

**FINAL YEAR PROJECT ONLINE MANAGEMENT SYSTEM (FYPOS):
CLIENT AND SERVER DESIGN**

By

RAIHANAH BINTI ABDUL WAHAB

FINAL PROJECT REPORT

Submitted to the Department of Electrical & Electronic Engineering
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Universiti Teknologi PETRONAS
Bandar Seri Iskandar
31750 Tronoh
Perak Darul Ridzuan

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
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Approved:

Dr Nasreen Bt Badruddin
Project Supervisor

UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK

September 2012

CERTIFICATION OF ORIGINALITY

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

Raihanah Binti Abdul Wahab

ABSTRACT

This paper proposed Final Year Project Online Management System to replace the current manual system. This Web-based system will emerge the paradigm of Universiti Teknologi PETRONAS management. The manual system is messy and time consuming with lack in efficiency. The main objective of this project is to engage all parties in one collaborative online system systematically as a medium in exchanging information for Final Year Project. Developing the system involves the knowledge of web design, web setup, database design, database setup and server setup. FYP Online Management System will be developed in an open source environment. Using Linux operating system on the server platform, the system will utilize MySQL as its database system and Apache as the Web server. The scripting language on server side is PHP while HTML with JavaScript is written on client side. Considering three user groups for FYP Online Management System, there will be different interface and function for each group. Administrator will be managing the system with the task of handling user registrations and accounts. User verification will secure the system. This web enabled project management and its associated features are strongly worth, feasible and relevance in fulfilling the endeavours of the parties concerned.

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ABBREVIATIONS AND NOMENCLATURES

FYP	Final Year Project
UTP	Universiti Teknologi PETRONAS
WWW	World Wide Web
HTTP	Hypertext Transfer Protocol
PHP	Hypertext Preprocessor
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheets
SQL	Structured Query Language
MS	Microsoft®
RAM	Random Access Memory
I.P	Internet Protocol

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Accessing information in today's world has taken a leap with the development in technology which given way to online system to be the new management system. The need of online system has increased rapidly during these past years. Online system has been doing a very good task in eliminating the need of hardcopies, spaces, protocols and time. Online system indicates the need of connection between the users and system. As one of the environment that involve a large number of participants, information, and resources, UTP also tend to benefit from the use of a time-efficient online management system. The exchange of information among Final Year Project coordinators, lecturers, supervisors, examiners and students need an effective communication medium to ensure that no misunderstanding or lack of information that will cause delay in the completion of projects. Thus, the FYP Online System (FYPOS) is ideal since it provides the best solutions for the previous FYP management. This system is proposed as the need to enhance the process and management system efficiency. In this project, a web based software solution will be introduced to provide a comfortable environment for FYP management. This system will be developed using software freely distributed and available to the public.

1.2 Problem Statement

Final Year Project management has been in a more traditional way for all these years. It is done manually where all the registration, allocation and markings are in hardcopies and forms and then managed by FYP coordinators. While the coordinators are doing a great job, this management system has several disadvantages;

- It is time-consuming and requires more man power in running the manual system, hence it is denoted as less efficient
- In communicating with all the participants, the committee also having problems and difficulties because there is no specific medium of interaction and this will cause delays.
- There are also problems aroused in archiving and storage. The previous data are hard to search and tend to be eliminated after some period of time. The manual system also uses much more storage for all the hardcopies.

1.3 Objective

The main objective of this project is to:

- To develop an online system that is systematic and comfortable
- To design the architecture of the system and its functionalities
- To setup the platform and server environment
- To test the reliability of the system

1.4 Scope of Study

The scope for FYP Online Management System is very broad in terms of the management system. There are two parts in developing this project. This project will involve the knowledge and experimentation based on

- Web design, setup and development
- Database design and management
- Server design and setup

In this part, it will be focusing more on web and server design, setup and development. Meanwhile, the other part which is the database design and management will be conducted by Nur Alia Azween.

1.5 Feasibility and Relevancy of Project

FYP Online Management System is very feasible. In the first 6 weeks, a lot of researches had been conducted to determine the systems background. During the duration of time also the system abilities and functionalities had been discussed. Straight after that, the studies continued in term of system design and structure and by the end of FYPI the concept of the system had been finalized. The project is continued in FYPII, begin with the development of the system back-end which is database design and structure in 5 weeks. Another 5 weeks had been taken for web application design, coding and interface. The project is undergoing enhancement and upgrading before being tested.

The FYP Online Management System is set to achieve four properties.

- Scalability

The system should be scalable which means that it should be able to accommodate a large number of participations and monitor large numbers of data attributes.

- Flexibility

The system should be flexible enough with dynamic changes within the data in the system.

- Administrative Isolation

As in UTP environment that involve large scope of participants, the system should provides administration isolation to arrange nodes in more organized hierarchy.

- Robust

The system must be robust. It also should be able to adapt accordingly to reconfigurations and provide ways to counter when reconfigurations occur. There will be some testing to make sure that the system is robust.

CHAPTER 2

LITERATURE REVIEW

The World Wide Web (WWW) is a platform for all the people from all around the world to gain and deliver knowledge and information. The Web is also becoming more popular because of the effectiveness in the use as an administrative and management tool in many institutions. This technology is the main key in the idea of developing an online system. In defining the structure of a web system, website programming is used to manage the behavior of the pages while web design technique will give it a user-friendly interface. The complete programmed web pages will be presented on to client by hosting it on a web server, which will allow them to be transferred to any web browser as requested by client, via HTTP [1]. In the mean time, there are some elements needs to be considered in developing an online system.

2.1 Operating System

Operating system is the most important thing in every computer. It served as the platform for all the programs to run and interact between the hardware and the software of the system. There are a lot of operating systems available to install such as Windows, Linux, and Mac OS.

2.1.1 Open Source Operating System

The common and main idea about open source is that it is free and cost-minimized. Even though it is one of the advantages of using open source, there are other points that attract the programmers as well. The important key of open source is that it values the independence of the developers. It reduces the dependency towards the vendors. Open source also easier to customize. The users of open source are everywhere and there are a lot of people who can help regarding issues of open source. The compatibility of open

source also draws people to use its system. It is also reliable in terms of security and architecture.

2.2 Programming Language

One of the main components to be taken into account before developing a web page is to select the language to be used. A programming language is a language used to communicate and interact with computer. It is used to communicate with the machine, by creating programs, applications, scripts, or other set of instructions that control its behavior and to express algorithms [2]. The sights and sounds created on web page are all created using programming languages, among them are PHP, Python, and ASP.Net. It is used for various applications on web pages.

2.2.1 Client-Side Scripting

Client-side scripting is referring to the web programming that takes place on the client side. A user will use the web browser to access the information thus the web browser will execute the script and send the information back to the user's interface [3]. Client-side scripting is crucial to be able to dynamically react with different and changing content, depending on the input or other variables requested by user. Once a user requests a file, the web server will be in charge to find the file and then send it to the user's web browser to execute the file and then display the output [4]. Client-side scripts can simply be said that the medium of communication on the front end between the web server with the user.

- ***HTML***

HTML stands for Hyper Text Markup Language [5]. Not to be mistaken, HTML is not a programming language but it is a markup language for web pages [6]. HTML documents are the web pages and the HTML tags and plain text describes the web pages. A web browser will read the documents by interpreting the tags and then displays the content of the web pages [7]. In between the HTML opening and closing tags, the author may create the pages by adding images and objects or designing text structure by putting headings, paragraphs, et cetera [7]. Even though HTML language seems like the

most simple and basic, it can embed scripts in languages that can affect the behavior of the web pages such as JavaScript. To enhance the appearance and layout of the pages, the author can use Cascading Style Sheets (CSS) on the HTML web pages.

- ***JavaScript***

JavaScript is a scripting language or in another word, a lightweight programming language. It is designed to perform dynamic tasks [8]. Embedding JavaScript into HTML pages may do a lot of things. The web browser with JavaScript enabled only will interpret the script as the web pages being loaded. Because a JavaScript can perform dynamic tasks, it can be used to add effects by reading and changing the content of an HTML element accordingly as response to the user's action. JavaScript also helps the server by performing some simple actions on the client-side to prevent the server from doing extra processing.

2.2.2 Server-Side Scripting

In contrast, server-side scripts, written in languages such as Perl, PHP, Python, Java and ASP.NET, are the medium to communicate with the server on the back-end side and executed by the web server [9, 4]. Taking request from user, the language is used to tell the server and after processing, the output will be sent to the user in a format understandable by web browser. Server-side scripting is usually used to provide interactive web sites that involve databases or other data stores. The main use of this scripting is to customize the response dynamically according to the user's requirement [2].

- ***PHP***

PHP stands for PHP: Hypertext Preprocessor [10]. PHP is developed as open source software [11]. It is one of the server-side scripting languages among Perl, Python and Java. PHP scripts are executed on the server [12]. When the server receive a request for a PHP page, the server will read the php files and starts working on the tasks need to be executed before sending it to the user. Therefore, a PHP page will not display the PHP codes on the client interface because it is executed on the server. A PHP file can simply

be said that the file that have a file extension of ".php", ".php3", or ".phtml" [13]. One of the advantages of PHP is that it can run on different platforms or operating systems (Windows, Linux, Unix, etc.). PHP also supports many databases (MySQL, Informix, Oracle, Sybase, etc.) which would be explained later. It is also compatible with almost all web servers used today (Apache, IIS, etc.). Not only HTML, a PHP codes may give the output of images, PDF files and also Flash. As open source software, PHP is free to download and use. It is also easy to learn and runs efficiently on the server side [14].

2.3 SQL Database

SQL is short for Structured Query Language. SQL is the language used to communicate with the database. Using SQL, the author can create database, and access, insert and manipulate data in the database [15, 16]. There are standard SQL commands that are essential in communicating with database such as "Select", "Insert", "Update", "Delete", "Create", and "Drop". Top SQL databases today are MS SQL Server, Oracle, DB2, and MySQL [17].

- *MySQL*

MySQL is an open source database server system [18, 19]. MySQL supports standard SQL and also flexible to use on many platforms such as Windows, Linux and Mac OS [20]. MySQL is one of the world's top databases as it is used by the world's largest organizations including Facebook, Google, Adobe, Twitter and Wikipedia. The advantages of MySQL that attract authors to use are its high performance, high reliability and its ease of use. MySQL also has the function of indexes which improves SELECT queries speed tremendously [18]. MySQL is open source software so it is free to download and use [19].

2.4 Web Server

Web server is software installed on the server, used to serve web pages as requested by clients [21]. The requested web pages will ask the web server to find the required pages in the server and then will responds with the content of that resource or an error message if unable to do so. Once the web server found the data needed, it will pass the works to

web browser to display the output for user. The role of web server is really important as it connects the clients with the server.

- ***Apache HTTP Server***

Apache is one of the most popular web server software. Apache is open-source software, released under the Apache License. One of the reasons most authors are using Apache is that it is available for many operating systems, including Unix, Linux, Mac OS X, and Microsoft Windows [23]. It is also free, but high performance and easy to use.

2.5 System Engineering

2.5.1 Server Requirement

The basic requirements for a server computer is that it needs to be fast, have a large storage capacity hard disk and lots of RAM to support a lot of participants and data. Regardless, the most crucial thing that the server needs is a permanent internet address also known as an I.P. (Internet protocol) address. The IP address is like the address of a house where it determines the location of the web site. If the IP address changed, the web browser cannot determine where to find the web site so it will appear offline [21].

2.5.2 Server Capabilities

The specification of server for FYP Online Management System is given as follows. The formula can be used to find out the maximum number of traffic the server can handle and how many visitors can accommodate the page at same time [24]. These capabilities should be taken into account before deciding a server for any system. Bandwidth is the measurement for maximum data that can be transmitted in a period of time. Usually the calculation is in bits per second (bps) or bytes per second. More bandwidth means that the faster the server can be running.

$$\text{Bandwidth} = \frac{\text{Connection Bandwidth} \times 100}{\text{Overhead Margin}}$$

$$\text{Traffic in Megabytes per day} = \frac{\text{Bandwidth} \times 86400 \times 1000}{(8 \times 1048576)}$$

$$\text{Traffic in Gigabytes per month} = \frac{\text{Bandwidth} \times 86400 \times 1000 \times 30.41}{(8 \times 1073741824)}$$

$$\text{Visitors per second} = \frac{\text{Bandwidth} \times 1000}{(\text{Pages Per Visitor} \times \text{Page Size} \times 8)}$$

$$\text{Visitors per day} = \frac{\text{Bandwidth} \times 86400 \times 1000}{(\text{Pages Per Visitor} \times \text{Page Size} \times 8)}$$

$$\text{Visitors per month} = \frac{\text{Bandwidth} \times 86400 \times 1000 \times 30.41}{(\text{Pages Per Visitor} \times \text{Page Size} \times 8)}$$

$$\text{Pages per second} = \frac{\text{Bandwidth} \times 1000}{(8 \times \text{Page Size})}$$

$$\text{Pages per day} = \frac{\text{Bandwidth} \times 86400 \times 1000}{(8 \times \text{Page Size})}$$

$$\text{Pages per month} = \frac{\text{Bandwidth} \times 86400 \times 1000 \times 30.41}{(8 \times \text{Page Size})}$$

$$\text{Download time per page} = \frac{\text{Page Size} \times 8}{(\text{Bandwidth} \times 1000)}$$

$$\text{Simultaneous visitors} = \frac{60 \times \text{Bandwidth} \times 1000}{(\text{Page Size} \times 8)}$$

2.6 System Checking

There will be some testing to check the system before it is released to public. System testing is important to make sure that the system is good enough to be used and also to improve the performance of the system. For this project, there will be testing on

- Delays in relieving information – How fast the system can perform the tasks and entertain user's requests.

- Stress Test – To determine the maximum number of simultaneous access the system can handle, and to test the robustness, availability, and reliability of the system [41].
- Scalability Test – This test is the advance of performance test which needed to identify the performance of the system, to test the size and capabilities of the system database, and to identify the bottleneck of the system [42].

CHAPTER 3

METHODOLOGY / PROJECT WORK

3.1 System Architecture

A brief outline on how the system works is shown in Figure 1 and Figure 2. Figure 1 refers to the architecture of a Three-Tier Client/Server whereas Figure 2 shows the relationship between client and server through a Use Case Diagram. In overview, the flow of the system can be described as follows. When a user enters the URL to access FYP Online Management System in the Web browser, the browser will send a request to the Web server to fetch an HTML page or execute a PHP script. A PHP script uses SQL queries to access the FYP Online Management System database tables and sends dynamically generated HTML pages back to the client's browser.

One of the compelling reasons for developing FYP Online Management System is to provide a user-friendly Web environment in managing all the participants and projects. The system shall be made up of the following four components:

1. Client side
2. Server side
3. Database back-end and web-based administration tool
4. Graphical front-end

3.1.1 Three-Tier Client/Server Architecture

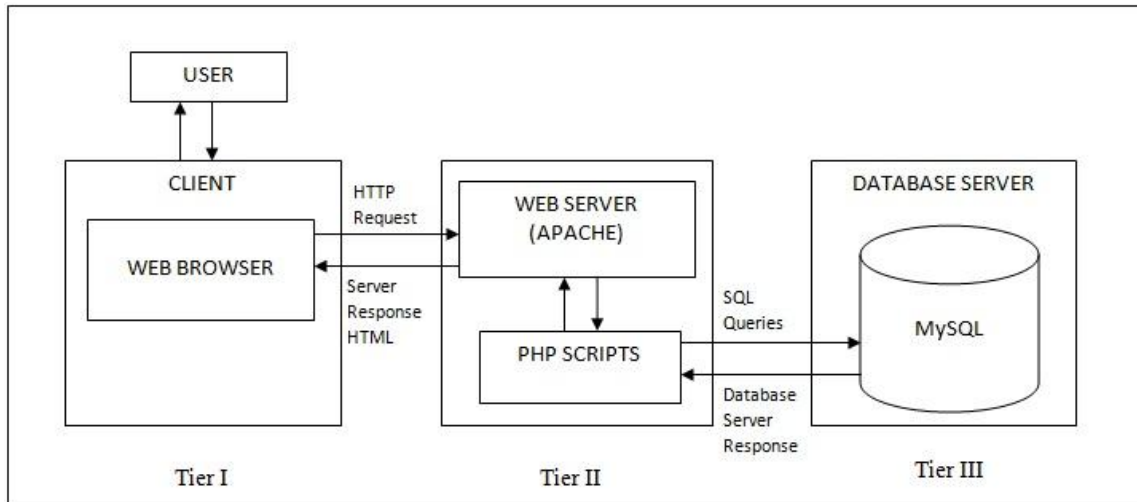


Figure 1 : Three Tier Client-Server Architecture

In Figure 1, FYP Online Management System architecture is ordered into three tiers: the user interface in the client browser, the Web server, and the database server [25]. The functional description of each tier in the system is as follows:

- First Tier: The Interface

As viewed from the client's web browser, the interface is build by HTML pages with Java Script support.

- Second Tier: Web Server

For this system, an Apache web server is used with the PHP module to support the back ends in third tier. The PHP scripts will process the user input, generate SQL queries to access the database and then the Apache will compile and execute the output in dynamically generated HTML pages.

- Third Tier: Database Server

In the third tier, the MySQL database server will receives requests from the second tier to execute SQL statements. The server accesses the database files to retrieve the stored data and then sends the queried data back.

3.1.2 Use Case Diagram

Use case diagram is a graphical representation used to capture the dynamic aspect of a system. It consists of actors, use cases and their relationships. Use case diagram describe how users will interact with the proposed system [27]. It is used to gather the requirements for the system and identify the external and internal factors that will influence the system [28, 29]. By drawing the diagram, the interactions and functionalities can be seen [30]. In Figure 2, there are 3 actors which represent the three groups of users for FYP Online Management System which are Students, Lecturers/Supervisors/Examiners and FYP Coordinators. In the middle is the requirement of each group towards the system.

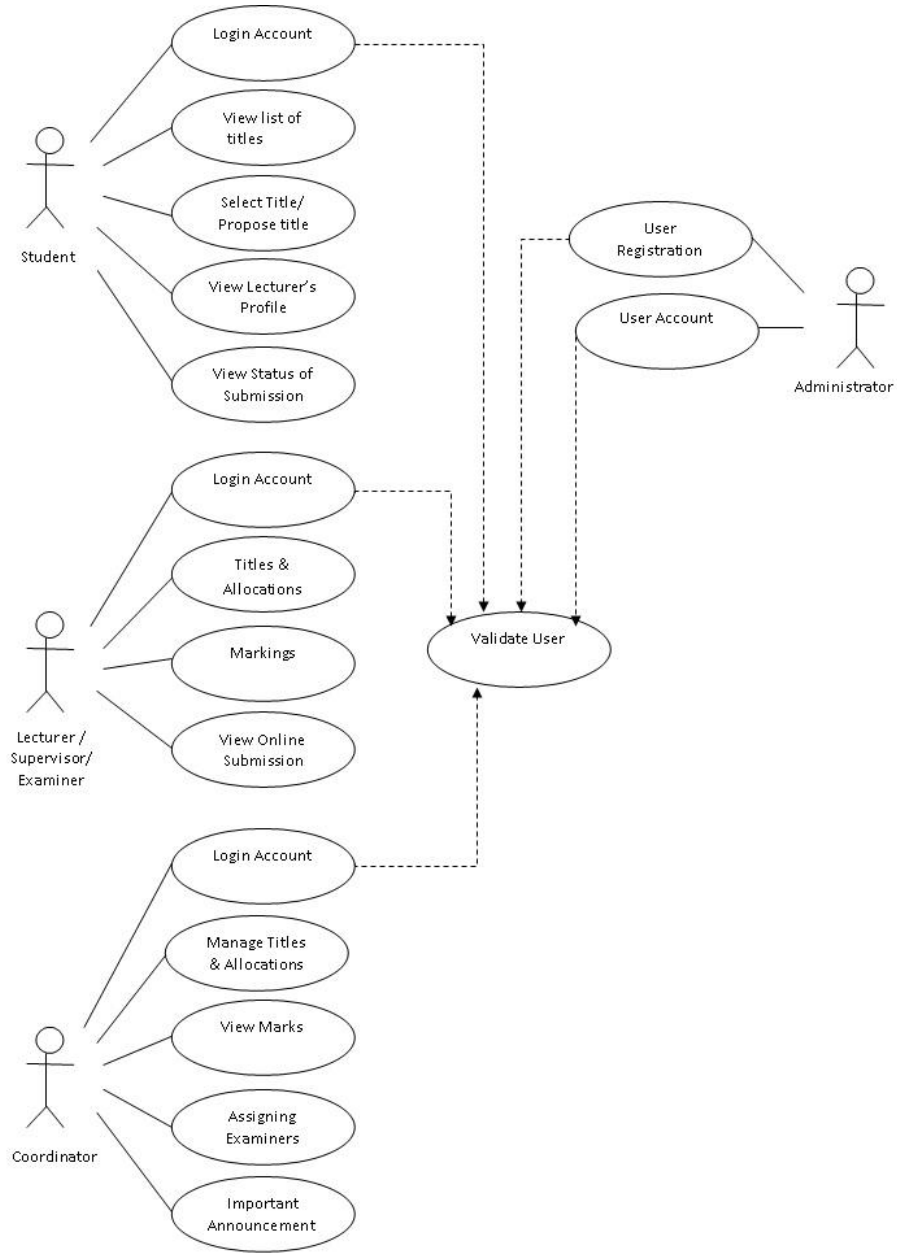


Figure 2 : Use Case Diagram of FYP Online System

3.1.3 Client Side Architecture

The FYP Online Management System is designed with the function of exchanging information between students, supervisors and FYP committee. For students, the system will have the function to view all the available topics of projects and supervisors, and

select the chosen one. Students may also view the supervisors profile and view the status of their submissions.

As for the lecturers, supervisors and examiner, the task of uploading their projects and allocations of students are made easier with this system. There will be no more hardcopy forms to be filled and submit by hand. All will be done online. This group may also view students' profiles and give the students marks. The system is planned to be able to allow the lecturers to view the students' online submissions.

The FYP coordinators will be granted full access of this system to manage the titles and allocations, also assigning the examiners. The committee may view the marks and will post any important announcement.

The system will be managed by the administrators. The administrator will monitor the system, maintain access level of all users and administer the site settings.

The FYP Online Management System is a Web-based application where it uses any web browser to interact with user. So the important component on client side is the web browsers (e.g. Internet Explorer, Mozilla Firefox, Google Chrome, etc). After all the back end process, the HTML will be used to generate dynamic web pages and the JavaScripts will validate user input [26]. Scripting language used here is HTML with JavaScript enabled to ensure the compatibility with the server side.

3.1.4 Server Side Architecture

On the server side, the FYP Online Management System will have several database tables where all the data and information are stored and also some dynamically generated tables using MySQL database in Linux environment. MySQL is used to compose the queries to access the database. The server will be running on PHP scripts with embedded queries to interact with the database.

3.2 Project Work

Figure 3 shows the process flow of the project. Throughout FYPI course, a lot of researches had been done in studying the operating systems, programming languages, SQL database and web servers until we made the decisions which of each to use for this system. After that the system design and architecture had been discussed for uses in client-side and server-side of FYPOS. The system has started to be developed since FYPI and continues into FYPII.

Process Flow

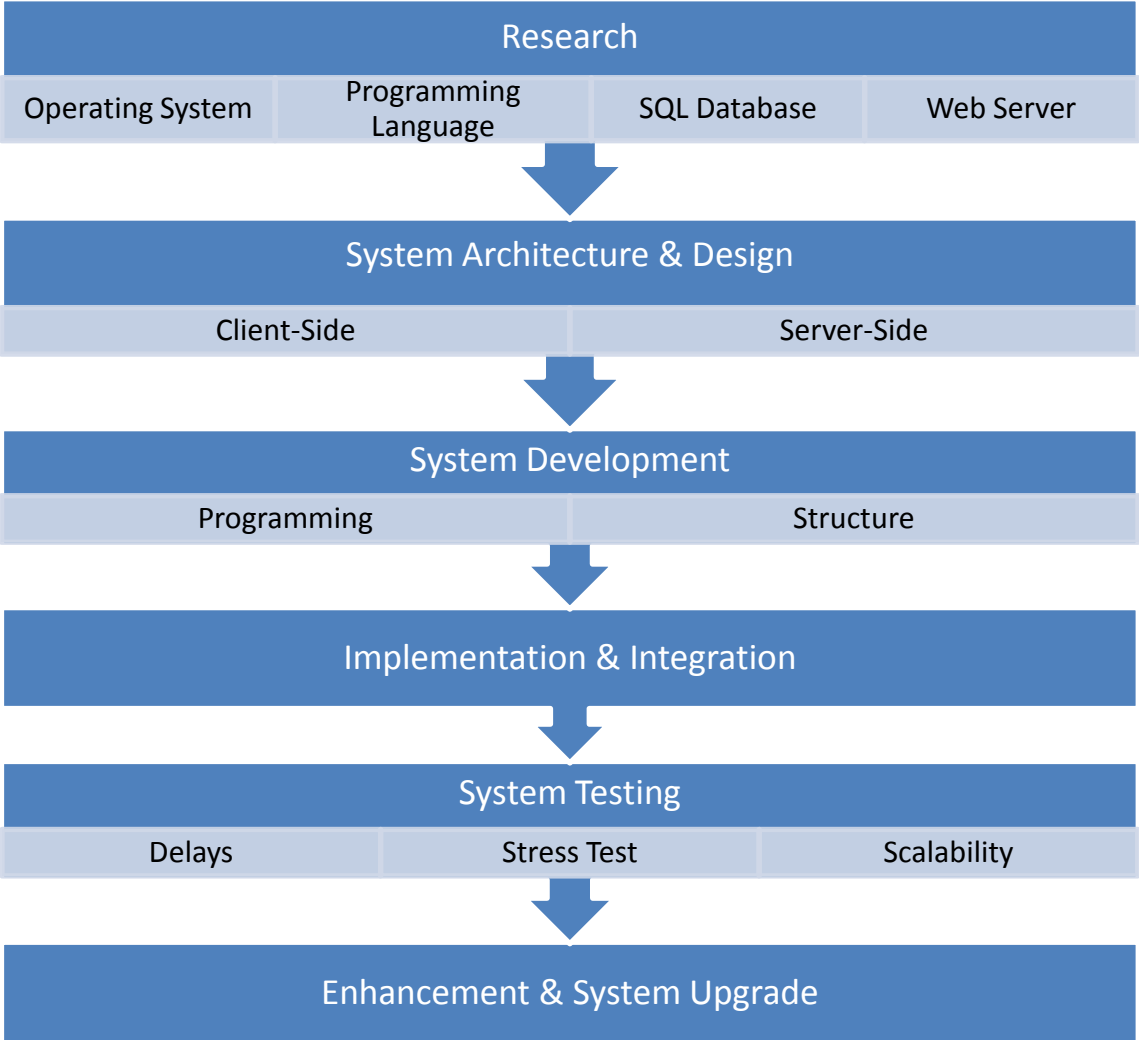


Figure 3

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 FYPOS Site Structure

First, when a user types the URL of FYPOS, the landing page would be the home of FYPOS. In this page, there are login column, latest announcement, and some other details which will be updated. From there, depending on the access level of the user, the site will redirect to their respective dashboard site. The access level will also determine the functions available for that user. This will be discussed later in section 4.2.

- **Home/ Landing Page**

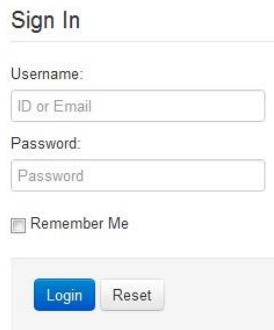
Figure 4 show the home or landing page of FYPOS. However there will be some modification later. There will be a countdown to next event in the course. Countdown will base on the pre-defined dates set by Administrator. The latest announcement will be accessible by committee of FYP for them to put anything up.



Figure 4

- **Login Form**

It is authenticated by username and password as shown in Figure 5. Administrator will determine the access level of user with their respective ID in the database. User credentials are kept in database in secured manner.



The image shows a 'Sign In' form. It has a title 'Sign In' at the top. Below it are two input fields: 'Username:' with a placeholder 'ID or Email' and 'Password:' with a placeholder 'Password'. There is a checkbox labeled 'Remember Me'. At the bottom, there are two buttons: 'Login' (blue) and 'Reset' (grey).

Figure 5

- **User's Dashboard**

After login, authenticated user will be redirected to dashboard page as Figure 6 which acts as user's main navigation page. There would be several interfaces for different user depending on the access level.

➤ Example of Student Dashboard

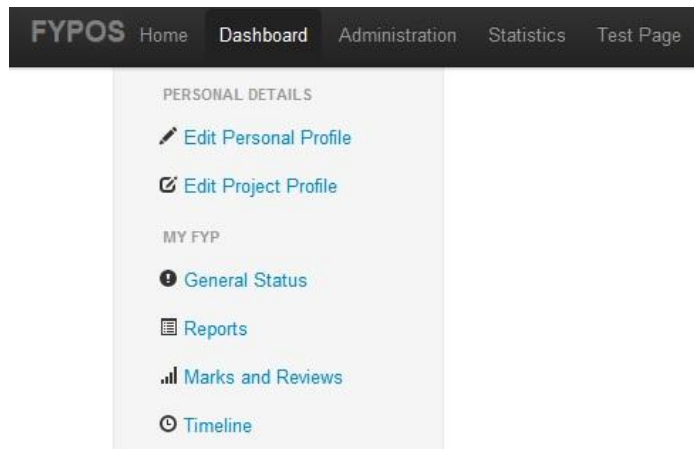


Figure 6

4.2 System Functionalities

FYPOS offers a lot of functions for the users, depending on their access levels. It provides an easier way for the users to perform their tasks with efficient time management.

- **Access Levels**

Depending on their access levels, users will be shown different menu items on the side of the page. The access level is divided into 6 levels as in Table 1. The highest number indicates the wider access the group will be given.

[0]	All
[1]	Student
[2]	External Examiner
[3]	Supervisor
[4]	Committee
[5]	Administrator

Table 1

There will be some functions allocated for the corresponding user. Referring to Table 2, the bigger number of access level given, the bigger access the user gets. The largest number is [5] which is the administrator, given all the access through the system.

Functions	[0]	[1]	[2]	[3]	[4]	[5]
View own and others' profile	○	○	○	○	○	○
View topic list	○	○	○	○	○	○
Edit own profile	○	○	○	○	○	○
Propose topic/ request topic		○		○		○
Give marks			○	○		○
Add topic				○		○
Edit own topic				○		○
View students allocation				○		○
View allocated student marks				○		○

Edit all topics				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
View all marks					<input type="radio"/>	<input type="radio"/>
Allocate examiners					<input type="radio"/>	<input type="radio"/>
Maintain access level						<input type="radio"/>
Administer general site settings						<input type="radio"/>

Table 2 Access Level Matrix

4.2.1 Student

- **User Registration**

In this system, students will need to register first and it will be approved by the committee. The form is shown in Figure 7. This is to ensure that the student had enrolled in FYP course.

Registration

The screenshot shows a 'Student registration form' with the following fields and values:

- Your full name: First [], Last []
- Create a password: []
- Confirm your password: []
- Matric ID number: 12345
- Your email address: example@domain.com
- Mobile phone: 60123456789
- Intake: Jan [], 2002 []
- Programme: Select Programme... []
- Major: Select Major... []

At the bottom, there are two buttons: 'Register' (highlighted in blue) and 'Reset'.

Figure 7

- **General Guidelines**

Every user will get to view the guidelines, which shown in Figure 8.

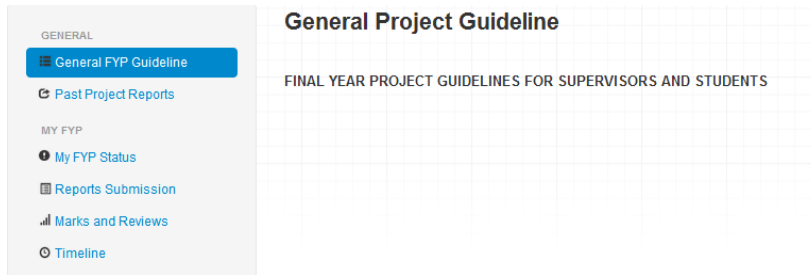


Figure 8

- **My Project**

After confirmation, the corresponding student will find that the chosen title and supervisor are mentioned in the ‘MYFYP’ as in Figure 9.

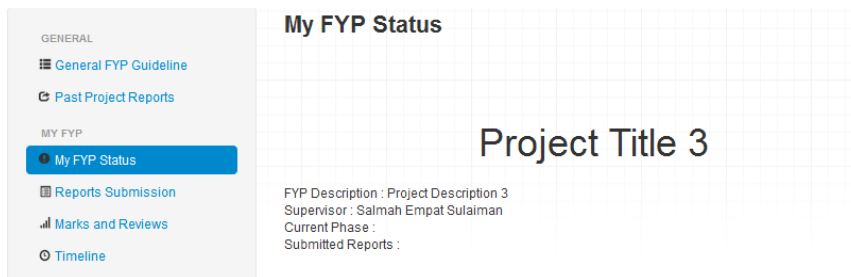


Figure 9

- **Change Password**

This function is enabled for the user to change the password if needed. Refer Figure 10.

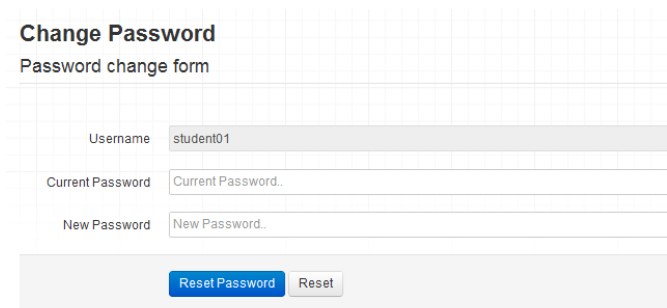


Figure 10

4.2.2 Lecturers

- **Dashboard**

Figure 11 below show the dashboard for Lecturer level.

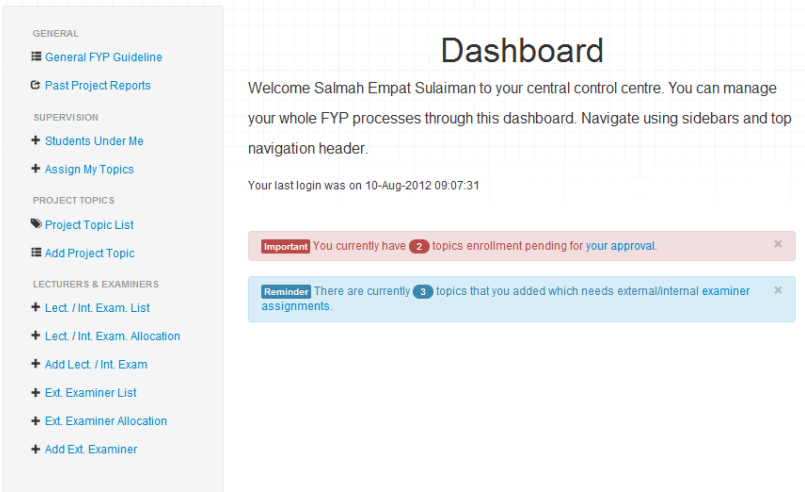


Figure 11

- **Assigning Topic**

The function is for the lecturers to be able to assign students to their topics. Figure 12 shows the function while Figure 13 is the popup for the lecturer to select student.

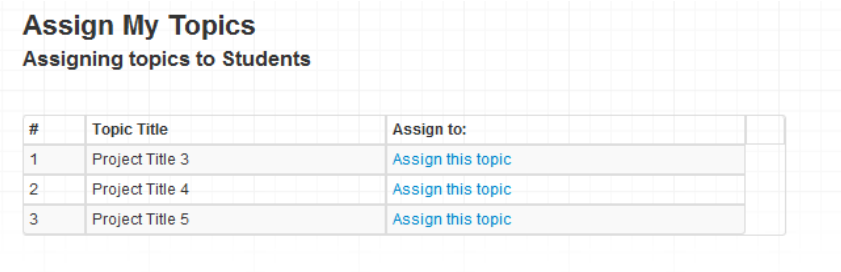


Figure 12

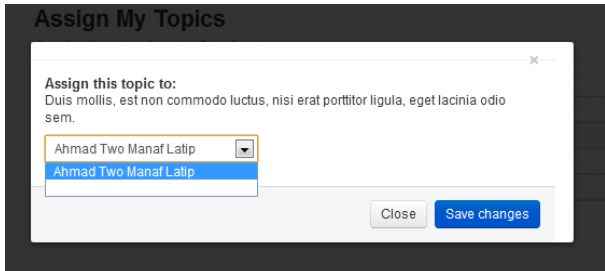


Figure 12

- **My Students**

Figure 14 shows the list of students under the supervision of the lecturer.

#	Name	Matric	Topic Title	Current Phase
1	Kamil Three Shaifuddin	ME12101	Project Title 4	Approved
2	Badrul One Hishamuddin Abu	S0001	Project Title 5	pending

Figure 13

- **Add Project Topic**

As shown in Figure 15, the lecturers can add Project topic by filling the form.

Figure 14

- **Projects List**

The lecturer can also view the list of all project topics as is Figure 16.

#	Lect.	Fac/Cluster	Title	Description		
1	KSI	EE: ACS	Project Title 1	Project Description 1	✍	✖
2	KSI	EE: COMM	Project Title 2	Project Description 2	✍	✖
3	SES	EE: ISI	Project Title 3	Project Description 3	✍	✖
4	SES	EE: PES	Project Title 4	Project Description 4	✍	✖
5	SES	EE: PES	Project Title 5	Project Description 5	✍	✖

Figure 15

- **Marks & Evaluations**

In Figure 17, the forms are for the lecturers to fill in the marks for the students.



Figure 16

- **Statistics**

In this Figure 18, lecturers has the option to view the statistics

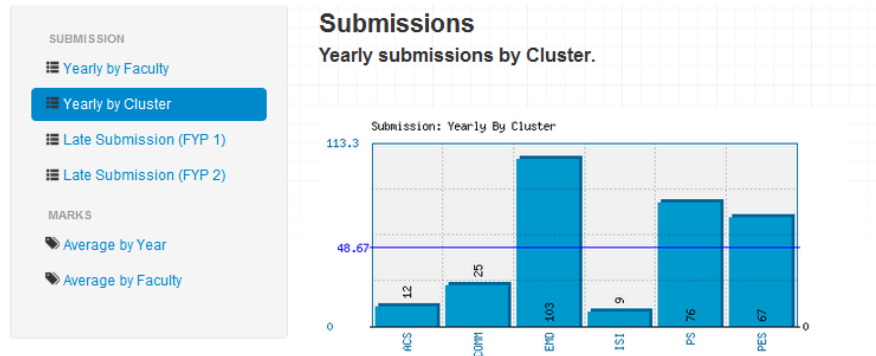


Figure 17

4.2.3 Administrator

Administrator will be given full access towards the system. In order to maintain and control the system, only a number of people dedicated enough to do the task will be chosen as the administrator.

- **Dashboard**

Figure 19 shows the dashboard of an administrator.

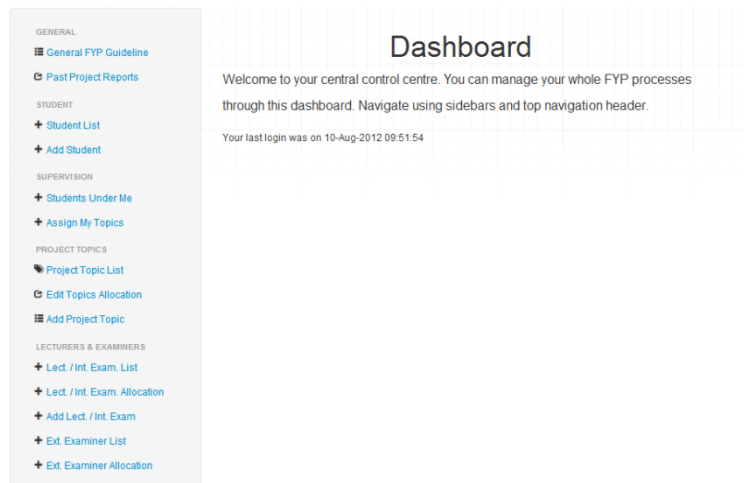


Figure 18

- **Administration**

The administration for the system is shown in Figure 20.

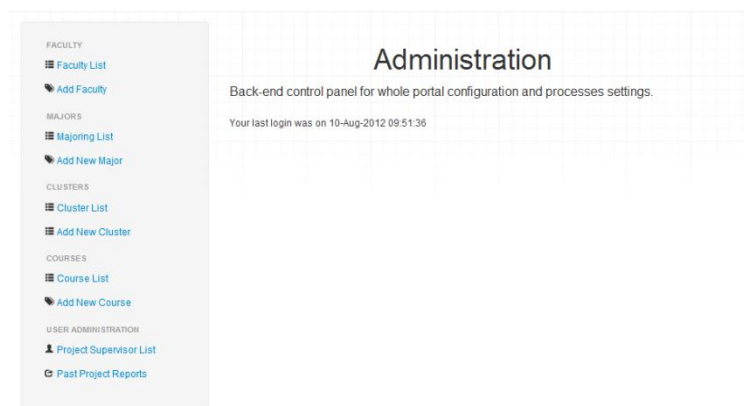


Figure 19

4.3 Relationships

For example, supervisors will be able to add, edit and view topics of FYP in the system. However students can only view the topics list.

The relationship between the functions can be seen in Figure 21 of example of adding a topic below.

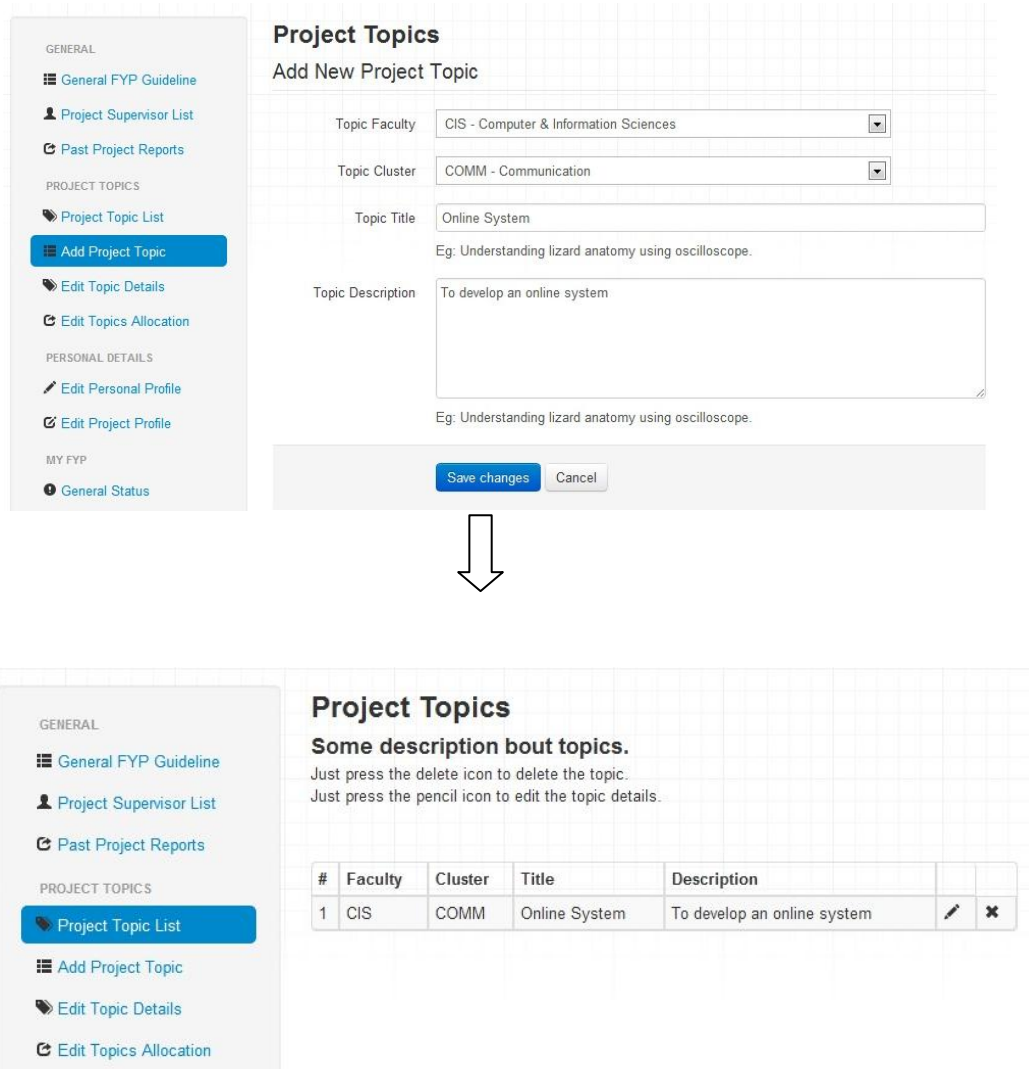


Figure 20

4.3.1 Process Flow

When the user login then the system will determine the user's ID and match it with the ID in the database. Thus it will be given the appropriate access level. For example, the user is a supervisor. He/she will be given the access as discussed before. If the user want to use the functions allowed, such as add topic then he/she can click the 'Add Project Topic' function. After he/she is done and save, the system will identify the data and give it a Topic ID. It then can be view in the 'Project Topic List' function which will call all Topic ID in the database.

4.4 FYPOS Site Styling

The look and feel of the web is added into the site by using open-sourced Twitter Bootstrap as in Figure 21. The idea is using a pane design where there is top bar, sidebar for navigation and one main content viewing area.

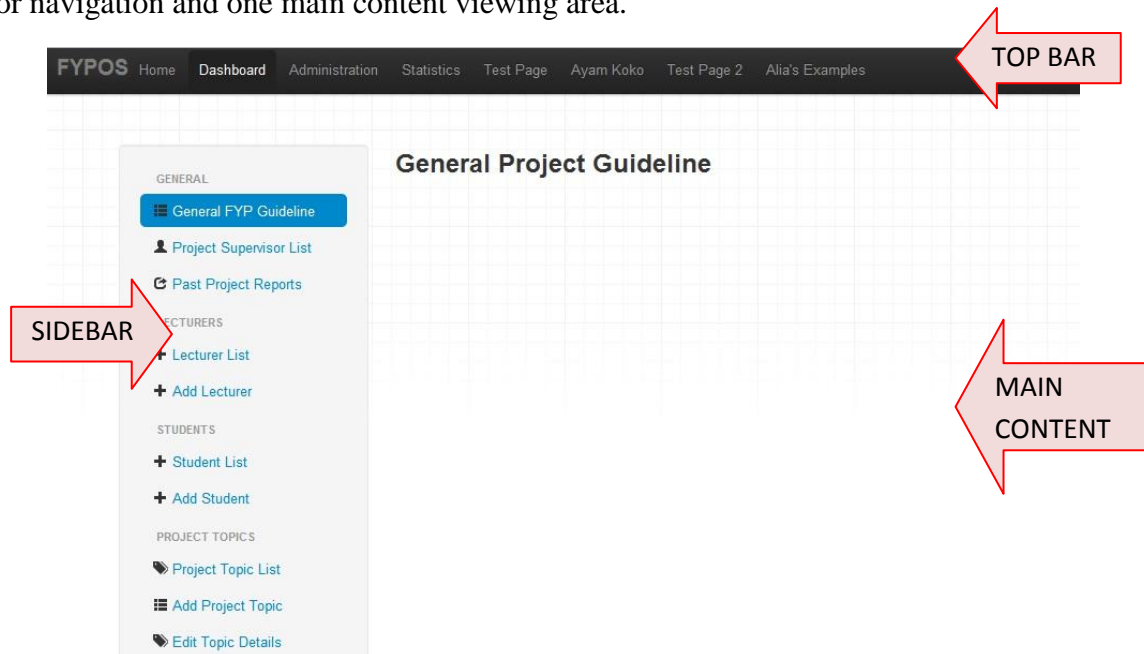


Figure 21

4.4.1 Interface Concept

All interfaces to the system are Web-based. This project will use the concept of *three clicks rule*. This rule is commonly used by web developer with the target that every user will get through to their desired page within three clicks only [44]. This will help ease the access of user. There are three distinct interfaces for three groups of users as well as a common interface to login to the system. Each user must go through the login process to access the system which will be controlled by an administrator. The administrator is responsible in handling user registration, user account and profile.

4.5 Discussion

FYP Online Management System is an online system that is intended to involve all participants in one collaborative system systematically. Once finished, the system will be used to replace the manual way of management. It can be use wherever the user has internet connection. There is no restriction to access the system anytime or any day.

In addition to the features outlined before, it has many security features that are important in an environment where access criteria to the database depend on the type of user. The system uses verification during the user login to provide appropriate access to the system. Security features like user identification and authentication, system time out, disabling browser cache entries, and disabling options when the user is not qualified to use a certain feature are some of the security features implemented in the system. The security of the Web pages for the three main interfaces of FYP Online Management System is maintained by using session cookies that are generated when the user logs into the system.

CHAPTER 5

CONCLUSION & RECOMMENDATIONS

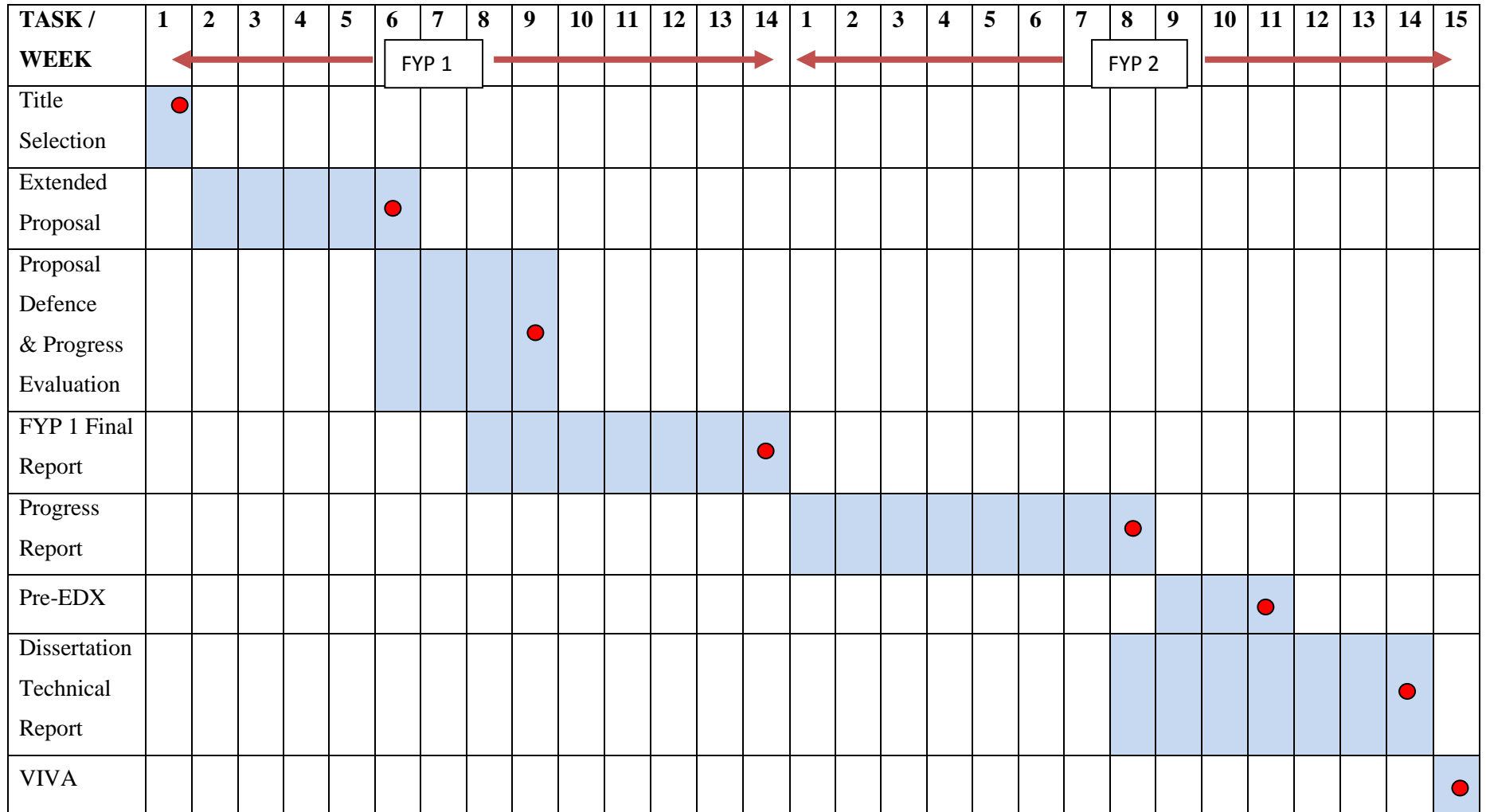
5.1 Conclusion

A web based software system FYP Online Management System will be introduced to provide a comfortable environment of management. This project is a comprehensive solution to the problems faced by the manual FYP management. The success of the FYP Online Management System will reduce the weight of FYP coordinators, simplify the protocol and increase the performance of all the management. All the participants can interact with each other and exchange the information online. The feasibility of the project is guaranteed so this project should really be developed and implemented. The FYP Online Management System is hoped to perform very well in enhancing the quality of FYP management.

5.2 Recommendations

There are much more can be done for this system. Currently the system is having some limitation as it is not fully automated in functioning. Also, there is no document management system yet. For future upgrade, there system is hoped to be able to use for master and PhD level. It is also recommended to be able to upload files or reports archiving. The system may also provide a means for the participants to communicate in real time online.

KEY MILESTONE



● Key Milestone
 Process

GANTT CHART

TASK / WEEK	FYP 1					1	2	3	4	5	6	7	8	9	10	11	12	13	14
Research on Project / Literature Review	█	█	█	█	█														
System Abilities and Functional	█	█	█	█	█														
System Design and Architecture Development of System – Back End Side	█	█	█	█	█														
Development of System – Front End Side			█	█	█														
Implementation														█	█	█	█		
System Testing – Delays – Stress test – Scalabilities														█	█	█	█		
System Prototype ready																			█

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