Web based Lecturer Evaluation Systems

by

Mohd Firdaus Bin Zulkafly

Dissertation submitted in partial fulfilment of
the requirements for the
Bachelor of Technology (Hons)
(Business Information Systems)

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
Information Technology Programme
University Teknologi PETRONAS
In partial fulfillment of the requirement for the
BACHELOR OF TECHNOLOGY (Hons)
(BUSINESS INFORMATION SYSTEMS)

Approved by,

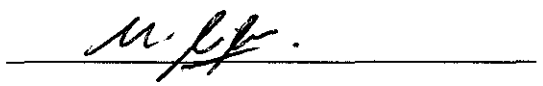
_____

(Ms. Savita K Sugathan)

UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK
JULY 2007

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.



MOHD FIRDAUS BIN ZULKAFLY

ACKNOWLEDGEMENT

In the name of God, the most gracious and the most merciful, I would like to thank Him for giving me the strength, skills, knowledge, patience and good health in completing my research and final year project. The success of this work depends on the contribution of many people. Therefore, I would like to take this opportunity to acknowledge and recognize the contributions of these individuals.

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ABSTRACT

At the beginning of every semester, Universiti Teknologi Petronas (UTP) students will complete a "course evaluation questionnaire" for each of their courses used to review a lecturer's performance throughout the semester. The ideas of creating an online system is initiate when the manual system is more complicated and ineffective. This web online evaluation system would be a valuable project, with many potential benefits and outcome. It would facilitate the collection, storage and analysis of data. If using the Internet as the means of submittal, the students would be able to complete and submit the questionnaire from anywhere on campus, or even at home. This system will improve this institution services evaluation system and management. This web online lecturer evaluation form system is the way to use automated online web method to change from manual system to computer automated system. This system framework consists of front-end form, transaction method and databases. The first objective of this project is developing and design form template for client access. This form will use for collecting data and input from student evaluation. Then this form will auto generate the input process and transfer the input information using encrypting language. This form template will be a graphical interface for web online evaluation form. The form GUI will be design using Microsoft ASP.NET. Then the next step is providing the system which can handle the data. An object relational database will be use for this project for handling the big data collection and organized. Overall of this process work flow will be guide and monitor by an SET systems created. These SET systems will organize the data automatically. The methodology use is RAD to create system prototype. There will be three user type who using this SET system. There are student, lecturer and staff. The student will evaluate their lecturer, the lecturer will request the result and the staff will get and update the system database. For the security, user authentication was implemented using the Socket Secure Layer (SSL). The user logs on to the system through a password dialog box inside user front end. The student is only allowed to submit one evaluation per course and can resume the evaluation system.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF FIGURES

LIST OF TABLES

ACRONYMS & ABBREVIATIONS

ASP – Active Server Pages

CSR - Certificate Signing Request

GUI - Graphical User Interface

RAD - Rapid Application Development

SET - Student Evaluation o Teaching

SQL – Standard Query Language

SSL - Secure Socket Layer

TAC - Transaction Authorization Code

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

The objective of this project is to design an online evaluation form computer base system. Because the challenging of time, the revolution of information system, we need to create the advance systems which can handle this evaluation process. It start from log in, the student can click the evaluation form online button to evaluate their lecturer performance. After clicking and enter the form page, the student can enter the necessary data and information. Then the input data can be processing using SET (Student Evaluation of Teaching) system created and submit it to database. Then this information can be store, manage and process itself then return the result for references. The HRM staff or user just only clicks the button to view the result. This online SET system also will set security provided for privacy and data management for future.

This SET system include front interface, which student can login via internet to evaluate, then the data transaction between client to server system will automatically can handle and organize data input and output. This SET system process totally automated, so the user just clicks for insert input and getting its output data from database. In early stage this SET system wills use transaction authorization code (TAC) as security, which can prove only the correct and true person who can evaluate using this online system. During development and testing process, new security system discovered and it is more suitable for this web site security. When developing a site that is either going collect or provide other confidential information, the security of data encryption is important. To prevent data theft, the system needs to apply a special encryption mechanism in this web site. The user access and the information that send are not encrypted by default. If someone intercepts and deciphers the data sent from the user to this website, the data can be used for an entire range of things that both system and client system would want. The mechanism should use to prevent this misuse is the Secured Socket Layer (SSL).

This online evaluation system, the online system is easy to update, quick change, accurate data and easier revised. This online evaluation system can give extra advantages and benefit for big organization. This system is also user friendly and economical. It is also requested by big organization such as UTP having this online evaluation system to replace the old manual system. Currently the basic project progress

is done designing the front end for user. The security and system still revised and expand and this system also provide optional advance system which can be update and insert later.

1.2 PROBLEM STATEMENT

Currently in Universiti Teknologi Petronas (UTP) is still using paper base evaluation form to survey lecturer performance and appraisal. Every year a lot of paper and ink are use for printing the evaluation form paper. There are many weakness and disadvantages using manual paper system. The manual system also consumes more cost and budget for paper and manual process. The best way to replace this manual system and reducing the redundant cost is change to online evaluation system. This lecturer evaluation system will not consume many paper and ink for printing.

Looking from lecture perspective, the lecturer need to give and collect their own form from student then submit it personally. It might waste lecturer time and become complicated when students increasing each year. It might be giving extra load to lecturer for carrying the manual form from office to class. The staffs assign to do this manual evaluation system need to key in the input manually. It can waste their time and energy, and then the human error can happen during input process. If they use this online evaluation system, they can use this time input process for other work because all the process is done by the system. When using this online evaluation system will help organizer to organize the data systematically.

For the student perspective, they are more interested in typing then writing. Sometime they feel writing is difficult than typing. (Cummings et al., 2001, Dommeyer et al., 2002) This system is also convenience to all party.

So they need the advance organize online evaluation system which can help all party to make this process done quickly, systematic and smoothly.

During progress time period, using transaction authorization code (TAC) via phone sms is quite expensive. It is because the organizations who own this system need to pay the cost of sms services trough mobile line services provider such as Maxis or Digi. Because of the demand to cut out this service cost is highly recommended, so the alternative way is sending transaction authorization code (TAC) via email to the student. This alternative way can cut cost for using sms to zero cost. During development and testing process, this TAC security system is too complex and not suitable for this project. In this project, ASP.NET already provides security to secure website. There are there types that are currently implemented are forms authentication

(sometimes referred to as cookie authentication), Windows, file and URL authorization and passport authentication. More detail will be explained in result and discussion chapter.

The other problem for this project is from the veteran lecturer. This is because they still not familiar with computer, it might be hard for them to trust this online lecturer evaluation system.

Conservative estimates of tangible value applying this online system include:

- 80%-90% cost time and consumption material such as paper are reduce
- 60%-70% more accurate input data
- Student interested making evaluation process will increasing
- The database organize systematically and system can handle large of input and output data without limitation
  <http://www.wmo.ch/web/www/WDM/Guides/Guide-on-DataMgt-2.htm>

Special Issues or Constraints:

- The university management views this online system as a strategic system. This system will add value to their current services, and it also will serve for large people for future. For example, in the future the student will be increasing and the database will become larger and widely use.
- This online system should be replacing the current manual system to improve evaluation process function *(Resource: Online class computer registration system, Group Project Software Engineering, Jan2006)*

1.3 OBJECTIVE AND SCOPE OF STUDY

System request: web base online lecturer evaluation form system for student to evaluate lecturer performance.

System need: This project has been initiated for replacing the manual evaluation process system

The objectives of this propose system is:

1. to replace paper base evaluation by replacing with web-based systems
2. to initiate practical project so this system can be continuous upgraded and change

1.3.1 Scope Feasibility

This project scope is give contribution for public education services and later can be upgrade for future and continuous

1.3.2. Technical Feasibility

This online evaluation system is feasible technically, although there is some risk.

The risk regarding this online system is high

- There are problem were online system is operating needs online technology to process the data, but the issues of using license software will appear
- The possible for system can be hacked and fraud

The risk regarding new online and electronic system for new student registration and customer applications is medium

- The student or user has now familiar with internet and online system
- This system is automated, all process controlled by the SET system

The project size is considered medium risk

- This project system will consume more time to implement
- High system security is required because dealing with private data input

1.3.3 Economic feasibility

Cost and benefits

- Increase business recognition
- Improve evaluation system service
- Reduce overhead costs for the paper and omr machine maintenance
- Speedier system process to reduce human workforce hire

1.4.1 SWOT analysis current manual system

STRENGTHS	WEAKNESSES
• Will yield a better response rate to the survey • Provide a more accurate response • Offers more convenience to student	• Consume more time to produce result • Sometime data is not accurate because of human error • Can be cheated and fraud • Student participation cannot be measured
OPPORTUNITIES	**THREATS**
• Cost management can be controlled	• Management issues and human behavior

1.4.2 SWOT analysis for new system

STRENGTHS	WEAKNESSES
• Reducing cost of evaluation process • Reducing time consuming for getting result • Supporting quantitative and qualitative feedback • Increasing high participation and response rate(anonymous can be monitored) • Ensuring that data is handled securely	• Cost setup and purchasing license product might be expensive • Cost maintenance and service can increase
OPPORTUNITIES	**THREATS**
• UTP have good internet coverage and network • The system can be upgraded and is expandable because it's using standard programming language and source	• Management issues and human behavior

CHAPTER 2

LITERATURE REVIEW AND THEORY

The demand for immediate teaching evaluation feedback has long been an issue (Thorpe, 2002). The old paper evaluation system required surveys to be shipped off site and results took months to receive. Faculties were unable to improve their courses based on feedback received from the students without significant delay because the evaluations were not returned until well after the new semester was underway. Moreover, the time and effort it took for faculty to sift through the evaluations to improve their courses was significant with the old paper-based evaluation (Hmieleski & Champagne, 2000; Cummings et al., 2001; Johnson, 2002) s. And the storage required to accommodate the volume of paper evaluations was a huge burden (Suh-Pyng Ku, 2002).

As more and more completely online degree programs are established, the need to develop evaluation methodologies and processes to guide that assessment practice increases (Dobbs & Allen, 2004; Schott et al., 2003).

Evaluation falls into three main types, those oriented toward the construction of knowledge, those orientated toward placing value, and those oriented toward how information is used (Alkin & Christie, 2004).

The online system allows students to provide feedback on the course and the instructor(s) online anytime during the 8 days to 2 weeks preceding their final exams, and anywhere that is convenient without peer pressure. Baum et al. (2001) showed that online surveys may produce more favorable ratings than paper survey.

The online course evaluation system was created within the context of a larger online survey system, which will also allow faculty members to conduct survey research online. The new system also strives to raise student response rates, as well as provide on-demand reports to faculty and administration. (Curt J. Dommeyer et al, 2002)

Student feedback through teaching evaluations is a critical component to continuing success in achieving educational mission. The goal in developing this system is to leverage existing technology to improve business process and provide faculty with timely information so they can improve their instruction and better meet learning outcomes. Give students a chance to answer evaluation questions without time pressure and therefore to provide more thoughtful feedback to their instructors.(Weisband & Kiesler, 1996)

Because of the complicated nature of program structures and scheduling, it was a very time consuming and labor-intensive task to prepare, schedule, deliver, administer, collect, and distribute the paper-based teaching evaluations and results. Using web-based evaluation questionnaires can bypass many bottlenecks in the evaluation system e.g data entry and administration) and move to a more 'just in time' evaluation model (Hastie & Palmer, 1997; Seal & Przasnyski, 2001).

Manual optimization of systems is both time-consuming and difficult. Quite often it is based on human trial-and-error rather than careful analysis and planning. (R. Telford, 2003)

In addition, the online system offers the added security of allowing students to fill out only one evaluation, and ensures that the individual is officially enrolled in the course. And, of course, the online evaluation system increases class contact time. (Marshall, 2002)

The new online system will improve response rate from the current 75% to target of 90%. Although the system provides anonymous feedback, the system was able to monitor which students have and have not completed the evaluation and can build incentives for completion (Layne et al. 1999; Baum et al 2001)

Autonomic systems offer numerous advantages over non-autonomic systems, and many of these advantages relate to ease of use. The advantages regarding ease of use include reducing the number of low-level system administration tasks, simplifying the system administrator's interface, handling exceptions which would otherwise have resulted in system alerts, and the learning, by the system, of actions taken by the administrator.(S.O'Connell, 2003)

Table 1. Reason faculty chose the paper method

Will yield a better response rate to the survey	52.4%
Will provide a more accurate response	14.3%
Offers more convenience to student	14.3%
This method is more likely to obtain a response from students who regularly attend class	9.5%
Students are more likely to feel that their response is anonymous	9.5%

Table 2. Reason faculty chose the online method

Is easier for the professor	41.7%
Doesn't use up class time	25.0%
Reduces expense of teacher evaluation	16.7%
Offers more convenience to students	16.7%

Table 3. Faculty attitudes towards teaching evaluation methods

	Paper Method	Online Method	No Difference
Student participation issues			
Give a better opportunity for all students to participate in the evaluation	**43.4%**	**24.5%**	**32.1%**
Will result in more students doing the evaluation	**86.5%**	**5.8%**	**7.7%**
Provides more convenience to students	**60.4%**	**17.0%**	**22.6%**
Accuracy issues			
More likely to result in an accurate Evaluation of professor's teaching performance	**51.9%**	**5.8%**	**42.3%**
Is more likely to result in negative evaluation of professors	**6.1%**	**28.6%**	**65.3%**
Makes it less likely that professors will influence student's answer	**2.0%**	**28.0%**	**70.0%**
Provides less opportunity for instructors to cheat on the evaluations.	**2.0%**	**40.8%**	**57.1%**
Faculty Issues			
Provides more convenience to professors	**11.5%**	**57.7%**	**30.8%**
It an easier method for professors to administer	**9.6%**	**67.3%**	**23.1%**
Takes less classroom time to conduct the taking evaluation	**3.8%**	**83.0%**	**13.2%**

Literature review from Curt J.Dommeyer, Methods of collecting Teaching Evaluations: Paper vs Online, Assestment & Evaluation in Higehr Education, Vol.27, No.5, 2002, College of Business & Economics, California State University, Northridge.

CHAPTER 3

METHODOLOGY / PROJECT WORK

A good database design is needed in order to organize a big amount of data. Thus the database design is crucial in providing a good data management in more effective and systematic way. This project will deal with large data transaction network, user and database which can organize the data automated.

3.1 System Development Life Cycle

Since there are many methodologies, the first challenge faced is to select which one to use. Choosing a methodology is not simple, because no one methodology is always best for this project. Before start selecting the methodology to use, figure below summarizes some important methodology selection criteria.

Ability to Develop Systems	Structured Methodologies			RAD Methodologies		Agile Methodologies
	Waterfall	Parallel	Phased	Prototyping	Throwaway Prototyping	XP
With Unclear User Requirements	Poor	Poor	Good	Excellent	Excellent	Excellent
With Unfamiliar Technology	Poor	Poor	Good	Poor	Excellent	Poor
That are Complex	Good	Good	Good	Poor	Excellent	Poor
That are Reliable	Good	Good	Good	Poor	Excellent	Good
With a Short Time Schedule	Poor	Good	Excellent	Excellent	Good	Excellent
With Schedule Visibility	Poor	Poor	Excellent	Excellent	Good	Good

While selecting the appropriate development methodology, there are six steps must be determine;

1. Clarity of user Requirements
2. Familiarity with technology
3. System Complexity
4. System Reliability
5. Short time Schedules
6. Schedule Visibility

In developing this online proposed system, the best method will use is the rapid application development (RAD) model approach in the system development life cycle. This model is use as documentation will be produced at each phase where it fits with other engineering process model. The stages of the model are illustrated in Figure below:

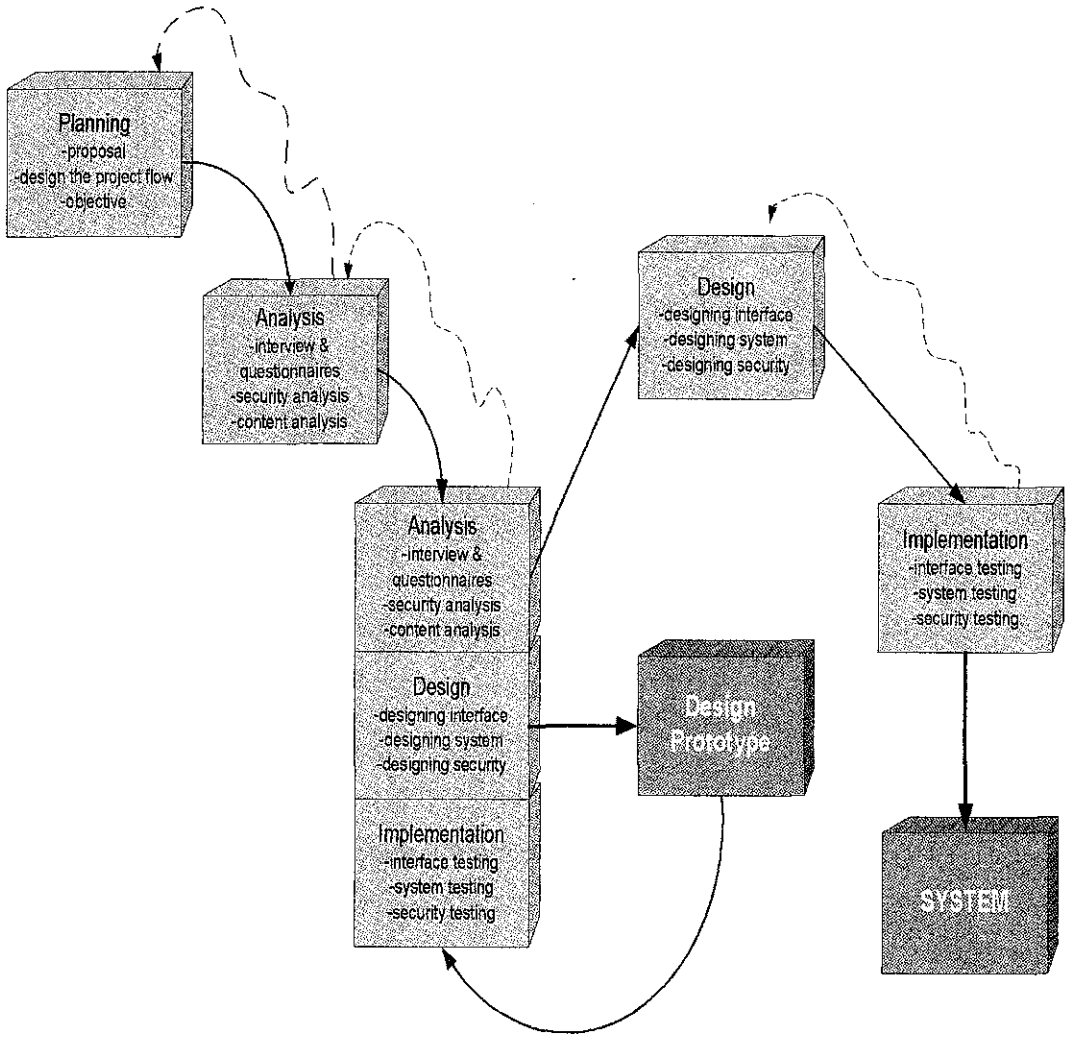


FIGURE 3.1-RAD

This system request also assume as complex systems which require careful and detailed analysis and design. The throwaway prototyping-based methodologies are particularly well suited to such detailed analysis and design, as opposed to prototyping-based methodologies, which are not. The traditional structured design-based methodologies can handle complex system, but with out the ability to get the system or prototypes into the user hand early on, some key issues may be overlooked. When make comparison why cannot use other methodology such as waterfall because it is consume

a lot of time and the result is not satisfied by user. So if using throwaway prototyping, this method can help to produce better product system and suitable for short time period. This project also design for short time schedules and has schedule visibility, so the throwaway prototyping methodology is good and well suited for RAD based methodologies. This is due to being designed to increase the speed of development.

The analysis, design and implementation process can be doing in many times until the user satisfies the output product system. System reliability is usually an important factor in system development. Through this system request is reliability, throwaway prototyping methodologies are the most appropriate when system reliability is a high priority, because it combines detailed analysis and design phases with the ability for the project designing many different approaches through design prototypes before completing the system design.

For this methodology, planning is the process step. In planning we will create the overflow project as known as project introduction process. This step will assign the objective and the best approach which use to decide the analysis, design and implementation process. This planning is main important part which can plan strategy for overall process. The planning also use to make sure the objective of this project is achieve and going smoothly and systematic. This planning process includes the grant chart, timeframe and process flow to do this online evaluation system.

In analysis step process, this project will do analysis by doing interview and observation research. The interview research include interview with user, and questionnaires asking to student and lecture for recommendation and comment. This is also the main part which uses to design user interface input. It is important for online content and data organization part. This system process is also including part of secure data, as private transaction data, high security system is needed to prove for private usage and fair transparent system. So the best idea is using Secure Socket Layer (SSL) for security transaction system.

The third step is designing and implementation process. This part process will design the prototype and implementing it for analysis. This process will be repeating until final product achieve. This process is the best way to get feedback from user and new idea can be added as upgrade part of this system. This process also focuses more in designing the online system prototype. The design process and implementation also will use the system function and testing the security system.

3.2 System Framework and Architecture

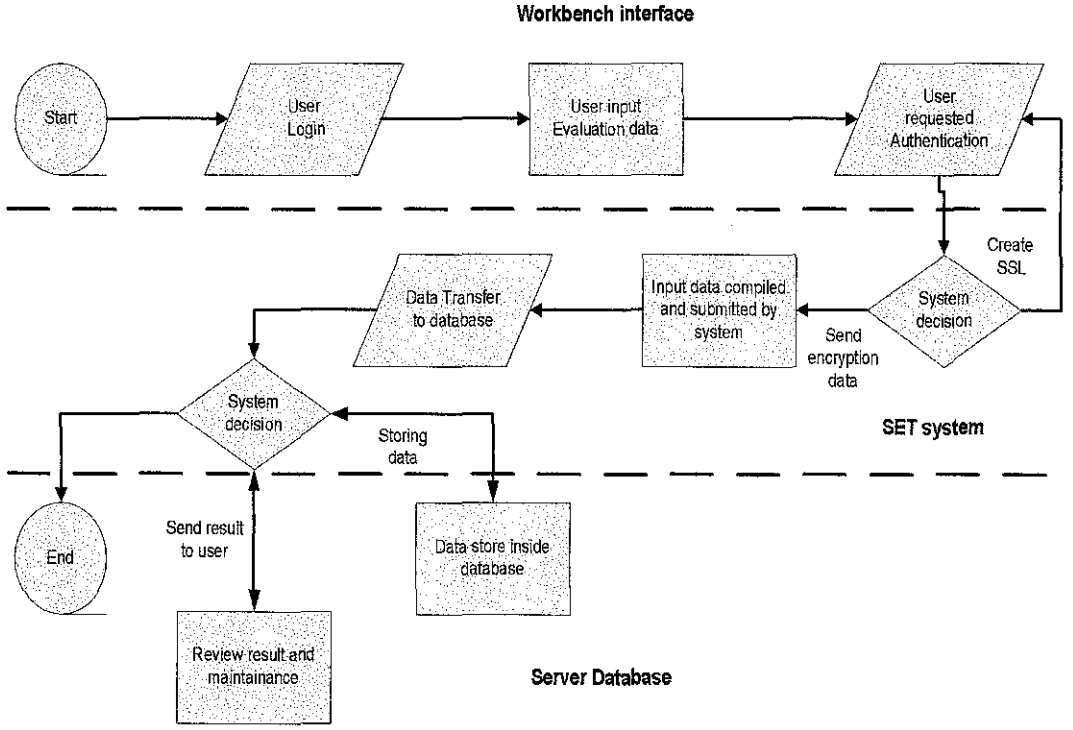


FIGURE 3.2 – System Framework

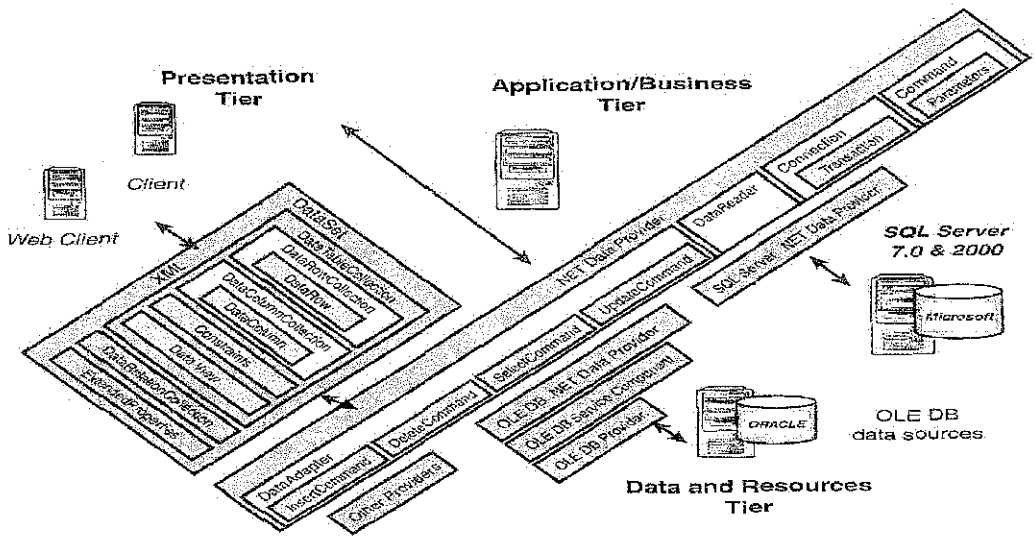


FIGURE 3.3 – Example Microsoft .NET Framework

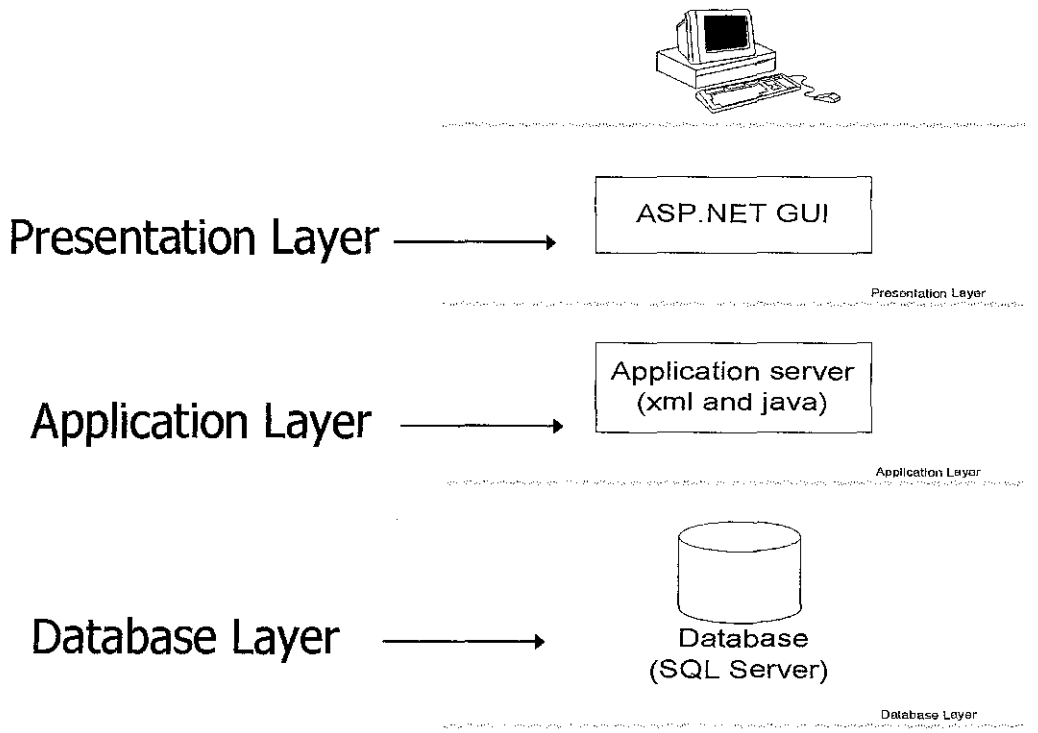


FIGURE 3.4 – System architecture

This proposed system framework consists of front-end interface, internet as medium transaction data, servers for storing databases and SET system to compile, organize and control the data input and output process. Front-end interface is where all the input information gets done by student during online evaluation process. All input data are compile and sends to available databases. Then the SET systems will processing the data from database then provide the result when if request. This SET system will work automatically to organize and do data processing.

3.3 Hardware & Tools

Below are the hardware specification and tools needed for development of this proposed system:

Hardware specification	Software used
Minimum requirement: - Pentium III 866 MHz - 256 MB - 20 GB Hard Disk Drive - CPU server	- Microsoft Visual Studio 2005 - Microsoft SQL 2005 - ASP.NET 2.0 - XML

3.3.1 Database server tool

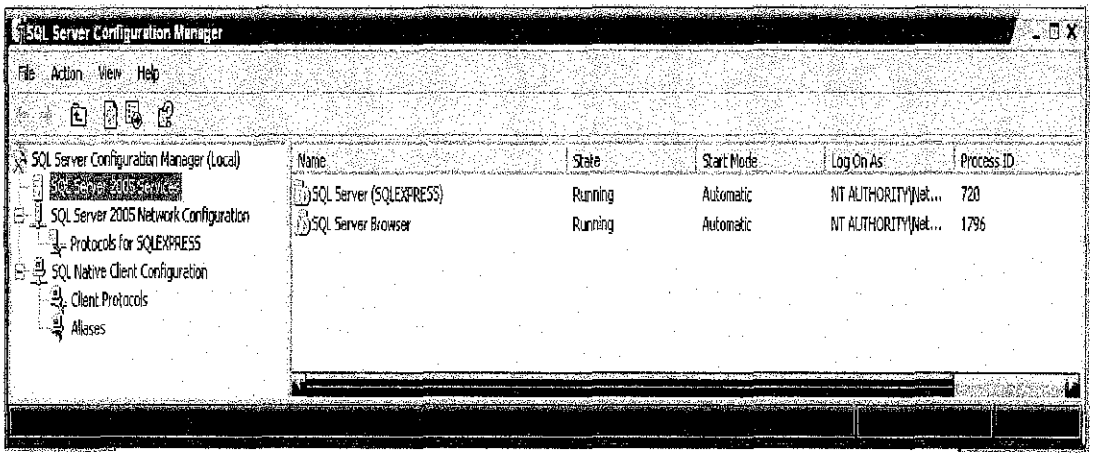


FIGURE 3.5 – Database server tools

3.3.2 Application tool and software (ASP.NET)

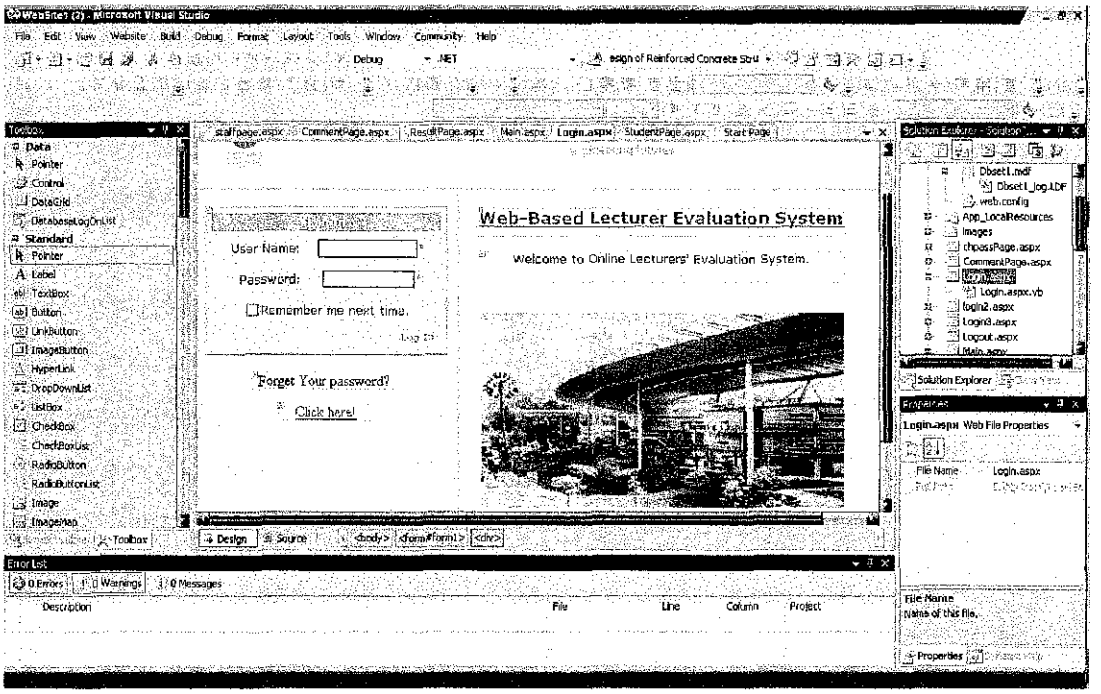


FIGURE 3.6 – Software tools

CHAPTER 4

RESULTS AND DISCUSSION

4.1 System Interface and Front End

The first phase of this project is developing and design form template for client access. This form will use for collecting data and input from student evaluation. Then this form will auto generate the input process and transfer the input information using xml language. This form template will be a web online evaluation form. The form GUI (Graphical User Interface) language code will be design using Microsoft Visual Studio 2005 (ASP.NET) and publish using asp.net. This programming code is better and suitable for this project other by using standard html code. This is because the standard html code is static web and not supported for dynamic web. This Visual Basic programming language ASP.NET also base on object oriented programming, it can associate with JAVA and C programming language. So it can support for this web online lecturer evaluation form system.

The 2nd phase is creating the SET (Student Evaluation of Teaching) system which can handle the data transaction process. This transaction process will use xml as coding language to transfer data via internet. The SET system will generate xml code to compile the input data. Then the compile data will be check by SET system for error or redundant data. Then it will store the data on the database server. An object relational database will be use for this project for handling the big data collection and organized. This database will use Microsoft SQL 2005 Express. Overall of this process work flow will be guide and monitor by an SET systems created. These SET systems will act as virtual assistant, so there is no human to control and manipulate the overall data. The scripting language C and object oriented will be use for SET systems code. This SET system also will provide output as result for staff or user reference.

The 3rd phase is to create the security for preventing fraud and system compatibility for malfunction and human error. For security in early stage, the transaction authorization code will be use. The student will login the evaluation system using their username and login password. Then the system will set the time process 15 minutes for evaluation process. This will prevent the system from denial of system fraud. The access time also can be controlled. To make sure the input data is exactly get from the rite person, when the student want to submit their complete form, they will request the transaction authorization code(TAC) for proceeding submit the form. The

system will reply the request by submit the transaction authorization code (TAC) via email to student. This is because the true person only has keep their own email, so it can prevent from other person to disguise or pretending as the true student because they don't have transaction authorization code (TAC) to proceed the submission process. This transaction authorization code (TAC) will generate randomly by the system and has expired time. These transaction processes also provide IP tracking so the system easily can track fraud or cheat. But during development and testing process, using TAC is too expensive, complex and not necessary for system. The process time and delay will occurred when establish connection to many client in same time. So the progress project is to drop this TAC security and replace it with SSL security. This security system is more suitable and necessary for this website system.

4.1.1 How if the students share the password received to the friends?

Holding and keeping the password is student or user responsibility. It is not the system responsibility. If the student or user misuse or sharing the password, it is their responsibility because sharing password to other friend. The user or student must keep their password save. What the system can do is tracking the ip address, and receives only once submission per course. The system also only can secure the process using Secure Socket Layer (SSL) to protect and secure connection between client and server. SSL (Secure Sockets Layer) is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral. SSL is an industry standard and is used by millions of websites in the protection of their online transactions with their customers or user. The system security is only covered and protected confidential information over the internet. But the security it is also important part, user authentication will be revised and advance in future.

UML Diagram

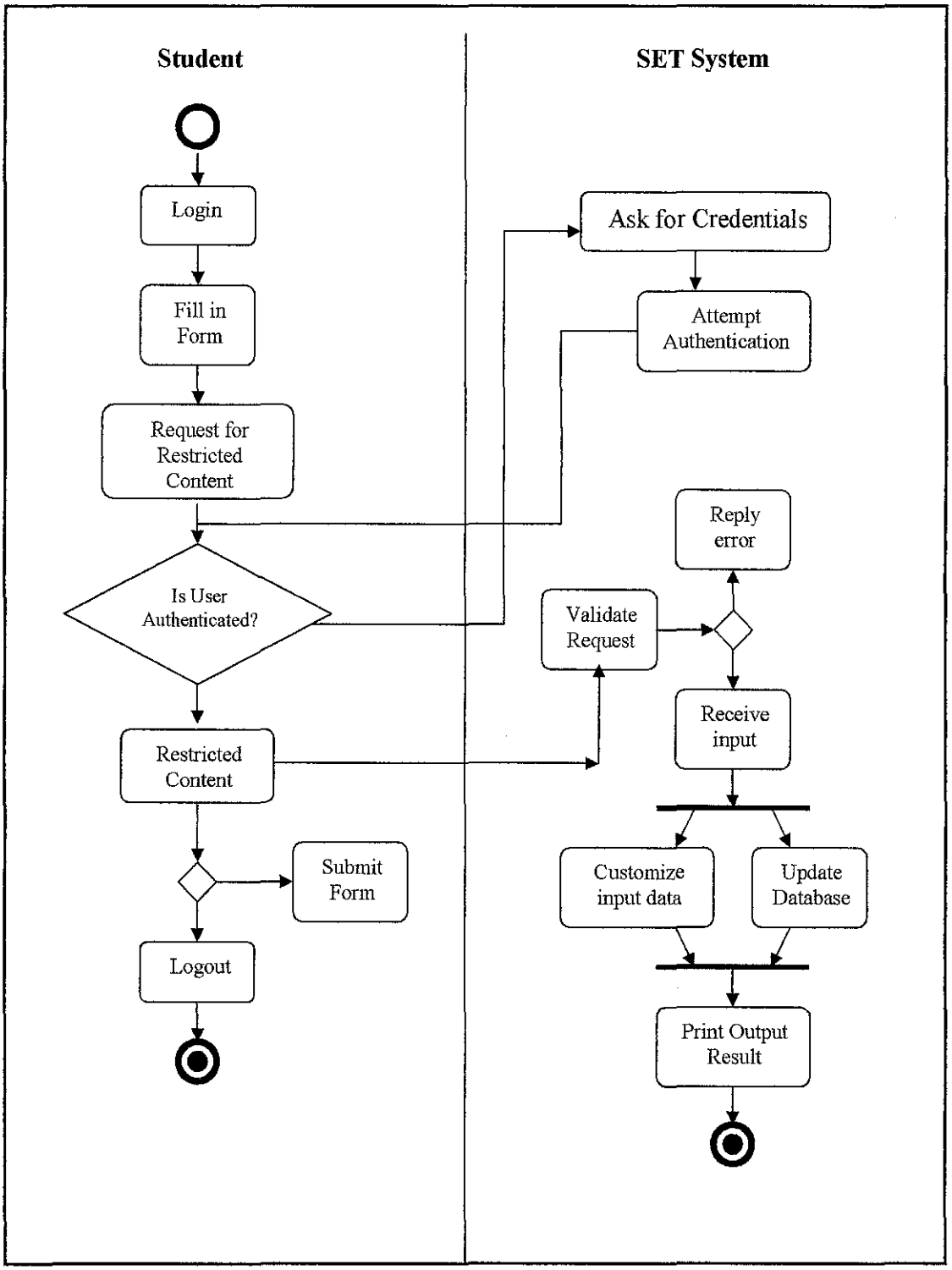


Figure 4.1 UML Diagram for Web based Online Lecturer Evaluation System

USECASE Diagram

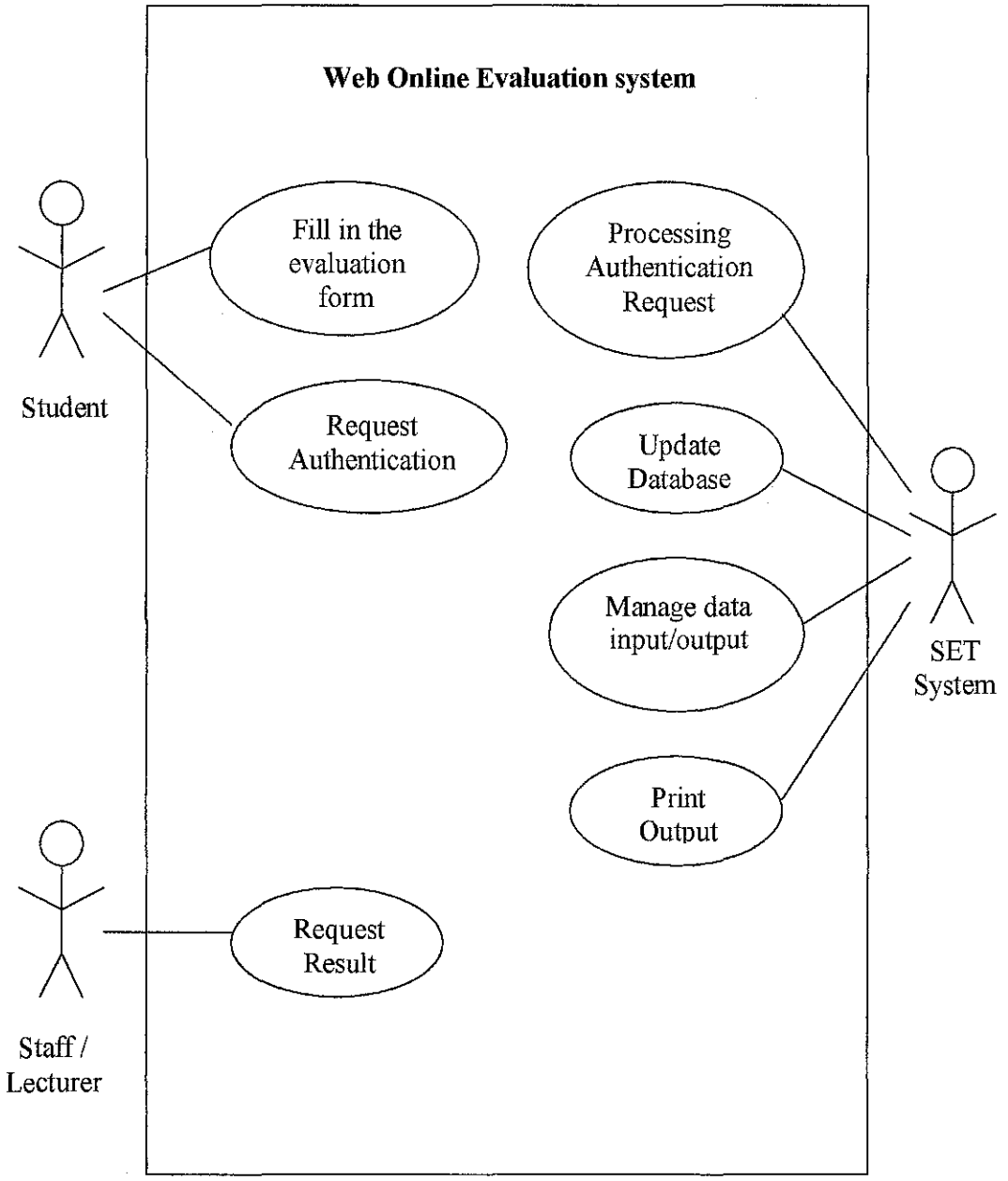


Figure 4.2: Use case Diagram for Web based Online Lecturer Evaluation System

Class Diagram

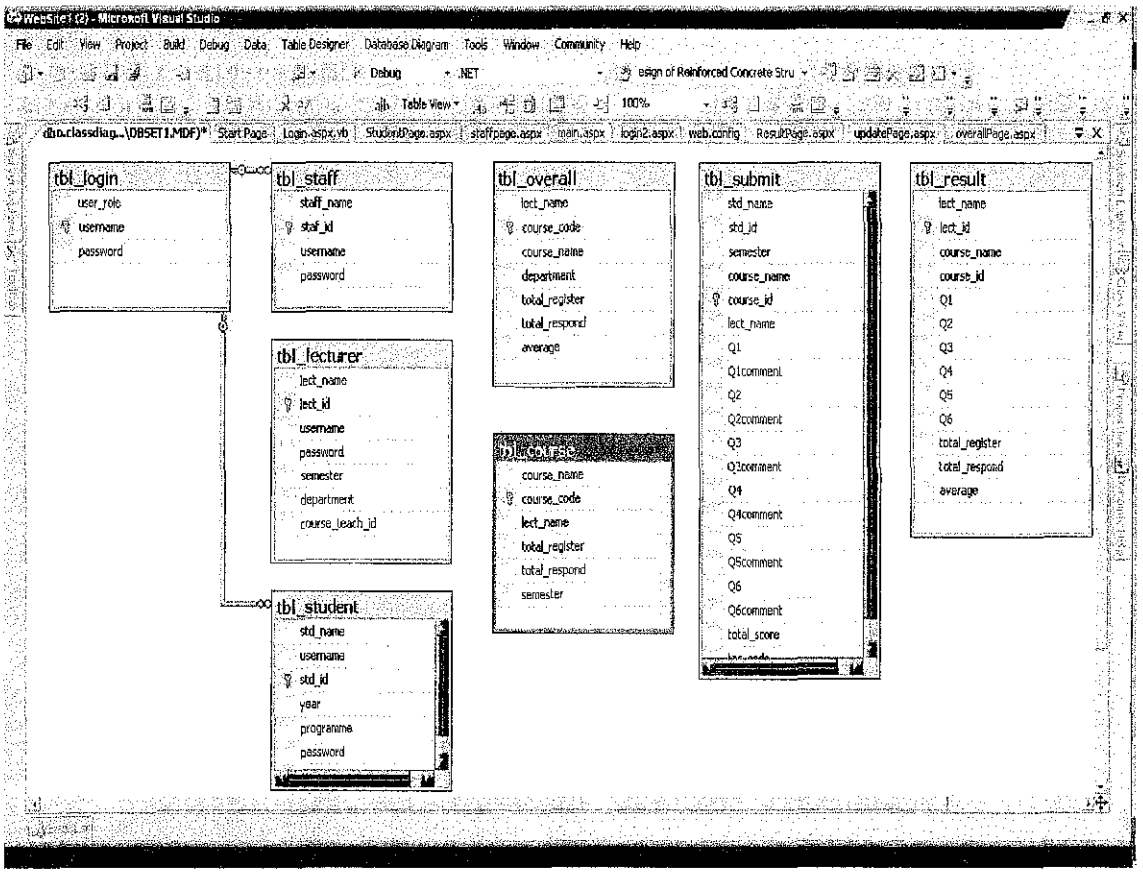


Figure 4.3: Current development class diagram (will be update)

Screen Interface for original manual Lecturer Evaluation System in UTP

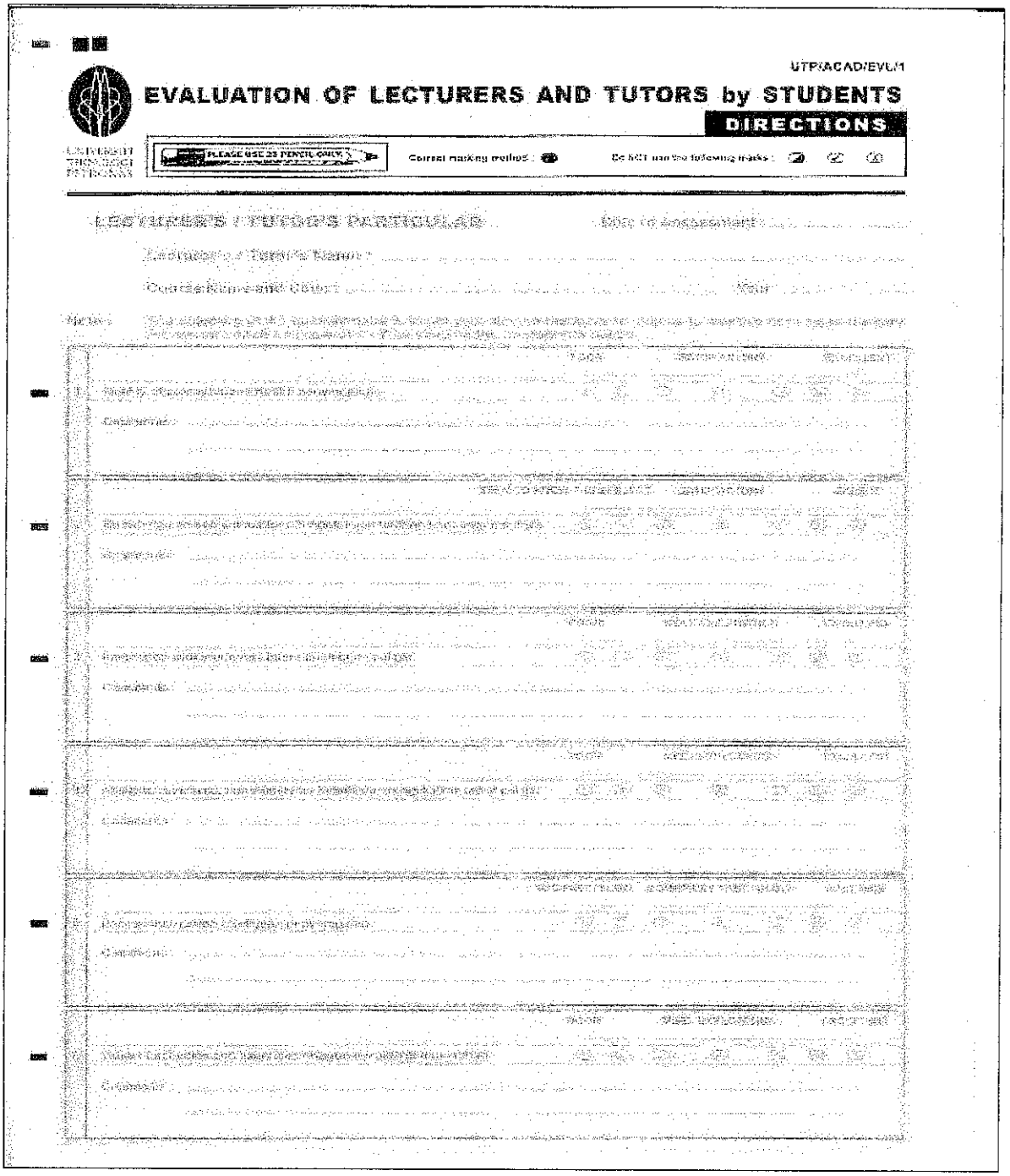
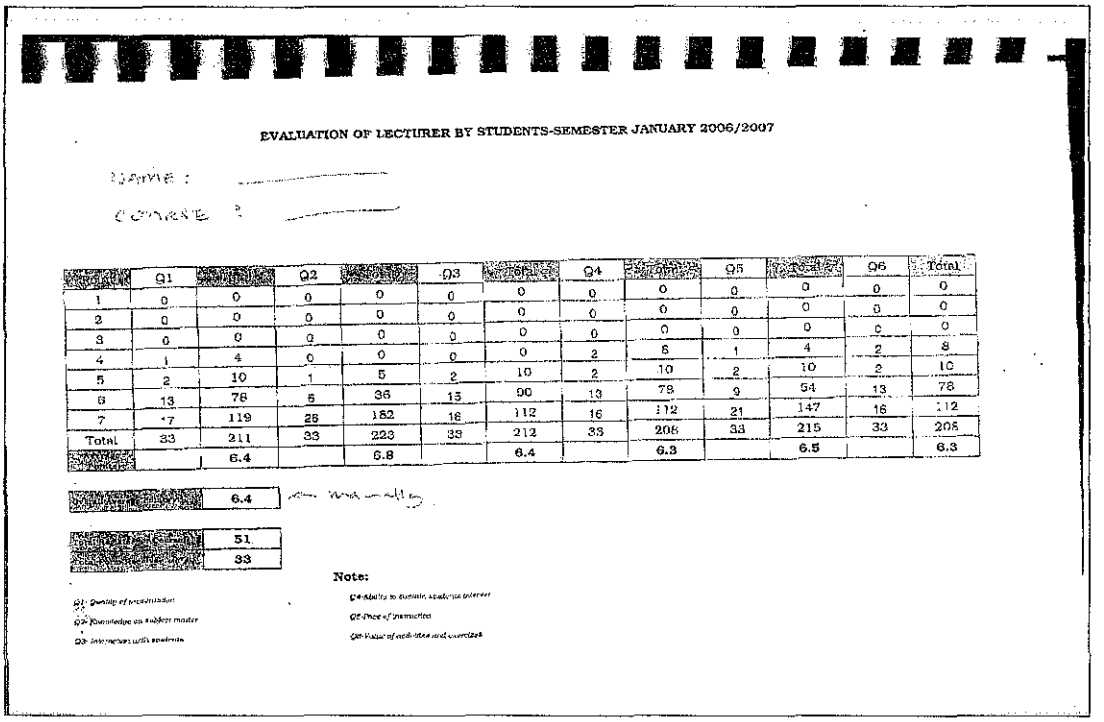


Figure 4.4: Manual form lecturer evaluation system



EVALUATION OF LECTURER BY STUDENTS-SEMESTER JANUARY 2006/2007

NAME :

COURSE :

	Q1		Q2		Q3		Q4		Q5		Q6	Total
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	1	4	0	0	0	0	2	8	1	4	2	8
5	2	10	1	5	2	10	2	10	2	10	2	10
6	13	78	5	30	13	90	13	78	9	54	13	78
7	17	119	28	182	16	112	16	112	21	147	16	112
Total	33	211	33	223	33	212	33	208	33	215	33	208
		6.4		6.8		6.4		6.3		6.5		6.3

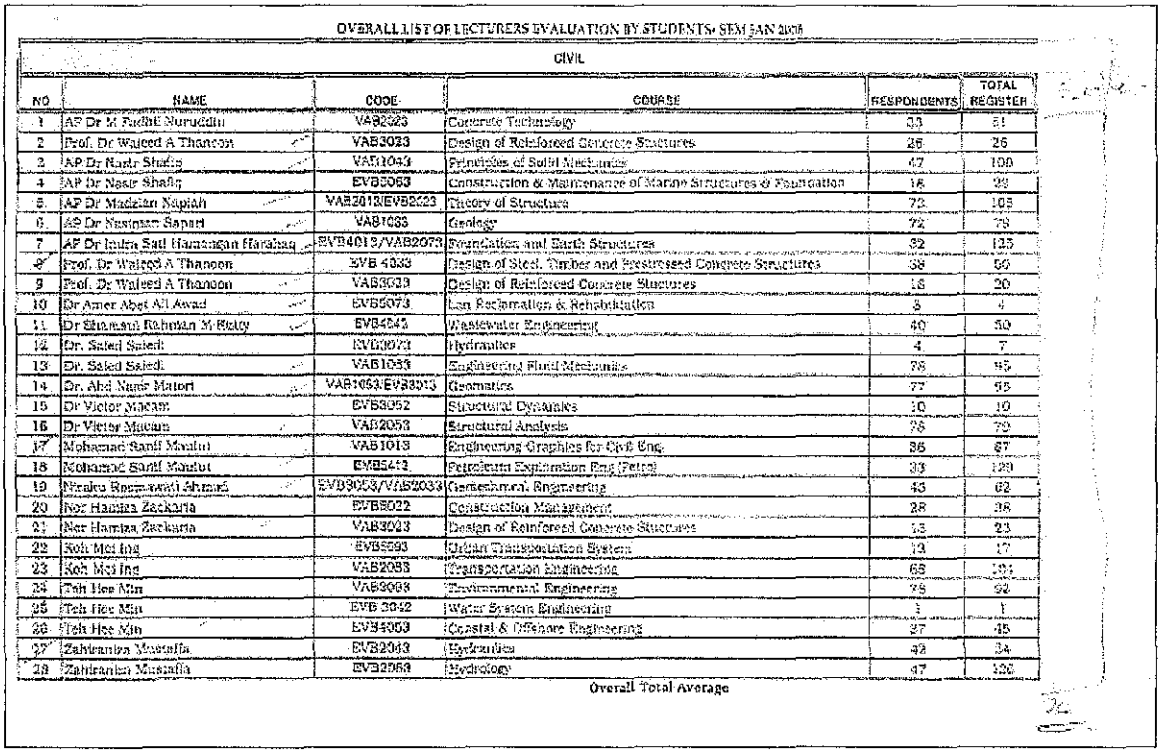
6.4

51

33

Note:

Figure 4.5: Result from manual system done manually using Excel



OVERALL LIST OF LECTURERS EVALUATION BY STUDENTS SEM JAN 2006

CIVIL

NO	NAME	CODE	COURSE	RESPONDENTS	TOTAL REGISTER
1	AP Dr M Fadhil Nurudin	VAB2023	Concrete Technology	33	51
2	Prof. Dr Waleed A Thanoon	VAB3033	Design of Reinforced Concrete Structures	26	26
3	AP Dr Nasir Shafiq	VAB1043	Principles of Solid Mechanics	47	100
4	AP Dr Nasir Shafiq	EVB5063	Construction & Maintenance of Marine Structures & Foundation	18	33
5	AP Dr Madzlan Napiah	VAB2013/EVB2023	Theory of Structures	72	105
6	AP Dr Nasiman Sapari	VAB1033	Geology	72	75
7	AP Dr Indra Sati Hamonangan Harahap	EVB4013/VAB2073	Foundation and Earth Structures	92	135
8	Prof. Dr Waleed A Thanoon	EVB 4033	Design of Steel, Timber and Prestressed Concrete Structures	58	60
9	Prof. Dr Waleed A Thanoon	VAB3033	Design of Reinforced Concrete Structures	18	20
10	Dr Amer Abd Al Awad	EVB5073	Land Reclamation & Rehabilitation	3	4
11	Dr Shamsul Rahman M Rizky	EVB4043	Wastewater Engineering	40	50
12	Dr. Saied Saiedi	EVB3073	Hydraulics	4	7
13	Dr. Saied Saiedi	VAB1033	Engineering Fluid Mechanics	78	85
14	Dr. Abd Nasir Matori	VAB1053/EVB3013	Geomatics	77	95
15	Dr Victor Macam	EVB3052	Structural Dynamics	10	10
16	Dr Victor Macam	VAB2053	Structural Analysis	78	79
17	Mohamad Sanfi Mastuti	VAB1013	Engineering Graphics for Civil Eng.	86	87
18	Mohamad Sanfi Mastuti	EVB5413	Petroleum Exploration Eng (Petrol	93	120
19	Niralini Rameswati Ahmad	EVB3053/VAB2033	Geotechnical Engineering	43	62
20	Nor Hamiza Zakaria	EVB5022	Construction Management	28	36
21	Nor Hamiza Zakaria	VAB3023	Design of Reinforced Concrete Structures	13	23
22	Koh Mei Ing	EVB5093	Urban Transportation System	13	17
23	Koh Mei Ing	VAB2083	Transportation Engineering	68	121
24	Teh Hee Min	VAB3063	Environmental Engineering	78	92
25	Teh Hee Min	EVB 3042	Water System Engineering	1	1
26	Teh Hee Min	EVB4053	Coastal & Offshore Engineering	37	45
27	Zahiraniza Mustafa	EVB2063	Hydraulics	42	84
28	Zahiraniza Mustafa	EVB2053	Hydrology	47	120

Overall Total Average

Figure 4.6: Overall Result from manual system done manually using Excel and will be submit personally to Head Department

4.2 Screen Interface and Current Prototype for new Web base Online Lecturer Evaluation System before user testing

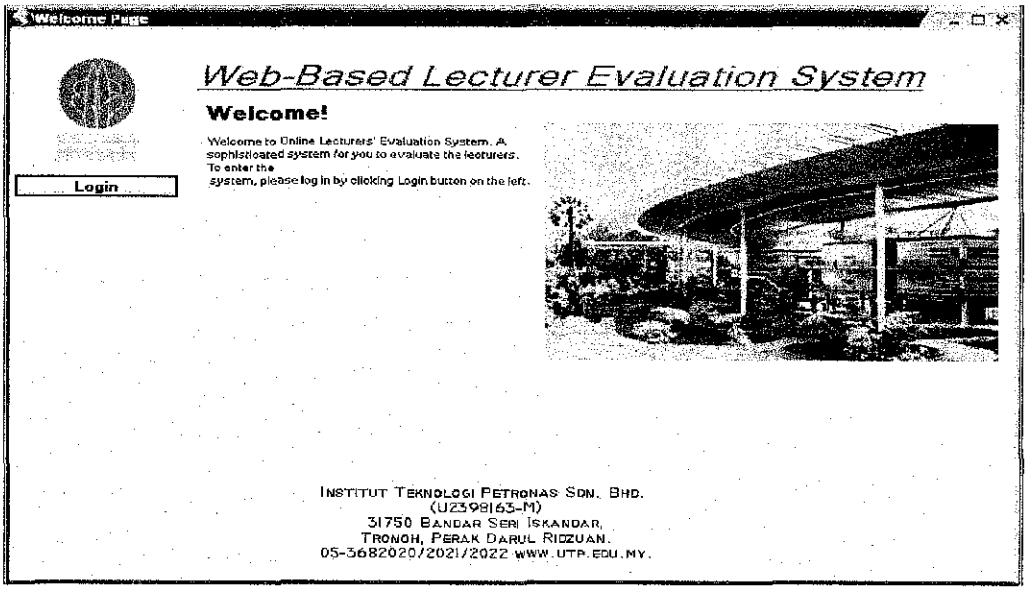


Figure 4.7: Main page

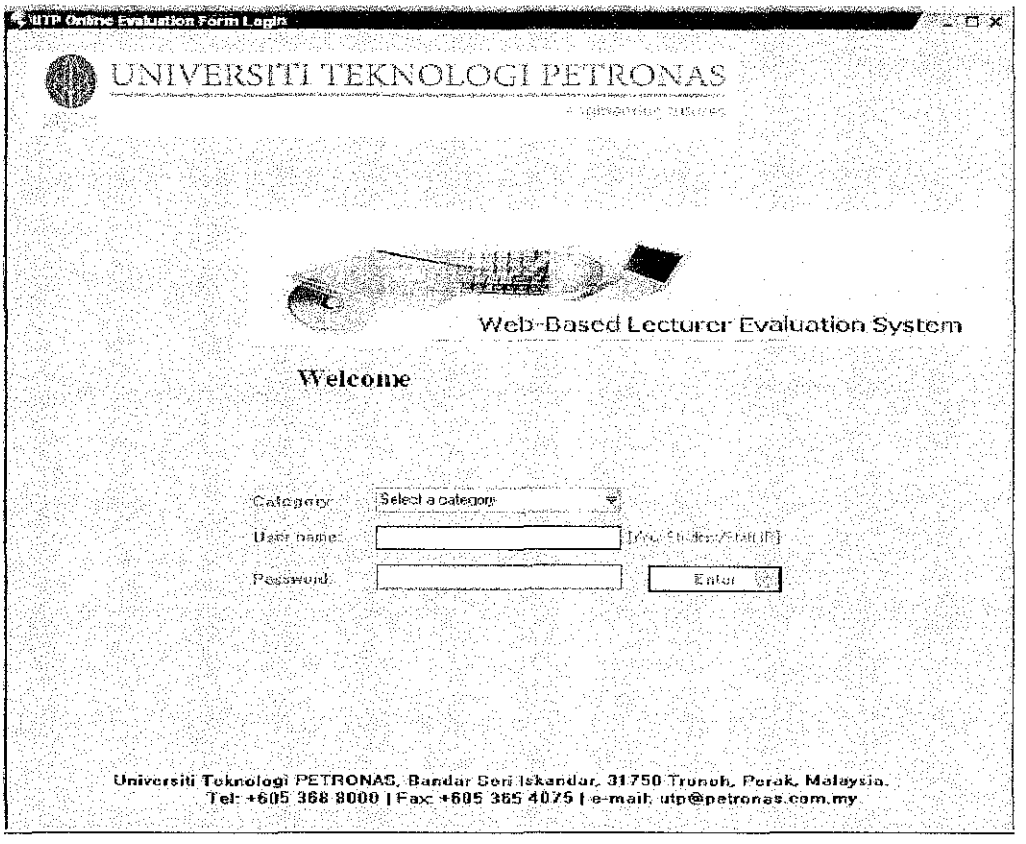


Figure 4.8: User login page

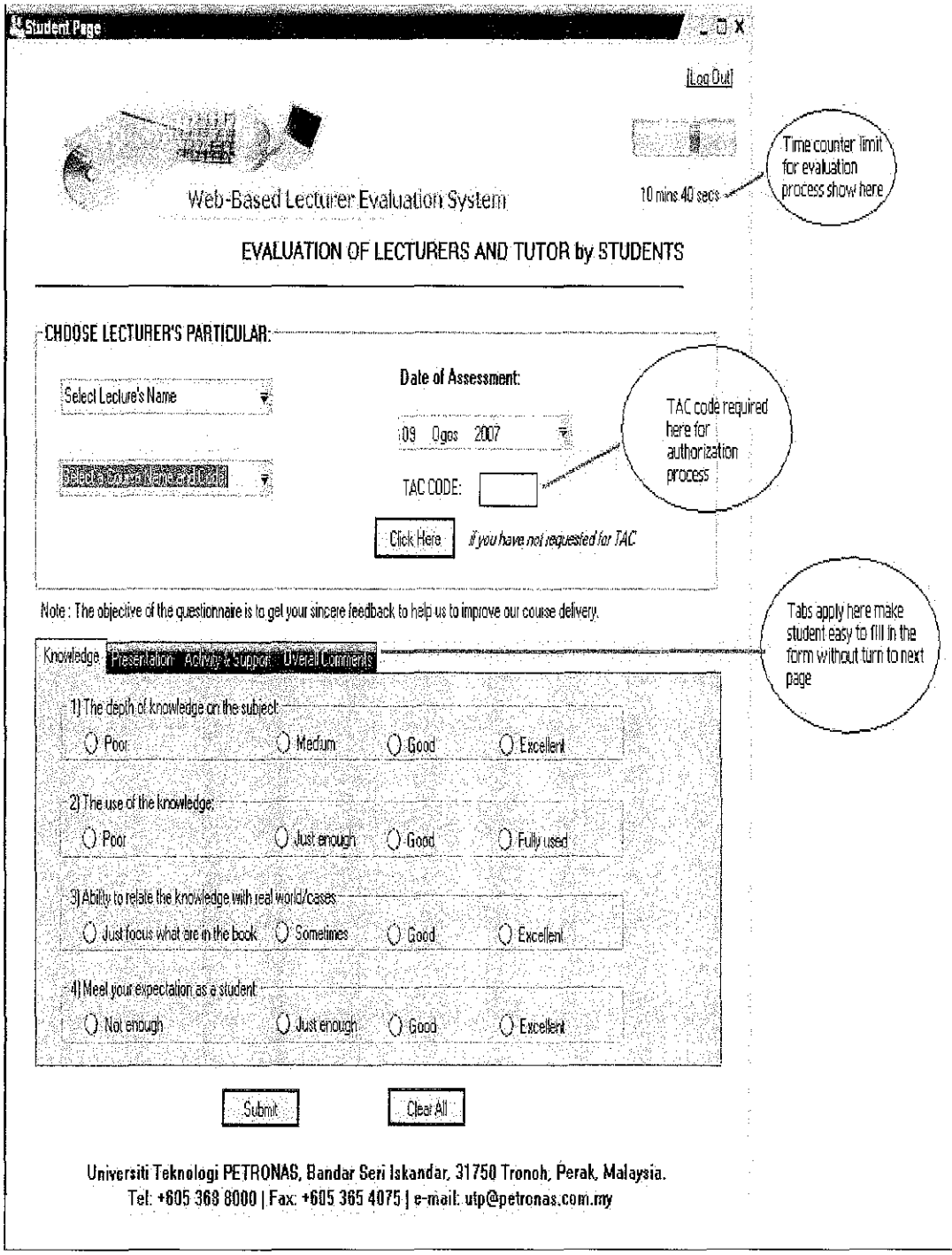


Figure 4.9: The evaluation form page for student to fill up

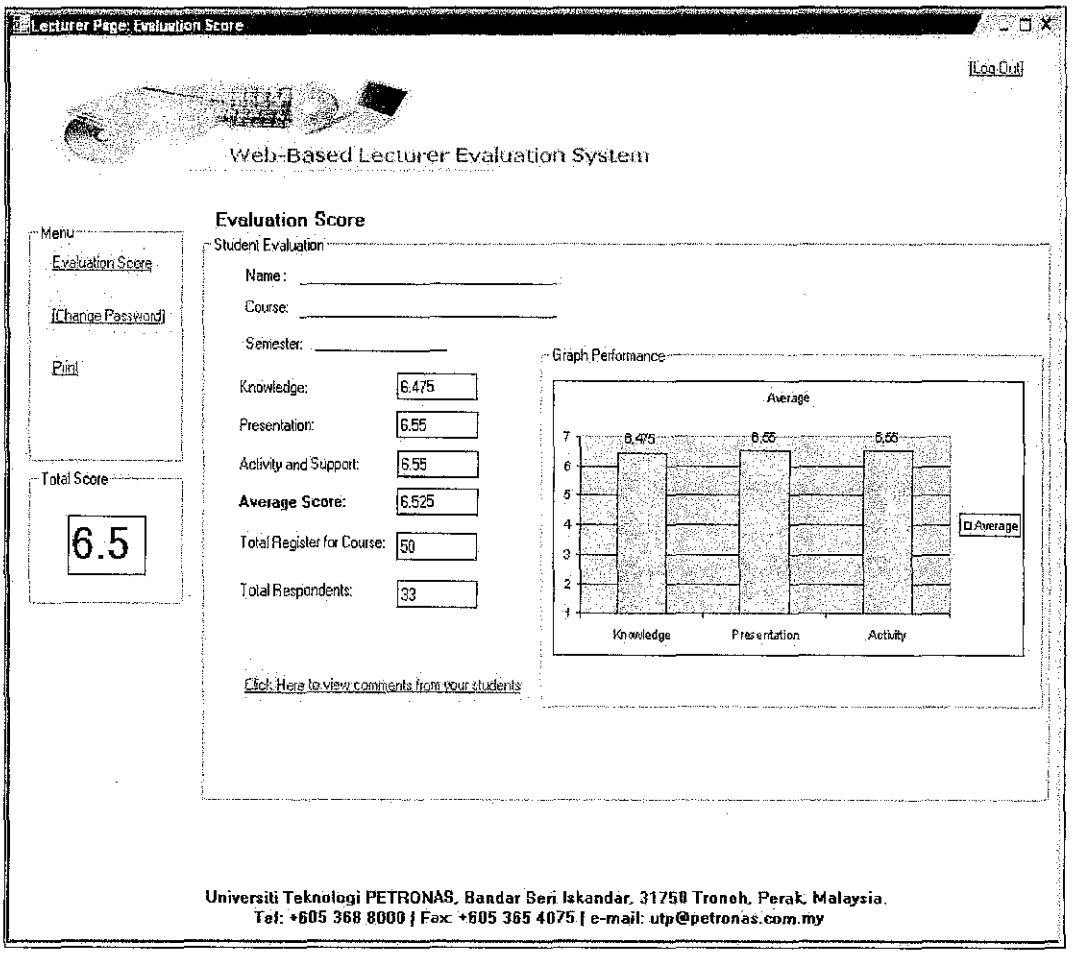


Figure 5.0: The result output interface

User comment:

For the first time release, the system interface publish using Microsoft visual studio 2005 as using visual basic code language. But the difficulty faces are this system need to be installed in laboratory computer or personal computer. This will affect time installing and burden to user. So to solve this problem by changing to web browser using ASP.NET , so the system does need to be install, then the user just open web browser for using this system.

Other comment are the button login, it is very difficult to see and not using standard login system. The Graphical User Interface also is not user friendly and too much redundant option for user.

4.3 Screen Interface and Current Prototype for new Web base Online Lecturer Evaluation System after testing and error fix

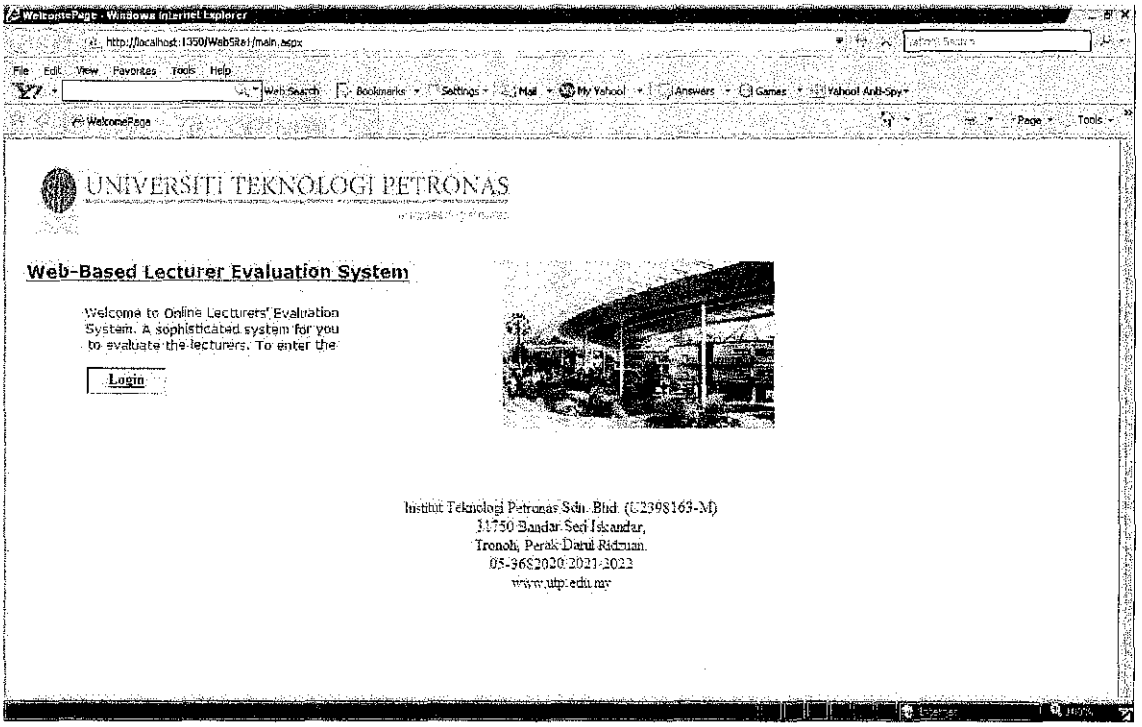


Figure 5.1: Main page new

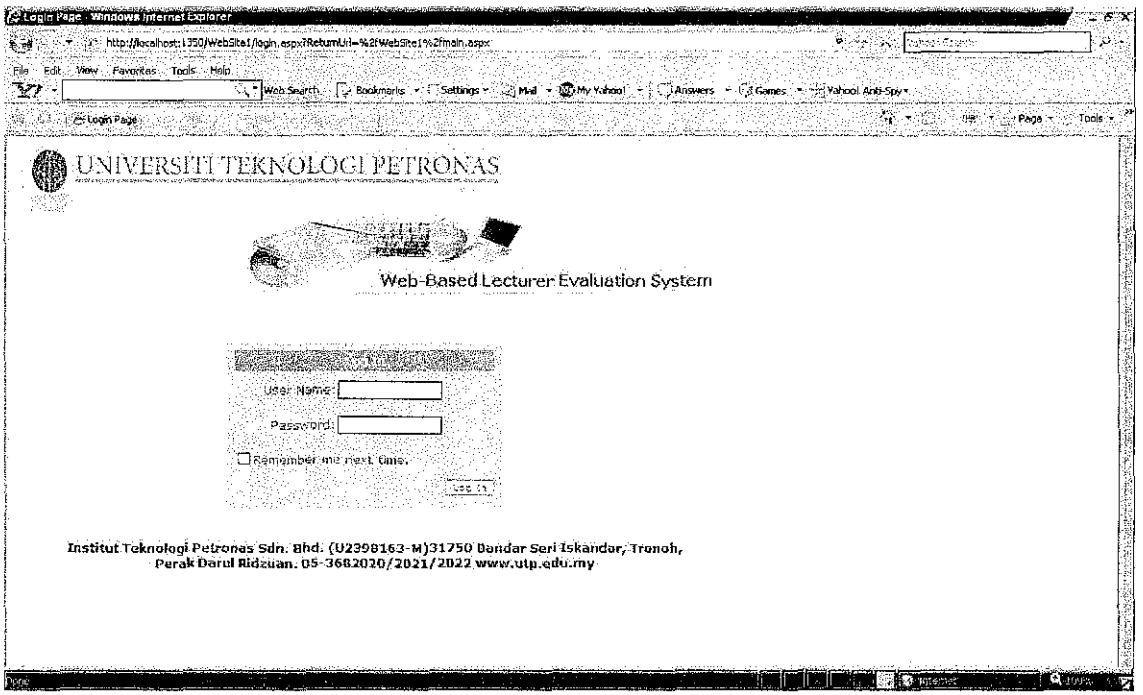


Figure 5.2: User login page (using standard login page)

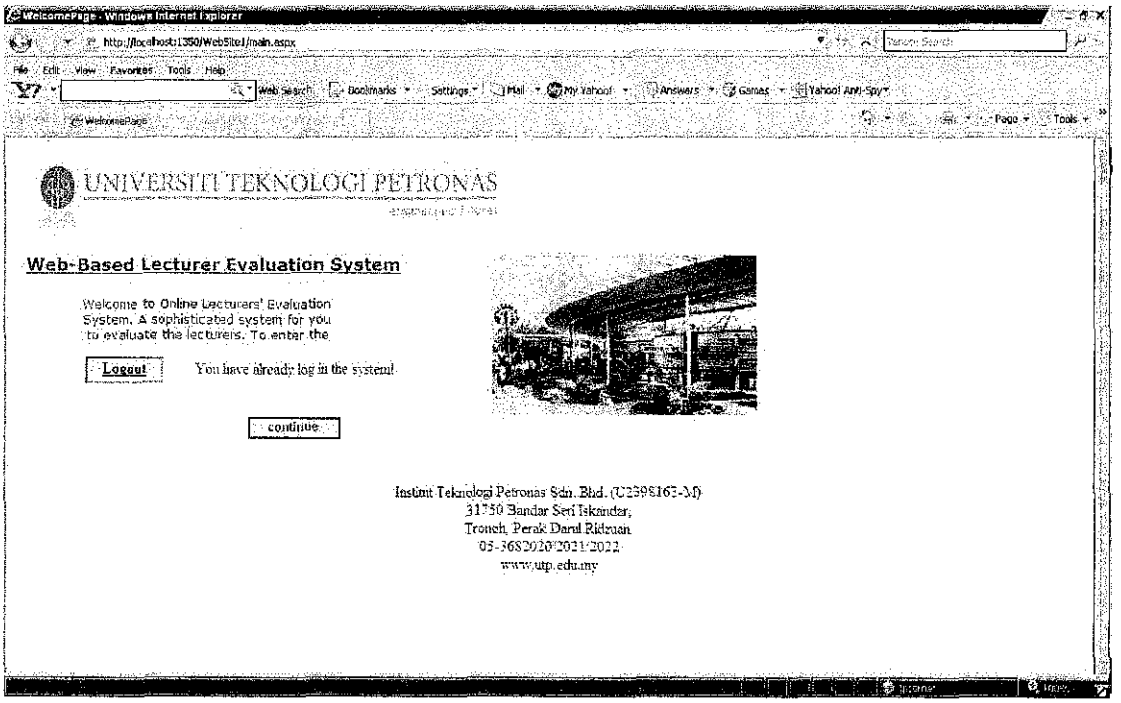


Figure 5.3: User login page after successful login. This time the session is open. Users have choice either continue to next page or logout.

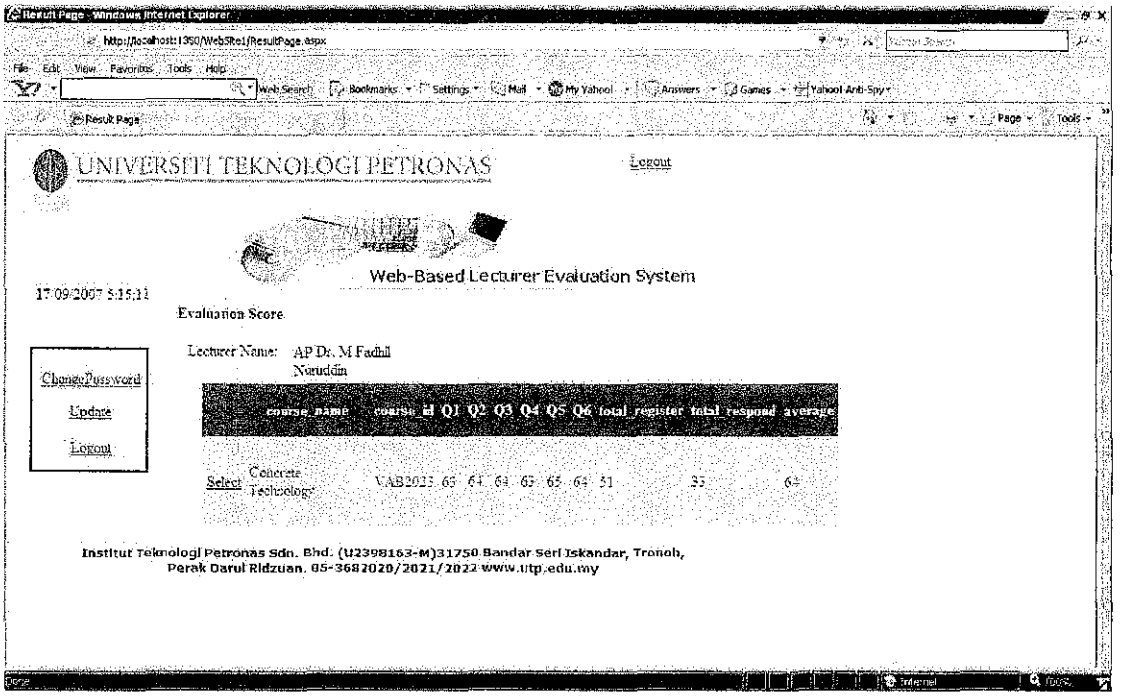


Figure 5.4: Lecturer page when role user is lecturer. This page is only can be view for role class lecturer.

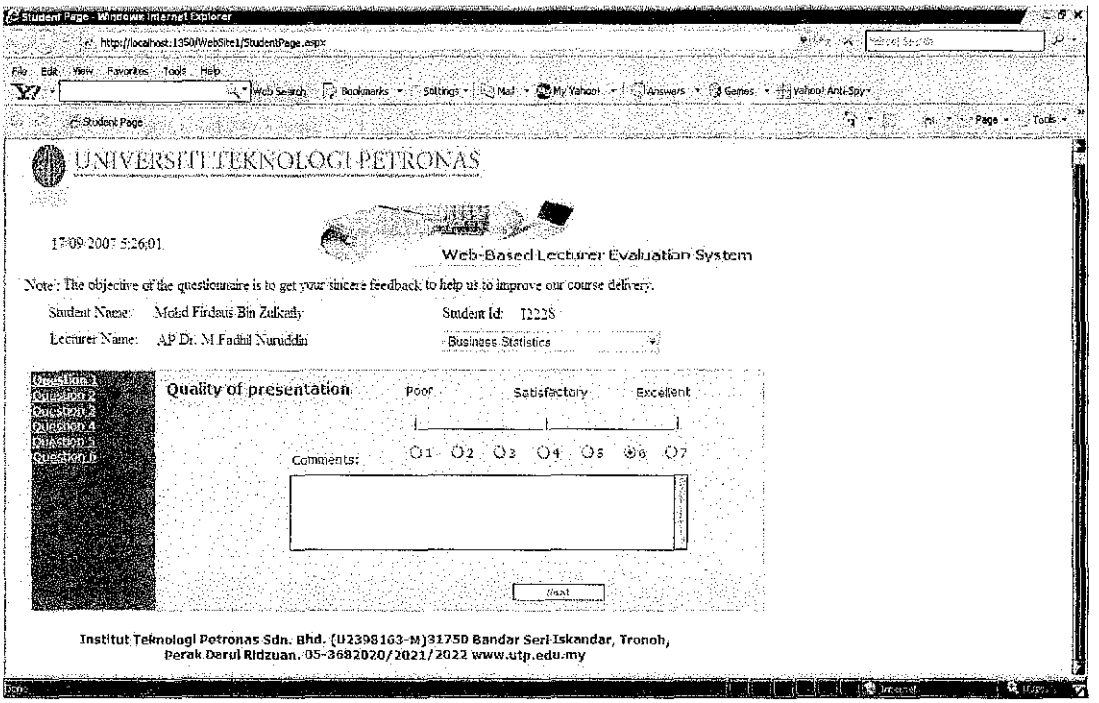


Figure 5.5: Student page will view when the role user is student.

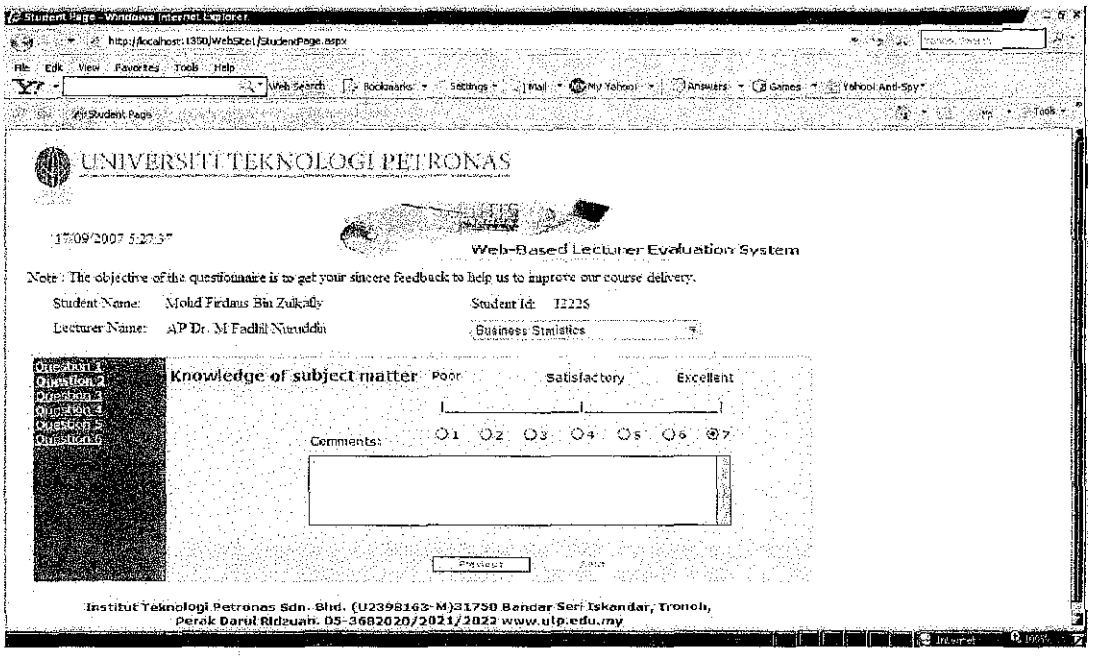


Figure 5.6: Student page will view when the role user is student. Next page question no.2

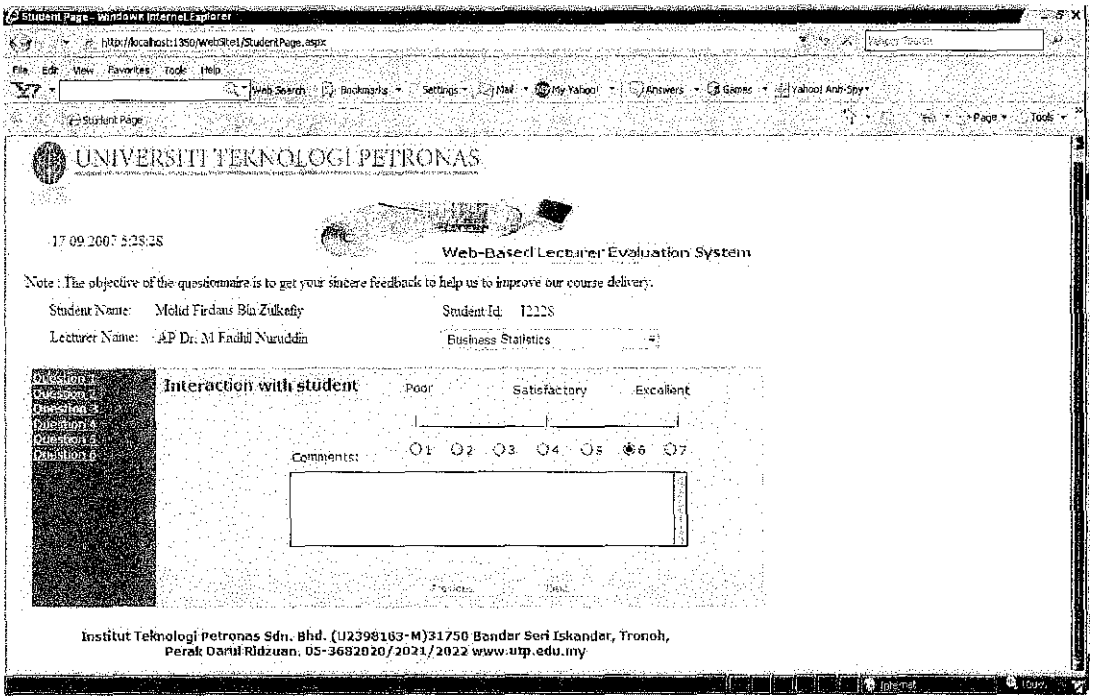


Figure 5.7: Student page will view when the role user is student. Next page question no.3

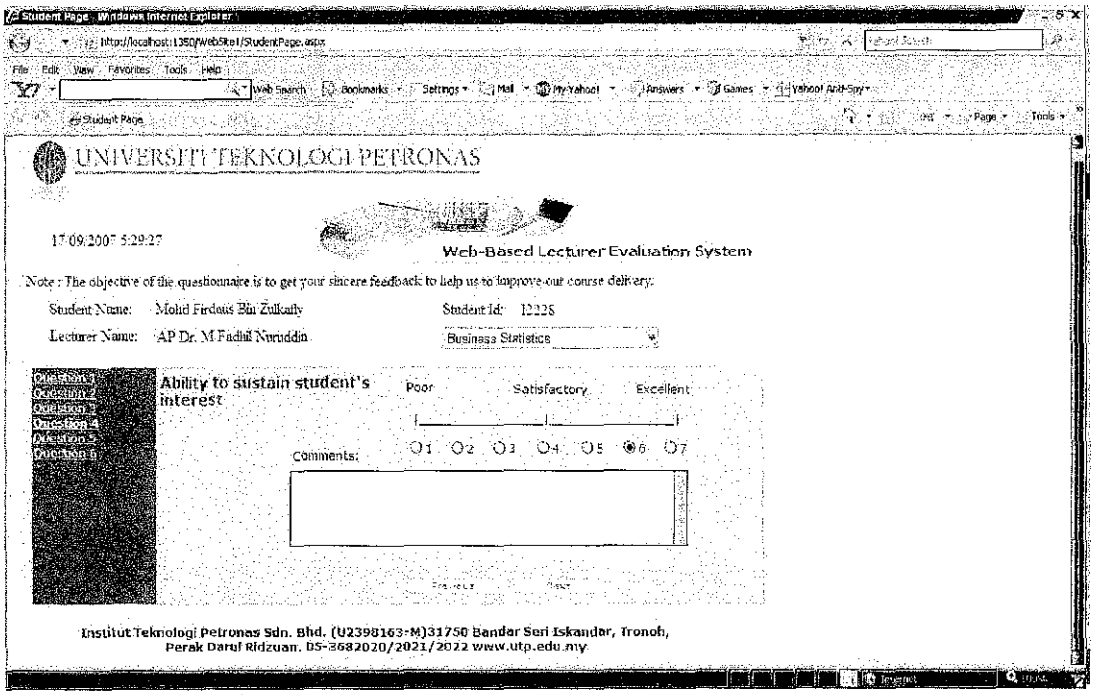


Figure 5.8: Student page will view when the role user is student. Next page question no.4

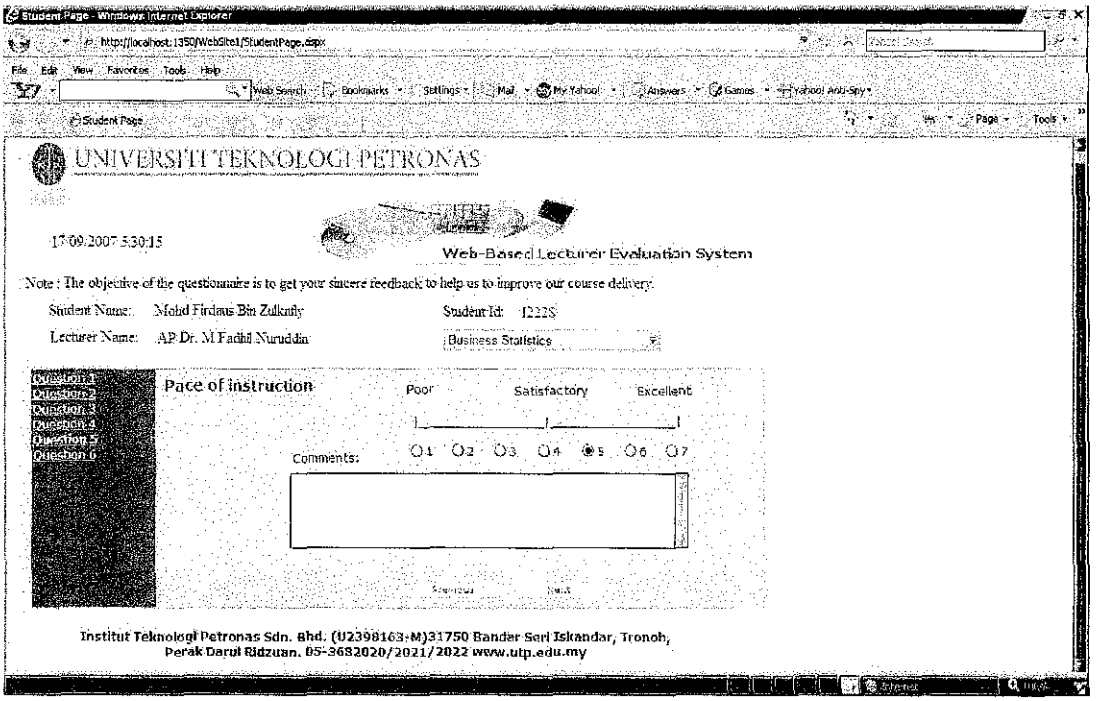


Figure 5.9: Student page will view when the role user is student. Next page question no.5

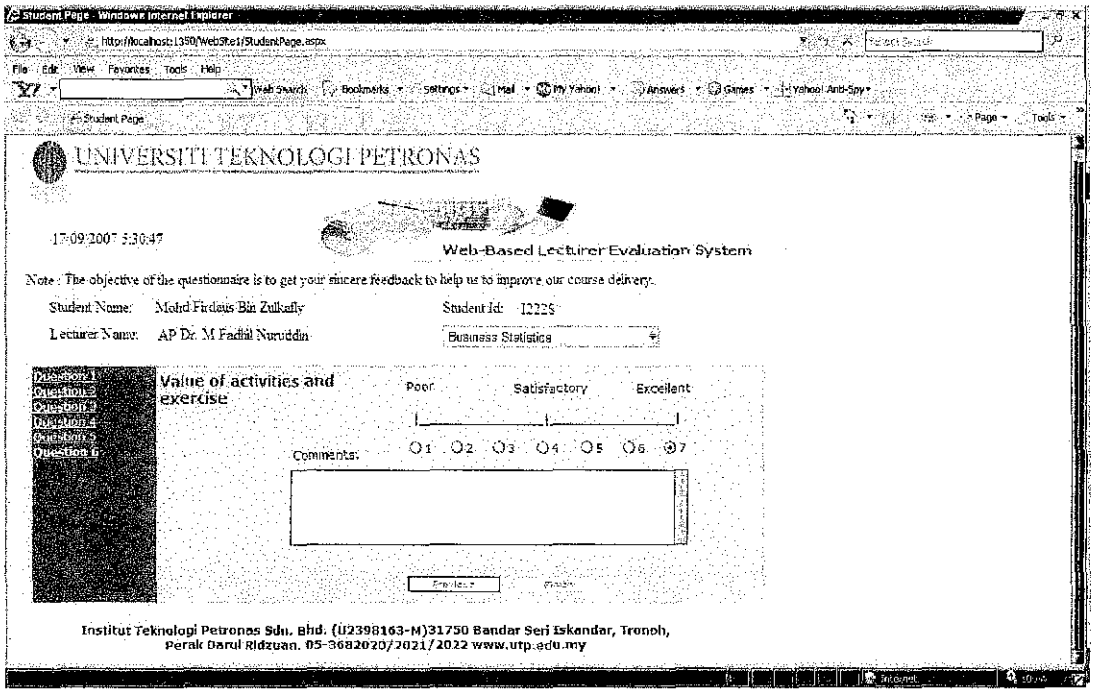


Figure 6.0: Student page will view when the role user is student. Next page question no.6

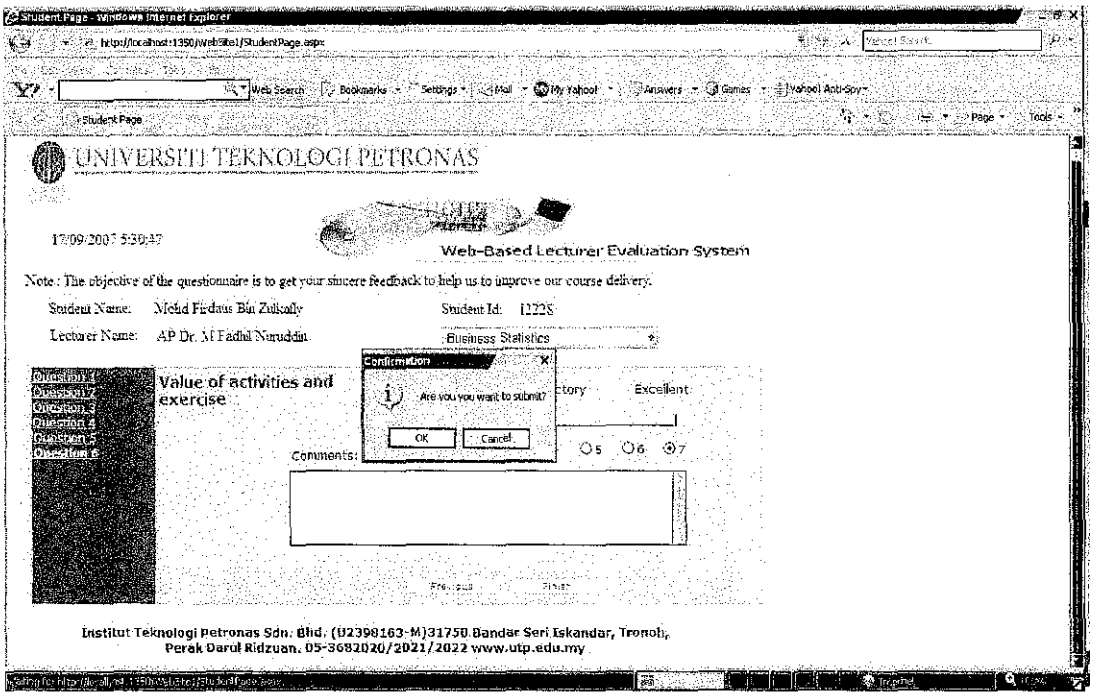


Figure 6.1: The confirmation message box will pop up when the user click button submit.

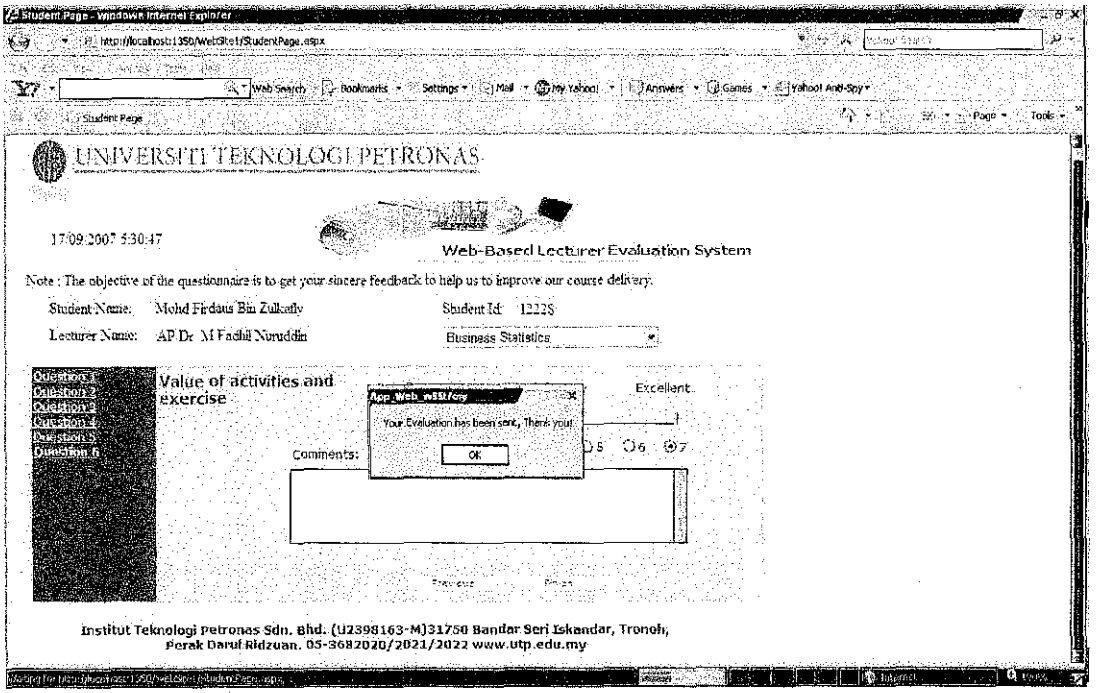


Figure 6.2: The successful message box will pop up when the user click ok button.

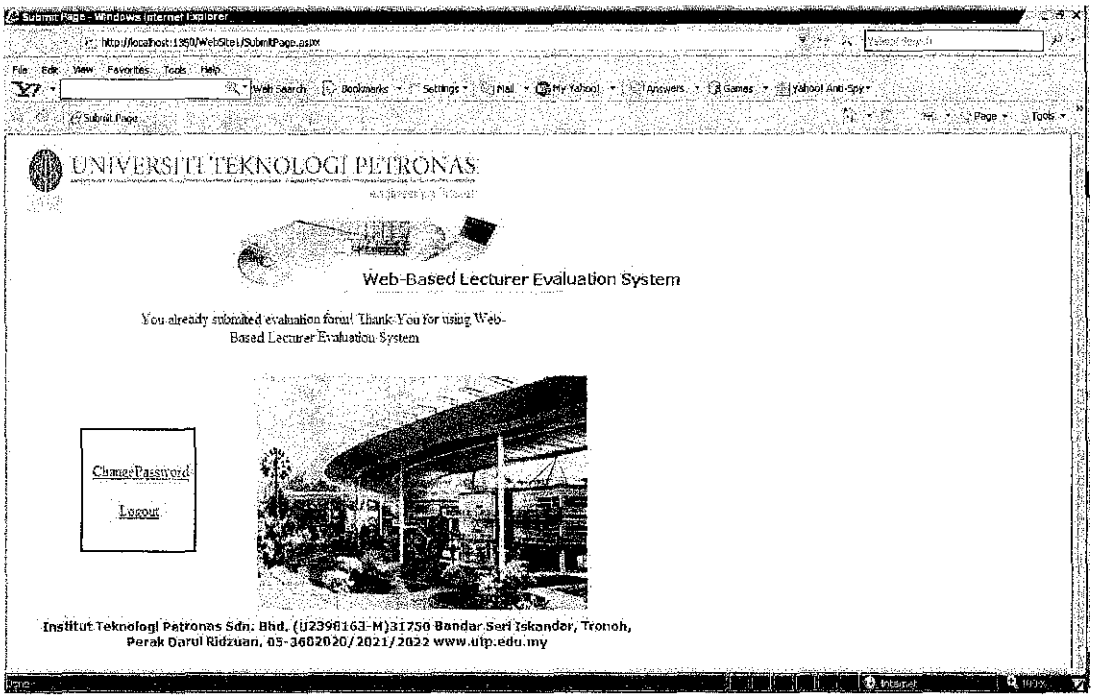


Figure 6.3: The submit page box will pop up when the user try to submit the same form.

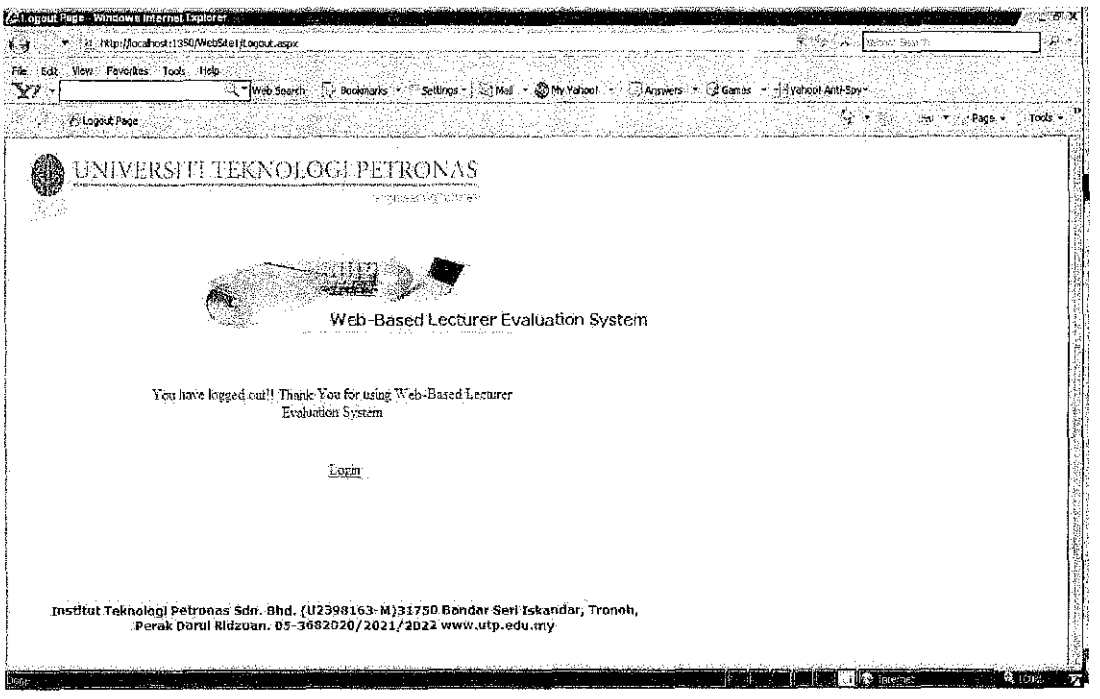


Figure 6.4: The logout page will view when the user click logout button.

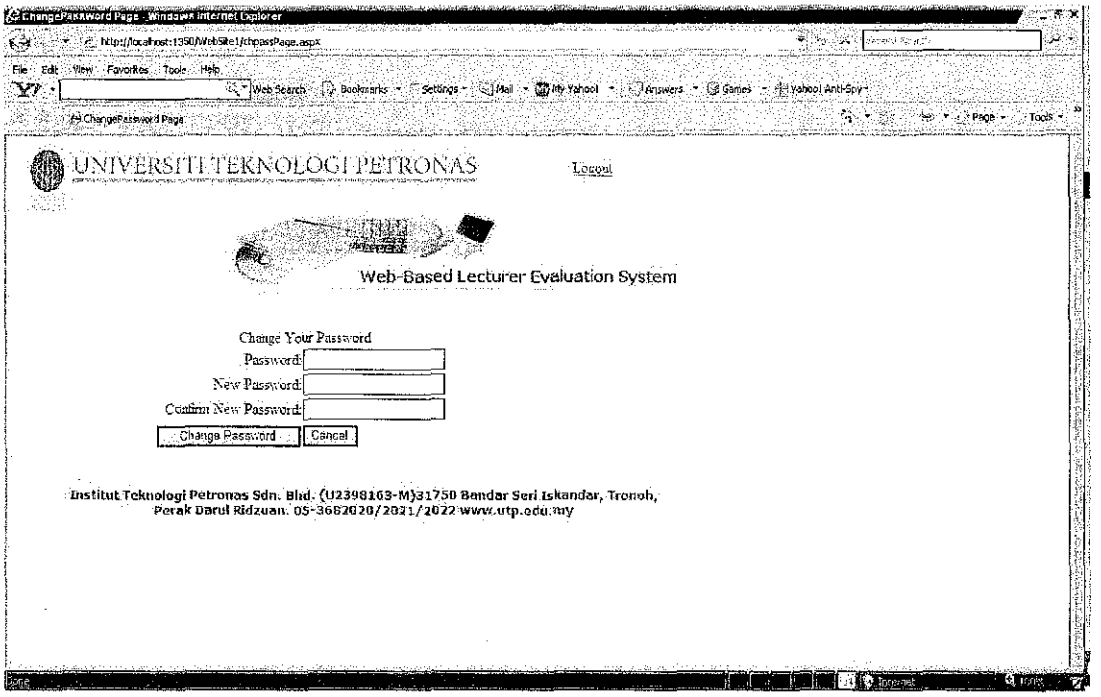


Figure 6.5: The change password page will view when user request to change their password. (This is optional page)

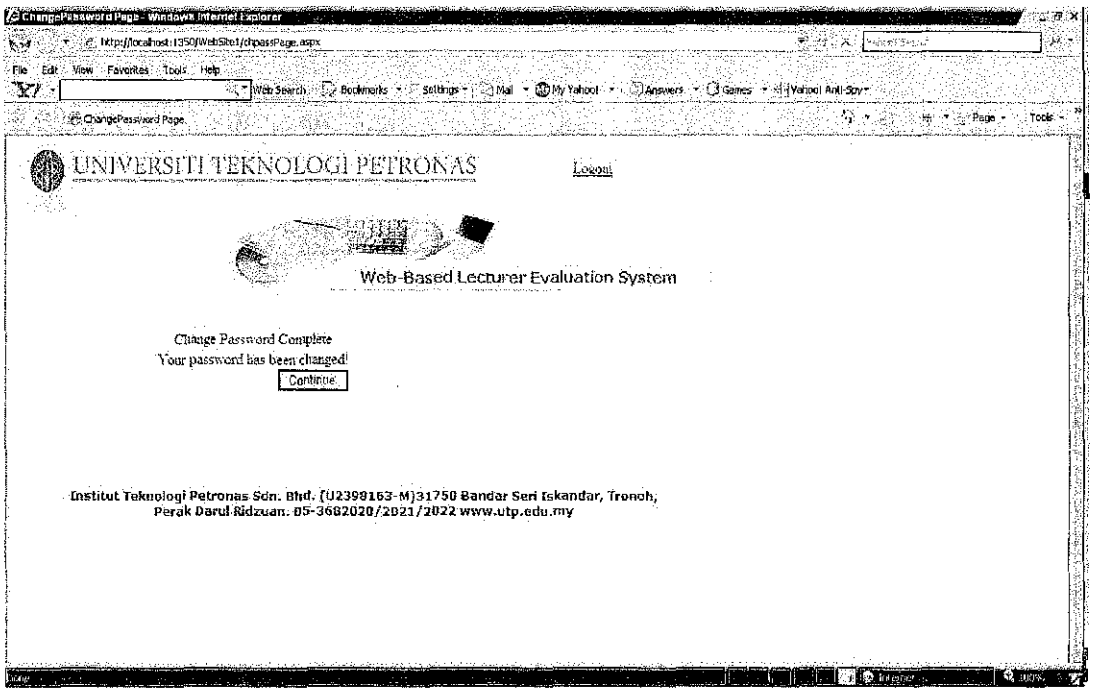


Figure 6.6: The change password complete page will view when user password successful change. (This is optional page)

4.4 New Screen Interface and Final Prototype for new Web base Online Lecturer Evaluation System after testing, error fix and user comment

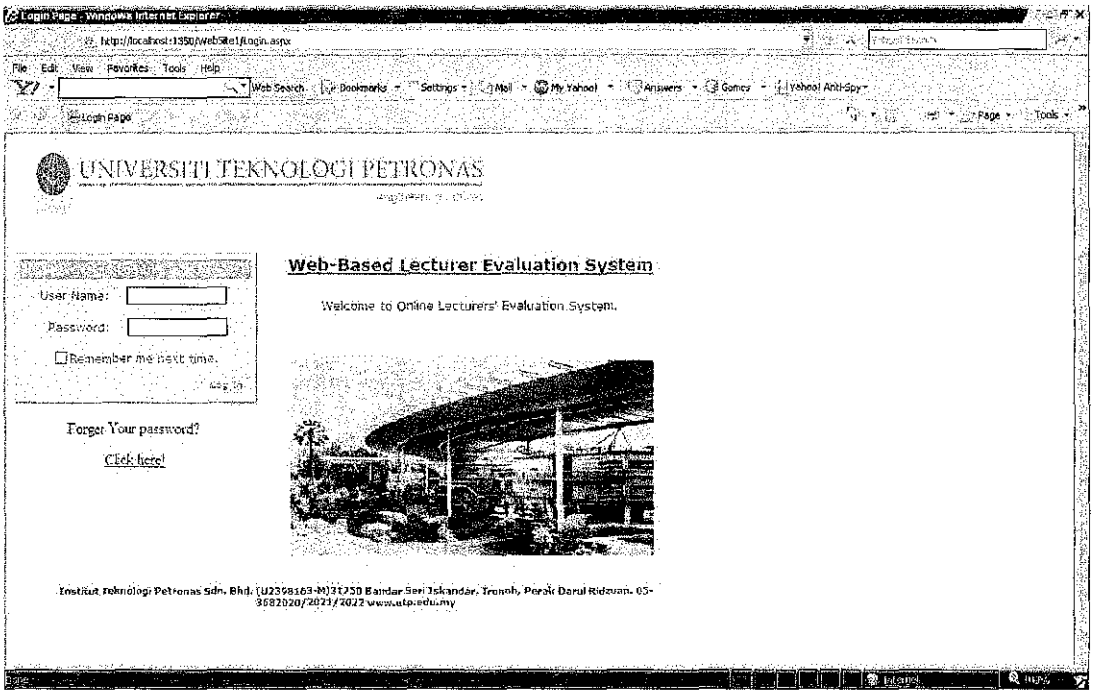


Figure 6.7: This is login page. The login in page provides standard login system. This page also provide link for password recovery. For beginner user also can see login column easily.

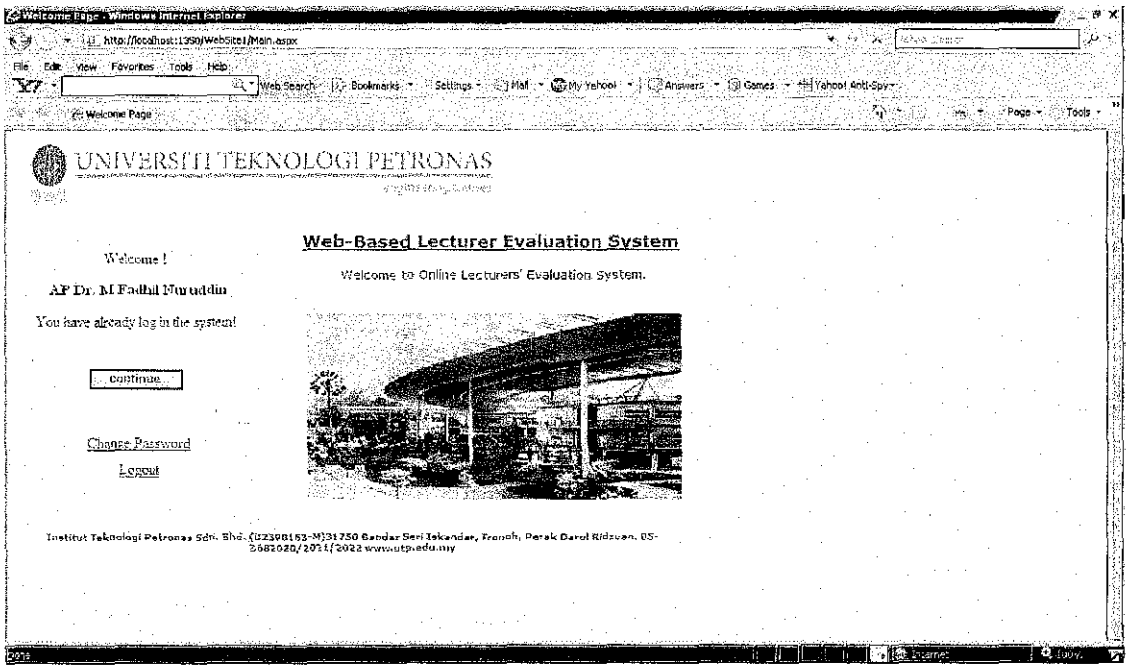


Figure 6.8: After user login

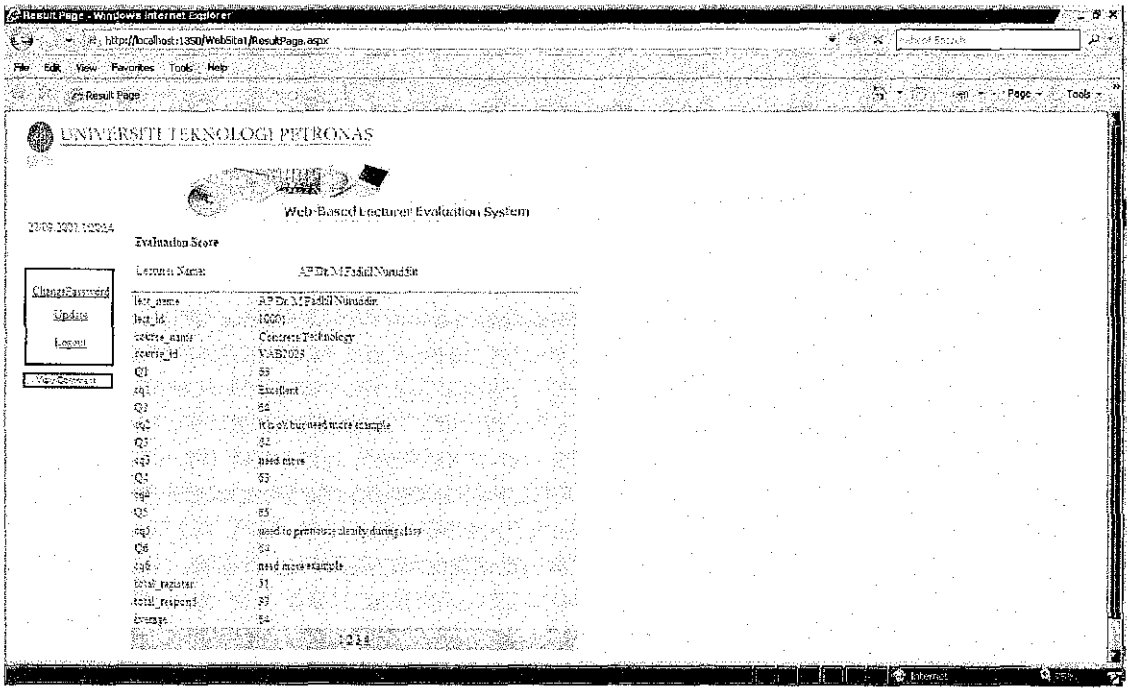


Figure 6.9: This page will be shown if role user is lecturer. The lecturer can only see their own result and student comment only. Cannot see others information. "cq1" column mean comment for question 1.

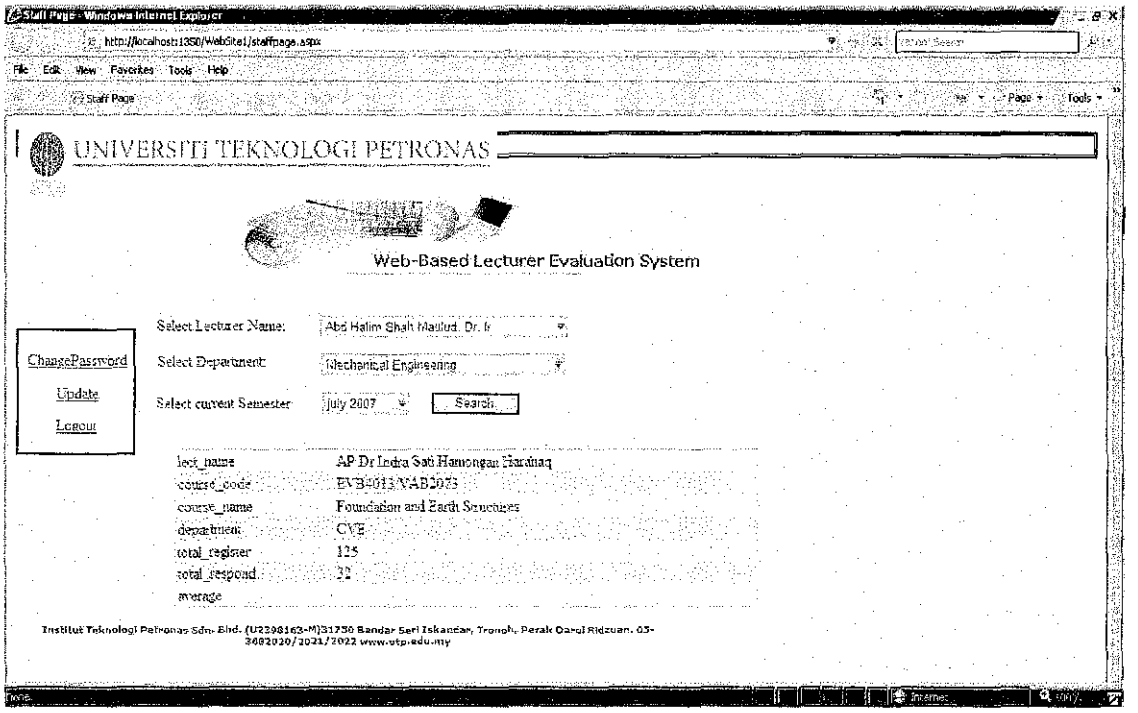


Figure 7.0: This page will show when the role user is staff. They can search and see all the result and update the future data later.

4.5 Discussion Progress

Evaluation Criteria

There will be 7 types of evaluation criteria include in this evaluation form. There is quality of presentation, knowledge on subject matter, interaction with student, ability to sustain student's interest, pace of instruction, value of activity and exercise and overall comment give the student to give their comment about the lecturer. Each evaluation criteria accept overall comment divided to 7 slots and given point minimum is 1 and maximum is 7. The slot are poor is 1, 2, Satisfactory is 3, 4, 5 and excellent is 6, 7. Then the total will calculate to get average point. The minimum average point is 1 and maximum average point is 7.

How the calculation is done?

Point	Q1	Total	Q2	Total	Q3	Total	Q4	Total	Q5	Total	Q6	Total
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	1	4	0	0	0	0	2	8	1	4	2	8
5	2	10	1	5	2	10	2	10	2	10	2	10
6	13	78	6	36	15	90	13	78	9	54	13	78
7	17	119	26	182	16	112	16	112	21	147	16	112
Total	33	211	33	228	33	212	33	208	33	215	33	208
Average		6.4		6.8		6.4		6.3		6.5		6.3

Table 1 – Calculation table

Sample calculation for the knowledge slot column

Average = total (Q1 * point) / Total

= 211 /33

= 6.4

So total average for = (average Q1 + average Q2 + average Q3 + average Q4 + average Q5 + average Q6) / 6 is

= (6.4 + 6.8 + 6.4 + 6.3 + 6.5 + 6.3) / 6

= 6.4

Overall Comments tab criteria

These criteria provide 500 free text words for student to write their comment easier.

Currently progress stage is development and testing stage. The main focus is about updating the content and collecting information to be added inside front end form. This process will be complete when the testing and analysis successful.

The main problem and difficulty face during this development and testing process it is establish connections between database and framework. This online web system is created and still in testing process. The familiarity and understanding in using the online system process is still low. The SET system for processing content is still in development.

The next problem occurred in this development and testing process is about security system. The transaction authorization code (TAC) will not be apply in this web system because it is too complex and not necessary needed by this project web base system. The system will become slow and delay when applying this security system. The cost for establish and applying this security system is costly expensive. So the alternate solution for security is using ASP.NET security provided such as Secure Socket Layer (SSL).

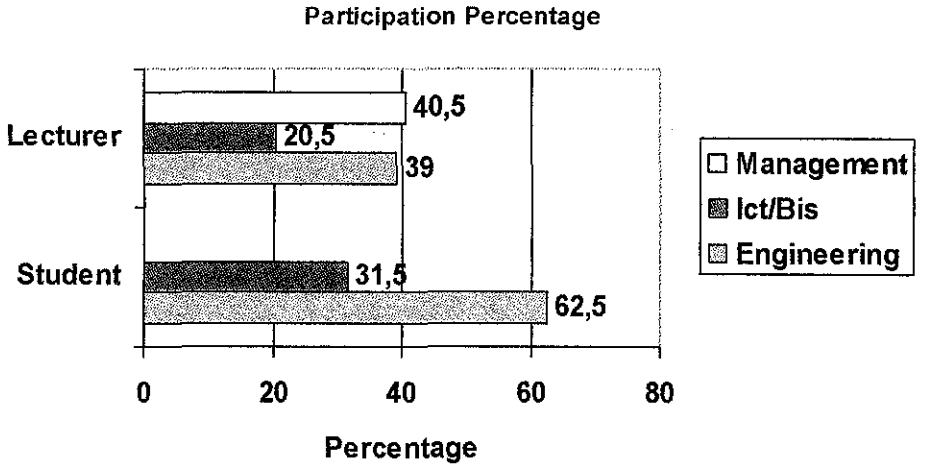
SSL (Secure Sockets Layer) is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral. SSL is an industry standard and is used by millions of websites in the protection of their online transactions with their customers. To be able to create an SSL connection a web server requires an SSL Certificate. When you choose to activate SSL on your web server you will be prompted to complete a number of questions about the identity of your website and your company. Your web server then creates two cryptographic keys - a Private Key and a Public Key. The Public Key does not need to be secret and is placed into a Certificate Signing Request (CSR) - a data file also containing your details. You should then submit the CSR. During the SSL Certificate application process, the Certification Authority will validate your details and issue an SSL Certificate containing your details and allowing you to use SSL. Your web server will match your issued SSL Certificate to your Private Key. Your web server will then be able to establish an encrypted link between the website and your customer's web browser.

The complexities of the SSL protocol remain invisible to your customers. Instead their browsers provide them with a key indicator to let them know they are currently protected by an SSL encrypted session - the lock icon in the lower right-hand corner, clicking on the lock icon displays your SSL Certificate and the details about it. All SSL Certificates are issued to either companies or legally accountable individuals. Typically an SSL Certificate will contain your domain name, your company name, your address, your city, your state and your country. It will also contain the expiration date of

the Certificate and details of the Certification Authority responsible for the issuance of the Certificate. When a browser connects to a secure site it will retrieve the site's SSL Certificate and check that it has not expired, it has been issued by a Certification Authority the browser trusts, and that it is being used by the website for which it has been issued. If it fails on any one of these checks the browser will display a warning to the end user letting them know that the site is not secured by SSL.

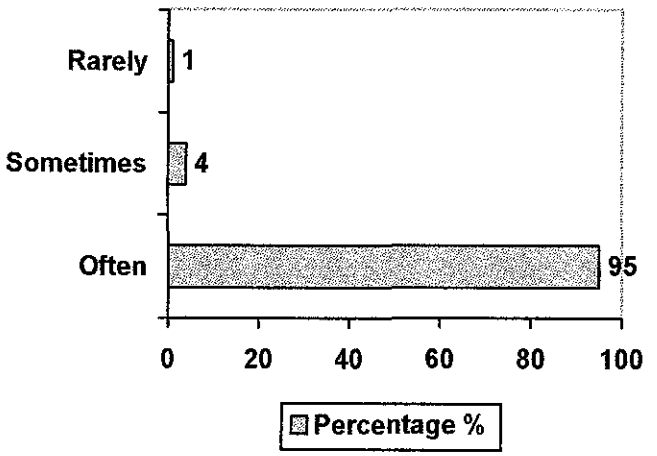
4.5 Questionnaire and Interview Result

1. Which department do you come from?



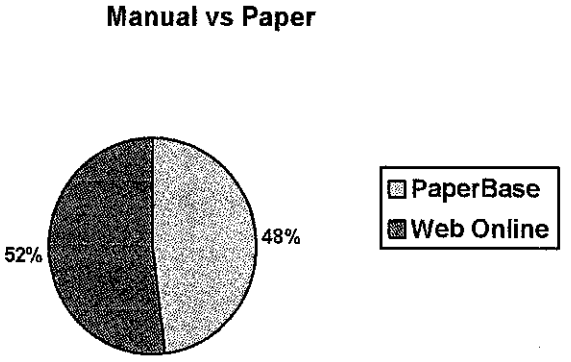
The result shows that more participation from engineering because population of engineering student is more than information student.

2. How often are you using the internet?



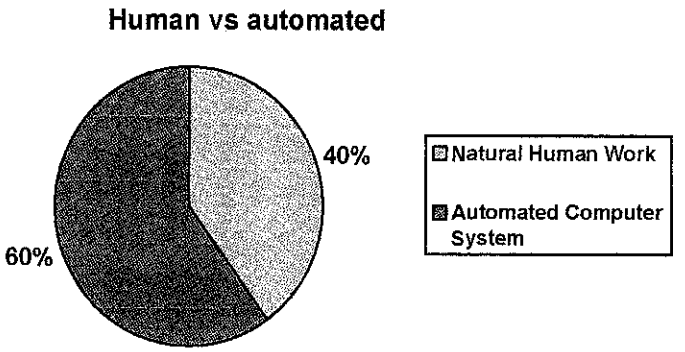
The result show that every student familiar with internet and using internet more often.

3. Which do you prefer the best choice doing evaluation process using



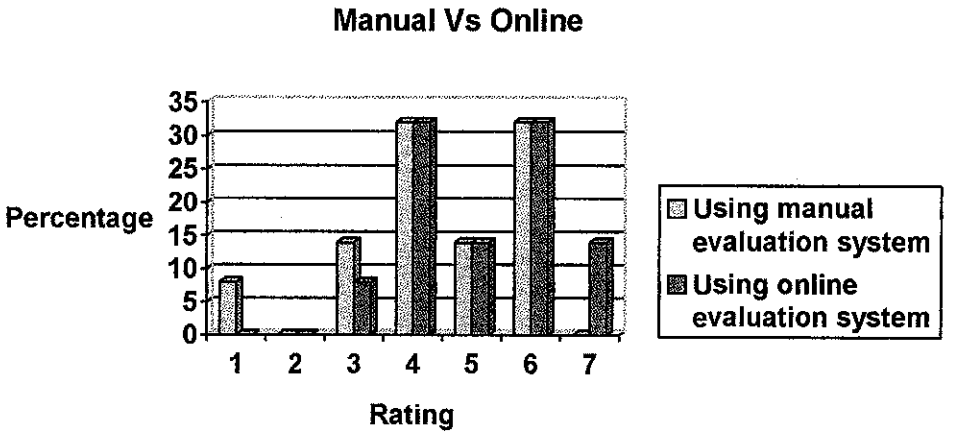
The result shows that student is more likely using standard paper base.

4. Which one do you think is the faster way to do evaluation process?

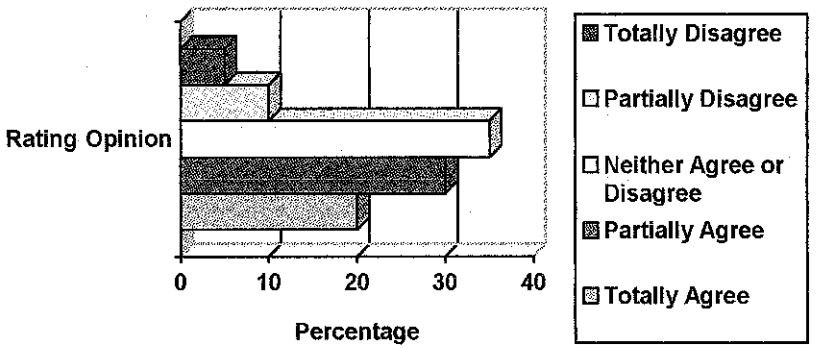


The result show that 60% agree that using automated system is faster than manual.

5. Do you think using manual evaluation system and online evaluation system is

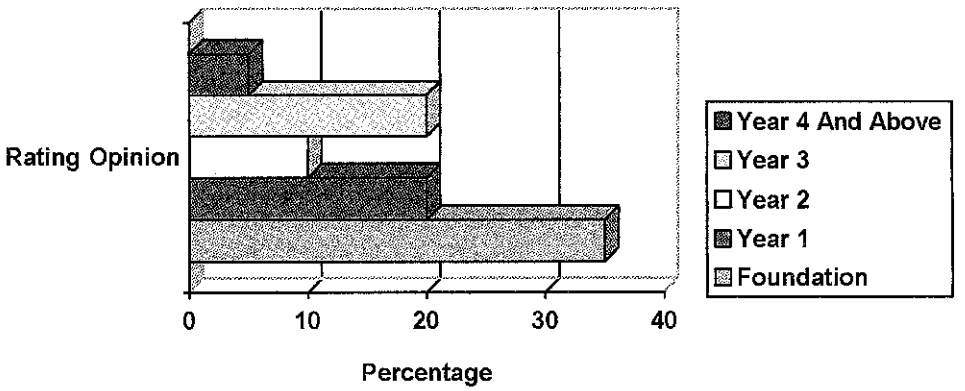


6. Do you think that doing the evaluation system is the best way to improve our lecturer performance?



The result shows that average is neither agree or disagree about using this evaluation system.

7. At what year student should evaluate the lecturer performance?



4.6 Interview

This interview session is done on Wednesday, 8 March 2007 at Academic Central Unit. The person involve in this interviewing session is Pn. Wan Normaizah Mahamud (Executive Technology & Development Unit) with En. Shamsul Rahman (New Executive Technology & Development Unit). The objective of this interview session is to know and get information about how they do manual system and get their suggestions.

Question1: Are the UTP currently using a manual evaluation system?

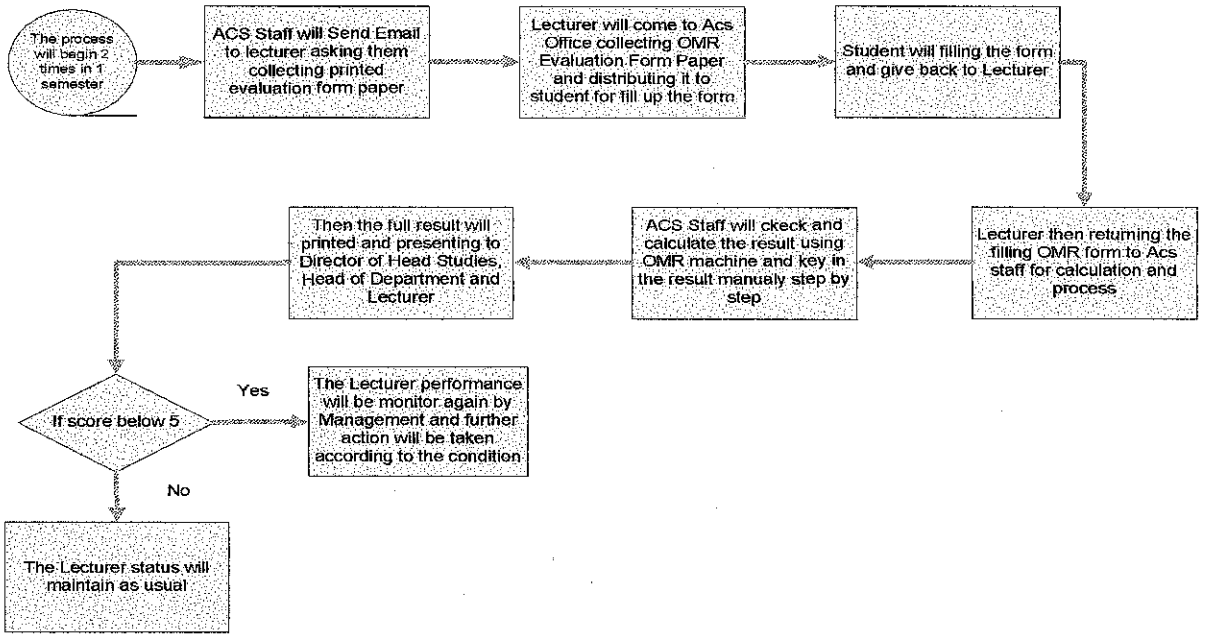
Answer: Yes. Still using pink color omr sheet

Question2: How long the time consuming for doing this manual evaluation system?

Answer: About a month, sometime delay because the omr machine failure and human error during key in the data.

Question3: Can you explain the process of how the manual evaluation system works?

Answer:



Question4: Do you think it is better if we replacing the manual paper base system to online system?

Answer: Yes. We already request and propose to management for providing us an online evaluation system to replacing and old manual system. But our proposal is still depend and hold by management.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 RELEVENCY OF THE OBJECTIVES

This project paper is about creating an online web evaluation system and automated system known as SET (Student Evaluation of Teaching) system. The main objective of this system is to replace manual paper based method to an online web evaluation system is successful implemented. The other option such as the security and intelligent system is still not completed.

The initial development of this set system mostly is focusing on the planning, analysis and design process. The prototype system developed in the early stage is concentrating on the basic online form for graphical user interfaces (the systems front-end). The basic function such as login and input database is successful, but the other function such as security, integrity login person and intelligent not complete and can be improve. Then the SET system originally will receive and update the data input automatically. The prototype for front-end is in beta test, the connection establish with database system is still in testing process, so the security testing cannot be proceed.

This SET system also will automate processing data entry, organize it and give printed output when requested by staff or lecturer. This objective will be optional if the system cannot complete according the time given.

Currently, the database manipulation for system is still in process and cannot be done during time given because need more analysis and research about coding language.

5.2 FUTURE WORK FOR EXPENSION OF CONTINUATION

There are many aspects of this system that can be improved for better services and better quality online software system. Currently, the system offers limited functionality. The SET system can be improved from a management system to be an automated system. However, installing difference engine may take a lot of work and experiences in the programming languages, as well as understanding of the expert system internal working.

Another part of the system that can be improved is the database manipulation. The current system database has limited data, and the system analyzing capabilities are based on pre-determined data input. The database can be designed to hold more data, and can also accept new data into the database, and including it in the analyses to come up with the problems or solutions. The system database can also be improved in a way where experienced and knowledgeable user can add data into the system. This particular function may require authoritative access to the database, or the system can provide a function that can capture all the related and relevant data into the database. The database structure is upgradeable and giving advantages for future change and maintenance. The database language is using Microsoft SQL Express which is universal and can be compatible with other database language such as Oracle 9i and Mysql. The major problem occurred during this project are from the basic establishing database. From start the foundation such as key name, data name, primary name must be clearly stated before proceed to creating database table. This is because if the basic is not configuring systematically, it will be problem when the database table created and input in the system.

The other recommendation from observation, this system will provide log and can be upgraded later. These system also using standard language code like ASP.NET which easier to learn for other programmer to continue and renovated this system. All the basic step and code language in this system using current and standard programming language code such as ASP.NET and Microsoft SQL Server 2005, so this system can be follow up current problem as well as standard programming language. Every each company is also using this standard code, so it is easy to them to accept this system for their business purpose.

The other suggestion is this system can be secure and using standard security provided from Microsoft. The Asp.net 2 already provided the online security such as SSL (Secure Socket Layer), so the security can be easily installed and implemented. The other Asp.net also has special code language to track and communicated with user workstation, this will be interesting and good for this system. The encryption code to transmit online can use xml data source. This xml data source also can communicate with database.

The extra option this system is can be use and accessible by blinded person. It is because this system can be read by windows narrator provided by Microsoft Operating System, so it is easy for blinded person who cannot see, they can hear and using sound to using this system.

Other optional recommendation to improve this SET system presentation layer by adding Artificial Intelligent Agent. This Artificial Intelligent Agent can be useful to provide information and answer the requested question online and faster. This Artificial Intelligent Agent code can be compatible with Microsoft Visual Studio 2005 and ASP.net.

The last option recommended for this SET system is provide good result compilation such as graph performance, nice comment page, so they can monitor their performance and get feedback. This SET system can access the Microsoft Excel, so it is easy to get data and create graph using Microsoft Excel and send back the graph picture to database.

This project specialty is propose to create continuous, so this SET system in future can be upgraded and change according to the current requirement.

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APPENDICES

Project Work plan

	Duration
1. Planning	14 days
1.1. Project initiation	12 days
1.1.1. Create system request	2 days
1.1.2. System proposal	3 days
1.1.2.1. proposal approval	7 days
1.2. Project management	2 days
1.2.1. Create work plans	2 days
2. Analysis	60 days
2.1. Analysis strategy	24 days
2.1.1. Analyze as-is-system	12 days
2.1.2. Analyze to-be-system	12 days
2.2. Requirements gathering	6 days
2.2.1. Do interviews	3 days
2.2.2. Do questionnaires	3 days
2.3. System security research	30 days
3. Design	100 days
3.1. Design interface	25 days
3.2. Architecture design	25 days
3.3. Database and intelligent system design	25 days
3.4. Create Program design and security	25 days
4. Implementation	28 days
4.1. Construction	7 days
4.2. Installation	1 days
4.3. Program testing	7 days
4.4. Security testing	7 days
4.5. Maintenance	7 days
Estimate time for completing the online system	202 days

Gantt chart

ID	Task Name	Duration	Start	Finish
1	Progress Report 1	2 days?	Thu 09/08/07	Fri 10/08/07
2	System Design Development	10 days?	Fri 10/08/07	Thu 23/08/07
3	System Implementation for testing	19 days?	Fri 24/08/07	Wed 19/09/07
4	Progress Report 2	6 days?	Wed 29/08/07	Fri 21/09/07
5	Finalization	2 days?	Fri 21/09/07	Mon 24/09/07
6	Seminar Progress Report	5 days?	Mon 24/09/07	Fri 28/09/07
7	Edx	2 days?	Wed 03/10/07	Thu 04/10/07
8	Submit Final Report	1 day?	Fri 05/10/07	Fri 05/10/07
9	Oral Presentation	5 days?	Mon 22/10/07	Fri 26/10/07
10	Submit Dissertation	1 day?	Fri 02/11/07	Fri 02/11/07