a		
1	Puan Rislah Binti Zakria	871902034237	F5107 - WEB PROGRAMMING	3	4	5	6	1	5	4	4	3	5	4	2	12	58	100
2	Encik Kamarudin Bin Ripin	851235036472	F5108 - NETWORK SECURITY	5	10	5	10	5	10	5	5	5	10	5	10	15	100	100

Figure 5.11 Department lecturer's score report page.

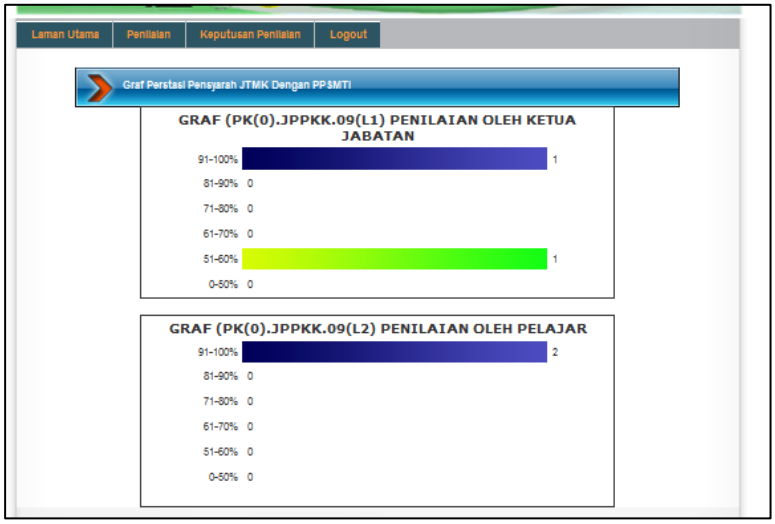
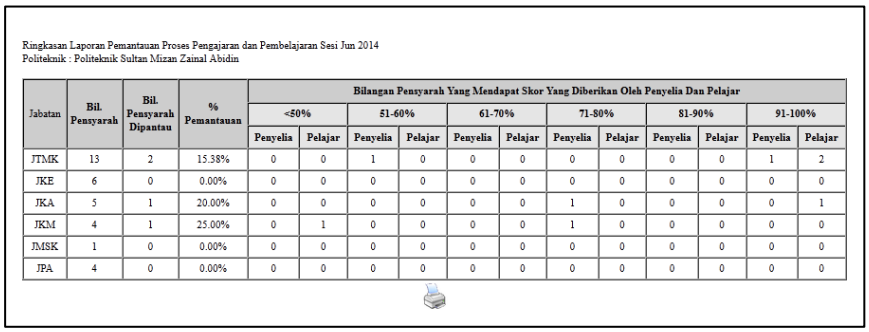


Figure 5.12 Department lecturer's score graph page.

Figure 5.13 show the page of the overall score of all department. This page will show number of lecturer that get score base on their mark. This result also can be print out.



Ringkasan Laporan Pemantauan Proses Pengajaran dan Pembelajaran Sesi Jun 2014
Politeknik : Politeknik Sultan Mizan Zainal Abidin

Jabatan	Bil. Pensyarah	Bil. Pensyarah Dipantau	% Pemantauan	Bilangan Pensyarah Yang Mendapat Skor Yang Diberikan Oleh Penyelia Dan Pelajar											
				<50%		51-60%		61-70%		71-80%		81-90%		91-100%	
				Penyelia	Pelajar	Penyelia	Pelajar	Penyelia	Pelajar	Penyelia	Pelajar	Penyelia	Pelajar	Penyelia	Pelajar
JTMK	13	2	15.38%	0	0	1	0	0	0	0	0	0	0	1	2
JKE	6	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0
JKA	5	1	20.00%	0	0	0	0	0	0	1	0	0	0	0	1
JKM	4	1	25.00%	0	1	0	0	0	0	1	0	0	0	0	0
JMSK	1	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0
JPA	4	0	0.00%	0	0	0	0	0	0	0	0	0	0	0	0

Figure 5.13 Overall department lecturer's score page.

5.2.3 Student Module.

This module will show the rules of student in this system. Student need to be register by administrator before can use this system. Student need to used their matric and identification number to enter the system. Figure 5.14 show the page of the student after successful login the system. This page will show the student information's.

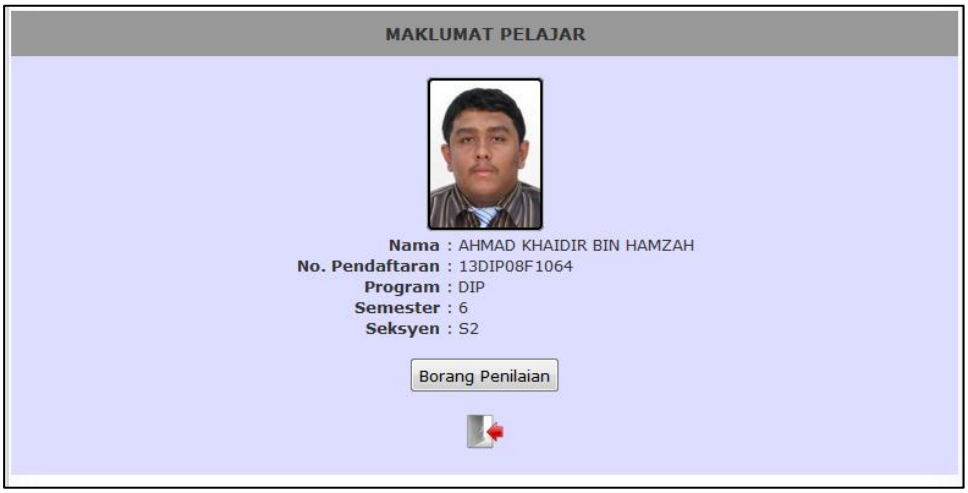


Figure 5.14 Student information page.

Figure 5.15 show the lecturer evaluation menu for student. The information show is the lecturer that need to be evaluate by student in that semester. If the evaluation still not

done the “form icon” will be display. The icons will be change into “edit icon” if the student already done their evaluate. Student can change the mark of the lecturer. In student evaluation also the progress bar that show the progression of the evaluation session. This will make the evaluation more easy to be done.

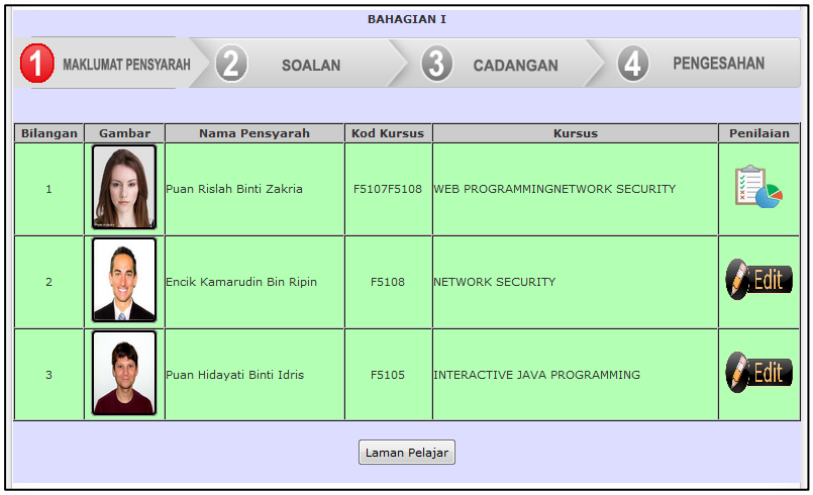


Figure 5.15 Lecturer information for student’s evaluation page.

The student’s evaluation is taken based on the manual evaluation form. It consist of ten question need to be answer by student. Student need to choose the score either one, two, three, or four. All the question must be answer. If one or more question to answer by student the error message will come out that tell student must answer all of the questions. After answer all the question student need to give comments to their lecturer. Figure 5.16 show the evaluation question for students.

Figure 5.16 Lecturer information for student's evaluation page.

5.2.4 SMS Module.

This module will show the Short Message Service (SMS) function in the system. The used of SMS is for send the notification to the students and head of department. This notification will send by administrator. This to make an alert to them about the evaluation that need to be done. Notification will send to all student base on their program and head of department that will evaluate lecturer. Figure 5.17 show the notification page in the administrator module.

Figure 5.17 SMS notification page.

SMS also was been used to send the evaluation score report to the lecturer at the end of the evaluation session. Lecturer will get the SMS about the score given by student and head of department. This SMS report will send the overall score of the lecturer. This SMS score report will be send by Head of department. Figure 5.18 show the SMS icons that uses to send the evaluation score to the lecturer. Figure 4.19 show the example of the SMS report that send to lecturer.

Figure 5.18 SMS icon in individual lecturer score result page.

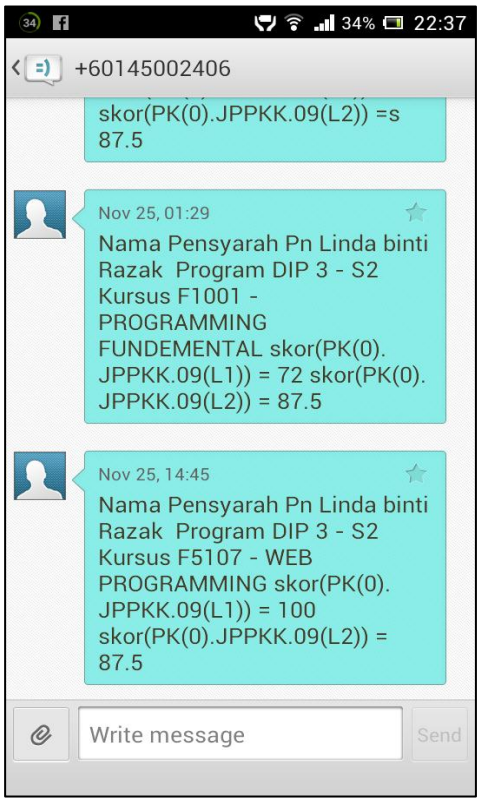


Figure 5.19 SMS score report.

5.3 Discussions

Based on the objective that come at the beginning of the planning phase for e – prestasi pensyarah, all data and action are follows as expected and for the conclusion it achieves the objective of the system. During the process of system development, there a lot of constraints and experience that can be learnt. In this, it help in developing the skill in write the sources code to build a system and websites by using available tools and software. By develop this system also can help polytechnic side to handle the evaluation of lecturer more easier and fast.

5.4 Advantages and Disadvantages

In this section we will discuss the advantages and disadvantages of e – prestasi pensyarah system.

5.4.1 Advantages of E –Prestasi Pensyarah System

This system has several advantages which will give benefit to all level of users. Those are :

1. E – Prestasi Pensyarah can help to manage all the process of lecturer evaluation with more efficient and more easier. All the data was store in the database that is more effective and not easy to loss and damage compare with stored at file.
2. By using this system, student can evaluate the lecturer anywhere and anytime because it was web bases system. This system will be an online system.
3. It also can increases the effectiveness of the lecturer evaluation. Because it will make the evaluation more easier than usual manual evaluation of the lecturer.
4. This system also can help in generate the report of the lecturer evaluation. The complex calculation also can be done easily because the formula of the calculation will insert into coding to calculate all the lecturer score.

5.4.2 Disadvantages of E –Prestasi Pensyarah System

This system also has several disadvantages. Those are :

1. The administrator still have burden of work. Administrator need register all the student, lecturer and courses information.
2. If the system was used in packed time or the system was hosting in the low spec server, the system will be slow in speed.
3. If the question of the evaluation lecturer was change the coding also need to be change because all the calculation of the score base on the current question form.

5.5 Assumption

There are several assumption that we assume the polytechnic and the user of the system. Those are:

1. It is assumed that all level of user are familiar and know how to use the computer and internet to use the system.
2. It assumed that all the information about students, lecturers, and courses was provided by polytechnic side and will be insert into the database.

5.6 Constraint

During development of this system, there are some constraints that affect the project development to be completed on-time have been identified as below:

1. System Constraint

The first constraint that need to be face is not familiar with the software that been use. Some of the function cannot be used during the system development phase, this is because does know how to use it. Some of the function need to uses a complex source code and also hard to explore and need to understand carefully. During the process of insert data into the database, there are problems that arise like the data is not match with the database structure.

2. Technical Constraint

During the process of develop the system, the local host used sometimes was corrupted and need to be reinstall again. Some data and development file has been lost. Virus attack also one of the technical constraint during the development and implement phase which is need to reformat the computer operating system used.

5.7 Future Development E – Prestasi Pensyarah

Based on the weakness identified, some suggestions to enhance the e –Prestasi Penyarah system functionality. Among the proposals to put forward here is as follows:

1. Applied the two way SMS gateway so student can make evaluation by using SMS to give the score to their lecturer.
2. Make the dynamic evaluation question. If the question of the evaluation was change so the administrator can change it without need to change internal source code.
3. Make the system can be embedded with the polytechnic database so administrator done have to register all the student, lecturer and courses details information. So the administrator was not burden with work anymore.

CHAPTER 6

CONCLUSION

6.1 Conclusion

As conclusion, Lecturers Performance Evaluation System 'e-prestasi pensyarah' is a system developed for the convenience of lecturers, students and heads of departments. e-Prestasi Pesyarah can help the process of managing the process of lecture evaluation in Polytechnic Sultan Mizan Zainal Abidin. This new system will help administrator to manage the evaluation mark faster and minimal time consuming. It also will enable students and head of department to evaluate lecturers with easier and fasters. For the lecturers their will get report of evaluations marks by receiving short messaging service (SMS). This will make the process of the evaluation more effective.

This system was build base on the manual evaluation lecturer that still using a paper and store in file. This system also was built by using web base system so the system can be host as an online system. The complexity of the calculate the score result also can be solve by using this system. The evaluation score report will generate after student and head of department done evaluate the lecturer.

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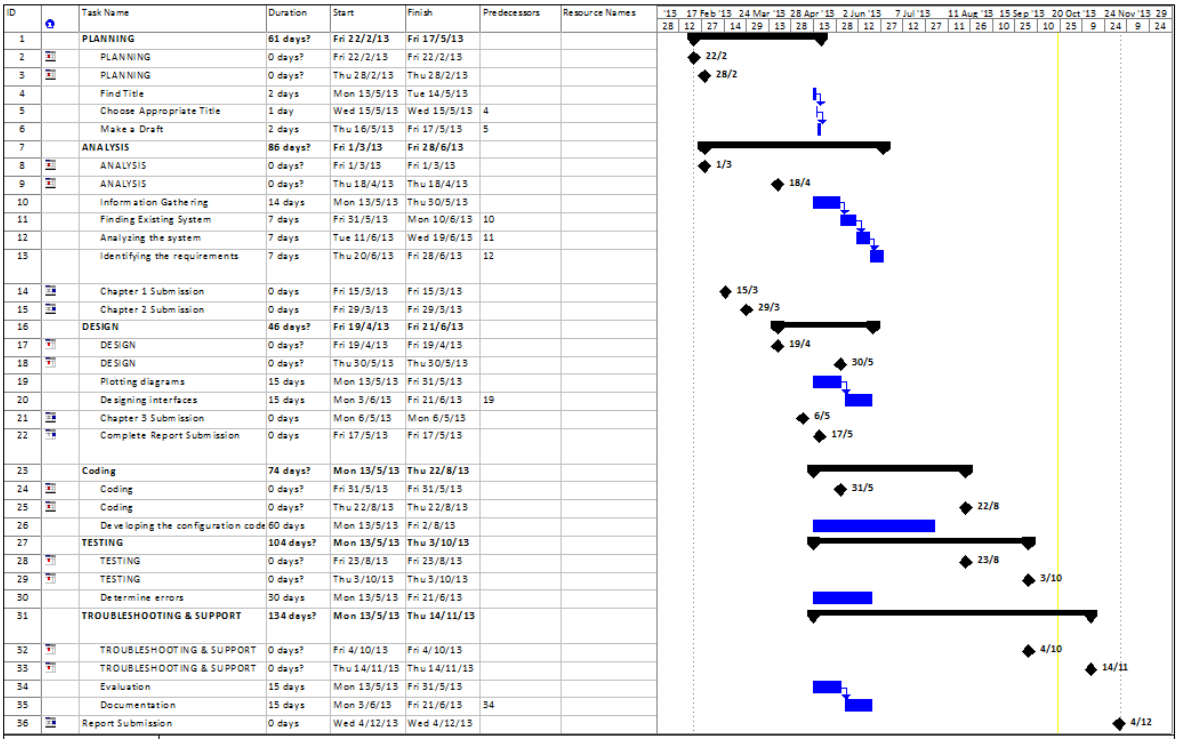
APPENDIX A

PROJECT PLANNING
(Gantt Chart)



ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1	**PLANNING**	**61 days?**	**Fri 22/2/13**	**Fri 17/5/13**		
2	PLANNING	0 days?	Fri 22/2/13	Fri 22/2/13		
3	PLANNING	0 days?	Thu 28/2/13	Thu 28/2/13		
4	Find Title	2 days	Mon 13/5/13	Tue 14/5/13		
5	Choose Appropriate Title	1 day	Wed 15/5/13	Wed 15/5/13	4	
6	Make a Draft	2 days	Thu 16/5/13	Fri 17/5/13	5	
7	**ANALYSIS**	**86 days?**	**Fri 1/3/13**	**Fri 28/6/13**		
8	ANALYSIS	0 days?	Fri 1/3/13	Fri 1/3/13		
9	ANALYSIS	0 days?	Thu 18/4/13	Thu 18/4/13		
10	Information Gathering	14 days	Mon 13/5/13	Thu 30/5/13		
11	Finding Existing System	7 days	Fri 31/5/13	Mon 10/6/13	10	
12	Analyzing the system	7 days	Tue 11/6/13	Wed 19/6/13	11	
13	Identifying the requirements	7 days	Thu 20/6/13	Fri 28/6/13	12	
14	Chapter 1 Submission	0 days	Fri 15/3/13	Fri 15/3/13		
15	Chapter 2 Submission	0 days	Fri 29/3/13	Fri 29/3/13		
16	**DESIGN**	**46 days?**	**Fri 19/4/13**	**Fri 21/6/13**		
17	DESIGN	0 days?	Fri 19/4/13	Fri 19/4/13		
18	DESIGN	0 days?	Thu 30/5/13	Thu 30/5/13		
19	Plotting diagrams	15 days	Mon 13/5/13	Fri 31/5/13		
20	Designing Interfaces	15 days	Mon 3/6/13	Fri 21/6/13	19	
21	Chapter 3 Submission	0 days	Mon 6/5/13	Mon 6/5/13		
22	Complete Report Submission	0 days	Fri 17/5/13	Fri 17/5/13		
23	**Coding**	**74 days?**	**Mon 13/5/13**	**Thu 22/8/13**		
24	Coding	0 days?	Fri 31/5/13	Fri 31/5/13		
25	Coding	0 days?	Thu 22/8/13	Thu 22/8/13		
26	Developing the configuration code	60 days	Mon 13/5/13	Fri 2/8/13		
27	**TESTING**	**104 days?**	**Mon 13/5/13**	**Thu 3/10/13**		
28	TESTING	0 days?	Fri 23/8/13	Fri 23/8/13		
29	TESTING	0 days?	Thu 3/10/13	Thu 3/10/13		
30	Determine errors	30 days	Mon 13/5/13	Fri 21/6/13		
31	**TROUBLESHOOTING & SUPPORT**	**134 days?**	**Mon 13/5/13**	**Thu 14/11/13**		
32	TROUBLESHOOTING & SUPPORT	0 days?	Fri 4/10/13	Fri 4/10/13		
33	TROUBLESHOOTING & SUPPORT	0 days?	Thu 14/11/13	Thu 14/11/13		
34	Evaluation	15 days	Mon 13/5/13	Fri 31/5/13		
35	Documentation	15 days	Mon 3/6/13	Fri 21/6/13	34	
36	Report Submission	0 days	Wed 4/12/13	Wed 4/12/13		