

**STUDENT PLANNING AND ADVISORY SYSTEM
(SPAS)**

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DECLARATION OF ORIGINALITY

I declare that this report entitled “**Student Planning and Advisory System (SPAS)**” is my own work except as cited in the references. The report has not been accepted for any degree and is not being submitted concurrently in candidature for any degree or other award.

Signature : _____

Name : _____

Date : _____

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ABSTRACTS

This project is an e-learning tool project for university which especially designed to Universite Tunku Abdul Rahman for planning and academic advice purpose. Due to the incensement of education quality, develop a planning and advisory system is to help university increase the student quality. The Student Planning and Advisory System targeted to solve the problem what students, lecturers and officers faced which provided useful functionality to help the target audiences to overcome the problems. The functionality involved planning tools, communication tools, and management tools that manage by officer (administrator). The methodology that applied in this project is the SDLC waterfall model, the progress of project will divided to 4 different phases, which are planning, analysis, design and implementation. In system development, the system is developed by PHP programming and MySQL database as this two development tools are open source and most common use in nowadays.

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CHAPTER 1 INTRODUCTION

1.1 Introduction

Planning and academic advice is important for every student, with a good academic advice can help students enhance their personality and disciplinary. Besides that, good advising will bring student to clarify, plan, implement and monitor their progress of study which consist their values, goals, interests and abilities.

Develop a “Student Planning and Advisory System” are bring the university toward e-learning environment and use it to guide students to plan in their studies and monitor their academic progress.

In Chapter 1, it will cover the UTAR background issue for the academic advice, problem statement that what lecturer, student and officer faced, objective of project, scope of project, definition of term for student planning and advisory system, and overview of project.

1.2 Background Issues

University Tunku Abdul Rahman (UTAR) has four branches in Malaysia, each branches have own major faculty. In University Tunku Abdul Rahman (UTAR), each student is assigned an academic advisor from 1st year to 3rd year or 4th year generally. However, academic advices are assigned according to their respective major program directly started from first year semester 1.

Normally one advisor has to handle 30 students or above for academic advice. The students can consult their academic advisor on both academic and non-academic matters. Academic matter including teaching and learning, non-academic matter which is activities, facilities provide, discipline and etc. The responsibilities for academic advisor are including advice students on subject registration, matters arise from examinations and student affairs. By the way, academic advisor have to help students plan their studies and monitor their academic progress until they graduate. In

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addition, academic advisors will also assist students in solving problems that may affect their studies and refer them to the relevant authority when necessary.

Besides that, any information what student want to know must getting the information from faculty office, the information such as previous semester result, subject availability.

1.3 Problem Statement

For the Student Planning and Advisory System, it has to concern in three area of role which is students, lecturers (advisor), officers

Students (Advisee)

1. Inconvenience

UTAR had target that every student has to meet up with their academic advisor by every semester for getting advice and plan their academic career. By the way, students have to sending email to make appointment before consult their advisor by face-to-face. Besides that, students have a lot of question to ask faculty officer when they facing problem or getting confuse for their course related matter.

2. Inaccuracy Information

All information what student needs must getting from faculty office. Sometime different officer will giving different information to student, it might bring misunderstanding to students

3. Confuse

Students will easily forget their previous CPA and current CGPA. Besides that, they always getting confuse when deciding to repeat the subjects. Students don't know that after repeat what result they will get, so they will consider it is worth or not. Sometimes students want to know what degree they can get if they take certain subjects, and sometimes they want to know why they cannot take a particular module or be awarded a particular semester. Besides that, in the UTAR course structure has a lot of elective subject waiting for student to decide what they need take.

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Lecturer (Advisor)

1. Inconvenience

Since students have to meet up with their academic advisor, lecturers have to arrange their time to meet up with their advisee one by one.

2. Time Consuming

Lecturer have to attend class for teaching and also have to handle 30 student or above for academic advice. They not enough time to make appointment with each their advisee, sometime they cannot individual to giving advice to student.

Faculty officers

1. Time Consuming

Each faculty in UTAR only has around 10 officers, it is not enough to do the documentation manually and answer questioning that asking from students. In addition, some of the students will asking similar question and the officer have to take time to answer and explain to them again and again. It was considering in duplicate work already, so that it is waste time.

1.4 Objectives

➤ To bring university toward e-learning environment

E-learning environment can bring convenience to students, lecturer and officer. Student can get the information easily such as course structure, subject name, unit code, credit hour, previous semesters CPA, current CGPA and etc.

Besides that, student can use system automatic calculate the forecast CGPA for students have a target for their result and future studies. For lecturer, they can share their experience by using the e-learning system. Officer no need answer the similar duplicate question again and again.

➤ To increase positive outcome and responsibility in academic advice.

Advisor can through the system provide link for share information and experience that he/she want to share and encourage to all his/her advisee student. By the way, student can get advice by academic advisor easily from the system as well.

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- To bring convenience for discuss career opportunities with students
Student and their advisor can use communication tools for discuss their career opportunity in the system. Therefore student can detract to make appointment to meet up with advisor for discussion and it is the most convenience way between student and lecturer. In other ways, student can through the system make appointment and no need sending email to advisor anymore, because system is provide calendar tools to make appointment with advisor.
- To increase work efficiency and make it systematically
Provide correct information for student through the system, student no need going to faculty office asking question anymore. Any information that related with faculty office must provide in the system.

1.5 Scope of Project

- Target Audients
Develop Student Planning and Advisory System is address to students and lecturers who are the flexi student that study or work in university/colleges. Nowadays, much more university and collages is executing the flexi course structure so students can randomly to add/drop subject in each semester. A lot of university also involves academic advice to improve the quality of student by getting advice from lecturers. When students face the problem may look for lecturer to help them solve the issue. By the way, student can learn from lecturer. Besides that, students will get the information from faculty when they need the information so that the system in order related to the faculty officer. It will bring convenient to faculty officer.
- Planning tools
Develop a system that provides planning tools functional to plan and implementing the progress of student's studies. In order to help students have a target for their studies. Besides that, they can manage their time well during 3 years degrees in university/colleges. By the way, advisor can via the system know that how their advisee plan studies for 3 year in university and give the recommendation and suggest them directly from the system at the same time.

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With the good planning and advice, students may much easier to reach the goals and complete the 3 years/4 years degree.

➤ Academic advise

Academic advice is a development process in university/colleges which bring students to clarify, plan, implement and monitor their progress of study, it is decision making process also that responsibility between student and advisor, the advisor has to communication and coordinate with student to share their learning experiences. The system is emphasis on academic advice, since every student have to getting advice by advisor, and make appointment is always the most trouble issue, develop SPAS is to help students and lecturer to resolved this kind of issue. On top of that, advisors have to communication and take care of their advisee on both academic and non-academic matters. The system provides communication tools to help between students and advisor communicate easily to enhance the performance of academic advice.

1.6 Definition of terms

Academic advice

It is based in the teaching and learning mission of higher education, is a set of student learning outcome (*NACADA, 2006*). Academic advice is a development process which bring student to clarify, plan, implement and monitor their progress of study which consist their values, goals, interests and abilities. It is decision-making process also that responsibility between student and advisor, the advisor has to communication and coordinate with student to share their learning experiences.

E-learning (Electronic Learning)

It is essentially the computer and network enabled transfer of skill and knowledge and comprises all forms of electronically supported learning and teaching (*Tavangarian D, 2004*). E-learning refers to using electronic application and processes to learn and it especially the content is delivered via the internet or intranet such as UTAR WBLE and web portal. Besides that, e-learning is defined as “the use of technologies in learning opportunities”.

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CGPA

Cumulative Grade Point Average is standardized measurements of varying levels of comprehension within a subject area (*Wikipedia, 2010*). The CGPA is determined by dividing the sum of all quality point earned by the sum of credits attempted for all the semesters. The range from 0 to 4.0 and awards are based on CGPA achieved by the candidate as

- First class from 3.5000 to 4.0000
- Second upper class from 3.0000 to 3.4999
- Second lower class from 2.2000 to 2.9999
- Third class from 2.0000 to 2.1999 (*UTAR Intranet, 2007*)

1.7 Outline of the remainder of the thesis

Chapter 1 – Introduction

Introduce the student planning and advisory system. Identify problem statement that unresolved issues and basic difficulty. Define the objective and scope of the project to emphasizing practical outcomes and solve the problem statement.

Chapter 2 – Literature Review

Research and study the information to discuss different type of tools that going to be use in development and comparing the existing or similar system. The research literature review will discuss and compare communication tools in web application, computer system security, programming language and web1.0 to web3.0.

Chapter 3 – Methodology

Use questionnaires or tests to identify the scalability of system and describe the methodology or approaches that will be apply in the project such as System Development Life Cycle (SDLC) and waterfall.

Chapter 4 – Findings

Identify the functionality of the project system and describe the system functionalities. Use table or chart to present the finding of testing when appropriate.

Chapter 5 – Summary and Recommendation

Summary the project covered from chapter 1 to 4, list out the importance of the study that may overlap with the statement of problem situation. Give some recommendation to improve the weakness of system for implementation or additional future research enhancement.

1.8 Conclusion

Develop Student planning and advisory system to help university/ colleges toward E-learning university environment. University will along with the e-learning environment become more strong and strong. It will bring the studying atmosphere to motivate student to study as increase the motivation of study.

On top of that, along with the e-learning environment, it will be enhancement in education management such as reduce the paper work and documentation. The faculty officers can abate a lot of duplicate work. For example, answering the question from the student. Besides that, with the student planning and advisory system it will increase the quality of student which includes time management, result and their moral. Students through the system to plan their studies progress, already show that how they manage well on their time in future. Along with the planning tools, advisor will give advice and monitor at the same time. Therefore, the results of student are going to be improving from the planning and academic advice. When talk about moral, academic advice are not only giving advice on academic matter. It is consist on non- academic matter also which is the discipline, so student will along with that to increase their personality and disciplinary.

The student planning and advisory system is important to help student to clarify and monitor their study which consist their values, goals, interests and abilities, in order to increase the quality of student such as moral, result and their time management.

The scope is developing a planning tools and a communication way for academic advice which address to student, lecturer and faculty officers who are the flexi student and who work in university. The objective of the system is increase the positive outcome and responsibility in academic advice to solve the common issue

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that happen in student academic matters. On top of that, bring convenient to increase the work efficiency and make it systematically on education management.

In conclusion, with the student planning and advisory system in university it will bring university toward to e-learning environment to become strong and strong. It can be help university to getting famous and better popularity in Malaysia and global.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

In chapter 2, it is research and studying the information to discuss different type of tools and technology that going to be use in development and comparing the existing or similar system. The research literature review will discuss and compare communication tools in web application, computer system security, programming language and web1.0 to web3.0.

2.2 Historical Background

The Student Planning and Advisory System is emphasis on planning and academic advice. Actually, it is an existing idea and functionality in UTAR web portal. But the academic advice function in UTAR portal is only listing the adviser information and the status of consultation. The more is provide to adviser update the status after finished the consultation and students can check the consultation details from there. The consultation details such as data time, duration, review of academic performance, co-curricular activities, overall performance, problem encountered and advice given from adviser. Student not able to modify the status from the web portal, which mean any mistake or problem must contact adviser through the email.

For student planning, it is new ideas and the web portal is only listed the course structure that fixed by UTAR syllabus for student refer. Started from last year, UTAR course structure is changed from fixed to flexible, so students is always selecting the subject without planning and advice by academic adviser.

2.3 Purposes to be served by review of research literature

2.3.1 Computer System Security

Computer System security is the branch of Computer Science Risk Management, it is capable of properly address to security issues of computer and named Security Engineering also. The purpose of security is to secure particular computer system from any kind of cybercrime. Therefore, it is aim to protect data, keep up interaction and provide uninterrupted services. The computer security is become important today since computer technology is encircle the world, so it aims at securing the integrity, availability and confidentiality of vital information stored in computer such as the important details about financial status and valuable data/ information of organization. Expect that, most computers is connected to other computers through the internet today so a computer is exposed to all kind of threats, With the expansion of cyber space the threats have significantly multiplied and the need of securing computer intensified.

Techniques are used to fully secure computer system such as Automated Theorem, Cryptographic and Authentication (*Map of World, 2007*).

2.3.1.1 Cryptographic

Cryptographic is used to secure the confidential information. It is mechanism for information hiding and verification. It is the process of converting the important data and information into a cipher text and covert it again to decryption when it reaches it is authorizing user (*WifiNotes, 2010*). The process of encryption and decryption is the main mechanisms which is work and guide the flow of data.

The four main goals of using cryptography are confidentiality/ privacy, integrity, authentication and non-repudiation (*WikiBooks, 2010*). Confidentiality/ privacy mean it is ensure that no one can read the message except the intended recipient. Integrity means it is for assure the recipient that the received message has not been altered in any way from the original. Authentication is helpful in providing sufficient evidence of the true identity of data. Non-repudiation is a mechanism to prove that the sender really sent the message.

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Cryptography is not only protects data from theft or alteration, it can also be used for user authentication. Generally, there are three type of cryptography schemes used to accomplish these fours goal of cryptography, such as secret key cryptography (symmetric), public key cryptography (asymmetric) and hash functions (*Gary C. Kessler, 1998*).



Figure 2.1 Secret Key Cryptography

Secret key cryptography is also called symmetric cryptography. It is uses a single key for both encryption and decryption. The sender uses the key mean some set of rules to encrypt the plaintext and send the cipher text to receiver. The receiver applies the same to decrypt the message and recover the plaintext. (*Gary C. Kessler, 1998*).



Figure 2.2 Public Key Cryptography

Public key cryptography is also called asymmetric cryptography. It is uses two keys, one key for encryption and another for decryption. One key is designated as public key and maybe advertised as widely as the owner wants. Another is designated as private key and never revealed to another party. It is straight forward to send messages under this scheme. For example, A want send a message to B, A encrypts come information using B's public key. B decrypts the cipher text using his private key. This method can be used to prove who sent a message also. For example, A can encrypt come plaintext with his private key, when B decrypts using A's public key, B knows that A sent the message and A cannot deny having sent the message. (*Gary C. Kessler, 1998*).

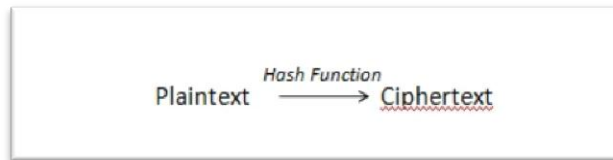


Figure 2.3 Hash function

Hash function have no key, it is uses a mathematical transformation to irreversibly “encrypt” information. A fixed-length hash value is computed based upon the plaintext that makes it impossible for either the contents or length of the plaintext to be recovered. Typically, it is used to provide a digital fingerprint of file, often used to ensure that the file has not been altered by virus. Hash functions are common employed by many operating systems to encrypt passwords and provide a measure of the integrity of a file. (*Gary C. Kessler, 1998*).

The process of using cryptography is beneficial only if the secret is refrained from getting copied or impersonated. It is used to conceal or hide crucial information, this mechanism helps in preventing the leakage of important information from network and for those unauthorized users are not allow to enter into network. It also benefits to provide the authentication of users over electronic data transfer for example in a digital signature. Mostly, the use of cryptography is beneficial for Banks and Law Company, and it can also help the investigation agencies to keep their data secure.

2.3.1.2 Authentication

Authentication is the process by which user credentials are validated to access data or enter a secure area, usually based on a username and password. But it is included three categories, based on what are known as the factors of authentication which is ownership factors, knowledge factors and inherence factors. Ownership factor is something that user have such as smart card, IC, security token. Knowledge factor is something that user know such as password, personal identification number and PIN number. Inherence factor is something that user are, it is biometrics such as voice recognition, face detection, fingerprints and DNA (*O'Reilly & Associates, Inc, 1999*). Authentication is equivalent to show IC or passport at the ticket counter at the airport.

CHAPTER 2: LITERATURE REVIEW

When elements representing two factors are required for identification, it can be considered as two-factor authentication. For example, ATM machine is required ATM card (something the user has) and PIN number (something the user knows) only can access to do the transaction. Two-factor authentication requires two independent ways to establish identity and privileges. The method of using more than one factor of authentication is also called strong authentication.

With the traditional password authentication, it is requiring only one factor in order to gain access to a system. Password is a secret word or code used to serve as security measure against unauthorized access to data. Basically, it is managed by the DBMS (database management system). However, a computer only can verify the legality of the password and not the legality of the user (*Willy Denoyette, 2010*).

In security system, authentication is distinct from authorization, which is the process of giving individuals access to system objects based on their identity. Authentication merely ensure that the individual is who he or she claims to be, but says nothing about access right of the individual.

2.3.1.3 Implementation

Table 2-1 Cryptographic and Authentication

	Cryptographic	Authentication
Software verification	✓	✓
Hardware verification	X	X
User Identify	✓	✓
Information Hiding	✓	X
Manage by DBMS	X	✓
Common use	X	✓

On top of table is listed the 2 technique of computer system security. It shows the functionality for each technique. Authentication is most suitable for Student planning and Advisory System and the reason will discuss at below.

In Student Planning and Advisory System, it will use authentication method and authorization method for the system security. Since the authentication method is most common and traditional method for user identify as using

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username and password, so it will be same as UTAR web portal and UTAR WBLE that using student ID as username ID and password. Besides that, it is managed by DBMS (Database Management System), easy to implement and familiar with asp.net or PHP.

Authorization is not a computer security technique but it is use for control the user permission which means the right access. It will involve in Student Planning and Advisory System to control the user permission. For example, Student may not able to view other student planning status, but advisor able to view all the student status because one advisor may handle many students as advisee, it can be consider as one-to-many. So the authorization will apply in system for user access control.

2.3.2 Communication Tools

Communication tools can be considered in different techniques such as asynchronous and synchronous. Asynchronous communication tools are involved email, discussion boards, forums, blogs and wikis that allow users to contribute at their leisure, but are not required to be online at specific time. Synchronous communication tools involved live chat rooms, Instant Messaging (IM), webcasts, video and audio technologies. These tools are used to simulate real time communication like Window Live Massager, it can use voice, video and text communication in real time but it required all participants to be online at the same time.

2.3.2.1 Internet Forums

home : forums : all forums

All Forums

Forum	Topics	Posts	Last Post
NEW POSTS General Discussion A general discussion forum for all members	267	1149	Jeremy R 9:08am 24 Apr 2007
NEW POSTS Conferences and Meetups Discussion of issues relating to various meetups	229	392	Kieran A 1:37pm 20 Apr 2007
NEW POSTS Training and Tips How do you get the best out of your operations? Improve your logistics? Pass on your tips here.	191	512	Sig H 10:36am 24 Apr 2007
NEW POSTS Research and Development What exciting things are coming down the line in widget development? What trends are driving the industry?	70	246	Jeremy R 9:09am 24 Apr 2007
NEW POSTS Regulation Industry regulation and best practices. What impact are these having on you? How do you efficiently manage compliance?	85	362	Jeremy R 9:10am 24 Apr 2007

Figure 2.4 Forums

Internet Forums is a discussion area on a website or web application and it is one of the asynchronous communication techniques, sometime it is called discussion board also (*David Calla, 2010*). Forum are do not required users to be online at the same time but can read and respond to each other whenever he/she is online and convenient.

Forum is a place where users can engage in text-based conversation organized into topic-based discussion threads. It is way to provide users to easily share information and experience based on the topic and the users able to post the question for waiting others to review. Other users can view the topic and post their own comments in a linear fashion that one after the other, it can be consider a way that exchanging the knowledge. Forum can be public and private, but most of the forums are public and it is allow everyone to be the member to join the topic conversation. For those private forums, it is already gated by communities where new members must pay the fee per month to join the conversation to get the resources and posting topic.

When forum come to education (e-learning), it have a number of educational advantages. It is the best place for student to discuss with each

other, the participants are engaged in conversation but they can take time to filter and reflect on others messages and carefully to compose their reply to reduce the conflict. Besides that, it is a great way of promoting collaborative learning, and lead to the development of effective learning communities (*Tangient LLC, 2010*).

2.3.2.2 Wikis

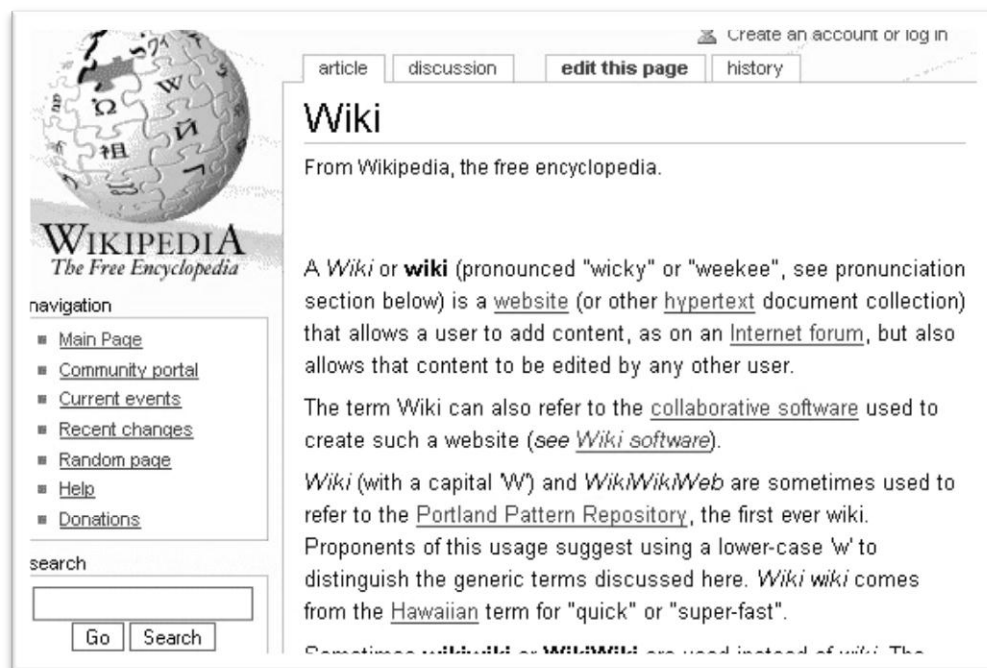


Figure 2.5 Wikis

Wikis are a collaboratively authored websites that anyone with a password can make alterations to unlocked sections. The content on wikis page can be modified by every visitor, meaning that who are the member then who have the permission to modify the content. Wikis can be considering as a knowledge management system, provide the power community websites to user to sharing knowledge by topic focus. Probably the best known wikis is Wikipedia (*Deitel, 2004*).

Promotes meaningful topic is one of the characteristics of wikis, it enable documents to be written collaboratively in a simple mark-up language using a web browser. It is interconnected by hyperlinks to refer the special keyword within a wiki website. A wiki is essentially a knowledge database-

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driven website for creating, browsing, and searching the information. Another characteristic of wikis is the pages easily to create and update. Generally, the pages are no review before modifications are accepted. Mostly, wikis page are public without register user accounts, that is why can be edited rapidly. For those private wikis page have to require user authentication to edit pages, even to read also.

From the education point of view, it advantages for students include the ability to draft and redraft work collaboratively, with each contributor add and modify the work of others. Besides that, wikis are the perfect platform for social community of practice approaches, they are ideal for promoting a sense of a leaning community. Students can receive the feedback from the entire internet with a public wikis. On top of that, wikis pages generally include a discussion function which in the tab at the top of the page, it giving access to forums which function like internet forums. It also provides history function to allow changes to be tracked by students or lecturer. (*Tangient LLC, 2010*).

2.3.2.3 Email

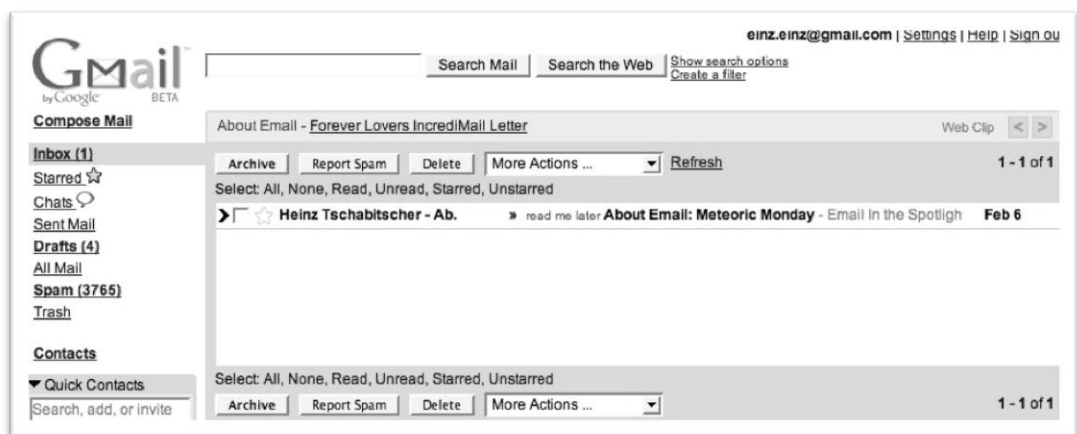


Figure 2.6 Email

Electronic mail, most commonly called email, is a method of creating, sending and storing textual data in digital messages through the internet or computer networks. Earlier, the email system was based on Simple Mail Transfer Protocol (SMTP) mechanism, a protocol used in sending the email from one server to another, which required both side to be online at the same time (*Shashank Nakate, 2010*). Nowadays, email technology are based on a store-

CHAPTER 2: LITERATURE REVIEW

and-forward model, the users sends and receives messages on their own computer terminal. Perhaps it is still the most useful of internet resources that has influenced our lives and has changed the medium of communication.

Email is formalize, it consist of two major sections which is header and body. In header fields, involved To and Subject. To is email address or name of the recipients, it is primary recipient and it allowed multiple then for secondary recipients are using Cc, Bcc. Subject is a brief summary of the topic of the message, if the message is reply from recipient or forward from others, it will be “RE” or “FW” in front the subject. In body field, sender can attach the document with the content of message together (*Wikipedia, 2010*).

In the education point, student is not prefer formalize conversation and the email much have the accurate email address like we send the mail must have a correct an address. (*Tangient LLC, 2010*).

2.3.2.4 Live Chat

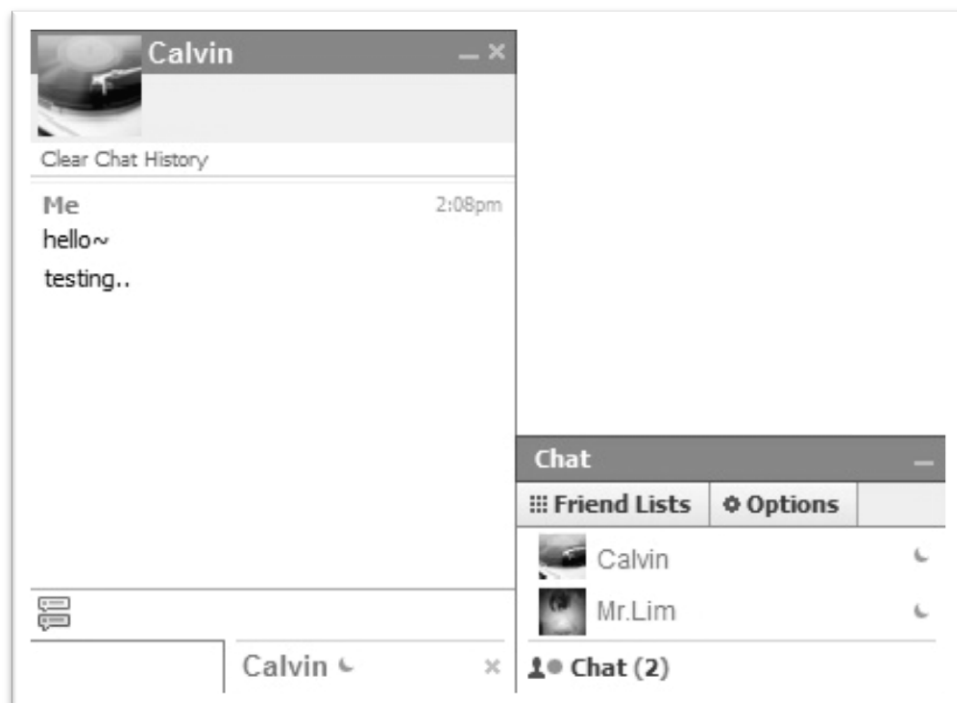


Figure 2.7 Live Chat

Live Chat is one of the synchronous communication techniques that refer to text based chatting which takes place in real time communication through the

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internet. Normally it can be one-to-one and many-to-many interaction. Many-to-many which mean it publicly allow users to join chat room and communication with many people at once. For private chatting, it is possible to one-to-one communicate with the only one people who specifically invite to join (*Deitel, 2004*).

Nowadays, live chat services is become more useful as become more popular like Instant Messengers (IM), but live chat can be a smaller part of function which inside a website like Facebook social network. Besides that, most of the e-learning web application already provided chat function for student and lecturer discussion in real time, for example UTAR WBLE.

Point view over to education, students produce a large amount of language at relatively high speed, which mean the focus tends to be on communication of key words rather than accuracy of expression of arguments. A disregard for grammatical and spelling conversation is common. Most lecturer find that real time chatting is better suited to social interaction while the forum is generally more appropriate on topic focus interaction and it can build the relationship closer with students. (*Tangient LLC, 2010*).

2.3.2.5 Implementation

Table 2-2 Advantages and Disadvantages of Communication tools

Asynchronous Communication		
Examples	Advantages	Disadvantages
Internet Forum	<ol style="list-style-type: none">1. Have time to think and consider what and how to respond2. Meaningful response3. Access messages at a suitable time	<ol style="list-style-type: none">1. Response not immediate if there are time constraints.
Email	<ol style="list-style-type: none">1. Reliable and secure2. Meaningful response3. Easier for reference	<ol style="list-style-type: none">1. Loss of Context2. Information overload3. Inconsistency

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Wikis	<ol style="list-style-type: none"> 1. Meaningful resource sharing easily 2. Provide hyperlinks for each special keyword 3. Community and collaboration 	<ol style="list-style-type: none"> 1. No review before the modification accepted.
Synchronous Communication		
Examples	Advantages	Disadvantages
Live Chat	<ol style="list-style-type: none"> 1. Immediate responses 2. Real-time and convenient 	<ol style="list-style-type: none"> 1. Limited time to think what to say or how to respond to another participant 2. Computer connections and speed could inhibit access 3. Typing skills and speed could limit contributions 4. Both must be online

In the Student Planning and Advisory System, the functionality will include the concept of internet forum and live chat function. Since academic advice is closer the relationship between students and advisor, so need a good communication tools support to get closer their relationship. Besides that, live chat can help students get the respond immediately and student can directly communication with advisor to get advice in real time so it is bring convenient to student and advisor.

From the review, live chat has limited time to think what to say or how to respond to others and both of the users must be online at the same time. Since the lecturer and student is always online at different time, the student planning and advisory system will involve the forum concept inside, which mean student can create topic for asking question when his advisor offline, by the way advisor can take time to think the better solution and as well as understanding way to reply students. The forums concept is not required both of them online at the same time, and it will help for planning tools to help

planning getting more effective. When students finish plan their career on the system, advisor can view from the system and give their comment to suggest them.

The reason that excluded the wikis and email in Student Planning and Advisory System, it is because the email is most advantage to business and email is different type of communication which has to login in different services provider. The more for Student Planning and Advisory system is provide the advisor's email address to students as references. Wikis is a community and collaboration for sharing knowledge as knowledge database, so it is not suitable for planning tools and academic advice.

2.3.3 Programming Language

Student Planning and Advisory system are the web application that using the internet programming to develop such as HTML, XHTML, JavaScript, CSS and others. The concept of Student Planning and Advisory System is server-side scripting, and the programming languages are including PHP and ASP.NET. Both of this is connected with internet server and access to database.

2.3.3.1 PHP

PHP: Hypertext Pre-processor is an open-source technology that is supported by a large community of users and developers, it is a general-purpose scripting language that is especially suited to server-side web development where PHP generally runs on a web server and it can be embedded into HTML and XHTML (*Deitel, 2004*). PHP is platform independent that implementations exist for all major UNIX, Linux, Mac and Windows operating system. Nowadays, PHP has become one of the most popular server-side scripting languages for creating dynamic web pages. The current new version is PHP 5.3.3

PHP code is embedded directly into HTML and XHTML documents, though these script segments are interpreted by the server before being

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delivered to the client. This allows the document author (developer) to write XHTML in a clear, concise manner (*Deitel, 2004*). PHP script file names end with .PHP.

PHP is mainly focused on server-side scripting, so it can do anything any other common gateway interface (CGI) program can do, such as collect form data, generate dynamic page content, or send and receive cookies. There are three main areas where PHP scripts are used, such as Server-side scripting, Command line scripting and Writing desktop applications (*The PHP Group, 2010*).

- Server-side scripting is the most traditional and main target field for PHP. Need three things to make this work such as the PHP parser (CGI or server module), a web server and a web browser. It is need to run the web server, with a connected PHP installation then only can access the PHP program output with a web browser, viewing the PHP page through the server.
- Command line scripting, it can make a PHP script to run it without any server or browser. It is only need the PHP parser to use this way. This type of usage is ideal for scripts regularly executed using cron (on UNIX or Linux) or Task Scheduler (on Windows). These scripts can also be used for simple text processing tasks.
- Writing desktop applications. PHP is probably not the very best language to create a desktop application with a graphical user interface, but if know PHP very well, and would like to use some advanced PHP features in client-side applications, it can also use PHP-GTK to write such programs.

PHP also supports many databases such as Empress, Hyper wave, Oracle (OCI7 and OCI8) and UNIX dbm, but common use in PHP is MySQL database. PHP has also support for most of the web servers today. This includes Apache, Microsoft Internet Information Server, Personal Web Server, and many others. For the majority of the servers, PHP has a module, for the others supporting the CGI standard, PHP can work as a CGI processor. The

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most common use in PHP is Apache server. The Apache server maintained by the Apache Software Foundation, it is currently most popular web server because of its stability, efficiency, portability, security and small size.

MySQL

MySQL is the best and the most common used database in the world for online application and it is free and open source. MySQL is a relational database management system that runs as a server providing multi-user access to a number of databases. There are three main Application Programming Interface (API) options when considering connecting to a MySQL database server such as PHP's MySQL Extension, PHP's mysqli Extension and PHP Data Objects (PDO)

Table 2-3 Three main type of API (The PHP Group, 2010)

	PHP's mysqli Extension	PDO	PHP's MySQL Extension
PHP version introduced	5.0	5.0	Prior to 3.0
Included with PHP 5.x	Yes	Yes	Yes
MySQL development status	Active development	Active development as of PHP 5.3	Maintenance only
Recommended by MySQL for new projects	Yes - preferred option	Yes	No
API supports Charsets	Yes	Yes	No
API supports server-side Prepared Statements	Yes	Yes	No
API supports client-side Prepared	No	Yes	No

Statements			
API supports Stored Procedures	Yes	Yes	No
API supports Multiple Statements	Yes	Most	No
Supports all MySQL 4.1+ functionality	Yes	Most	No

2.3.3.2 ASP.NET

The Microsoft's previous server side scripting technology is ASP and is now often called classic ASP. ASP.NET is Microsoft's Active Server Pages .NET technology. It is a server side scripting technology that enables scripts to be executed by an internet server (*W3schools, 2010*). Web-based application create web content for web-browser clients. This web content includes Extensible Hyper Text Mark-up Language (HXTML), client-side scripting, images and binary data. ASP.NET takes an object-oriented programming approach to web page execution. Every element in an ASP.NET page is treated as object and run on the server. The ASP.NET is a program that runs inside Internet Information Services (IIS).

Internet Information Services (IIS)

IIS formerly called internet information server which is the Microsoft's internet server, is a web server application and set of feature extension modules created by Microsoft for use with Microsoft Windows. It is the world's second most popular web server in term of overall websites behind the industry leader Apace Server (*Deitel, 2004*).

IIS comes as a free component with window servers and also is a part of Window 2000 and Window XP professional. IIS (Internet Information Server) is a group of Internet servers. It is including a Web or Hypertext Transfer Protocol server and a File Transfer Protocol

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server with additional capabilities for Microsoft's Windows NT and Windows 2000 Server operating systems. IIS is Microsoft's entry to compete in the Internet server market that is also addressed by Apache, Sun Microsystems, O'Reilly, and others. With IIS, Microsoft includes a set of programs for building and administering Web sites, a search engine, and support for writing Web-based applications that access databases.

Back to ASP.NET, the ASP.NET is major part of the Microsoft's NET framework. The .NET Framework is the infrastructure for the Microsoft .NET platform. It is an environment for building, deploying, and running web application and web services. The .NET Framework consists of 3 main parts such as programming languages, server and client technologies, and development environment. ASP.NET is the included in server and client technologies which is the major part of the Microsoft's NET framework.

2.3.3.3 Implementation

Table 2-4 PHP and ASP.NET

	PHP	ASP.NET
Open Source	Yes	No
Internet Server	Apache Server	Internet Information Server (IIS)
Database	Common use MySQL	Common use MS SQL server
OO concept	Yes	Yes

Student planning and Advisory System will use PHP to develop. The current PHP new version is 5.3.3. The reason that why choice PHP as development tools, it because the PHP is open source and it is using Apache server and MySQL database. From the review, Apache server is currently most popular web server because of its stability, efficiency, portability, security and the size

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is small. Besides that, Apache server is also an open source for free download and use.

For ASP.NET, it is not an open source, so it excluded in development. But the concept of ASP.NET is similar with PHP, so the student planning and advisory system will develop by PHP version 5.3.3 with apache server.

On top of that, the Student Planning and Advisory System will develop by XHTML, CSS and JavaScript also. Since the PHP code is embedded directly into HTML and XHTML. For JavaScript is a programming language base on Sun's Java software. It is used for client side web development which makes the webpage more interactive. Nowadays it is used for web 2.0 content and more popular browser is support on it, can do things like animated images, pop-up windows, cause an image to change when the mouse rolls over it and etc.

2.3.4 Web1.0, Web2.0 and Web3.0

The growth of World Wide Web (www) is evolving and it is evolving rather quickly. We cannot without it in our daily life as internet is around us. The most common version of web is web 1.0, web 2.0 and web 3.0.

2.3.4.1 Web 1.0

Web 1.0 is the first state of World Wide Web which was in the basic read only hypertext system in internet. According to Wikipedia, web 1.0 is a retronym which refers to the state of the World Wide Web, and any design style of website used before the advent of the web 2.0 phenomenon.



Figure 2.8 Web 1.0

The web 1.0 is one way communication which means it only allows read-only content. For example, a company describing their company background in the website to present to the user without any conversation. The most is provided the contact information from web 1.0 such as email, fax, phone number and address. Besides that, the content of webpage is only managing and update by the web master and all hyperlink to the content of the webpage is manually assigns by webmaster also. So they said the characteristic of web 1.0 is static webpage (*Jeffrey Henning, 2009*).

On top of that, the webpage of web 1.0 are use framesets and basic html for publishing the content on internet. It is use the hypertext mark-up language as mention on first paragraph that it is a hypertext system in internet.

2.3.4.2 Web 2.0



Figure 2.9 Web 2.0

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Web 2.0 is the most popular term for advanced Internet technology and application include blogs, wikis, forums, RSS and social networks. One of the most significant differences between web 2.0 and traditional web 1.0 is greater collaboration among internet users and other users, content providers, and enterprises.

Web 2.0 is providing users with information storage, creation, and dissemination capabilities that were not possible in the environment now known as “Web 1.0”. Web 2.0 typically includes some of the features and techniques such as search, links, authoring, tags, extensions and signals (*Deitel, 2004*).

- ✓ **Search** - Using keyword to search and find the information
- ✓ **Links** - Connects information together into a meaningful information ecosystem using the model of the web, and provides low-barrier social tools.
- ✓ **Authoring** - The ability to create and update content leads to the collaborative work of many rather than just a few web authors.
- ✓ **Tags** – Categorization of content by users adding “tags”
- ✓ **Extensions** - Software that makes the web an application platform as well as a document server.
- ✓ **Signals** - The use of syndication technology such as RSS to notify users of content changes

The web 2.0 concepts are already being used to a certain extent in education. There are not really technologies as such, but services or user processes built using the building blocks of the technologies and open standards that underpin the internet and the web. These include blogs, wikis, multimedia sharing services, podcasting and content tagging services as mentioned on top and explain details in the communication tools. Sometime, web 2.0 defined as conversation also (*Efrain Tuban, Linda volonino, 2009*).

2.3.4.3 Web 3.0

The web 3.0 is the portable personal web, focused on the individual life stream consolidating dynamic content the semantic web (*Deitel, 2004*). Semantic web also called the intelligent web. It is an evolving extension of the web in which web content can be expressed not only natural language but also in a form that can be understood, interpreted, and used by intelligent computer software agents, permitting them to find, share, and integrate information easily. Semantic web is a software agent that will collate and integrate information to give “intelligent” responses to human operators (*Shannon, 2006*).

Web 3.0 also as the geospatial web, where location is used to index information. Some believe that the future web will look like a virtual world which is navigated by avatars.



Figure 2.10 Web 3.0- Virtual World

Virtual world also known as Mutli-user virtual environment that are simulated 3-dimensional environments, like gaming environments which is a people enter with a character known as an avatar. It can be said to exist at the boundary between web 2.0 and web 3.0. (*Tangient LLC, 2010*).

In conclusion, web 3.0 is the read-write-execute web (*Sharma, 2010*). It defined as the creation of high-quality content and services produced by

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gifted individuals with faster search technology and great reduction in execution time using 2.0 technologies as an enabling platform.

2.3.4.4 Implementation

Table 2-5 Web 1.0, Web 2.0 and Web 3.0

Web 1.0	<ul style="list-style-type: none">➤ One way communication➤ Read-only content➤ Provide information without feedback➤ Static web page➤ Use framesets and basic html
Web 2.0	<ul style="list-style-type: none">➤ Two way communication, defines as conversation➤ Collaboration among internet users and other users➤ Provide users with information storage, creation, and dissemination capabilities➤ The features and techniques such as search, links, authoring, tags, extensions and signals
Web 3.0	<ul style="list-style-type: none">➤ Read-write-execute web➤ Dynamic content➤ As Semantic web also called the intelligent web

In Student planning and Advisory System, it will be the web base application and the concept will be same as web 2.0. From the functionality of student planning and advisory system, can know that system is focus on conversation between student and advisor. So that, the Student planning and advisory system will be a web 2.0 application, since Web 2.0 is providing users with information storage, creation, and dissemination capabilities and defines as conversation.

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On top of that, the Web 2.0 is the most popular term for advanced Internet technology and application include blogs, wikis, forums, RSS and social networks. As mentioned on top, Student Planning and Advisory system will use the concept of forum, and live chat as communication tools so web 2.0 concepts will apply in the Student planning and Advisory system.

The reason that why web 1.0 and web 3.0 are not the concept of student planning and advisory system, it is because web 1.0 is one way communication which means it only allows read-only content and normally use for company website that provide the company's information. For web 3.0, is it the portable personal web, focused on the individual life stream consolidating dynamic content the semantic web, so it is totally cannot use it education management system.

2.4 Conclusion

Student planning and Advisory System is an education system for students plan and monitor their future career in study. It is use to clarify their role, values, goals and ability with the academic advice which is the advisory system. From the literature review, it has been choices the best and the most suitable techniques and tools to be applying in the system that going to build.

The first review is concern about the security issue, which are the system login and the access control for the system. After review, the most suitable method of system security is authentication and authorization method. The authentication method is most common and traditional method for user identify as using username and password, and it is managed by DBMS (Database Management System), easy to implement and familiar with asp.net and PHP. The authorization is not a computer security technique but it is use for control the user permission which means the right access. It will involve in Student Planning and Advisory System to control the user permission.

Second review is about the communication tools. As mentioned on top, it is an advisory system which mean have to help student and advisor to communicate easily so the communication to are very important on this system. After review, it will

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applying the forums and live chat concept into the student planning and advisory system as the communication tools.

On top of that, the programming language is the most important part during the development. After review, it has been choice the PHP as the programming language that going to develop the system. The reasons because the PHP and the Apache server are open course and it is free.

In the end is discussed about the version of World Wide Web because the student planning and advisory system is a web application. In literature review, discuss from version web 1.0 to web 3.0 and the Student planning and advisory system are consider in the version web 2.0 which defines as conversation.

CHAPTER 3 METHODOLOGY

3.1 Introduction

In chapter 3, it will describe the methodology of system development life cycle (SDLC) that will be apply in the project of Student Planning and Advisory System and some of the diagram such as Use Case diagram and Gantt chart.

3.2 Methodology and Approach

3.2.1 Systems and Development Life Cycle (SDLC)

The Systems Development Life Cycle (SDLC) in software engineering and information system is the process of understanding how an information system can support the user needs, designing the system, building it and delivering it to users. The process including planning, analysis, design and implementation, the result in a high quality system that meets customer's expectations, reaches completion within time and cost estimates, works effectively and efficiently in the current planned, and is inexpensive to maintain and cost effective to enhance.

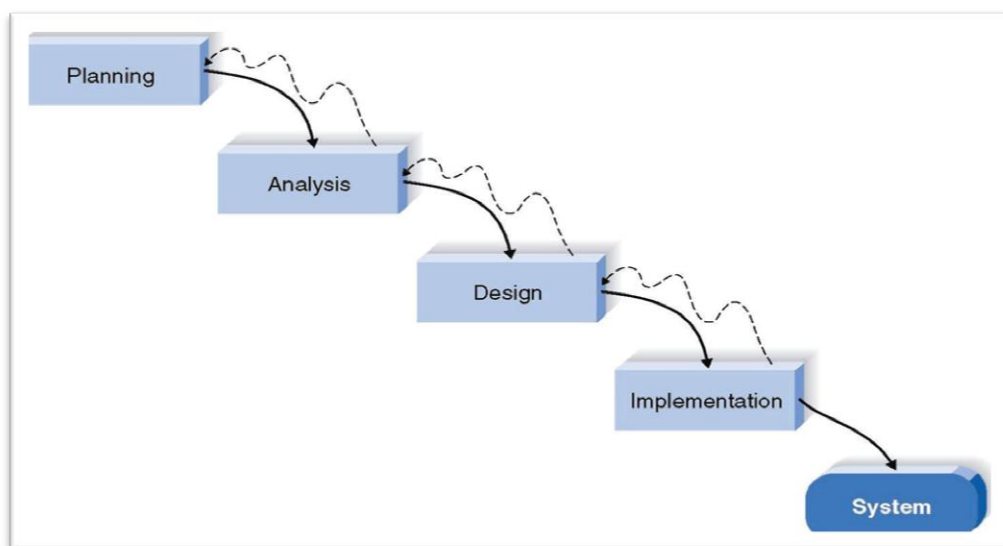


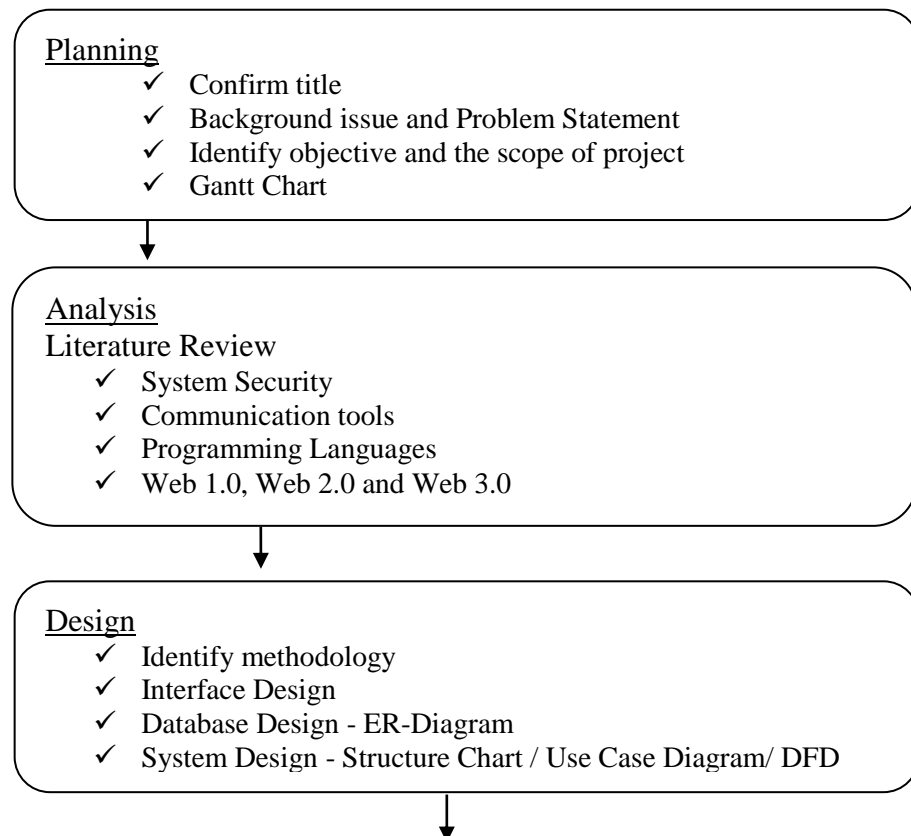
Figure 3.1 Waterfall model

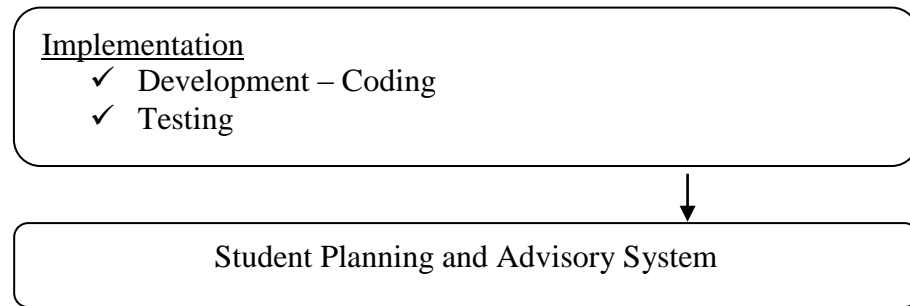
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The most common use SDLC is the waterfall model and it is proceed in sequence which the stage move from one to the next step and generally a stop is finished before the next one begins. There is a lot of different stages, but generally is follow the same basic steps, it started from planning. Planning can be consider to develop a project management plan and other plan documents, it provide the basic for acquiring the resources needed to achieve a solution. The 2nd step basically is analysis that analysis the user requirement to create a detail functional requirement document. After that is design phase, which transforms detail requirement into complete system design document that focus on how to deliver the required functionality, such as database design, program design, architectural design and interface design. The last step is implementation, which focus on testing and maintenance.

In Student Planning and Advisory System, it will follow the basic waterfall model in development.

Below is the step of development for Student Planning and Advisory System:





The reason that selected waterfall as development methodology is because the waterfall is work well in small project, small project scope and requirement is well understood. So the activities in each stage can be easily to define and explain.

3.2.1.1 Description of each phase and activities within each phase

Phase 1: Planning

First phase is planning which consist of few activities such as confirm the project title for the system that is going to develop, identify background issue, problem statement, objective and the scope of project. Confirm the project title which is summarizing the idea into a sentence for the system. Besides, identify the background issue to find out the problem statement for the existing system or similar system. After clarity the problem then identify the objective of the system to overcome the problem and identify the scope of the project into document. Besides that, draw the project plan by using Gantt chart as show in below 3.2.2

Phase 2: Analysis

During the second analysis phase, doing literature review for those techniques and tools that are going to be use in development such as system security, communication tools, programming languages and the version of world wide web. The purpose of literature review is selecting the most suitable technique and tools to apply in the system during the development which help in the phase of implementation to enhance the quality of the system.

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Phase 3: Design

The third phase focus on design, started from selecting the methodology for development. In Student planning and Advisory System, selected the waterfall model as methodology which proceed in sequence. After selected the methodology, it is process to system design, database design, user interface design and function integration design. System design is design the system structure as the figure below 3.2.4 structure chart. The purpose of structure chart is use to understand the view of the system structure as well as provide the guidance for further of development use. The next is function integration design and it is interaction between user and the system by using Use Case diagram as the figure below in 3.2.3. For the database design, it can be entity relationship diagram (ERD, refer Figure 3.7) or the information for each entity that we normally called Data dictionary. (Refer 3.5.2.2)

For the use interface design, come out with the basic layout such as page header, footer and the button, colour and font size. Design for user as user friendly to ease to use the system.

Phase 4: Implementation

The last phase for implementation consists of development with coding and testing. Use the techniques and tools that selected in analysis to develop and come out with the prototype. After that, testing the functional of the system by using self-testing to test the functionality for confirm the system is work.

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3.2.2 Gantt Chart

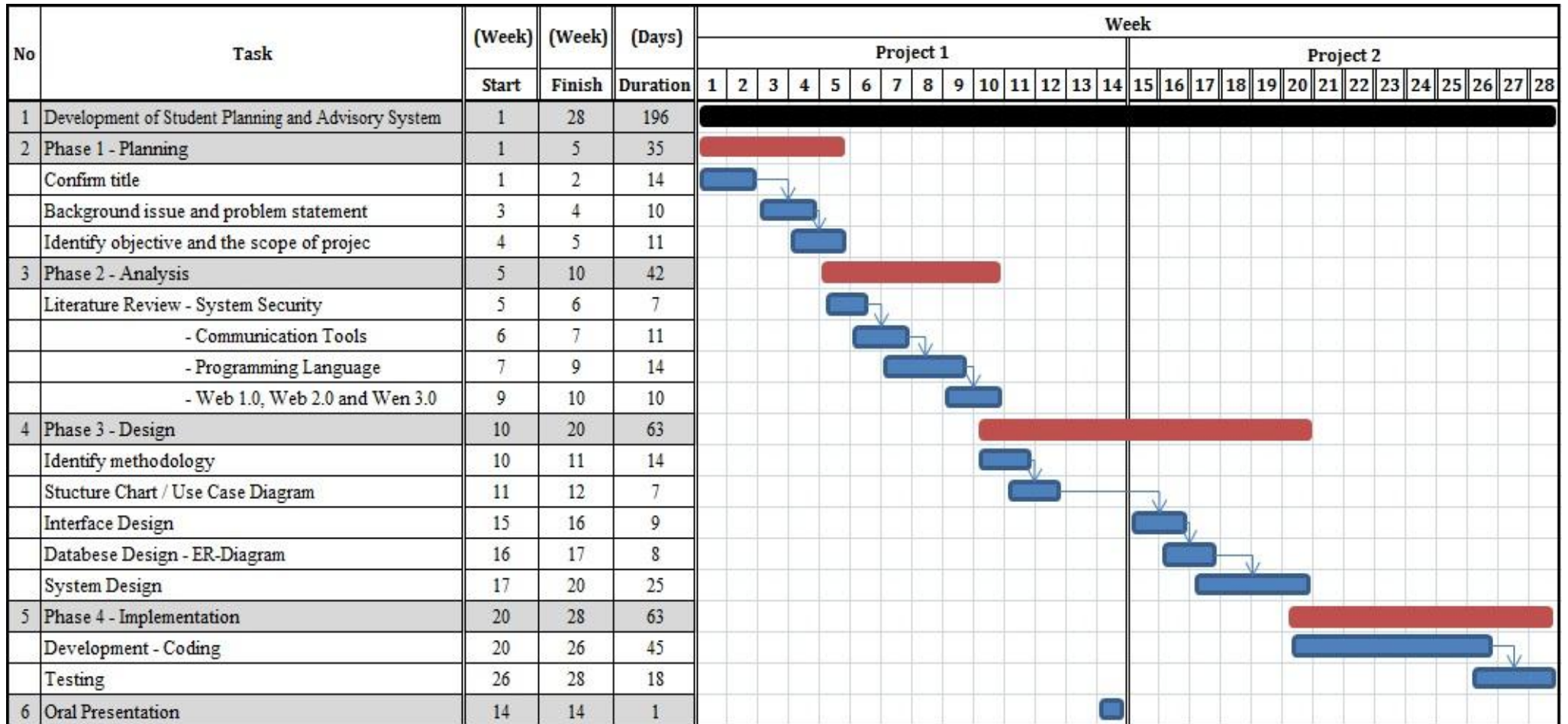


Figure 3.2 Gantt chart

3.2.3 Function integration - Use Case Diagram

There are four basic components of Use Case diagrams, such as Subject boundary, Actors, Use cases and relationships. Subject boundary is represented as a box that represents the system and clearly delineates what parts of the diagrams are external or internal to it. Actors is used to represent something that uses our system, it can be human, hardware device, or another system. A use case is action that user takes on a system, and the relationships is a link between an actors with the use case with which it interacts.

Below is the Use Case diagram of student Planning and Advisory System:

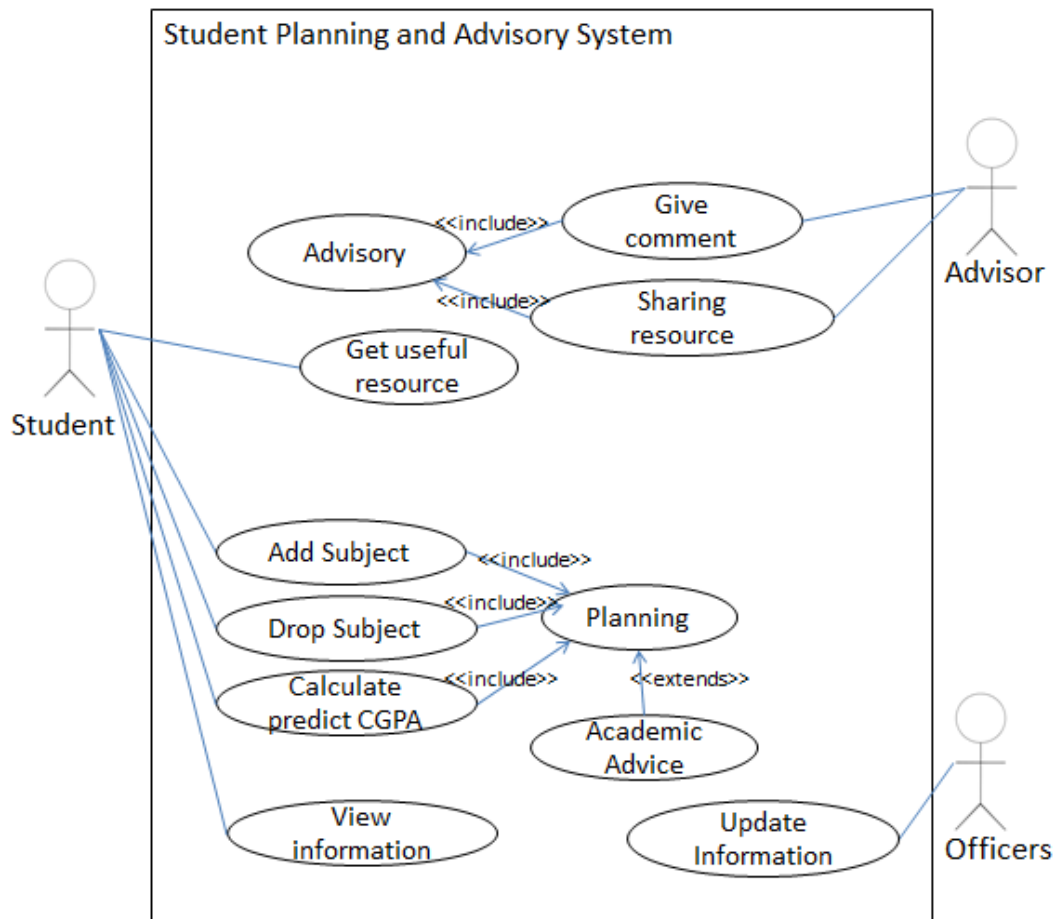


Figure 3.3 Use Case diagram

The Use Case Diagram is a use case illustrates the activities that are performed by users of a system. It is logical models for describe the activities of a system without specifying how the activities are implemented. The purposes of Use Case Diagram is representing how a system interacts with its

environment and show how the users view the process without suggesting how they are conducted. Use Case diagram gives a high level view of the domain system, illustrating the functionality that it will provide its users. The high-level view such as who will use the system and what the user is able to do with it.

3.2.4 System Design

Student planning and Advisory System is a web base system that address to education management which similar with UTAR web portal. It can be consider as e-learning tools for university or collages to improve the student quality.

SPAS can bring convenient to student and lecturer while student can get information easily, and lecturer can manage their time well in consultation. SPAS provide communication tools to student and lecturer communicate via the system but it required internet to perform the function.

3.2.4.1 Structure Chart

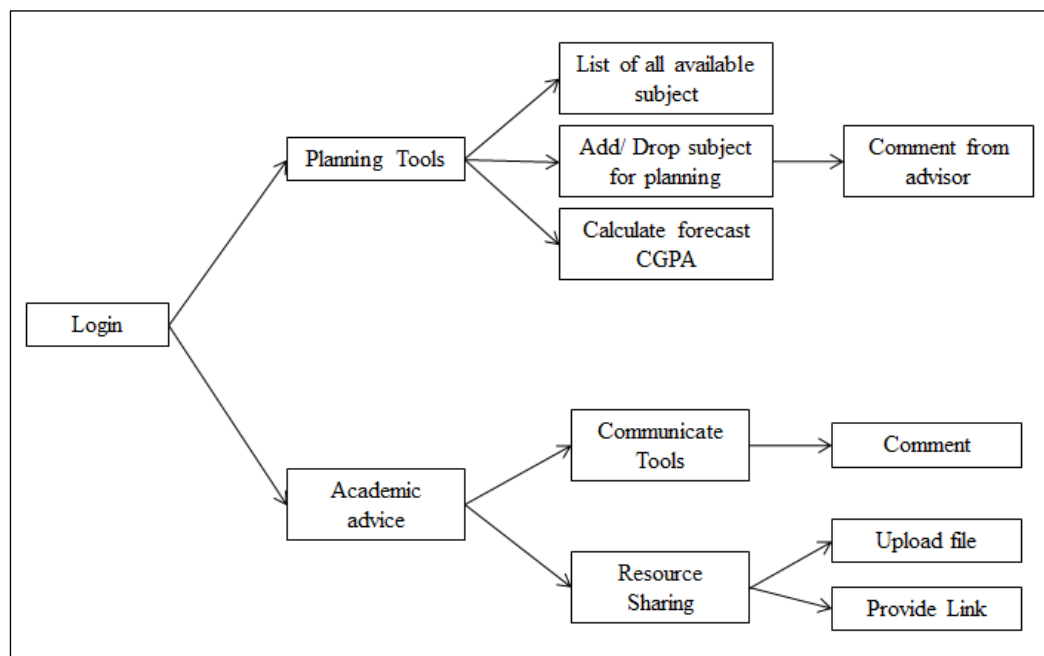


Figure 3.4 Structure Chart

3.2.4.2 Date Flow Diagram (DFD)

Context Diagram

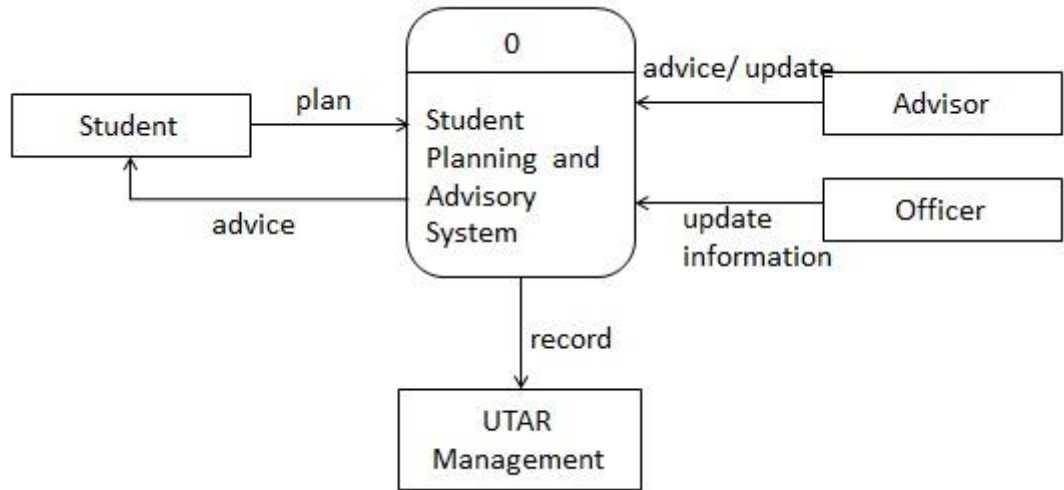


Figure 3.5 DFD – Context Diagram

Level-0 diagram

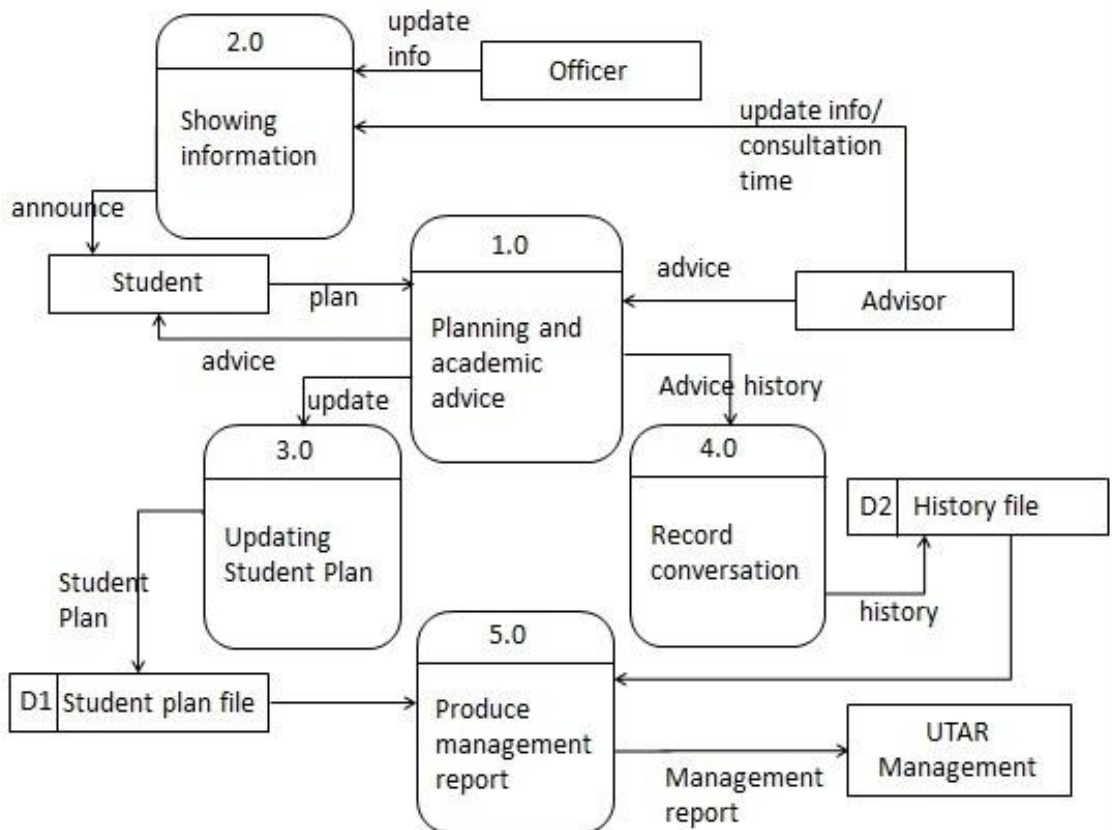


Figure 3.6 DFD – Level-0 diagram

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3.2.5 Database Design

3.2.5.1 Entity Relationship Diagram

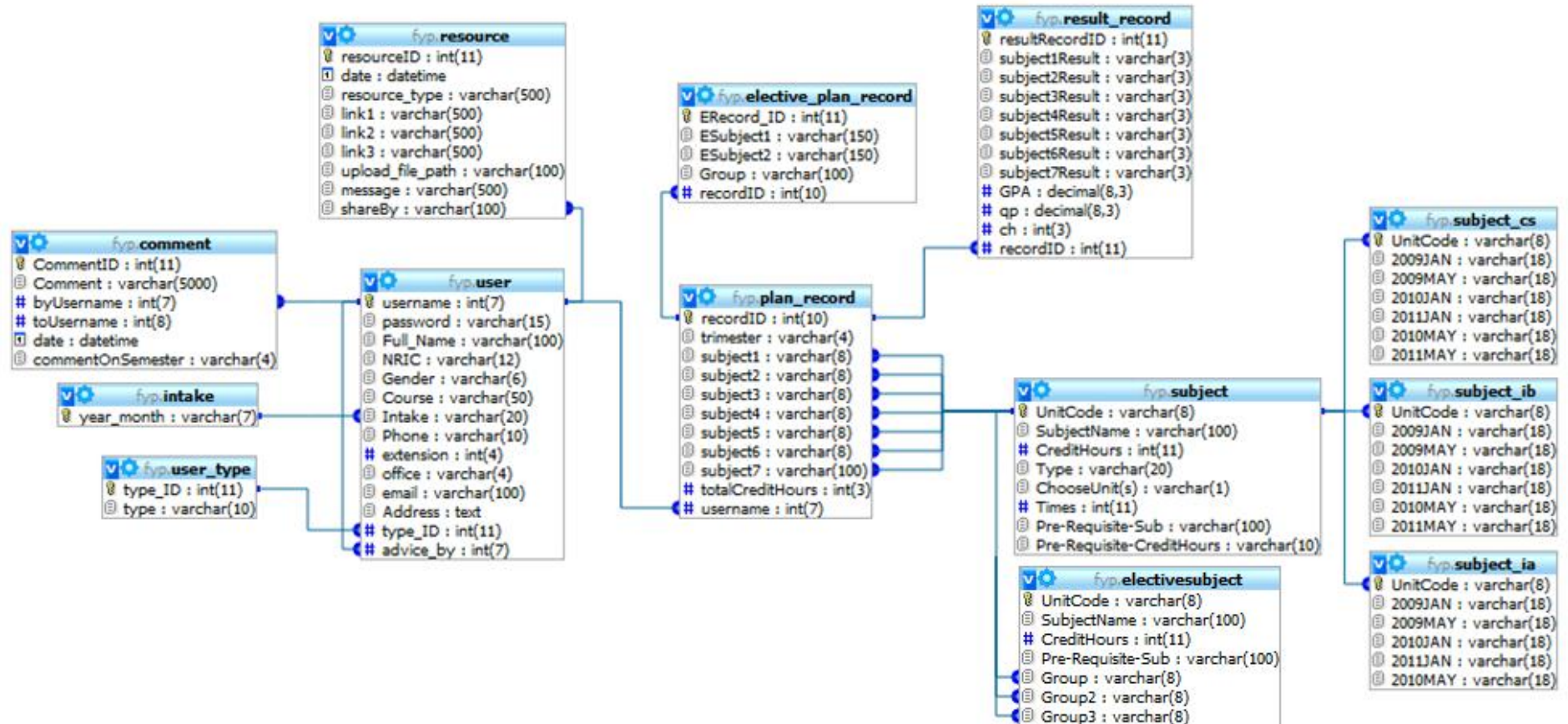


Figure 3.7 ER-Diagram

3.2.5.2 Data Dictionary

Table: user_type

Field	Data Type	NULL	Primary Key	Foreign Key	Description
type_ID	int(11)		Yes		User type ID
type	varchar(10)				The role, such as student , lecturer, administrator

Table: user

Field	Data Type	NULL	Primary Key	Foreign Key	Description
username	int(7)		Yes		User identification
Password	varchar(15)				User's password, for login purpose
Full_Name	varchar(100)				User's full name
NRIC	varchar(12)				User's IC number
Gender	varchar(6)				User's Gender
Course	varchar(50)	allow			User's Course (For students only)
Intake	varchar(20)	allow		Yes	User's Intake (For students only)
Phone	varchar(10)				User's Contact number
extension	int(4)	allow			User's extension number (for lecturer only)
office	varchar(4)	allow			Office Venue (for lecturer only)
email	varchar(100)				User's email address
Address	text				User's address
type_ID	int(11)			Yes	For authentication purpose FK user_type.type_ID table
advice_by	int(7)	allow		Yes	FK user table. username (for student only)

Table: intake

Field	Data Type	NULL	Primary Key	Foreign Key	Description
year_month	varchar(7)		Yes		record all the intake For example, "2010JAN" mean January of 2010

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Table: comment

Field	Data Type	NULL	Primary Key	Foreign Key	Description
CommentID	int(11)		Yes		Auto increment
Comment	varchar(5000)				The message that user leave
byUsername	int(7)			Yes	Who post the comment FK user.username
toUsername	int(7)				Who can view the message
date	datetime				When is the comment post
commentOnSemester	varchar(4)				Where the comment Post

Table: resource

Field	Data Type	NULL	Primary Key	Foreign Key	Description
resourceID	int(11)		Yes		Auto increment
date	datetime				When is the resource add by lecturer
resource_type	varchar(500)				The resource type, such as Message, Link and upload file
link1	varchar(500)	allow			resource url
link2	varchar(500)	allow			resource url
link3	varchar(500)	allow			resource url
upload_file_path	varchar(100)	allow			the location of uploaded resource (path)
message	varchar(500)				message
shareBy	varchar(100)			Yes	who share the resource FK user.username

Table: subject

Field	Data Type	NULL	Primary Key	Foreign Key	Description
UnitCode	varchar(8)		Yes		A code for subject identification
SubjectName	varchar(100)				Subject's Name
CreditHours	int(11)				Subject's credit hours
Type	varchar(20)				Subject's type, such as major, compulsory and elective
ChooseUnit(s)	varchar(1)	allow			Some elective subject are required to choose 2 unit

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times	int(11)	allow	Some elective subject are required to take more than 1 times from different trimester
Pre-Requisite-Sub	varchar(100)	allow	Pass particular subject in order to take a subject
Pre-Requisite-CreditHours	varchar(10)	allow	Earned credit hours must greater and equal the pre-requisite , in order to take a subject

Table: electivesubject

Field	Data Type	NULL	Primary Key	Foreign Key	Description
UnitCode	varchar(8)		Yes		A code for subject identification
SubjectName	varchar(100)				Subject's Name
CreditHours	int(11)				Subject's credit hours
Pre-Requisite-Sub	varchar(100)	allow			Pass particular subject in order to take a subject
Group	varchar(8)			Yes	Group of elective subject FK subject.UnitCode
Group2	varchar(8)			Yes	Group of elective subject, 1 elective subject might come from different group. FK subject.UnitCode
Group3	varchar(8)			Yes	<i>same as above</i> FK subject.UnitCode

Table: subject_ia, subject_cs and subject_ib

Field	Data Type	NULL	Primary Key	Foreign Key	Description
UnitCode	varchar(8)		Yes	Yes	A code for subject identification FK subject.UnitCode
2009JAN	varchar(18)				A field for record the course structure guide to display to student. For example, UnitCode "UCCD1023" is recommended to take in Y1T2 for January of 2009 intake

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2009MAY	varchar(18)	<i>Same as above</i>
2010JAN	varchar(18)	<i>Same as above</i>
2010MAY	varchar(18)	<i>Same as above</i>
2011JAN	varchar(18)	<i>Same as above</i>

Table: plan_record

Field	Data Type	NULL	Primary Key	Foreign Key	Description
recordID	int(10)		Yes		Auto increment
trimester	varchar(4)				Plan for which trimester. For example, plan for “Y1T1”
subject1	varchar(8)			Yes	1st selected subject FK subject.UnitCode
subject2	varchar(8)			Yes	2nd selected subject FK subject.UnitCode
subject3	varchar(8)			Yes	3rd selected subject FK subject.UnitCode
subject4	varchar(8)			Yes	4th selected subject FK subject.UnitCode
subject5	varchar(8)			Yes	5th selected subject FK subject.UnitCode
subject6	varchar(8)			Yes	6th selected subject FK subject.UnitCode
subject7	varchar(9)			Yes	7th selected subject FK subject.UnitCode
TotalCreditHours	int(3)				The total credit hours in this trimester
username	int(7)			Yes	The plan record plan by who FK user.username

Table: result_record

Field	Data Type	NULL	Primary Key	Foreign Key	Description
resultRecordID	int(11)		Yes		Auto increment
subject1Result	varchar(3)				1st selected subject result
subject2Result	varchar(3)				2nd selected subject result
subject3Result	varchar(3)				3rd selected subject result
subject4Result	varchar(3)				4th selected subject result
subject5Result	varchar(3)				5th selected subject result
subject6Result	varchar(3)				6th selected subject result
subject7Result	varchar(3)				7th selected subject result
GPA	decimal(8,3)				Calculated GPA for one trimester plan
qp	decimal(8,3)				Trimester quality point

ch	int(3)		Trimester earned credit hours
recordID	int(11)	Yes	This result record is plan for a plan record. FK plan_record.recordID

Table: elective_plan_record

Field	Data Type	NULL	Primary Key	Foreign Key	Description
ERecordID	int(11)		Yes		Auto increment
ESubject1	varchar(150)				1st Selected elective subject
ESubject2	varchar(150)				2nd selected elective subject
Group	varchar(100)			Yes	Elective subject Group FK subject.UnitCode
recordID	int(10)			Yes	This elective plan record is the plan for elective subject in one of the plan record. FK.plan_record.recordID

3.2.6 User Interface Design

Interface Design in this step refers to the layout of the Student Planning and Advisory System and clearly set the position of header, navigation menu and main content.

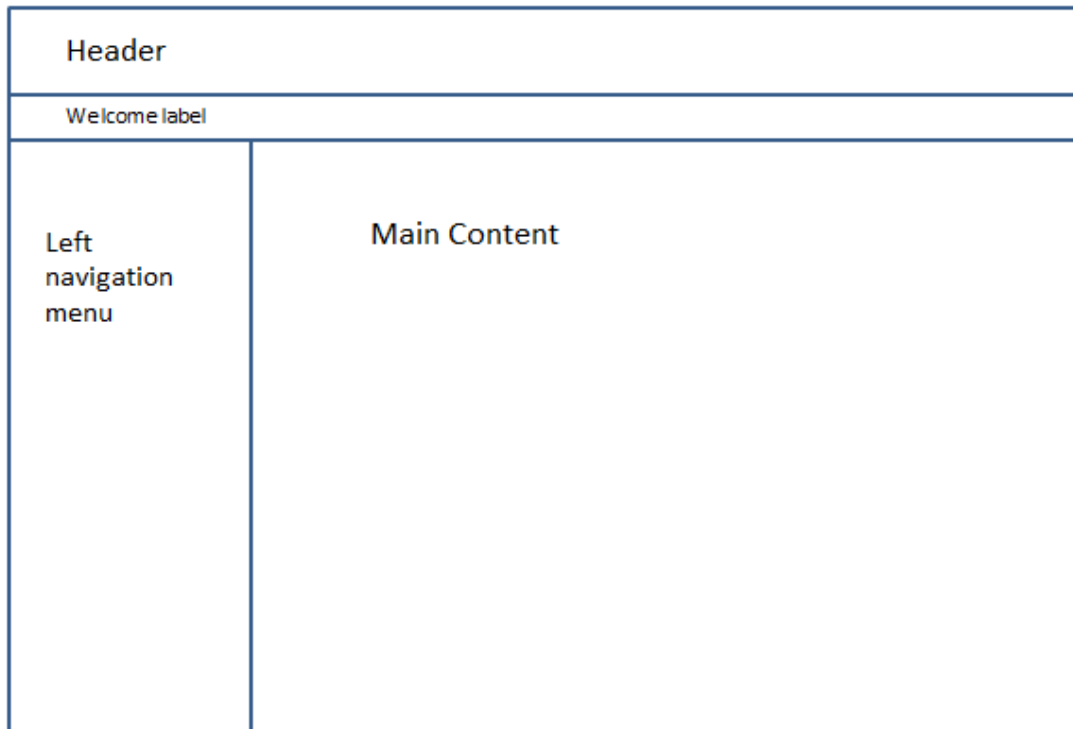


Figure 3.8 Interface Design

3.3 Instrumentation

Use pre questionnaire, and self-test instrumentation to testing and get better quality of system. The use of questionnaire is to get the UTAR students feedback before the build the student planning and advisory system. Besides that, the self-testing is use for testing the functionality of application that going to develop, test the function see weather working or not.

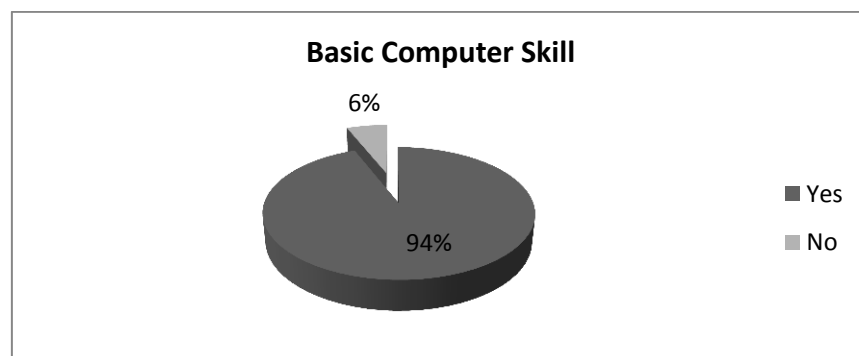
3.3.1 Pre - Questionnaire

The questionnaire is getting the more accurate information from UTAR students before build the system for matching the objective and problem statement that identified on chapter 1. Please refer Appendix questionnaire A.

For questionnaire A, it is already distributed 50 copies to 50 UTAR students and get feedback and the result analysed are show in below:

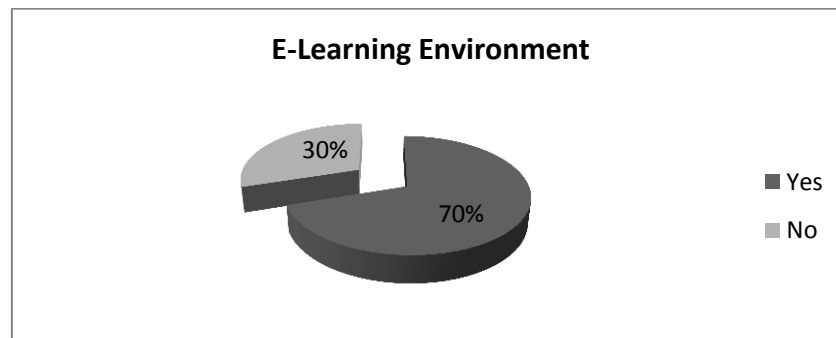
Background

Question 1



From the questionnaire first question, it is asking about the student ability of basic computer skills and the result is the majority of UTAR student have the basic computer skill.

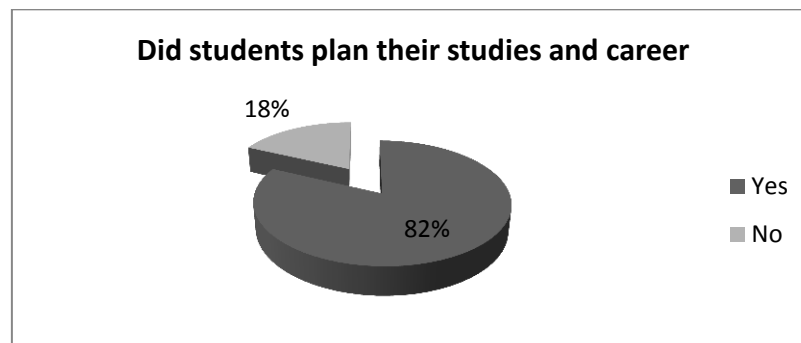
Question 2



The second question is asking about the E-learning environment. 70% of UTAR student don't like the e-learning environment and 30% of UTAR students wish to bring the university to e-learning environment.

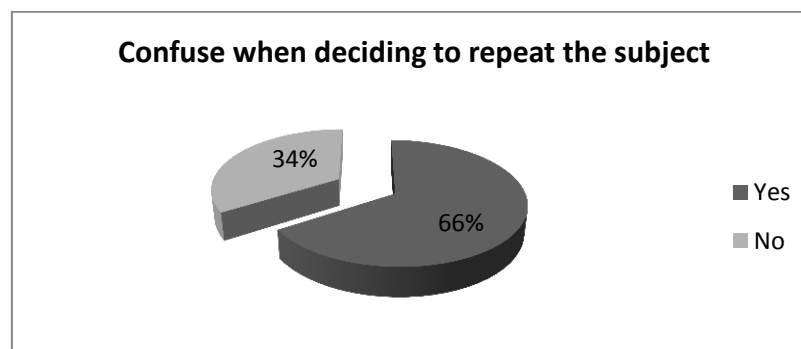
Student Planning

Question 1



The first question for student planning is getting the information from UTAR students that did them plan their studies and career before. The result from the questionnaire is 82% of UTAR student is plan their career without any system.

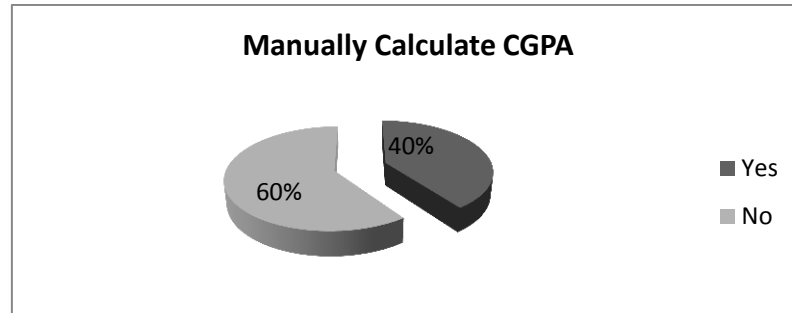
Question 2



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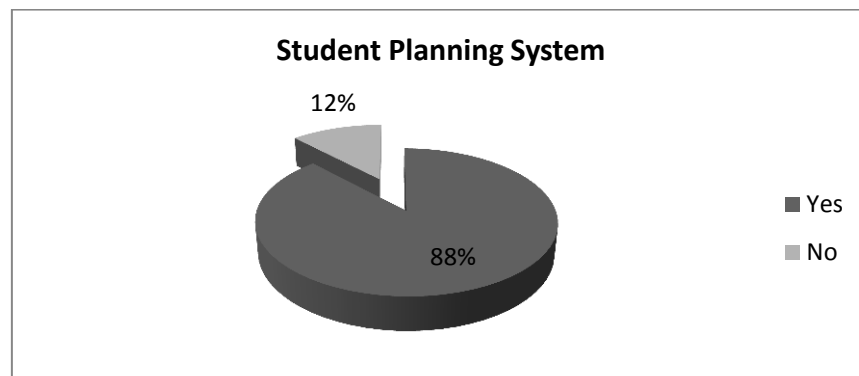
Second question about student planning is asking about the repeat subject issue. From the result show that over 60% of UTAR student are easily to get confuse when deciding to repeat the subject.

Question 3



The 3rd question in questionnaire is asked about the calculation of CGPA issue. From the result show 60% of UTAR student are didn't manually calculate their CGPA, may be they already forget the previous semester result or don't know how to calculate.

Question 4

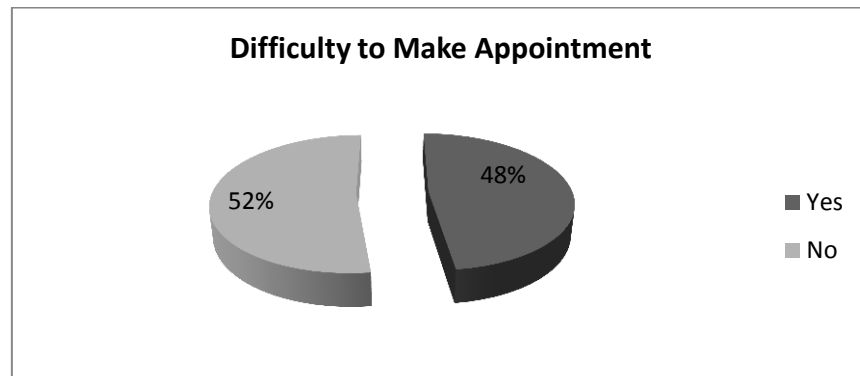


The last question for student planning is about the student planning system, the student planning system is including the forecast CGPA function. The majority of UTAR student wish to have a student planning system with auto calculate forecast CGPA function. The majority is over 88% and 12% is saying no to student planning system.

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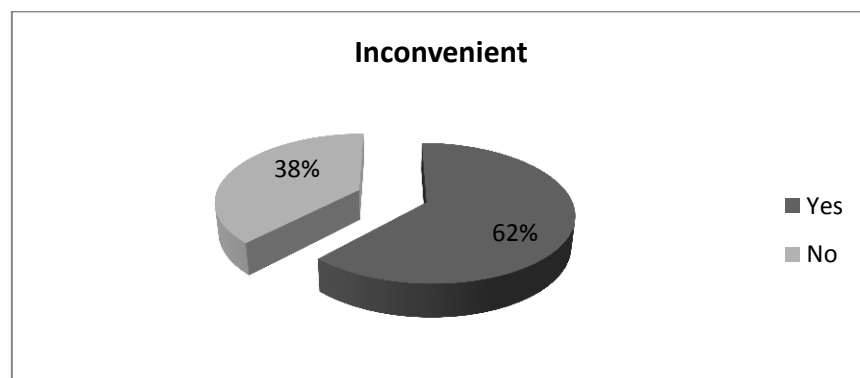
Academic Advice

Question 1



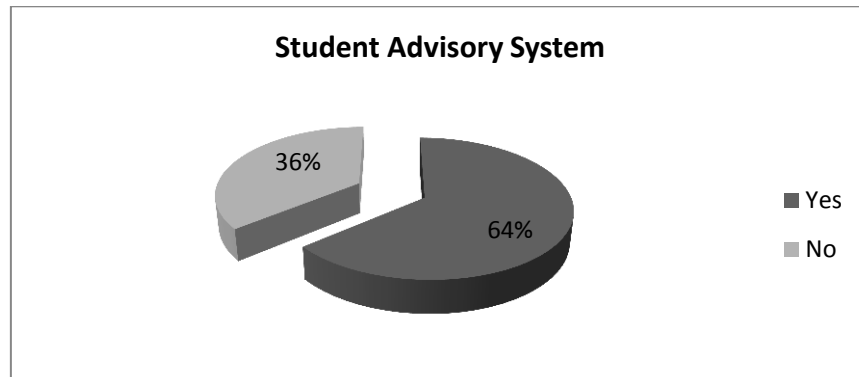
The first question about the academic advice is asking about the difficulty to make appointment with advisor. From the result, half of the UTAR student feeling that make appointment is not difficult and another half is feeling make appointment with advisor is difficult.

Question 2



The second question for academic advice is asking about the inconvenient of meet up with advisor every semester. The result is show that over 60% of UTAR students is feeling inconvenient to meet up advisor by every semester.

Question 3



The last question for academic advice is about the student advisory system, the student advisory system is including the live chat function. The majority of UTAR student wish to have a student advisory system and the majority is over 60%.

3.3.2 Self-Testing

Self-testing is going to be use after the Student planning and advisory system developed. It can be during development. The examples of self-testing are show in below:

Test 1:	
What to test	
Test the forecasting CGPA function.	
Test Procedure	
Click repeat the subject Operation Management	
Test Value	Result
Subject Operation Management get A-grade.	Current CGPA : 2.0
NOTE: Auto calculates the CGPA	Forecast CGPA : 2.2

The first test is testing the forecasting CGPA function, when users select to repeat the subject Operation Management and predict the result getting A grade after repeat, System will automatic calculate the forecast CGPA to him. The display result is correct, test successful.

Test 2:	
What to test	
Test the comment function	
Test Procedure	
Reply in one of the topic	
Test Value	Result
Type in “ Hello world, Testing “ NOTE: It like the forums	The “Hello world, Testing” is posted.

The second test is test the comment function in the system, when user reply in one of the topic and type in “Hello world, Testing“. The “Hello world, Testing” is posted mean testing successful.

3.4 Methodological assumptions

3.4.1 User Requirement

- ✓ Users should have basic computer skill in operating system and internet browser.
- ✓ Users must have connection to access internet
- ✓ Users must be the UTAR staffs, lecturer and students that have the staff ID or student ID

3.4.2 System Requirement

Hardware

- ✓ Basic computer hardware such as monitor, keyboard, and mouse.
- ✓ Processor - Pentium 4
- ✓ RAM - 512MB (recommended 1G B and above)

Software

- ✓ Internet Browser such as Internet Explorer (recommended version 7.0 and above), Mozilla Firefox (recommended version 3.0 and above), Google Chrome and etc.

- ✓ Adobe Flash player, use for live chat function. It may be is an add-on /plug-in for internet browser.

3.5 Conclusion

In chapter 3, was selected SDLC waterfall model as the development methodology. From the first planning phase to last implementation phase, describe and use the different approach to complete the project.

The first phase is planning, which draw the Gantt chart to plan the timeline and identify the background issue and problem statement in order to help project to catch out the objective and the scope. Second phase is analysis, which analysis the tools and techniques. By the time, select the suitable tools and techniques to apply in the system. During the third phase, it is design phase and it have to come out a lot of diagram which design for the system, such as use case diagram, data flow diagram and structure chart and etc. Besides, have to come out the simple layout for user interface. The last phase is implementation, which involved development (coding) and testing by using self-testing to test the functionality of system and questionnaire to matching the user requirement with the objective of the system.

In conclusion, follow the waterfall methodology by sequences that finish the phase one by one from first to the last and complete the project.

CHAPTER 4 SYSTEM DEVELOPMENT AND FINDING

4.1 Introduction

The system design and system implementation for Student Planning and Advisory System (SPAS) will deeply explained in this chapter. The system design will involve system flow chart as well.

For the system implementation, this chapter will describes the functionality of the system, and also go through the whole system from level-1 user to level-3 user such as students, lecturer and administrator. Besides that, this chapter will show the self-testing's result in tables for prove the System is work.

4.2 System Design

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4.2.1 System Flow Chart

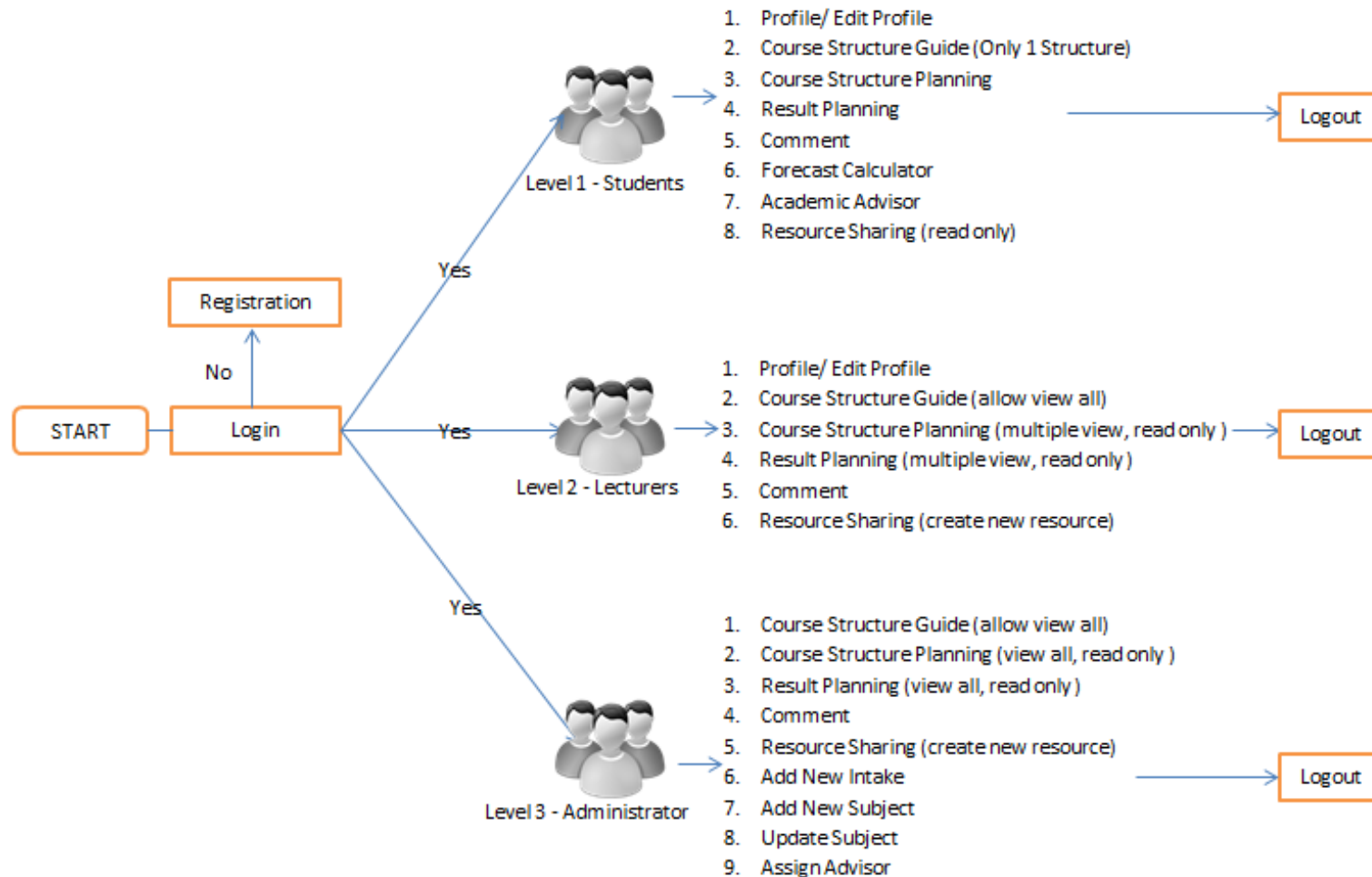


Figure 4.1 System Flow Chart

4.3 System Implementation

4.3.1 System Functionalities

4.3.1.1 Login



Figure 4.2 Login Page

Figure 4.2 are shown the login page for Student Planning and Advisory System (SPAS). Users can login by student ID or staff ID with their password. If users are first time login, they are requires to register in order to access into SPAS. In registration form, users have to enter their personal info such as full name, NRIC, gender, email, phone number and address. For student type user, they need to enter their intake year/ month and course, and lecturer need to enter their office venue and extension number.

4.3.1.2 Profile

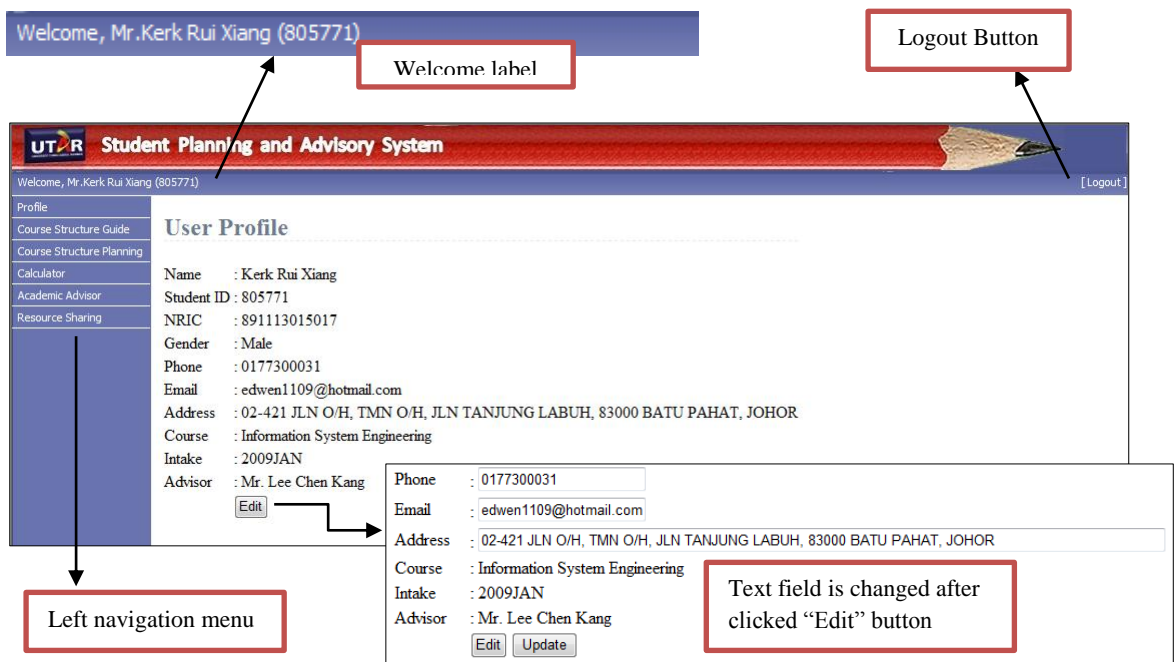


Figure 4.3 User profile - Student view

After user logged in, system redirect user to user profile as shown in Figure 4.3. Users are allowed to modify and update their phone number, email and address. For lecturer, the user profile is a bit different from in student profile view. Lecturers are allowed to modify and update their phone number, address, email, office venue, and extension number.

4.3.1.3 Course Structure Guide

Year 1 Trimester 1				Year 1 Trimester 2				Year 1 Trimester 3			
BIAFE04	ENGLISH ELECTIVE	Elective	3.0	BIAFE01	MINOR ELECTIVE 1	Elective	3.0	BIAFE01	MINOR ELECTIVE 1	Elective	3.0
LANG003	NATIONAL LANGUAGE/ OTHER LANGUAGES	Compulsory	3.0	MPW2133	PENGAJIAN MALAYSIA	Compulsory	3.0	BIAFE05	LIBERAL ARTS ELECTIVE	Elective	3.0
UCCD1003	PROGRAMMING CONCEPTS AND DESIGN	Major	3.0	MPWE02	MPW ELECTIVE II	Compulsory	3.0	UCCD1233	WEB SITE DEVELOPMENT	Major	3.0
UCCD1013	ANALYSIS AND DESIGN OF INFORMATION SYSTEMS	Major	3.0	UCCD1023	DATA STRUCTURES AND ALGORITHMS	Major	3.0	Total Credit Hours 9.0			
UCCD1203	DATABASE DEVELOPMENT AND APPLICATIONS	Major	3.0	UCCD1133	INTRODUCTION TO COMPUTER ORGANISATION AND ARCHITECTURE	Major	3.0	BIAFE01 ELECTIVE GROUP - Choose 1 Unit(s)			
UCCM1333	INTRODUCTORY DISCRETE MATHEMATICS	Major	3.0	UCCN1003	DATA COMMUNICATIONS AND NETWORKS	Major	3.0	UBEA1013 - ECONOMICS			
Total Credit Hours 18.0			Total Credit Hours 20.0			Total Credit Hours 20.0			UBMH1013 - ORGANISATION AND HUMAN RESOURCE		
BIAFE04 ELECTIVE GROUP - Choose 1 Unit(s)				BIAFE01 ELECTIVE GROUP - Choose 1 Unit(s)				BIAFE05 ELECTIVE GROUP - Choose 1 Unit(s)			
UALC1113 - ENGLISH FOR INFORMATION TECHNOLOGY				UBEA1013 - ECONOMICS				UBMM1013 - MANAGEMENT PRINCIPLES			
UALL1053 - CRITICAL READING AND THINKING				UBMH1013 - ORGANISATION AND HUMAN RESOURCE				UBMM2013 - OPERATIONS MANAGEMENT			
LANG003 ELECTIVE GROUP - Choose 1 Unit(s)				UBMM1013 - MANAGEMENT PRINCIPLES				UBMM2023 - ORGANISATIONAL BEHAVIOUR			
MPW2113 - BAHASA KEBANGSAAN (A)				UBMM2013 - OPERATIONS MANAGEMENT				UBMM2023 - ORGANISATIONAL BEHAVIOUR			
* FOR MALAYSIAN ONLY, WITHOUT SPM-BM CREDIT				UBMM2023 - ORGANISATIONAL BEHAVIOUR				BIAFE05 ELECTIVE GROUP - Choose 1 Unit(s)			
MPW2123 - BAHASA KEBANGSAAN (B)				MPWE02 ELECTIVE GROUP - Choose 1 Unit(s)				UALC1083 - BASIC PROFESSIONAL WRITING			
** FOR NON-MALAYSIAN ONLY				MPW2143 - PENGAJIAN ISLAM				UAMG1043 - INTERPERSONAL COMMUNICATION			
UALC1003 - INTRODUCTION TO CHINESE LANGUAGE I				MPW2133 - PENDIDIKAN MORAL							
***WITHOUT KNOWLEDGE OF CHINESE LANGUAGE				Pre-Requirement Unit(s) For UCCD1023							
UALC1013 - INTRODUCTION TO CHINESE LANGUAGE II				1. UCCD1003 - PROGRAMMING CONCEPTS AND DESIGN							
***HAVE CREDIT FOR CHINESE LANGUAGE IN UPER AND DUE											

Figure 4.4 Course Structure Guide – Student View

The course structure guide is recommended course structure from Year 1 Trimester 1 to Year 3 Trimester 3 that displays to user for reference purpose. From the screenshot (Figure 4.4), it's under student account and system will depend on student's course and intake to redirect user to his/her course structure automatically, so the student is only able to view his/her course structure.

Figure 4.5 Course Structure Guide – Lecturer/ Administrator View

For lecturer and administrator, they are able to view all the course structure guides from the system. Form the Figure 4.5, there is two drop down list selection for user to select the course and intake so the course structure of selected course and intake will display to user.

4.3.1.4 Course Structure Planning

Switch trimester link Reminder

Y1T1 | Y1T2 | Y1T3 | Y2T1 | Y2T2 | Y2T3 | Y3T1 | Y3T2 | Y3T3 TOTAL 18 CREDIT HOURS

Recommended

Unit Code	Subject Name	Type	Credit Hours
BIAFE04	ENGLISH ELECTIVE	Elective	3
*UAL1113	ENGLISH FOR INFORMATION TECHNOLOGY		
*UAL1053	CRITICAL READING AND THINKING		
	NATIONAL LANGUAGE/ OTHER LANGUAGES	Elective	3
*MPW2113	BAHASA KEBANGSAAN (A)		
*MPW2123	BAHASA KEBANGSAAN (B)		
*UALC1003	INTRODUCTION TO CHINESE LANGUAGE I		
*UALC1013	INTRODUCTION TO CHINESE LANGUAGE II		
*UALC1023	INTRODUCTION TO CHINESE LANGUAGE III		
*UALF1003	INTRODUCTION TO FRENCH		
*UALJ2013	INTRODUCTION TO JAPANESE		
*UALM1003	INTRODUCTION TO TAMIL LANGUAGE		
*UALT1003	INTRODUCTION TO THAI LANGUAGE		
UCCD1003	PROGRAMMING CONCEPTS AND DESIGN	Major	3
UCCD1013	ANALYSIS AND DESIGN OF INFORMATION SYSTEMS	Major	3
UCCD1203	DATABASE DEVELOPMENT AND APPLICATIONS	Major	3
UCCM1333	INTRODUCTORY DISCRETE MATHEMATICS	Major	3
Total Credit Hours 18			

Course Structure Plan - Y1S1

Unit Code	Subject Name	Type	Credit Hours	Result
BIAFE04	ENGLISH ELECTIVE	Elective	3	A
	*UAL1113 ENGLISH FOR INFORMATION TECHNOLOGY			
UCCD1003	PROGRAMMING CONCEPTS AND DESIGN	Major	3	B+
UCCM1333	INTRODUCTORY DISCRETE MATHEMATICS	Major	3	B+
UCCD1133	INTRODUCTION TO COMPUTER ORGANISATION AND ARCHITECTURE	Major	3	B-
LANGXXXX3	NATIONAL LANGUAGE/ OTHER LANGUAGES	Elective	3	PS
	*MPW2113 BAHASA KEBANGSAAN (A)			
UCCD1013	ANALYSIS AND DESIGN OF INFORMATION SYSTEMS	Major	3	B
	----Select Subject----			
Total Credit Hours 18				

GPA : 3.260
 Trimester Quality Point : 48.900
 Trimester Credit Earned : 15

List of available subjects in drop down list

- CO-CURRICULAR UNITS
- DATA COMMUNICATIONS AND NETWORKS
- DATA STRUCTURES AND ALGORITHMS
- DATABASE DEVELOPMENT AND APPLICATIONS
- DATABASE SYSTEMS
- ENGLISH ELECTIVE
- HUMAN COMPUTER INTERACTION
- INDUSTRIAL TRAINING
- INTRODUCTION TO COMPUTER ORGANISATION AND ARCHITECTURE
- INTRODUCTORY DISCRETE MATHEMATICS
- LIBERAL ARTS ELECTIVE
- MAJOR ELECTIVE
- MANAGEMENT INFORMATION SYSTEMS
- MINOR ELECTIVE 1
- MINOR ELECTIVE II
- MOBILE APPLICATIONS DEVELOPMENT
- MPW ELECTIVE II
- NATIONAL LANGUAGE/ OTHER LANGUAGES
- OBJECT ORIENTED PROGRAMMING PRACTICES
- OBJECT-ORIENTED SYSTEM ANALYSIS AND DESIGN
- OPERATING SYSTEMS
- PENGAJIAN MALAYSIA
- PROGRAMMING CONCEPTS AND DESIGN
- PROJECT I
- PROJECT II
- SOFTWARE AND PROJECT MANAGEMENT
- SUN ZI ART OF WAR AND BUSINESS STRATEGIES
- TCP/IP INTERNETWORKING
- WEB SITE DEVELOPMENT
- WEB TECHNOLOGIES

Elective subject selection

Unit Code	Subject Name	Type	Credit Hours	Result
BIAFE04	ENGLISH ELECTIVE	Elective	3	--
UCCM1333	INTRODUCTORY DISCRETE MATHEMATICS	Major	3	--
UCCD1133	INTRODUCTION TO COMPUTER ORGANISATION AND ARCHITECTURE	Major	3	--
LANGXXXX3	NATIONAL LANGUAGE/ OTHER LANGUAGES	Elective	3	--
* MPW2113	BAHASA KEBANGSAAN (A)			
UCCD1013	ANALYSIS AND DESIGN OF INFORMATION SYSTEMS	Major	3	--
	----Select Subject----			
Total Credit Hours 15				

Figure 4.6 Course Structure Planning – Student View

The course structure planning is the most important part in this system. It is a function that allowed student to plan his/ her own course structure in 3 years. From the figure 4.6, it is the screenshot of course structure planning in Year 1 Trimester 1, and on the top of middle is the link that allowed student to switch between the 3 year trimesters.

There are two tables in the screen, such as structure guide and structure plan. The structure guide is according the course structure guide to generate the recommended course structure to student for reference. Another structure plan table are provide 7 of fields with drop down list, the drop down list are listed all available subjects let student to choose for planning purpose. Once drop down list selected a subject, the system will do the information checking, such as the unit code, credit hours, subject type and pre-requisite.

The processes of checking are show below:

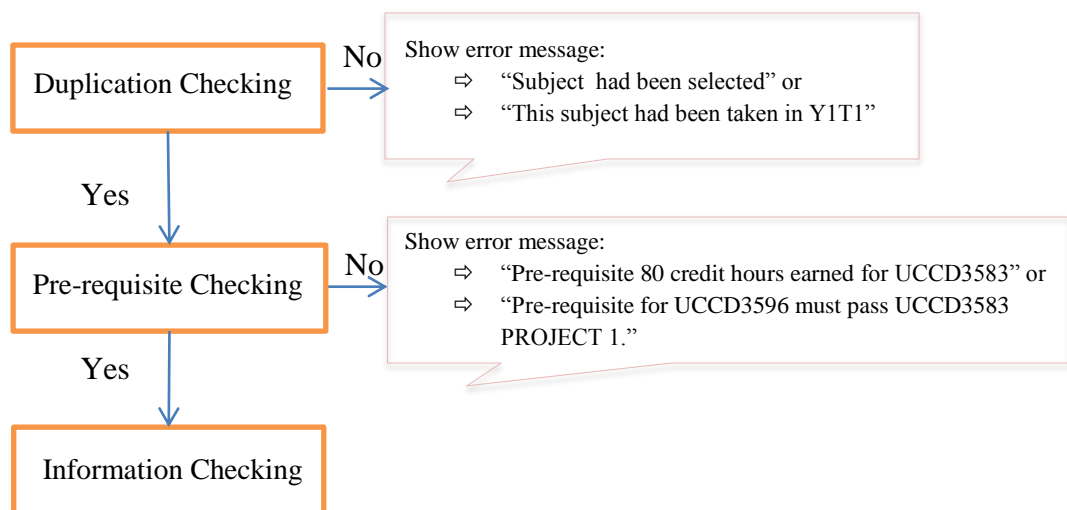


Figure 4.7 Processes of Checking

The selected subject will also show the information in column, if the subject type is equal elective, then another drop down list will display to user for selecting the subject that under the same elective group. System provides save and edit function to student save and modify their record and the total credit hour for 1 trimester will auto calculate by system when a single drop down list on change. On above of structure plan table, there is a reminder called “TOTAL CREDIT HOURS”. It is a function to let student easily to recall that how much is the total credit hours he had planned.

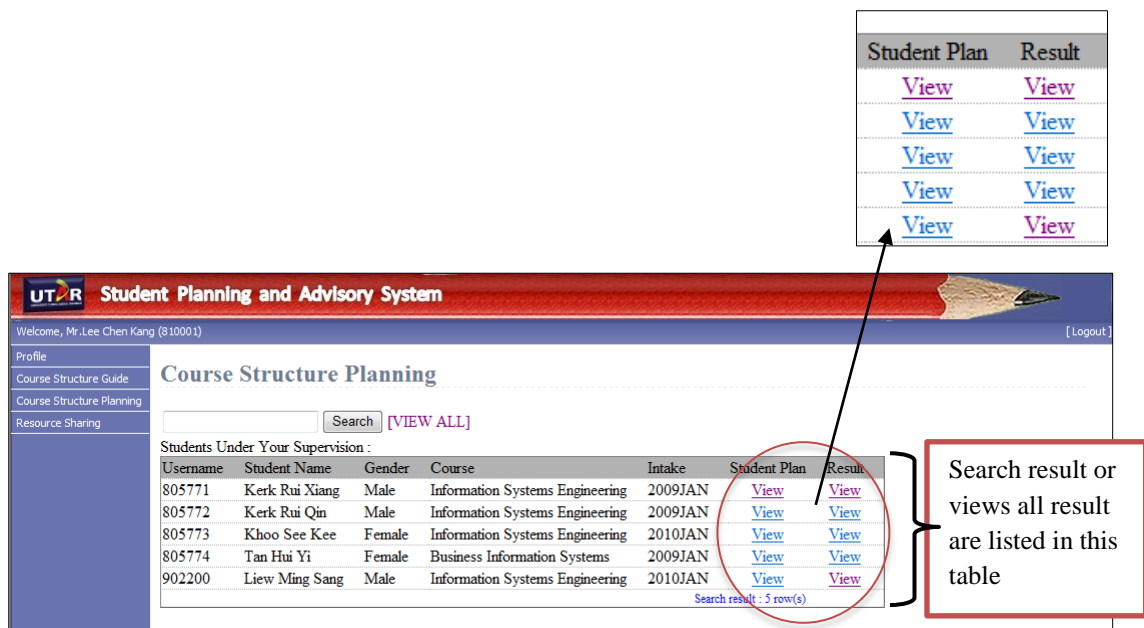


Figure 4.8 Course Structure Planning Lecturer/ Administrator View

Figure 4.8 are shown the course structure planning in lecturer and administrator view. Lecturer and administrator actually have the same function in course structure planning, but the system allowed administrator to view all the students and lecturer is only have the permission to view the student who under his supervision. One lecturer might have to handle 40 and above students, it's quite difficult to search particular student by manually. The search function is provided to admin and lecturer to search particular student by id or student name. Lecturer and admin are allowed to click in to view particular student's plan (same layout with student view, refer figure 4.6) but they are unable to modify. They only can give advice to student.

4.3.1.5 Result Planning

Course Structure Plan - Y1S1				
Unit Code	Subject Name	Type	Credit Hours	Result
BIAFE04	ENGLISH ELECTIVE	Elective	3	A
	* UALE1113 ENGLISH FOR INFORMATION TECHNOLOGY			
UCCD2013	HUMAN COMPUTER INTERACTION	Major	3	B+
UCCM1333	INTRODUCTORY DISCRETE MATHEMATICS	Major	3	B+
UCCD1133	INTRODUCTION TO COMPUTER ORGANISATION AND ARCHIT	Major	3	B-
LANGXXX3	NATIONAL LANGUAGE/ OTHER LANGUAGES	Elective	3	PS
	* MPW2113 BAHASA KEBANGSAAN (A)			
UCCD1013	ANALYSIS AND DESIGN OF INFORMATION SYSTEMS	Major	3	A
	----Select Subject----			--
			Total Credit Hours	18
			<input type="button" value="Edit"/>	<input type="button" value="Save"/>
GPA		: 3.460		
Trimester Quality Point		: 51.900		
Trimester Credit Earned		: 15		

Drop down list that selecting the grade

Figure 4.9 Result Planning – Student View

Actually result planning is a part of course structure planning, students can plan their result after selected the subject. There is a drop down list beside the credit hours column for student to target each subject result, when the result drop down list on change, the system will calculate the trimester quality point and GPA display to user. In figure 4.10, the trimester quality point, trimester credit hours earned and GPA are listed on the below of structure plan table. Students are able to save his result plan into record together with their course structure plan record.

For lecturer and administrator, the result planning function is actually same with course structure planning. They are able to search particular student to click into student record to view their plan, but unable to modify their record.

4.3.1.6 Comment

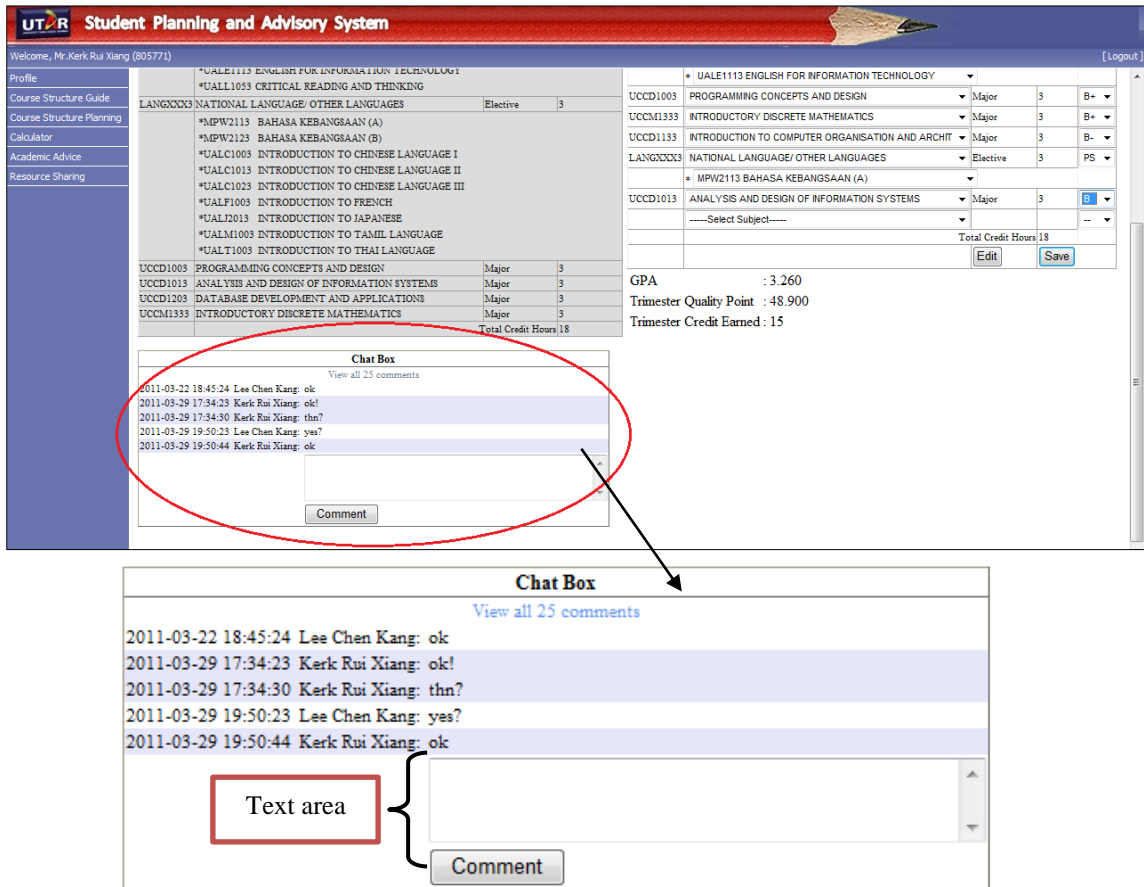


Figure 4.10 Comment

Comment function allowed student to communicate with lecturer, it can consider as an activities for academic advice. The comment function is located in course structure planning (Figure 4.10), so lecturer can advise their student when lecturer views their student’s record through the comment function. The chat box is only show 5 latest comments in the box, and there is provided a “view all” function to user to view all the chatting history.

4.3.1.7 Forecast CGPA calculator

The screenshot displays the 'Student Planning and Advisory System' interface. On the left, a sidebar lists navigation options: Profile, Course Structure Guide, Course Structure Planning, Calculator, Academic Advice, and Resource Sharing. The main content area is titled 'Calculator' and contains the following fields:

Current CGPA	:	3.500
Cumulative Quality Point	:	63
Cumulative Credit Earned	:	18
Total Current Trimester Credit	:	15
Target CGPA	:	3.6
Calculate Result	:	3.72

A red box highlights the calculator fields, and a callout box on the right states: 'Linked with course structure and result planning'.

Figure 4.11 Forecast CGPA

The forecast CGPA calculator is linked with course structure and result planning. After student plan their result, the system will calculate the CGPA automatically and display in forecast CGPA to student. As shown in figure 4.11, the first row (red colour font) is the current CGPA that calculated by system. The following cumulative quality point and credit earned are also calculated by system, so the system is according the current CGPA, cumulative quality point and credit earned to calculate the forecast GPA. In order to get the result from calculator, user are requires to enter the total credit hours that he/she going to take in next trimester and their target CGPA.

For example, one student his current CGPA is 3.5 and he is plan to take 15 credit hours on next trimester then he target to improve his CGPA to 3.6, so the calculator will calculate the GPA to him. The result from calculator is 3.72, which mean this student have to get 3.72 GPA in next trimester in order to improve his CGPA to 3.6. (Refer Figure 4.11)

4.3.1.8 Academic Advisor



Figure 4.12 Academic Advisor

Figure 4.12 is shown the screenshot in function academic advisor. Student can get their advisor’s information easily from SPAS, the information such as name, phone extension, email, and office venue. When lecturer updates his personal information then student will also get the latest information from the system as well.

4.3.1.9 Resource Sharing

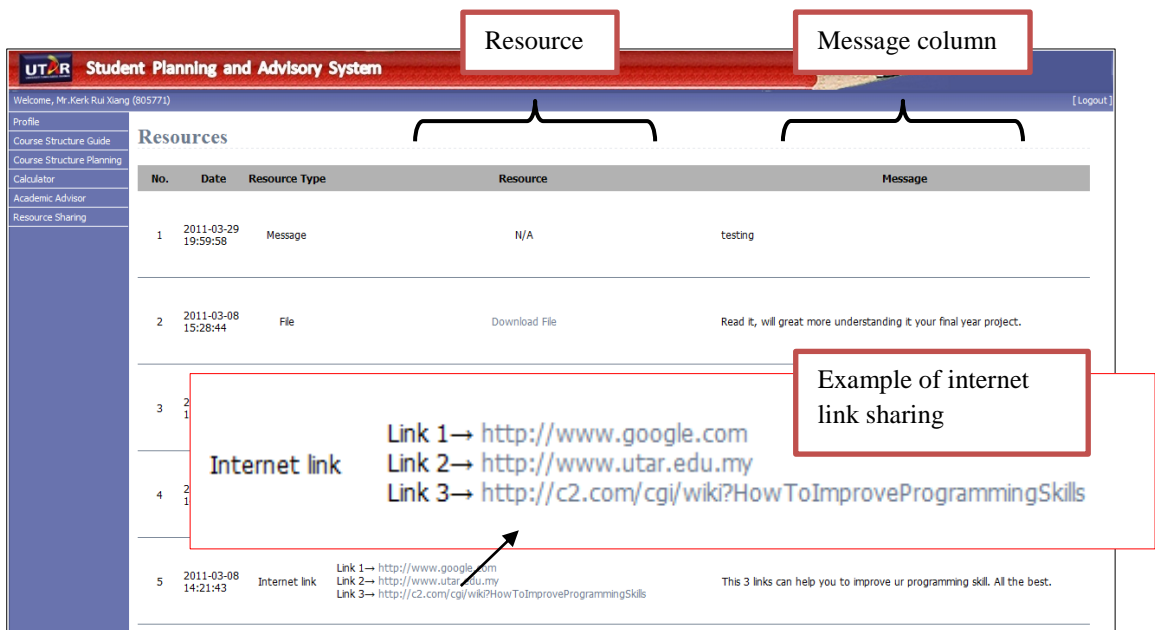


Figure 4.13 Resource Sharing - Student View

There is three type of resource, such as message, files and internet link sharing. Student can view all the resource that shared by his advisor and they unable to modify or sharing new resource to others.

For lecturer and admin, they can create new resource. The screenshot below is an example.

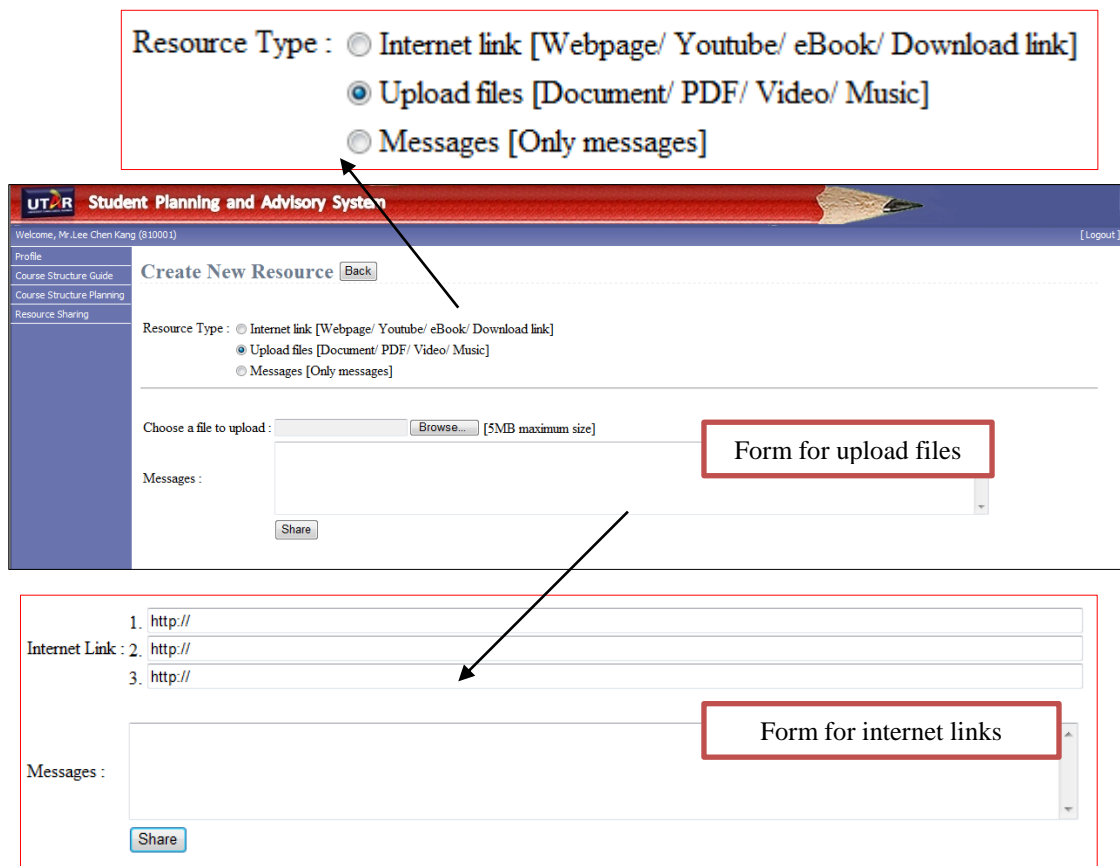


Figure 4.14 Create New Resource

Lecturer need select the resource type first then only can sharing the new resource. When lecturer selected different type of resource then system will shows different form to lecturer to enter the resource, it can be internet link, multimedia files or message.

Figure 4.14 are shown an example of file sharing resource, lecturer can upload whatever file that less than 5MB and leave a message let his advisee know how important is this resource or what benefit can get after read the resource.

4.3.1.10 Assign Advisor

The screenshot displays the 'Assign Advisor' interface. At the top, it says 'UTAR Student Planning and Advisory System'. A sidebar on the left lists various options like 'Course Structure Guide', 'Resource Sharing', and 'Assign Advisor'. The main area has a search bar and a '[VIEW ALL]' link. Below the search bar, a table lists student information:

Student ID	Student Name	Information
805775	Lui Shen Jian	View/Update

Below the table, it says 'Search result : 1 row(s)'. A callout box points to the 'View/Update' link, indicating that clicking it leads to the 'Student Info' page. The 'Student Info' page displays the following details:

Student Info

Name : Lui Shen Jian
 Student ID : 805775
 NRIC : 891106015027
 Gender : Male
 Phone : 0177338806
 Course : Information System Engineering
 Address : 12, JLN SATU, TMN BARU, 83000, BATU PAHAT
 Advice By : [Dropdown Menu]
 [Back] [Submit]

Figure 4.15 Assign Advisor

Assign Advisor to student is the permission of administrator, they can even reassign new advisor to student also. From figure 4.15, there is a “view all” and “new student” button. When click on the “view all” button then the system will listing all student for admin to modify and update, and click on the “new student” button to show the new students who have no advisor. Admin have to click in and go through the student info to assign advisor to students accordingly, the drop down list is listed all available lecturer name and provided to admin for selecting purpose.

4.3.1.11 Add New Intake

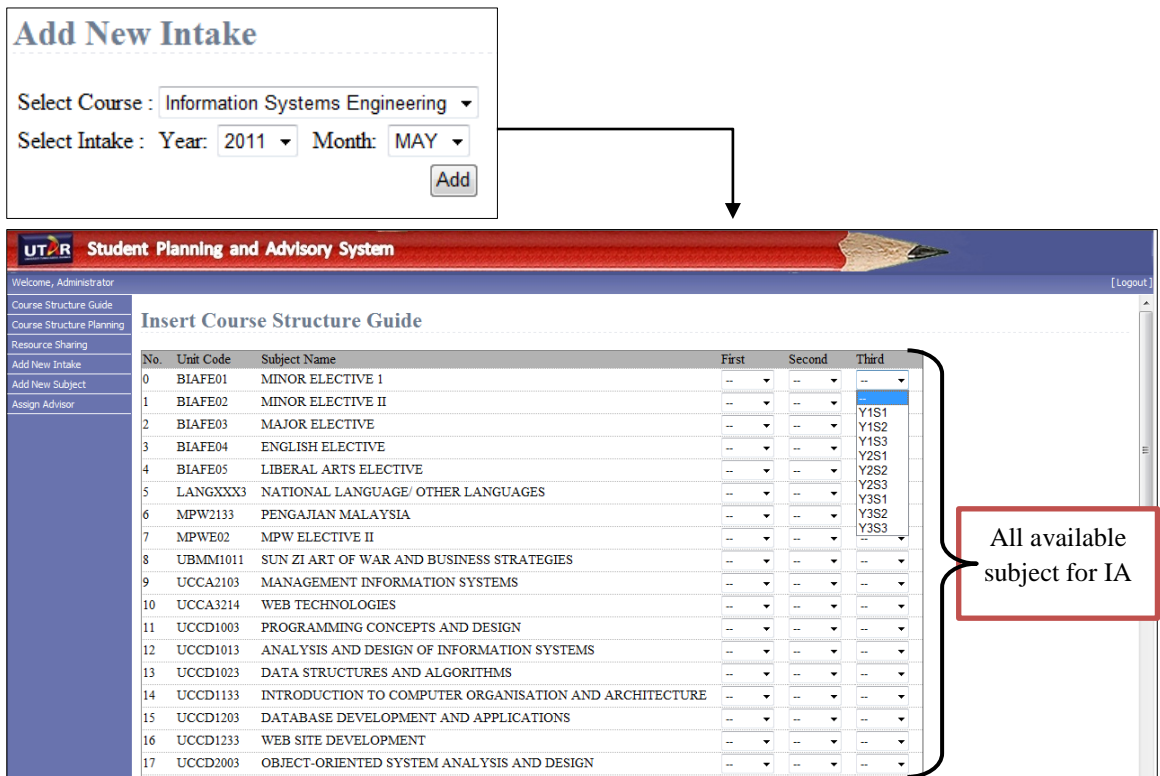


Figure 4.16 Add New Intake

SPAS provide new intake adding function and insert new intake course structure guide to admin. Figure 4.17 is shown the process of adding a new intake. Start from the first step, the system is requires admin to select the course and new intake year and month. After that, admin have to follow the course structure guide to insert the trimester for every available subject.

4.3.1.12 Add New Subject

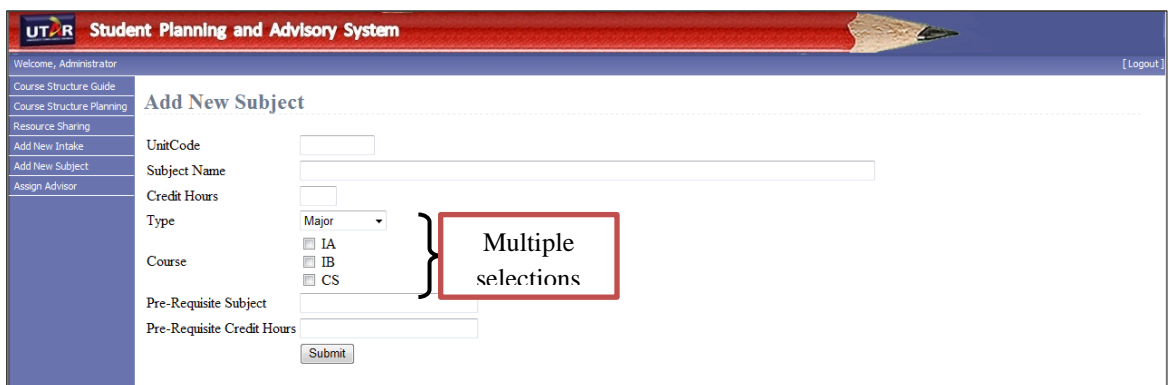


Figure 4.17 Add New Subject

Figure 4.17 is shown the adding new subject function. System provided a form that allowed administrator to add new subject. The new subject can be available for IA, IB and CS, so there is a multiple selection in courses field.

4.3.1.13 Update Subject

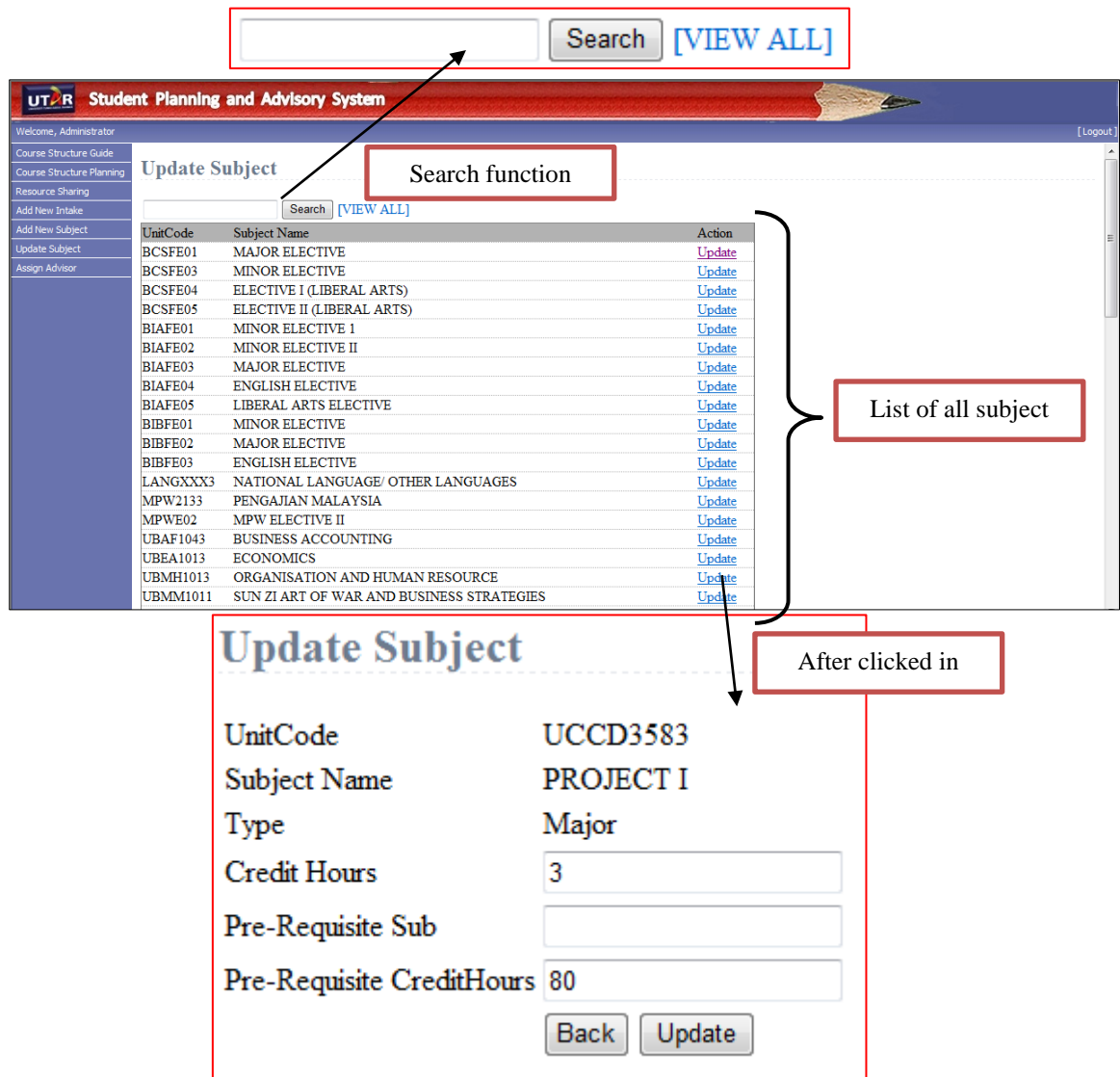


Figure 4.18 Update Subject

System allowed administrator to update the subject's credit hours, pre-requisite subject and pre-requisite credit hours. Since there is a lot of subject, system is provided the search function to admin to search particular subject. Figure 4.18 is shown the screenshot in update subject page, and there is an update action column that allowed admin to click in to view and modify particular subject.

4.3.2 System Testing

4.3.2.1 Testing login page

Case	What to test	Procedure	Test Value
1	Login authentication	Enter username and password, click login	Username: 0805771 Password: 123456
	Result: Expected: Invalid username/ password. Actual: Invalid username/ password		
2	Login authentication	Enter username and password, click login	Username: 0805771 Password: 0167540803
	Result: Expected: System redirect to index.php Actual: System redirect to index.php		

4.3.2.2 Testing profile page

Case	What to test	Procedure	Test Value
1	Edit profile	Click edit button	-
	Result: Expected: phone, email and address change to textbox view Actual: phone, email and address change to textbox view		
2	Edit profile	Enter new phone number to phone number text box field and click update	Phone number: 0177300031
	Result: Expected: phone number updated and display new phone number 0177300031 Actual: phone number updated and display new phone number 0177300031		
3	Edit profile	Enter new email address to new email textbox field and click update	email address: edwen1109@gmail.com
	Result: Expected: email updated and display new email edwen1109@gmail.com. Actual: email updated and display new email edwen1109@gmail.com.		

4.3.2.3 Testing course structure guide in lecture view

Case	What to test	Procedure	Test Value
1	View particular course structure	select a course, select an intake and click "view"	select "Computer Science" as course select "2009MAY" as intake
	Result: Expected: show the course structure guide of computer science - 2009MAY Actual: show the course structure guide of computer science - 2009MAY		

4.3.2.4 Testing Course Structure Planning in student view

Case	What to test	Procedure	Test Value
1	Trimester links	click the link	Y1T3
	Result: Expected: redirect to Year 1 Trimester 3 plan and show Year 1 Trimester 3 structure guide. Actual: redirect to year 1 trimester 3 plan and show Year 1 Trimester 3 structure guide.		
2	Pre-requisite	Select a subject note: current total credit hours is 21	Select "Project 1"
	Result: Expected: error message pop out - Pre-requisite 80 credit hours earned for UCCD3583. Actual: error message pop out - Pre-requisite 80 credit hours earned for UCCD3583.		
3	Pre-requisite	Select a subject	Select "Project II"
	Result: Expected: error message pop out - Pre-requisite for UCCD3596 must pass UCCD3583 – project 1. Actual: error message pop out - Pre-requisite for UCCD3596 must pass UCCD3583 – project 1.		
4	Get subject info	Select one subject	Select "Pengajian Malaysia"
	Result: Expected: unit code display MPW2133, Type display Compulsory and 3 credit hours Actual: unit code display MPW2133, Type display Compulsory and 3 credit hours		
5	Duplication	Select two same subject	First select "Pengajian Malaysia" Second select "Pengajian Malaysia"
	Result: Expected: error message pop out – Subject had been selected Actual: error message pop out - Subject had been selected		
6	Save record	Click save button	-
	Result: Expected: unable to modify, all field disabled Actual: unable to modify, all field disabled		
7	Edit record	Click Edit button and reselect a subject in field 1 then click save.	Select "Management Information System "
	Result: Expected: when click edit button, enable to modify all field. After save, pop out a message "Your record had been updated." Actual: when click edit button, enable to modify all field. After save, pop out a message "Your record had been updated."		

4.3.2.5 Testing Result Planning

Case	What to test	Procedure	Test Value
1	Trimester result	Select two grade for two subject	first subject 3 credit hours "A" second subject 3 credit hours "B"
	Result: Expected: GPA: 3.500, Trimester Quality Point: 21.000 and credit earned: 6 Actual: GPA: 3.500, Trimester Quality Point: 21.000 and credit earned: 6		
2	Trimester result	Select a grade for LAN subject	select "PS" note: PS stand for pass
	Result: Expected: Result no change, because LAN subject not count in CGPA Actual: Result no change		

4.3.2.6 Testing Comment Part

Case	What to test	Procedure	Test Value
1	Comment	Enter message in text box	"How are you"
	Result: Expected: "how are you" posted in chat box and show current date time. Actual: "how are you" posted in chat box and show current date time.		
2	Comment	Enter message in text box	"I am fine"
	Result: Expected: "I am fine" posted in chat box and show current date time. Actual: "I am fine" posted in chat box and show current date time.		

4.3.2.7 Testing Forecast Calculator

Case	What to test	Procedure	Test Value
1	Calculation	Enter total credit hour and target CGPA note: Current CGPA is 3.5	Total credit hour "21" Target CGPA is 3.6
	Result: Expected: result show 3.69 Actual: result show 3.69		
2	Calculation	Enter total credit hour and target CGPA note: Current CGPA is 3.5	Total credit hour "18" Target CGPA is 3.7
	Result: Expected: result show 3.90 Actual: result show 3.90		

4.3.2.8 Testing course structure planning in lecturer view

Case	What to test	Procedure	Test Value
1	Search	Enter student ID	“0805771”
	Result: Expected: search result display 1 row “Kerk Rui Xiang” Actual: search result display 1 row “Kerk Rui Xiang”		
2	View Student Plan	Click view to enter student plan	Click view for student “Kerk Rui Xiang”
	Result: Expected: Student plan displayed student name: Kerk Rui Xiang Actual: Student plan displayed student name: Kerk Rui Xiang		

4.3.2.9 Testing resource sharing in lecture view

Case	What to test	Procedure	Test Value
1	Create new resource	Select a resource type to share	Select “internet link”
	Result: Expected: show three text box for enter link and a message box below Actual: show three text box for enter link and a message box below		
2	Create new resource	Select a resource type to share	Select “upload file”
	Result: Expected: Show a browse button and a message box below Actual: Show a browse button and a message box below		

4.3.2.10 Testing to assign advisor

Case	What to test	Procedure	Test Value
1	New Student button	Click “new student” button note: there is 2 new students	-
	Result: Expected: show two students in the table below Actual: show two students in the table below		
2	Search function	Enter keyword in textbox	“Kerk”
	Result: Expected: Show the student who name have “kerk”, search result ”2” Actual: Show the student who name have “kerk”, search result ”2”		
3	View and update	Click in one student info and assign an advisor to him/her	click “Kerk Rui Xiang” and assign “Mr. Lee Chen Kang” as his advisor
	Result: Expected: Show student Kerk Rui Xiang info and assigned advisor Actual: Show student Kerk Rui Xiang info and assigned advisor		

4.3.2.11 Testing to update subject

Case	What to test	Procedure	Test Value
1	search function	Enter keyword in textbox	“UCCD”
	Result: Expected: Show the subject where unit code have “UCCD”, search result ”19” Actual: Show the subject where unit code have “UCCD”, search result ”19”		
2	Search function	Enter keyword in textbox	“Programming”
	Result: Expected: Show the subject where subject name have “programming”, search result ”4” Actual: Show the subject where subject name have “programming”, search result ”4”		
3	View and update	Click in to one subject and update subject’s credit hours	click into “Project 1” and modify credit hours to “3”
	Result: Expected: Show subject “project 1” info and info updated Actual: Show subject “project 1” info and info updated		

CHAPTER 5 SUMMARY AND RECOMMENDATION

5.1 Introduction

This is the final chapter of the thesis. Topics that will be discussed in this chapter are summary of project, contributions, system limitation and recommendations. The summary is summarizing the task that covered from Chapter 1 to Chapter 4. The contribution of the project will list and point out in this final chapter. The system limitation will discuss the drawback of system in term of system functionality. At the end will provide some recommendation on the project limitation for future enhancement in further development.

5.2 Summary of project

Student planning and advisory system consider as an E-learning tools that help student to clarify, plan, implement and monitoring their progress of study in 3 years. As mentioned in Chapter 1, the target audients are address to students, lecturer and officer (administrator). The objective of project is to increase positive outcome and responsibility in academic advice, the way to bring convenience for lecturer to discuss career opportunities with students, and also to increase work efficiency and bring university toward e-learning environment. Obviously, the objective of project has solved the problem statement that listed in Chapter 1.

From Chapter 2 literature review, we had compared the existing system and doing the enhancement with new ideas in SPAS. We also had discussed the computer system security, communication tools, programming language and web 1.0 to web 3.0. Lastly, we decided to use PHP programming with MySQL database in development and combine the web 2.0 communication concept to build up an e-learning web application.

During the system development, the methodology that applies in is the waterfall model. It is proceed in sequence which the stage move from one to the next step and

generally a stop is finished before the next one begins. Start from the planning, analysis, design the system flow, and done the implementation we must clearly understand what objective we going to be and finally build up a perfect web application

The system functionality has explained in Chapter 4, and self-testing has applied in during the finding session. The match of testing expected result and actual result is to prove the system is working and calculate accurately.

5.3 Contributions

Develop this web based planning and advisory system is to help university/ colleges toward E-learning university environment. It will bring the studying atmosphere to motivate student to study as increase the motivation of study. There will be a lot of benefit gained not only for the student but also for the lecturer as well. The contributions of this system are stated as follow:

Provide student with a good planning tools

Student planning and advisory system consist of course structure guide, result calculator, and the empty field for 3 year structure plan. The system provide course structure guide beside the planning table for student easily to refer, at the same time student can plan their result and calculate a forecast result immediately.

Improve education quality

Develop SPAS will improve the education quality as student will plan their career and get a target for their progress of study. Some more, they can reduce confuse when deciding to take subject. Except that, student will easily to get the information and get advice by advisor .Turn over to lecture and faculty officers, the system is bring much more convenient to them whatever in academic advice or documentation. Lecture can easily to share their knowledge and experience through the system.

Improve work efficiency in education management

SPAS will be enhancement in education management as well, such as reduce the paper work and documentation. The faculty officers can abate a lot of duplicate work.

CHAPTER 5: SUMMARY AND RECOMMENDATION

For example, update the information to system to reduce answering the same question from different student. For lecturer, they can improve the consultation and increase positive outcome and responsibility in academic advice

In conclusion, with the student planning and advisory system in university it will bring university toward to e-learning environment to become strong and strong. It can be help university to getting famous and better popularity in Malaysia and global.

5.4 Limitations

Although the student planning and advisory system has developed and achieve the objective, however, the system still has some limitations due to the time constraint. The limitations are list in below:

Student's result

Due to security, private and confidential problem, UTAR are not allowed to export the student's result to system so that the student planning and advisory system are using result planning concept and the result of calculator might not accurate since it is all plan by students and it is all depend the student who have seriously to use the tools.

Consultation

The function for academic advisor in SPAS is only show the advisor information to student, such as advisor name, office venue, extension number, and email. Student unable to get the consultation time easily

Communication

Comment is only allowed in planning session, and student cannot get immediately respond from their advisor.

Subject adding function

Currently, add new subject function for SPAS is only allowed to add one subject in one time. For example, if got 10 subjects have to add in, then the administrator is needed to repeat the function 10 times and add the subject in.

The availability of course

This system is only available for IA (Information Systems Engineering), IB (Business Information Systems) and CS (Computer Science).

5.5 Recommendations

The student planning and advisory system consider as prototype in experts' mind and it is not enough perfect. The SPAS needs to further improve and enhance to bring satisfaction to user. The main recommendation that suggest in enhancement is to solve the system's limitation.

First of all, The SPAS should integrated with examination department, because of the forecast result calculator must be get the actual result from department examination, so the result from calculator will be more accurate and student can get the accurate forecast CGPA to plan in their following trimester.

Besides that, suggested to build a calendar and locate in function academic advisor. As the current system is only show the information of advisor, with a calendar that lecturer can post their timetable to the system and student can make appointment immediately from the system. The tools that can be implement may be Google Calendar, because it provided the function that discuss in above.

On top of that, SPAS can implement a live chat function and make the system more toward the social's life. Live chat can help student to get immediately respond when the lecturer is online. Moreover, it can also improve the relationship between student and lecturer

Lastly, in the subject adding and update function may have to further study in the PHP read file algorithm. As adding subject and modify subject 1 by 1 is difficult to administrator, I suggested to use fix the format of course structure in excel or csv format and use the read file algorithm to input all subject to database in few second.

5.6 Conclusion

In Chapter 5 had summarised the project from Chapter 1 to 4. As conclusion, the overall of student planning and advisory system is specially designed to university and collage as an e-learning tool that provided a lot of function to fulfil the student and lecturer needs.

CHAPTER 5: SUMMARY AND RECOMMENDATION

As mentioned in Chapter 1, the targeted audience are lecturer, student and officer so the main contribution of SPAS is to contribute to the target audience which is improving the work efficiency in education management and education quality.

Although the system has developed and achieves the objective, however, the system still has some limitations such as student result, consultation, communication, function in subject adding, and the availability of courses. In order to make the system perfect, I had recommended some suggestion in future enhancement to solve the problem of current system.

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APPENDIX

APPENDIX

APPENDIX

APPENDIX A - Questionnaire

Date of birth: _____ Sex: [Female / Male] _____

Background:

1. Do you have basic computer knowledge? [Yes / No] _____
2. Do you like E-learning environment? [Yes / No] _____

Thanks you for taking time to complete this questionnaire. The information you provide is appreciate much and helps to improve the Student Planning and Advisory System.

Student Planning:

1. Did you have plan for your studies and career before? [Yes / No] _____
2. Easily to get confuse when deciding to repeat the subject? [Yes / No] _____
3. Have you manually calculated your CGPA before? [Yes / No] _____
4. Do you wish have a Student Planning System with auto calculate forecast CGPA function? [Yes / No] _____

Academic Advice:

1. Feeling difficult to make appointment with academic advisor? [Yes / No] _____
2. Every semester have to meet up with academic advisor are inconvenient for you? [Yes / No] _____
3. Do you wish have a Student Advisory System with Live Chat function? [Yes / No] _____

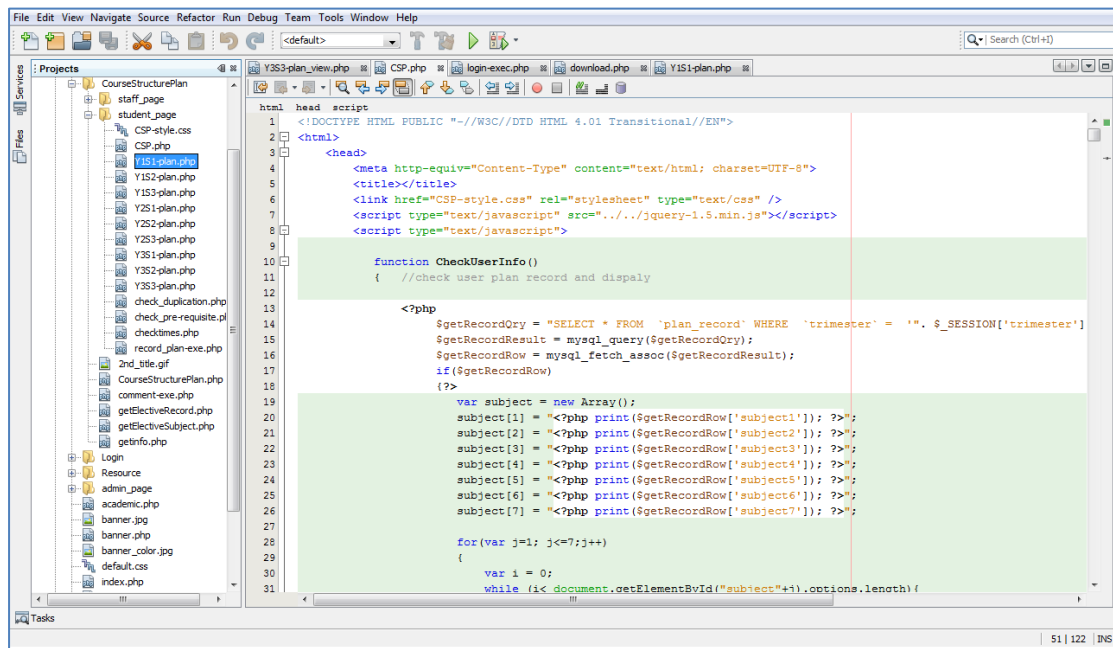
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APPEDDIX B - Development Tools

The system is developed by PHP programming and MySQL database. PHP is an open source programming language and has a lot of IDE to support it to build up an application.

The tools that used in development are NetBeans IDE 6.9.1 and XAMPP cross platform.

Below is the screenshot of NetBeans IDE:



The XAMPP is a free and open source cross platform web server solution stack package as well. It consist of the Apache HTTP server, MySQL database and interpreters for scripts written in the PHP and Perl programming languages.

The XAMPP is also involved the third party MySQL software which is phpMyAdmin. phpMyAdmin is an open source tool written in PHP intended to handle the administration of MySQL over the world wide web. It can perform various tasks such as creating, inserting, deleting, modifying databases, tables, fields and rows.

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APPENDIX C - Source Code

Course Structure Planning - Y1S1-plan.php

```
<?php
```

```
    error_reporting(0);
    session_start();

    //connect to database
    $dbhost = 'localhost';
    $dbuser = 'root';

    $conn = mysql_connect($dbhost, $dbuser) or die ('Error connecting to mysql');

    $dbname = 'fyp';
    mysql_select_db($dbname);

    $qry = "SELECT * FROM user WHERE username = '".$_SESSION['username']."'";
    $result = mysql_query($qry);
    $row= mysql_fetch_assoc($result); //Fetch a result row as an associative array

    $_SESSION['trimester']= "Y1S1";
    $_SESSION['stage'] = "Year 1 Trimester 1";
    include ("CSP.php"); //CSP.php consider as a class that use in every trimester
```

```
?>
```

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Course Structure Planning - CSP.php

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title></title>
    <link href="CSP-style.css" rel="stylesheet" type="text/css" />
    <script type="text/javascript" src="../../jquery-1.5.min.js"></script>
    <script type="text/javascript">

      function CheckUserInfo()
      {
        //check user plan record and dispaly
        <?php
          $getRecordQry = "SELECT *
                        FROM `plan_record`
                        WHERE `trimester` = '". $_SESSION['trimester']."'
                        AND `username` = '". $_SESSION['username']."'";
          $getRecordResult = mysql_query($getRecordQry);
          $getRecordRow = mysql_fetch_assoc($getRecordResult);
          if($getRecordRow)
          {?>
            var subject = new Array();
            subject[1] = "<?php print($getRecordRow['subject1']); ?>";
            subject[2] = "<?php print($getRecordRow['subject2']); ?>";
            subject[3] = "<?php print($getRecordRow['subject3']); ?>";
            subject[4] = "<?php print($getRecordRow['subject4']); ?>";
            subject[5] = "<?php print($getRecordRow['subject5']); ?>";
```

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```
subject[6] = "<?php print($getRecordRow['subject6']); ?>";
subject[7] = "<?php print($getRecordRow['subject7']); ?>";

for(var j=1; j<=7;j++)
{
    var i = 0;
    while (i< document.getElementById("subject"+j).options.length){
        if(document.getElementById("subject"+j).options[i].value == subject[j])
        {
            document.getElementById("subject"+j).value = subject[j];

            var selectedVal =document.getElementById("subject"+j).options[i].value;
            $.ajax({
                url:"../getinfo.php",
                async:false,
                type:"post",
                data: {UnitCode: selectedVal},
                success: function(data) {
                    var info = data.split(",");
                    document.getElementById("code"+j).innerHTML = info[0];
                    document.getElementById("credit"+j).innerHTML = info[1];
                    document.getElementById("type"+j).innerHTML = info[2];
                    //if subject equal elective subject then get the elective subject info
                    if(info[2] == "Elective")
                    {
                        if(info[3]=='1'){
                            document.getElementById("elective"+j).style.display = ' ';
                        }else if(info[3]=='2'){
                            document.getElementById("elective"+j).style.display = ' ';
                            document.getElementById("2_elective"+j).style.display = " ";
                        }
                    }
                }
            });
        }
    }
}
```

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```
}else if(info[3]=='3'){
    document.getElementById("elective"+j).style.display = "";
    document.getElementById("2_elective"+j).style.display = "";
    document.getElementById("3_elective"+j).style.display = "";
}else if(info[3]=='4'){
    document.getElementById("elective"+j).style.display = "";
    document.getElementById("2_elective"+j).style.display = "";
    document.getElementById("3_elective"+j).style.display = "";
    document.getElementById("4_elective"+j).style.display = "";
}

$.ajax({
    url:"../getElectiveSubject.php",
    async:false,
    type:"post",
    data: {GroupName: info[0]},
    success: function(result){
        var ElectiveSubject = result.split("\n");
        var k=0;
        for(k=0; k<ElectiveSubject.length-1;k++)
        {
            var NewOption = document.createElement("OPTION");
            NewOption.value= ElectiveSubject[k];
            NewOption.text= ElectiveSubject[k];
            document.getElementById("electiveSubject"+j).add(NewOption);
            document.getElementById("electiveSubject"+j).disabled = true;

            var NewOption2 = document.createElement("OPTION");
            NewOption2.value= ElectiveSubject[k];
            NewOption2.text= ElectiveSubject[k];
```

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```
document.getElementById("2_electiveSubject"+j).add(NewOption2);
document.getElementById("2_electiveSubject"+j).disabled = true;

var NewOption3 = document.createElement("OPTION");
NewOption3.value= ElectiveSubject[k];
NewOption3.text= ElectiveSubject[k];
document.getElementById("3_electiveSubject"+j).add(NewOption3);
document.getElementById("3_electiveSubject"+j).disabled = true;

var NewOption4 = document.createElement("OPTION");
NewOption4.value= ElectiveSubject[k];
NewOption4.text= ElectiveSubject[k];
document.getElementById("4_electiveSubject"+j).add(NewOption4);
document.getElementById("4_electiveSubject"+j).disabled = true;
    }
}
});
$.ajax({
    url:"../getElectiveRecord.php",
    async:false,
    type:"post",
    data: {GroupName: info[0]},
    success: function(result){

        var ESubject = result.split(",");
        var c = 0;
        while (c< document.getElementById("electiveSubject"+j).options.length){
            if(document.getElementById("electiveSubject"+j).options[c].value == ESubject[0])
            {
                document.getElementById("electiveSubject"+j).value = ESubject[0];
            }
        }
    }
});
```

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```
    }
    if(document.getElementById("2_electiveSubject"+j).options[c].value == ESubject[1])
    {
        document.getElementById("2_electiveSubject"+j).value = ESubject[1];
    }
    if(document.getElementById("3_electiveSubject"+j).options[c].value == ESubject[2])
    {
        document.getElementById("3_electiveSubject"+j).value = ESubject[2];
    }
    if(document.getElementById("4_electiveSubject"+j).options[c].value == ESubject[3])
    {
        document.getElementById("4_electiveSubject"+j).value = ESubject[3];
    }
    c++;
}
}
});
}
}})
}
i++;
}
//get the result that student planed
<?php
    $getResultRecordQry = "SELECT * FROM result_record WHERE recordID = ".$getRecordRow['recordID']."";
    $getResultRecordResult = mysql_query($getResultRecordQry);
    $getResultRecordRow = mysql_fetch_assoc($getResultRecordResult);
?>
var result = new Array();
result[1] = "<?php print($getResultRecordRow['subject1Result']); ?>";
```

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```
result[2] = "<?php print($getResultRecordRow['subject2Result']); ?>";
result[3] = "<?php print($getResultRecordRow['subject3Result']); ?>";
result[4] = "<?php print($getResultRecordRow['subject4Result']); ?>";
result[5] = "<?php print($getResultRecordRow['subject5Result']); ?>";
result[6] = "<?php print($getResultRecordRow['subject6Result']); ?>";
result[7] = "<?php print($getResultRecordRow['subject7Result']); ?>";
var i = 0;
while (i< document.getElementById("result"+j).options.length){
    if(document.getElementById("result"+j).options[i].value == result[j])
    {
        document.getElementById("result"+j).value = result[j];
    }
    i++;
}
document.getElementById("GPA").value = "<?php print($getResultRecordRow['GPA']); ?>";
document.getElementById("qp").value = "<?php print($getResultRecordRow['qp']); ?>";
document.getElementById("ch").value = "<?php print($getResultRecordRow['ch']); ?>";
//end get the result
}
document.getElementById("tdGPA").innerHTML = " <?php echo $getResultRecordRow['GPA']; ?>";
document.getElementById("tdQP").innerHTML = " <?php echo $getResultRecordRow['qp']; ?>";
document.getElementById("chEarned").innerHTML = " <?php echo $getResultRecordRow['ch']; ?>";
document.getElementById("totalcredit").innerHTML = "<?php print($getRecordRow['totalCreditHours']); ?>";
document.getElementById("input-totalcredit").value = "<?php print($getRecordRow['totalCreditHours']); ?>";
var update = "<?php print($_GET['update']); ?>";
if(update == "yes"){
    alert("Your record had been updated");
}
}
<?php }
else
```


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```
{?>
    alert("No record found.\nPlease save record after you plan.\nThank you");
    for(var i=1; i<=7; i++)
    {
        document.getElementById("subject"+i).disabled = false;
    }
    document.getElementById("save").disabled= false;
<?php }?>
//check user course, intake to get course structure guide
<?php
    $intake = $row['Intake'];
    $typeID = $row['type_ID'];
    $course = $row['Course'];

    if ($typeID == 30){
        if ($course == "IA"){
            $qry = "SELECT *
                FROM `subject`
                INNER JOIN `subject_ia`
                ON `subject`.UnitCode = `subject_ia`.UnitCode
                WHERE `subject_ia`.`$intake` LIKE '%" . $_SESSION['trimester']. "%'";
        }
        else if($course == "IB"){
            $qry = "SELECT *
                FROM `subject`
                INNER JOIN `subject_ib`
                ON `subject`.UnitCode = `subject_ib`.UnitCode
                WHERE `subject_ib`.`$intake` LIKE '%" . $_SESSION['trimester']. "%'";
        }
        else if($course == "CS"){
```

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```
        $qry = "SELECT *
                FROM `subject`
                INNER JOIN `subject_cs`
                ON `subject`.UnitCode = `subject_cs`.UnitCode
                WHERE `subject_cs`.`$intake` LIKE '%'. $_SESSION['trimester'].'%";
    }
    else
        exit();
    }
    ?>
}
function getinfo(i) //get subject info
{
    var selectVal = document.getElementById("subject"+i).value;
    //check duplication
    $.ajax({
        url:"check_duplication.php",
        async:false,
        type:"post",
        data: {UnitCode: selectVal, trimester: "<?php echo $_SESSION['trimester'];?>"},
        success: function(data){
            if(data == "") // no duplicate
            { //if no duplicate, check selected on this semester already or nt.
                for(var count=1; count<=7; count++){
                    if(selectVal == document.getElementById("subject"+count).value)
                    {
                        if(i==count){
                        }else{
                            var selected = "yes";
                        }
                    }
                }
            }
        }
    });
}
```

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```
    }  
  }  
  if(selected == "yes"){  
    alert("Subject had been selected");  
    document.getElementById("subject"+i).value = "";  
    document.getElementById("result"+i).value = "";  
    document.getElementById("code"+i).innerHTML = "";  
    document.getElementById("credit"+i).innerHTML = "";  
    document.getElementById("type"+i).innerHTML = "";  
    document.getElementById("result"+i).disabled = true;  
    document.getElementById("elective"+i).style.display = 'none';  
  }else{  
    $.ajax({  
      url:"check_pre-requisite.php",  
      async:false,  
      type:"post",  
      data: {UnitCode: selectVal, trimester: "<?php echo $_SESSION['trimester'];?>"},  
      success: function(Pass){  
        if(Pass == "Yes")  
        {  
          $.ajax({  
            url:"../getinfo.php",  
            async:false,  
            type:"post",  
            data: {UnitCode: selectVal},  
            success: function(data) {  
  
              var info = data.split(",");  
              document.getElementById("code"+i).innerHTML = info[0];  
              document.getElementById("credit"+i).innerHTML = info[1];  
            }  
          }  
        }  
      }  
    });  
  }  
}
```

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```
document.getElementById("type"+i).innerHTML = info[2];
document.getElementById("result"+i).disabled = false;

if(info[2] == "Elective")
{
    if(info[3]== '1'){
        var removeOption = document.getElementById("electiveSubject"+i).options;
        if(removeOption.length>0)
        {
            removeOption.length=0; //remove all options
        }

        alert("Please select one ELECTIVE SUBJECT in group "+info[0]+".");
        document.getElementById("elective"+i).style.display = "";
        document.getElementById("2_elective"+i).style.display = 'none';
        document.getElementById("3_elective"+i).style.display = 'none';
        document.getElementById("4_elective"+i).style.display = 'none';
        $.ajax({
            url:"../getElectiveSubject.php",
            async:false,
            type:"post",
            data: {GroupName: info[0]},
            success: function(result){
                var ElectiveSubject = result.split("\n");
                var k=0;
                for(k=0; k<ElectiveSubject.length-1;k++)
                {
                    var NewOption = document.createElement("OPTION");
                    NewOption.value= ElectiveSubject[k];
                    NewOption.text= ElectiveSubject[k]
```

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```
        document.getElementById("electiveSubject"+i).add(NewOption);
    }
}
});
}
else if(info[3]=='2')
{
    var removeOption = document.getElementById("electiveSubject"+i).options;
    var removeOption2 = document.getElementById("2_electiveSubject"+i).options;
    if(removeOption.length>0 || removeOption2.length>0){
        removeOption.length=0;
        removeOption2.length=0;//remove all options
    }
    alert("Please select two ELECTIVE SUBJECT in group "+info[0]+".");
    document.getElementById("elective"+i).style.display = "";
    document.getElementById("2_elective"+i).style.display = "";
    document.getElementById("3_elective"+i).style.display = 'none';
    document.getElementById("4_elective"+i).style.display = 'none';
    $.ajax({
        url:"../getElectiveSubject.php",
        async:false,
        type:"post",
        data: {GroupName: info[0]},
        success: function(result){
            var ElectiveSubject = result.split("\n");
            var k=0;
            for(k=0; k<ElectiveSubject.length-1;k++)
            { //first elective
                var NewOption = document.createElement("OPTION");
                NewOption.value= ElectiveSubject[k];
```

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```
        NewOption.text= ElectiveSubject[k]
        document.getElementById("electiveSubject"+i).add(NewOption);
        //second elective
        var NewOption2 = document.createElement("OPTION");
        NewOption2.value= ElectiveSubject[k];
        NewOption2.text= ElectiveSubject[k]
        document.getElementById("2_electiveSubject"+i).add(NewOption2);
    }
}
});
}
else if(info[3]=='3')
{
    var removeOption = document.getElementById("electiveSubject"+i).options;
    var removeOption2 = document.getElementById("2_electiveSubject"+i).options;
    var removeOption3 = document.getElementById("3_electiveSubject"+i).options;

    if(removeOption.length>0 || removeOption2.length>0){
        removeOption.length=0;
        removeOption2.length=0;
        removeOption3.length=0;//remove all options
    }
    alert("Please select Three ELECTIVE SUBJECT in group "+info[0]+".");
    document.getElementById("elective"+i).style.display = "";
    document.getElementById("2_elective"+i).style.display = "";
    document.getElementById("3_elective"+i).style.display = "";
    document.getElementById("4_elective"+i).style.display = 'none';
    $.ajax({
        url:"../getElectiveSubject.php",
        async:false,
```

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```
type:"post",
data: {GroupName: info[0]},
success: function(result){
    var ElectiveSubject = result.split("\n");
    var k=0;
    for(k=0; k<ElectiveSubject.length-1;k++)
    { //first elective
        var NewOption = document.createElement("OPTION");
        NewOption.value= ElectiveSubject[k];
        NewOption.text= ElectiveSubject[k]
        document.getElementById("electiveSubject"+i).add(NewOption);
        //second elective
        var NewOption2 = document.createElement("OPTION");
        NewOption2.value= ElectiveSubject[k];
        NewOption2.text= ElectiveSubject[k]
        document.getElementById("2_electiveSubject"+i).add(NewOption2);
        //third elective
        var NewOption3 = document.createElement("OPTION");
        NewOption3.value= ElectiveSubject[k];
        NewOption3.text= ElectiveSubject[k]
        document.getElementById("3_electiveSubject"+i).add(NewOption3);
    }
}
});
}
else if(info[3]=='4')
{
    var removeOption = document.getElementById("electiveSubject"+i).options;
    var removeOption2 = document.getElementById("2_electiveSubject"+i).options;
    var removeOption3 = document.getElementById("3_electiveSubject"+i).options;
```

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```
var removeOption4 = document.getElementById("4_electiveSubject"+i).options;
if(removeOption.length>0 || removeOption2.length>0){
    removeOption.length=0;
    removeOption2.length=0;
    removeOption3.length=0;
    removeOption4.length=0;//remove all options
}
alert("Please select four ELECTIVE SUBJECT in group "+info[0]+".");
document.getElementById("elective"+i).style.display = "";
document.getElementById("2_elective"+i).style.display = "";
document.getElementById("3_elective"+i).style.display = "";
document.getElementById("4_elective"+i).style.display = "";
$.ajax({
    url:"../getElectiveSubject.php",
    async:false,
    type:"post",
    data: {GroupName: info[0]},
    success: function(result){
        var ElectiveSubject = result.split("\n");
        var k=0;
        for(k=0; k<ElectiveSubject.length-1;k++)
        { //first elective
            var NewOption = document.createElement("OPTION");
            NewOption.value= ElectiveSubject[k];
            NewOption.text= ElectiveSubject[k]
            document.getElementById("electiveSubject"+i).add(NewOption);
            //second elective
            var NewOption2 = document.createElement("OPTION");
            NewOption2.value= ElectiveSubject[k];
            NewOption2.text= ElectiveSubject[k]
```


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```
        document.getElementById("2_electiveSubject"+i).add(NewOption2);
        //third elective
        var NewOption3 = document.createElement("OPTION");
        NewOption3.value= ElectiveSubject[k];
        NewOption3.text= ElectiveSubject[k]
        document.getElementById("3_electiveSubject"+i).add(NewOption3);
        //4th elective
        var NewOption4 = document.createElement("OPTION");
        NewOption4.value= ElectiveSubject[k];
        NewOption4.text= ElectiveSubject[k]
        document.getElementById("4_electiveSubject"+i).add(NewOption4);
    }
}
});
}
}
else
{
    document.getElementById("elective"+i).style.display = 'none';
    document.getElementById("2_elective"+i).style.display = 'none';
    document.getElementById("3_elective"+i).style.display = 'none';
    document.getElementById("4_elective"+i).style.display = 'none';
}
}
});
}
else{
    alert(Pass);
    document.getElementById("subject"+i).value = "";
    document.getElementById("result"+i).value = "";
}
```

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```
        document.getElementById("code"+i).innerHTML = "";
        document.getElementById("credit"+i).innerHTML = "";
        document.getElementById("type"+i).innerHTML = "";
        document.getElementById("result"+i).disabled = true;
        document.getElementById("elective"+i).style.display = 'none';
        document.getElementById("2_elective"+i).style.display = 'none';
        document.getElementById("3_elective"+i).style.display = 'none';
        document.getElementById("4_elective"+i).style.display = 'none';
    }
    })
}
}
else{ //duplicate
    alert(data);
    document.getElementById("subject"+i).value = "";
    document.getElementById("result"+i).value = "";
    document.getElementById("code"+i).innerHTML = "";
    document.getElementById("credit"+i).innerHTML = "";
    document.getElementById("type"+i).innerHTML = "";
    document.getElementById("result"+i).disabled = true;
    document.getElementById("elective"+i).style.display = 'none';
}
}
})

var total = 0;
var j=1
for(j;j<=7;j++)
{
    var ch = document.getElementById("credit"+j).innerHTML;
```

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```
        if(ch!=""){
            total = total + parseInt(ch);
        }
    }
    document.getElementById("totalcredit").innerHTML = total;
    document.getElementById("input-totalcredit").value = total;
}
function calculateGPA(){
    var qp = 0;
    var chEarned = 0;
    for(var i=1; i<=7; i++){
        var gradepoint = document.getElementById("result"+i).value;
        var ch = document.getElementById("credit"+i).innerHTML;
        if(gradepoint!="" && ch !="" && gradepoint!="ps" && gradepoint!="fl"){
            qp += parseFloat(gradepoint)* parseInt(ch);
            chEarned += parseInt(ch);
        }
    }
    var GPA = qp/chEarned;
    document.getElementById("tdGPA").innerHTML = ": "+GPA.toFixed(3);
    document.getElementById("tdQP").innerHTML = ": "+qp.toFixed(3);
    document.getElementById("chEarned").innerHTML = ": "+chEarned;
    document.getElementById("GPA").value = GPA.toFixed(3);
    document.getElementById("qp").value = qp.toFixed(3);
    document.getElementById("ch").value = chEarned;
}
function editPlan()
{
    for(var i=1; i<=7; i++){
```

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```
        document.getElementById("subject"+i).disabled = false;
        document.getElementById("electiveSubject"+i).disabled = false;
        document.getElementById("2_electiveSubject"+i).disabled = false;
        document.getElementById("3_electiveSubject"+i).disabled = false;
        document.getElementById("4_electiveSubject"+i).disabled = false;
        document.getElementById("result"+i).disabled = false;
    }
    document.getElementById("save").disabled = false;
}
</script>
</head>
<body onload="CheckUserInfo()">
<div>
<h2>Course Structure Planning</h2>
<table>
<tr>
<td>Course</td>
<td>:
<?php
    if($row['Course']== "IA")
        print("Information System Engineering");
    else if($row['Course']== "CS")
        print("Computer Science");
    else if($row['Course']== "IB")
        print("Business Information System");
?>
</td>
</tr>
<tr>
<td>Current Stage</td>
```

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```
<td> <?php echo $_SESSION['stage'];?></td>
</tr>
</table>
<div style="text-align:center">
<table style="width:1100px">
<tr>
<td style="width:30%"></td>
<td><a target="mainFrame"href="Y1S1-plan.php">Y1T1 |</a></td>
<td><a target="mainFrame"href="Y1S2-plan.php">Y1T2 |</a></td>
<td><a target="mainFrame"href="Y1S3-plan.php">Y1T3 |</a></td>
<td><a target="mainFrame"href="Y2S1-plan.php">Y2T1 |</a></td>
<td><a target="mainFrame"href="Y2S2-plan.php">Y2T2 |</a></td>
<td><a target="mainFrame"href="Y2S3-plan.php">Y2T3 |</a></td>
<td><a target="mainFrame"href="Y3S1-plan.php">Y3T1 |</a></td>
<td><a target="mainFrame"href="Y3S2-plan.php">Y3T2 |</a></td>
<td><a target="mainFrame"href="Y3S3-plan.php">Y3T3</a></td>
<?php
$trimester_array= array('Y1S1', 'Y1S2', 'Y1S3', 'Y2S1', 'Y2S2', 'Y2S3', 'Y3S1', 'Y3S2', 'Y3S3');
for($i=0; $i<9; $i++){
    $TotalCreditQry = "SELECT * FROM `plan_record` WHERE `trimester` = '$trimester_array[$i]' AND `username` =
        '$_SESSION['username'].''";
    $TotalCreditResult = mysql_query($TotalCreditQry);
    $TotalCreditRow= mysql_fetch_assoc($TotalCreditResult);
    $total += $TotalCreditRow['totalCreditHours'];
}
?>
<td style="color:red; text-align: right; width:30%">TOTAL <?php echo $total; ?> CREDIT HOURS</td>
</tr>
</table>
</div> <br/>
```

APPENDIX

```
<!--Course Structure Guide-->
<div style="width:1100px">
  <div class="divACSG" style="width:49.5%; float:left">
    <table border="1" style="font-size: 11px; width:100%;background-color: gainsboro; border-collapse: collapse">
      <th colspan="4" style="font-size: 12.5px; background-color: #627AAD;height: 27px">According to Course Structure Guide</th>
      <tr style="background-image: url('../2nd_title.gif'); background-repeat: repeat;font-weight: bold; height: 29px">
        <td style="width:60px">Unit Code</td>
        <td style="width:auto">Subject Name</td>
        <td style="width:80px">Type</td>
        <td style="width:70px">Credit Hours</td>
      </tr>
      <?php
        $result = mysql_query($qry);
        $total=0;
        while($row = mysql_fetch_assoc($result))
        {
          echo "<tr>";
          echo " <td>", $row['UnitCode'], "</td>";
          echo " <td>", $row['SubjectName'], "</td>";
          echo " <td>", $row['Type'], "</td>";
          echo " <td>", $row['CreditHours'], "</td>";
          echo "</tr>";
          if($row['Type']=="Elective")
          {
            echo "<tr>";
            echo "<td></td>";
            echo "<td colspan='3'>";
            $qry2="SELECT * FROM `electivesubject` WHERE `Group` = '{$row['UnitCode']}' OR
              `Group2` = '{$row['UnitCode']}' OR
              `Group3` = '{$row['UnitCode']}';";
          }
        }
      </?php>
    </table>
  </div>
</div>
```

APPENDIX

```
$result2 = mysql_query($qry2);
?>   <table style="font-size: 11px;">
    <?php
    while($row2 = mysql_fetch_assoc($result2))
    {
        echo "<tr>";
        echo " <td>*", $row2['UnitCode'], "</td>";
        echo " <td>", $row2['SubjectName'], "</td>";
        echo "</tr>";
    }
    ?>
    </table>
<?php
    echo "</td>";
    echo "</tr>";
    }
    $total += $row['CreditHours'];
    }
?>
<tr>
    <td></td>
    <td colspan="2" align="right">Total Credit Hours</td>
    <td><?php print($total); ?></td>
</tr>
</table>
</div>
```

APPENDIX

```
<!--Course Structure Planning-->
<div class="divCSP" style="width:50%; float:right;" >
<form id="subjectform" name="subjectform" method="post" action="record_plan-exe.php">
<table border="1" style="font-size: 11px;width:100%;border-collapse: collapse">
<th colspan="5" style="font-size: 12.5px; background-color: #B2B2B2; height: 27px">
    Course Structure Plan - <?php echo $_SESSION['trimester'];?>
</th>
<tr style="font-weight: bold; background-color:#E6E8ED">
<td style="width:60px">Unit Code</td>
<td style="width:auto">Subject Name</td>
<td style="width:100px">Type</td>
<td style="width:50px">Credit Hours</td>
<td style="width:auto;">Result</td>
</tr>
<?php
for($i=1; $i<=7; $i++)
{
    echo "<tr>";
    echo " <td id='code";print($i);echo "'>";
    echo " </td>";
    echo " <td>";
        //<select disabled="disabled" name="subject$i" id="subject$i" style="font-size: 11px; width:320;" onchange="getinfo($i)">
    echo " <select disabled="disabled" name="subject";print($i);echo "'"; id="subject";print($i);echo "' style="font-size: 11px; width:320;"
onchange="getinfo(';print($i);echo ')">";
    echo " <option value="">-----Select Subject-----</option>";
    if ($course == "IA"){
        $qry3 = "SELECT *
                FROM `subject`
                INNER JOIN `subject_ia`
                ON `subject`.UnitCode = `subject_ia`.UnitCode
```


APPENDIX

```
        ORDER BY `SubjectName` ASC ";
    }
    else if($course == "IB"){
        $qry3 = "SELECT *
        FROM `subject`
        INNER JOIN `subject_ib`
        ON `subject`.UnitCode = `subject_ib`.UnitCode
        ORDER BY `SubjectName` ASC ";
    }
    else if($course == "CS"){
        $qry3 = "SELECT *
        FROM `subject`
        INNER JOIN `subject_cs`
        ON `subject`.UnitCode = `subject_cs`.UnitCode
        ORDER BY `SubjectName` ASC ";
    }
    $result3 = mysql_query($qry3);

    while($row3 = mysql_fetch_assoc($result3))
    {
        echo '<option value="">print($row3['UnitCode']); echo">';
        print($row3['SubjectName']);
        echo "</option>";
    }
    echo "</select>";
    echo "</td>";
    echo "<td id='type';print($i);echo ""></td>";
    echo "<td id='credit';print($i);echo ""></td>";
    echo "<td>";
```

APPENDIX

```
        echo    '<select disabled="disabled" name="result";print($i);echo"' id="result";print($i);echo"' style="font-size: 11px;"
onchange="calculateGPA()">';
    echo        "<option value="">--</option>";
                $GradeQry = "SELECT * FROM `grade`";
                $GradeResult = mysql_query($GradeQry);
                while($GradeRow = mysql_fetch_assoc($GradeResult))
                {
                    echo '<option value=""';print($GradeRow['grade_point']); echo"'>';
                        print($GradeRow['grade']);
                    echo "</option>";
                }
    echo        "</select>";
    echo        "</td>";
    echo "</tr>";

    echo "<tr id='elective';print($i);echo"' style='display:none'>";
    echo        "<td></td>";
    echo        "<td colspan='3'>* ";
    echo        '<select name="electiveSubject";print($i);echo"' id="electiveSubject";print($i);echo"' style="font-size: 11px; width:320;">';
    echo        "<option value="">-----Select Subject-----</option>";
    echo        "</td>";
    echo "</tr>";
    echo "<tr id='2_elective';print($i);echo"' style='display:none'>";
    echo        "<td></td>";
    echo        "<td colspan='3'>* ";
    echo        '<select name="2_electiveSubject";print($i);echo"' id="2_electiveSubject";print($i);echo"' style="font-size: 11px; width:320;">';
    echo        "<option value="">-----Select Subject-----</option>";
    echo        "</td>";
    echo "</tr>";
    echo "<tr id='3_elective';print($i);echo"' style='display:none'>";
```

APPENDIX

```
echo "<td></td>";
echo "<td colspan='3'* ";
echo '<select name="3_electiveSubject';print($i);echo"" id="3_electiveSubject';print($i);echo"" style="font-size: 11px; width:320;">';
echo "<option value="">-----Select Subject-----</option>";
echo "</td>";
echo "</tr>";
echo "<tr id='4_elective";print($i);echo"" style='display:none'>";
echo "<td></td>";
echo "<td colspan='3'* ";
echo '<select name="4_electiveSubject';print($i);echo"" id="4_electiveSubject';print($i);echo"" style="font-size: 11px; width:320;">';
echo "<option value="">-----Select Subject-----</option>";
echo "</td>";
echo "</tr>";
}
?>
<tr>
<td></td>
<td colspan="2" align="right">Total Credit Hours</td>
<td id="totalcredit"></td>
</tr>
<tr>
<td></td>
<td><input type="hidden" name="trimester" value="<?php echo $_SESSION['trimester'];?>">
<input type="hidden" name="totalcredit" id="input-totalcredit" value="">
<input type="hidden" name="GPA" id="GPA">
<input type="hidden" name="qp" id="qp">
<input type="hidden" name="ch" id="ch">
</td>
<td><input type="button" onclick="editPlan()" value="Edit"></td>
<td colspan="2"><input disabled type="submit" value="Save" id="save"></td>
```

APPENDIX

```
</tr>
</table>
<table>
  <tr>
    <td>GPA</td>
    <td id="tdGPA">:</td>
  </tr>
  <tr>
    <td>Trimester Quality Point</td>
    <td id="tdQP">:</td>
  </tr>
  <tr>
    <td>Trimester Credit Earned</td>
    <td id="chEarned">:</td>
  </tr>
</table>
</form>
</div><br/>
<!--Comment Part---->
<div class="DIVcomment" id="DIVcomment" style="width:530px; padding-top:15px; clear: left;">
  <form id="commentform" name="commentform" method="post" action='../comment-exe.php'>
  <table style="font-size: 11px;width: 100%;border-collapse: collapse; border: 1px outset #DFDFC4;">
    <tr>
      <th colspan="3" style="font-size: 12px; border: 1px outset #E6E8ED;">Chat Box</th>
    </tr>
    <?php
      $CommentQry = "SELECT * FROM comment
        WHERE byUsername = '$_SESSION['username'].'" AND commentOnSemester = '$_SESSION['trimester'].'" OR
        toUsername = '$_SESSION['username'].'" AND commentOnSemester = '$_SESSION['trimester'].'"";
```

APPENDIX

```
$CommentResult = mysql_query($CommentQry);
$num_rows = mysql_num_rows($CommentResult);
if($_GET['viewAll']=='yes'){
    while($CommentRow= mysql_fetch_assoc($CommentResult))
    {
        if($CommentRow['byUsername']== $_SESSION['username'])
        {
            echo '<tr style="background-color:lavender">';
            $getNameQry = "SELECT * FROM user WHERE username = {$CommentRow['byUsername']}";
            $getNameResult = mysql_query($getNameQry);
            $getNameRow= mysql_fetch_assoc($getNameResult);
            echo '<td style="width: 21%">'; print($CommentRow['date']); echo'</td>';
            echo '<td style="width: 15%">'; print($getNameRow['Full_Name']); echo':</td>';
            echo '<td>'; print($CommentRow['Comment']); echo'</td>';
            echo '</tr>';
        }else{
            echo '<tr>';
            $getNameQry = "SELECT * FROM user WHERE username = {$CommentRow['byUsername']}";
            $getNameResult = mysql_query($getNameQry);
            $getNameRow= mysql_fetch_assoc($getNameResult);
            echo '<td style="width: 21%">'; print($CommentRow['date']); echo'</td>';
            echo '<td style="width: 15%">'; print($getNameRow['Full_Name']); echo':</td>';
            echo '<td>'; print($CommentRow['Comment']); echo'</td>';
            echo '</tr>';
        }
    }
}
}
}else{
    if($num_rows == 0){
        echo '<tr>';
        echo " <td colspan='3' style='text-align:center'>no record found.</td>";
    }
}
```

APPENDIX

```
    echo '</tr>';
}
else if($num_rows > 5){
    $fromRowNum = $num_rows - 5;
    $CommentQry = "SELECT * FROM comment
        WHERE byUsername = '$_SESSION['username'].'" AND commentOnSemester = '$_SESSION['trimester'].'" OR
        toUsername = '$_SESSION['username'].'" AND commentOnSemester = '$_SESSION['trimester'].'"
        LIMIT $fromRowNum, 5";
    $CommentResult = mysql_query($CommentQry);
    echo '<tr>';
    echo '<td colspan="3" style="text-align:center"><a href="'; echo $_SESSION['trimester']; echo '-plan.php?viewAll=yes#DIVcomment">View
        all ';echo $num_rows;echo ' comments</a></td>';
    echo '</tr>';
    while($CommentRow= mysql_fetch_assoc($CommentResult))
    {
        if($CommentRow['byUsername']== $_SESSION['username'])
        {
            echo '<tr style="background-color:lavender">';
            $getNameQry = "SELECT * FROM user WHERE username = {$CommentRow['byUsername']}";
            $getNameResult = mysql_query($getNameQry);
            $getNameRow= mysql_fetch_assoc($getNameResult);
            echo '<td style="width: 21%">'; print($CommentRow['date']); echo '</td>';
            echo '<td style="width: 15%">'; print($getNameRow['Full_Name']); echo '</td>';
            echo '<td>'; print($CommentRow['Comment']); echo '</td>';
            echo '</tr>';
        }
        else{
            echo '<tr>';
            $getNameQry = "SELECT * FROM user WHERE username = {$CommentRow['byUsername']}";
            $getNameResult = mysql_query($getNameQry);
            $getNameRow= mysql_fetch_assoc($getNameResult);
```

APPENDIX

```
    echo '<td style="width: 21%">'; print($CommentRow['date']); echo '</td>';
    echo '<td style="width: 15%">'; print($getNameRow['Full_Name']); echo '</td>';
    echo '<td>'; print($CommentRow['Comment']); echo '</td>';
    echo '</tr>';
  }
}
}
else{
  while($CommentRow= mysql_fetch_assoc($CommentResult))
  {
    if($CommentRow['byUsername']== $_SESSION['username'])
    {
      echo '<tr style="background-color:lavender">';
      $getNameQry = "SELECT * FROM user WHERE username = {$CommentRow['byUsername']}";
      $getNameResult = mysql_query($getNameQry);
      $getNameRow= mysql_fetch_assoc($getNameResult);
      echo '<td style="width: 21%">'; print($CommentRow['date']); echo '</td>';
      echo '<td style="width: 15%">'; print($getNameRow['Full_Name']); echo '</td>';
      echo '<td>'; print($CommentRow['Comment']); echo '</td>';
      echo '</tr>';
    }else{
      echo '<tr>';
      $getNameQry = "SELECT * FROM user WHERE username = {$CommentRow['byUsername']}";
      $getNameResult = mysql_query($getNameQry);
      $getNameRow= mysql_fetch_assoc($getNameResult);
      echo '<td style="width: 21%">'; print($CommentRow['date']); echo '</td>';
      echo '<td style="width: 15%">'; print($getNameRow['Full_Name']); echo '</td>';
      echo '<td>'; print($CommentRow['Comment']); echo '</td>';
      echo '</tr>';
    }
  }
}
```

APPENDIX

```
        }
    }
}
?>
<tr>
    <td></td>
    <td></td>
    <td><textarea name="commentmsg" rows=3 id="commentmsg" cols="40"></textarea></td>
</tr>
<tr>
    <td></td>
    <td></td>
    <td>
        <input type="hidden" name="commenton" value="<?php echo $_SESSION['trimester'];?>">
        <input type="submit" name="commentbutton" id="commentbutton" value="Comment">
    </td>
</tr>
</table>
</form>
</div>
</div>
</div>
</body>
</html>
```