FINAL YEAR PROJECT ONLINE MANAGEMENT SYSTEM (FYPOS): DATABASE DESIGN

by

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Final Report submitted in partial fulfillment of the requirement

for the Bachelor of Engineering (Hons)

Electrical and Electronics Engineering

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the

Electrical & Electronics Engineering Programme

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in partial fulfilment of the requirement for the

BACHELOR OF ENGINEERING (Hons)

(ELECTRICAL & ELECTRONICS ENGINEERING)

Approved by,

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UNIVERSITI TEKNOLOGI PETRONAS

TRONOH, PERAK

MAY 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.

_____

(NUR ALIA AZWEEN BINTI ANUAR)

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ABSTRACT

Final Year Project (FYP) is the most important course in university. Every student will be taking FYP courses in their final year studies in university. It will be troublesome for student if the management system of FYP continue to be manually instead of online systems. Online systems provide a very important part in the life of every student upon entering universities, submission of project and enroll the subject or title to lecturer. It gives students the impression on how the whole institute manages and manipulates the entire organization. Therefore FYPOS is proposed. FYPOS stands for Final Year Project Online System. FYPOS is online systems that make the students and lecturer to register, submit report and view it online. FYPOS will make the student and lecturer life easier and faster than before (manually management system). The objectives of the FYPOS to enhanced the management system to be online by design, develop and testing the database. Currently, the manually system have limited storage, troublesome and no proper record. Hence, the scope of study covers all the server design, database design and also monitoring the data that undergo the database (testing). This project consists of introduction of Relational Database Management System (RDBMS), Entity-relationship Diagram (ER-Diagram) and PHPmyAdmin. For further information are the detailed explanations of what are RDBMS, ER-Diagram and also PHPmyAdmin. All of the information is extracted from trustworthy website and books.

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CHAPTER I

1. INTRODUCTION

At the moment, manually management system of FYP courses gives both of student and lecturer in Universiti Teknologi Petronas troublesome and complicated. For instance, whoever taking course FYP have to manually register and submit the form, manually search for supervisor from one cubicle to another and occasionally disturb lecturer's privacy. To make the registration and submission simpler, easier and smoother, therefore the Final Year Project Online System (FYPOS) has been introduced. These FYPOS is a new method for students to register and submit form via online, for lecturers to submit their title of project via online and for the committees to view the entire database and edit it via online.

1.1 Background of Study

This FYPOS is basically a program to enhanced the FYP's online management system and make it more convenient. The system will provide the services that the students, supervisors, lecturers, examiners and coordinators needed as shown in Figure 1.

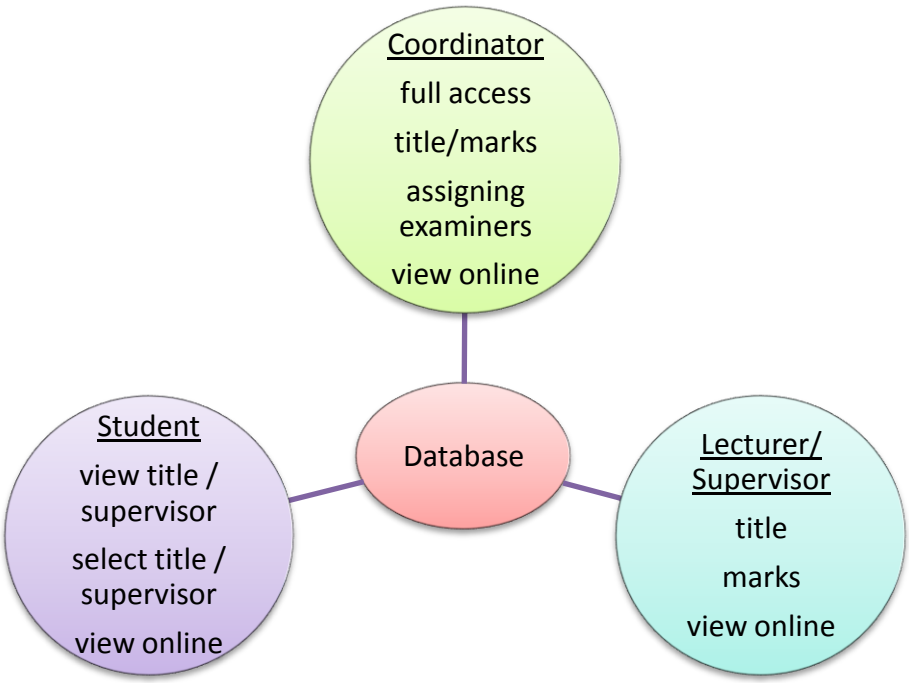


Figure 1: Overview of the database FYPOS

Furthermore, the database system will work as a centre that connects all of them (student, lecturer and coordinator) together. For example, the lecturer can propose title and the student can view the title online plus choose their desired title or desired lecturer. In addition, the registration form, submission proposal, submission final report and result of the supervisor's can be submitted and view it online.

1.2 Problem Statement

Final Year Project Online System (FYPOS) is a research development of final year project management system. This is new method due to find out and reduce the problems of manually management system. The problem that slows down the whole process of final year project timeline and occasionally mess up the progress of FYP are as follows:

1. Improper record
   Manually registration makes the lecturer hard to find their previous student because it does not have proper archiving.

2. Troublesome
   Students have to download the timetable from e-learning UTP for the updates (external supervisor, date of extended proposal or submission of Final Reports).

3. Limited storage
   Limited space to store and retain the reports of final year projects from previous students.

4. Redundancy tends to happen
   Lecturer proposed the same topics and students always refer to same reference (previous student).

These will slightly by make appalling reputation to Universiti Teknologi Petronas.

1.3 Objective

The objectives of the FYPOS are as follows:

- To enhance the current manual FYP management system to be online system.
- To design and develop the database of FYP online system management.
- To test the database of FYPOS.

1.4 Scope of Study

Throughout these final year project timeline, I was assign into a project of FYP online management system and daily work with the database plus coding itself. This FYPOS is divided into two parts as shown in figure 2 below.

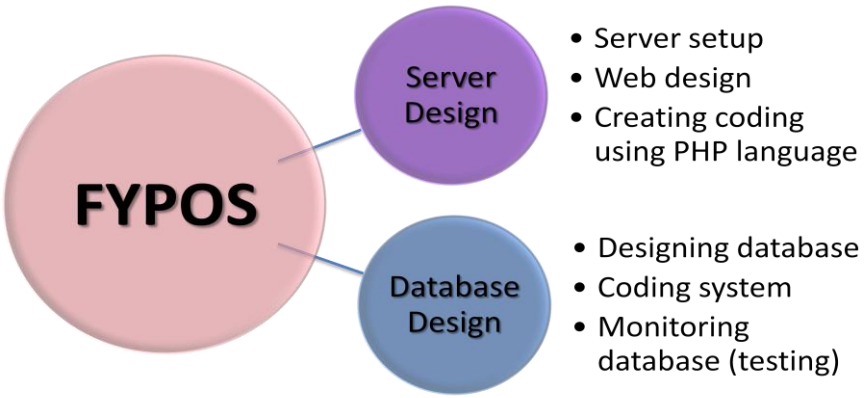


Figure 2: Scope of study

The first part will be done by my partner, Raihanah Abdul Wahab which is server design specifically about creating coding based on PHP language that can be imply into MySQL database. Next, second part is about database design of online system management that I will be doing in this project. The works that I had assigned to are as follows:

- Process for designing database the FYPOS website.
- Query and coding system of PHP that will collaborate with database design.
- Monitoring the data (do not crash) that undergo the database process.

CHAPTER II

2. LITERATURE REVIEW / THEORY

Generally, to create the FYP online system, there will need an open-source operating system. Firstly, open-source operating system needs a web server to create the online system. Next is database, followed by server and scripting language as shown in figure 3.

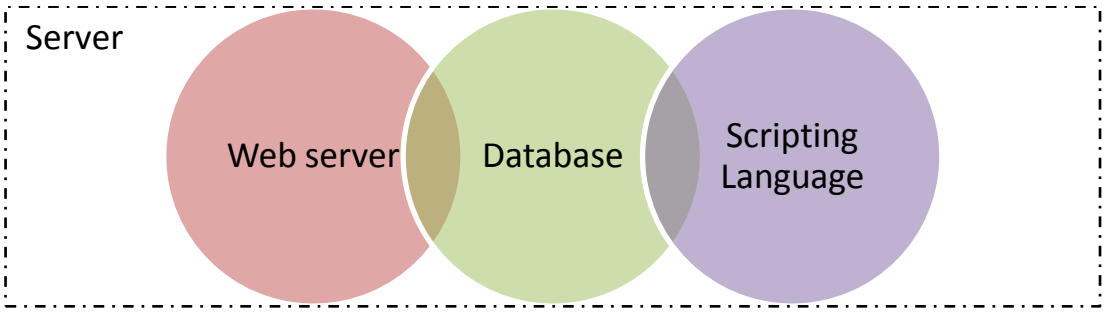


Figure 3: Things needed to create online system

- Web server – is the computer system that used to connect the internet, download stored webpage on to the user computers.
- Database – A database is an organized collection of data.
- Server – A computer program that has a linked client program that may run on the same computer or on another networked computer.
- Scripting language – A form of programming language that is usually interpreted rather than compiled.

2.1 Open Source Operating System

There are several open source operating system such as Microsoft, Oracle Inc., IBM and also the OSS community. For this FYPOS, we are using Open Source Operating Sytem (OSS). Figure 4 below explain about OSS operating system.

2.1.1 OSS Community Operating System

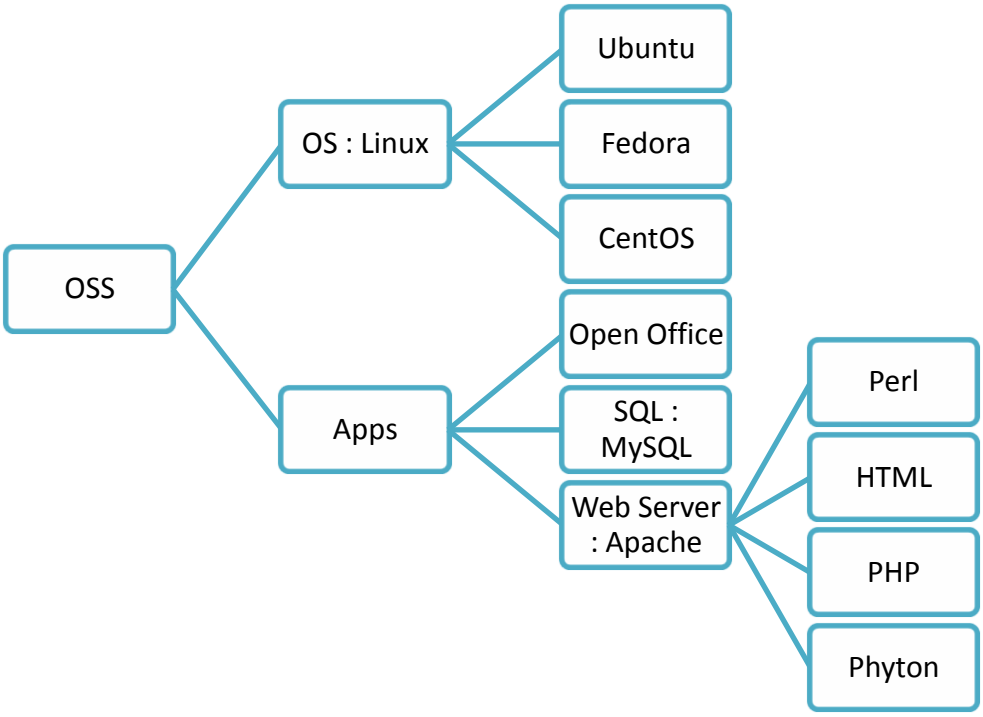


Figure 4: OSS Committee's web server, applications and supported language.

OSS Community is a group people who invented their own structured open source called Linux. Linux have several computer operating systems such as Ubuntu, Fedora and CentOS. It can be installed and used on the desktop, server or on mobile phone same as Microsoft. Their applications are similar to Microsoft. For instance Open Office, MySQL Server and the web server is Apache and Apache Tomcat. This web server support languages as Perl, Php, Phyton, HTML and Java.

2.2 Web Server - Apache

The web server that will be using in FYPOS is Apache web server. Apache is a web server developed and maintained by a group of insecurely programmers [1]. Apache is also a public domain that refers to any program that is not copyrighted. Public-domain software is free and can be used without restrictions. Apache Server is the most popular and preferred from web developers. More than the half of web sites in the internet is running under Apache as shown in Figure 5. The stated objective of Apache is to create an open source server that will run on any modern operating system and hardware.

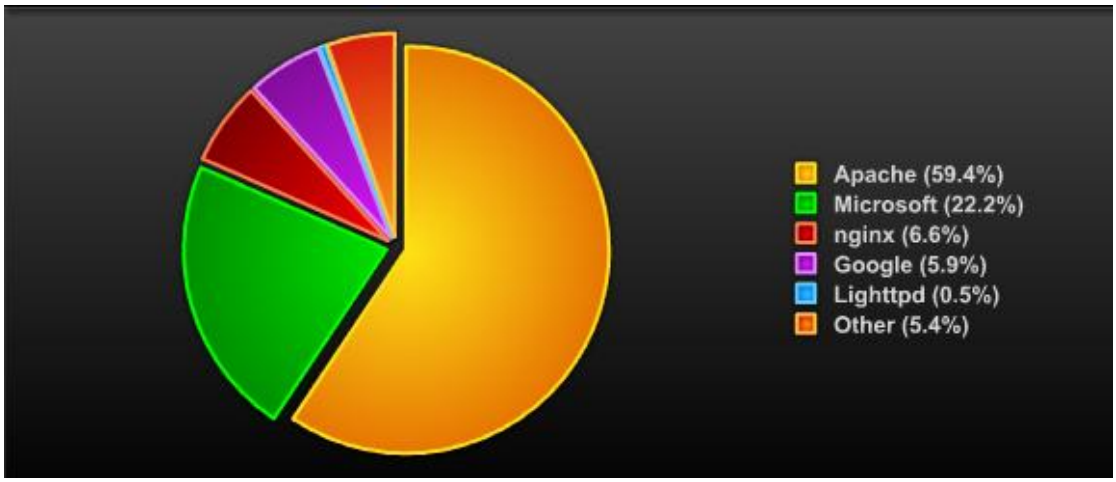


Figure 5: Web servers that have been running in the internet. [2]

There are several advantages of Apache such as:

- **Free:** Apache can be downloading for free and also can run it under Windows [3].
- **Advanced features of Apache Server:** Apache server is the web server is the most sophisticated features in the market. Also Apache is always innovating and is able to use the latest protocols used in the internet.
- **Flexible:** Apache Server can be customized very easily due to its modular structure.
- **Features.** Apache has various useful features, including implementation of the latest protocols [4].

- **Efficient.** A lot of effort has been put into optimizing the Apache's C code for performance. As a result, it runs faster and consumes less systems resources than many other servers.

- **Easy to administrate:** The administration is one of the main elements of servers. With Apache Server administration problems can be solve easily. Apache Server has a list of configuration files that are well documented with all the necessary information in order make it can read and can be inform about the features and settings of the Apache Server [5] .

- **Portability.** Apache runs on a wide variety of operating systems, including all variants of UNIX, Windows, MacOS and several of operating systems.

- **Stability/Reliability.** Apache's source code is open to public. When any bugs are found, they are often quickly communicated, and rapidly fixed. Updates are made and announced thereafter. This has resulted in Apache becoming more and more stable, and hence reliable, server over the time.

2.3 Database

What is it a database? Database are used to collect, store and managed a group of data in a structured way. In a relational structured database there are tables that store data.

2.3.1 Relational Database Management System (RDBMS)

These days, relational database management systems (RDBMS) are used to store and managed huge volume of data. Every data are stored into different tables and it has their own relations between the data as shown in Figure 6. MySQL is an example of relational database.

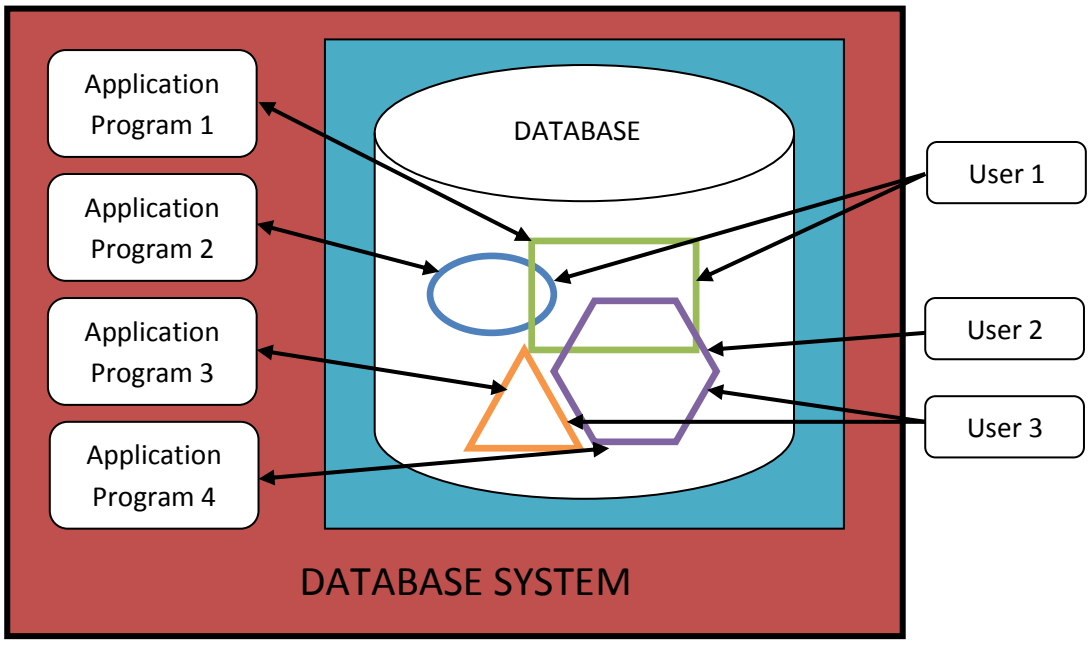


Figure 6: Components of database system

Databases are most useful when it comes to storing large information that fits into logical categories [6]. Database also create, access, manage, search, and replicate the data it holds [7].

The basic process database design:

- Determine the relationships between the different data elements.
- Apply to a logical structure upon the data on the basis of these relationships. [8]

2.3.2 Entity-relationship Diagram (ER-Diagram)

ER diagram stands for Entity-relationship model diagram. An ER diagram is a diagram that helps to design databases in an efficient way as shown in Figure 7. There are three basic elements in ER models:

- Entities – Is where the information came from.
- Relationships – Provide the structure needed to draw information from multiple entities
- Attributes – Is the collected data about the entities.

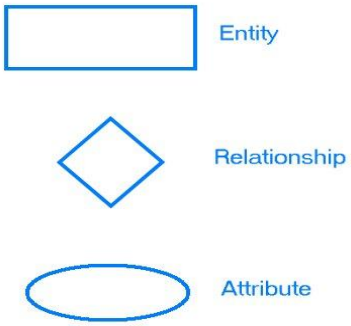


Figure 7: Basic elements in ER

Figure 8 below shown that relationship between patient and ward is one to many (1:M) and relationship between patient and doctor is many to many (M:M). Each of every entity will have it owns attributes. [9]

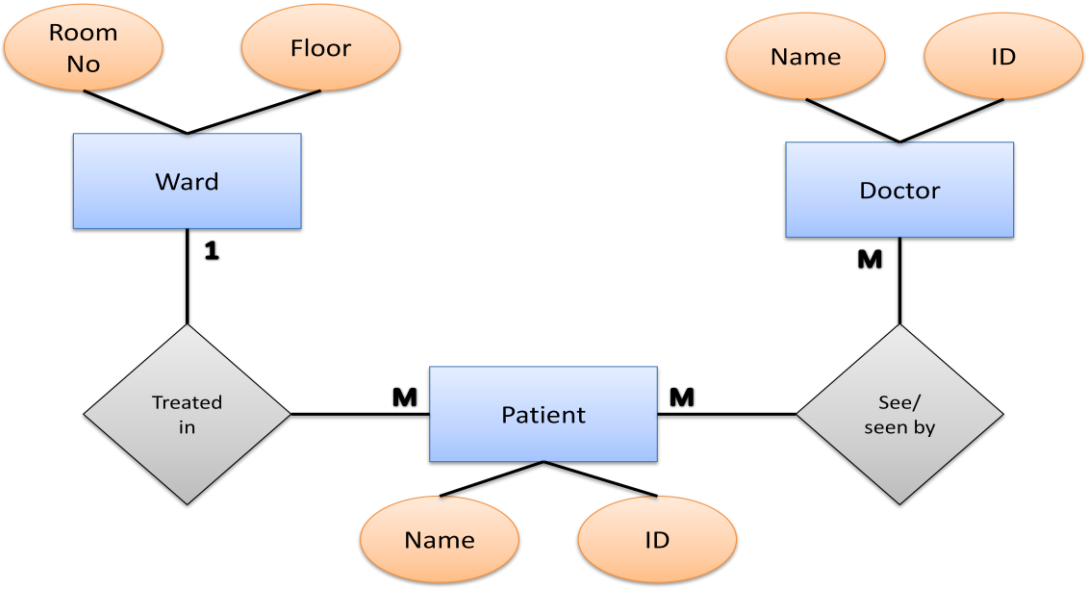
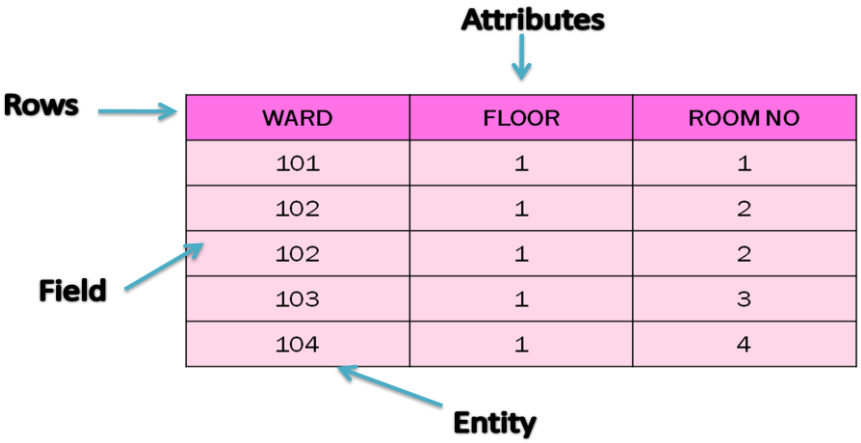


Figure 8: Example of ER-Diagram

In order to create a good database system, there are three relational database components that we need to perform and obey it rules. The components are as follow:

- Data structure
  - Data organized into tables
- Data manipulation
  - Add, delete, modify, and retrieve using SQL
- Data integrity
  - Maintained using business rules



WARD	FLOOR	ROOM NO
101	1	1
102	1	2
102	1	2
103	1	3
104	1	4

Figure 9: Data organized into table

WARD	PATIENT	DOCTOR
101	Jamilah Said	Dr. Ahmad Awang
102	Siu Ling	Dr. Kim Kuah Can
102	Ismail Yaacob	Dr. Ahmad Awang
103	Zain Tarmizi	Dr. Rohaiza
104	Juliana Aina	Dr. Rohaiza

WARD	FLOOR	ROOM NO
101	1	1
102	1	2
102	1	2
103	1	3
104	1	4

Figure 10: The relationships of two tables

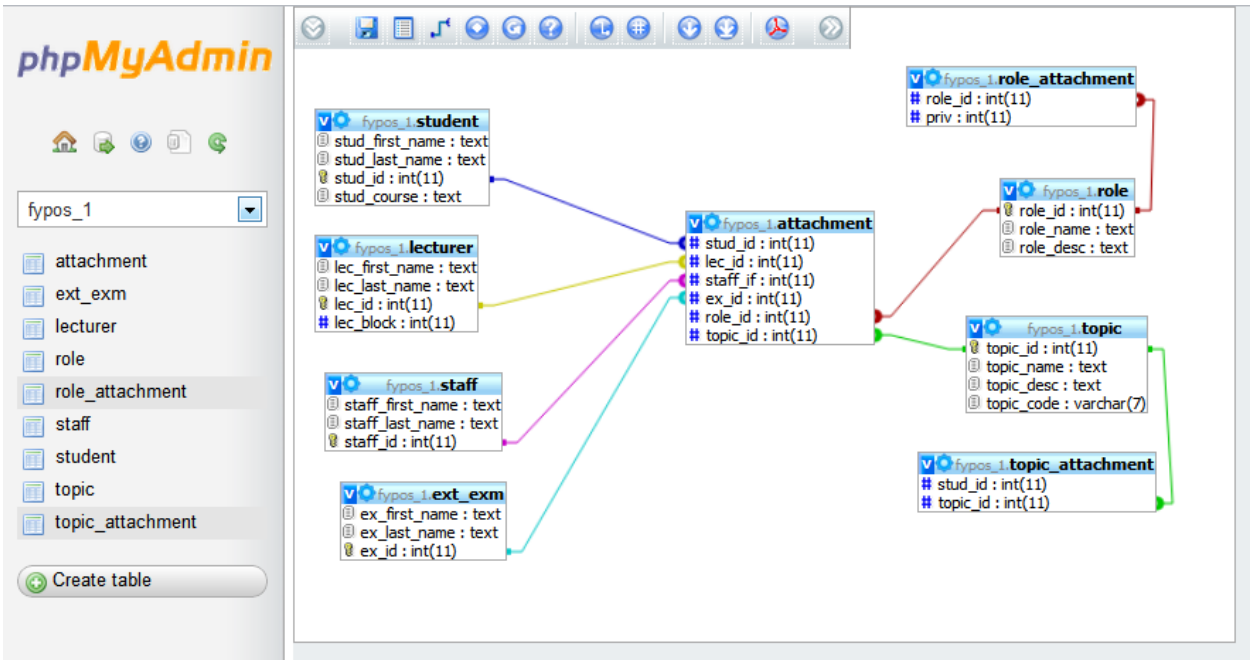


Figure 11: Example of FYPOS relationship tables

Within the relational model the final step can usually be broken down into two more steps that of determining the grouping of information of the system, what are the basic objects is all about and lastly determining the relationships between the groups of information. After finishing the ER-Diagram, it can be converted into the PHPmyAdmin database.

2.3.3 PHPmyAdmin

PHPmyAdmin is a free and open source tool written in PHP intended to handle the administration of MySQL with the use of a Web browser. It can perform various tasks (e.g. creating, modifying or deleting databases, tables, fields or rows), executing SQL statements and managing users/permissions. Furthermore, PHPmyAdmin is a HTML interface developed in PHP.

- **The Interface**

PHPmyAdmin web page is as Figure 12 below. The left sidebar of PHPmyAdmin contains five icons that is home, query window (for executing SQL queries), phpMyAdmin documentation, documentation and reload navigation frame. Below the icons is a Databases link, which allows jumping to the database chosen. The tables will be displayed after choosing any database.

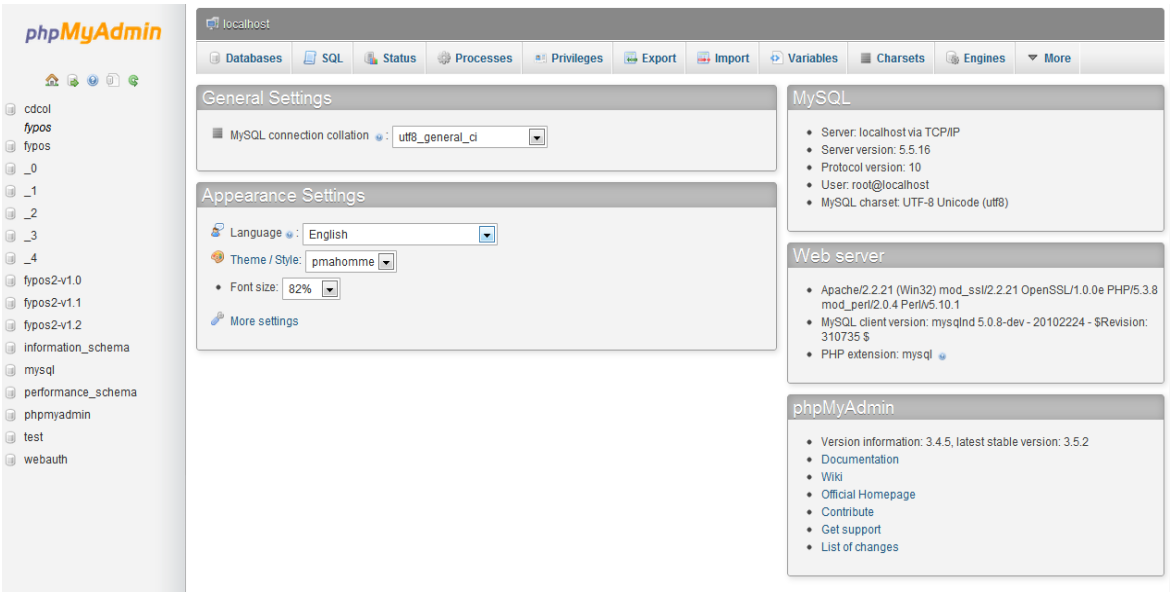


Figure 12: Screenshot of the interface

Example of simple database is collection data of book store that consist 4 details which is ISBN, author, title and price. It is for the manager or the employee to search prices for certain books, or who is the author of the book. Example are as follows:

- **Database form**

How to create a database? For example, create a database and call it *book_shop*. (Figure 13) Type in the name into the *Create New database* field and click Create.

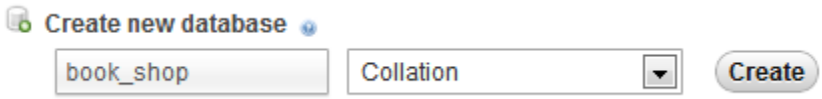


Figure 13: Create a database

The equivalent command will be displayed as well, as shown Figure 14 below.

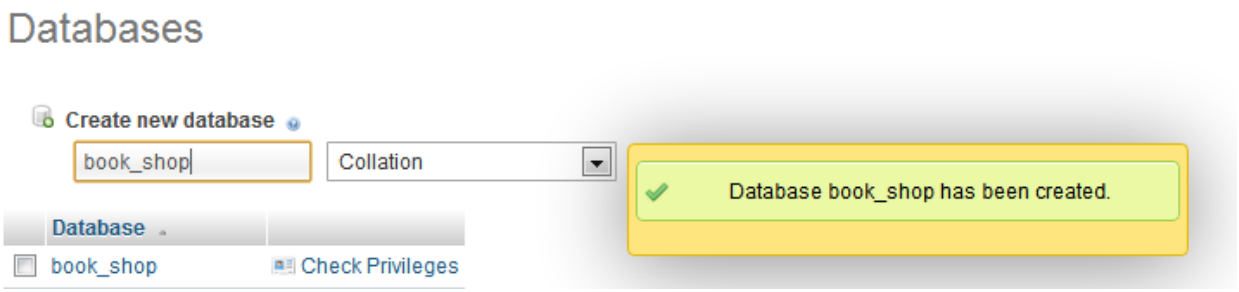


Figure 14: Command received after create a database

- **Table structure**

After that, creating tables are needed in the database. For instance, create a table called *books* and enter 4 in the *number of fields*. Enter the following fields: ISBN, Author, Title and Price as in Figure 15. [10]

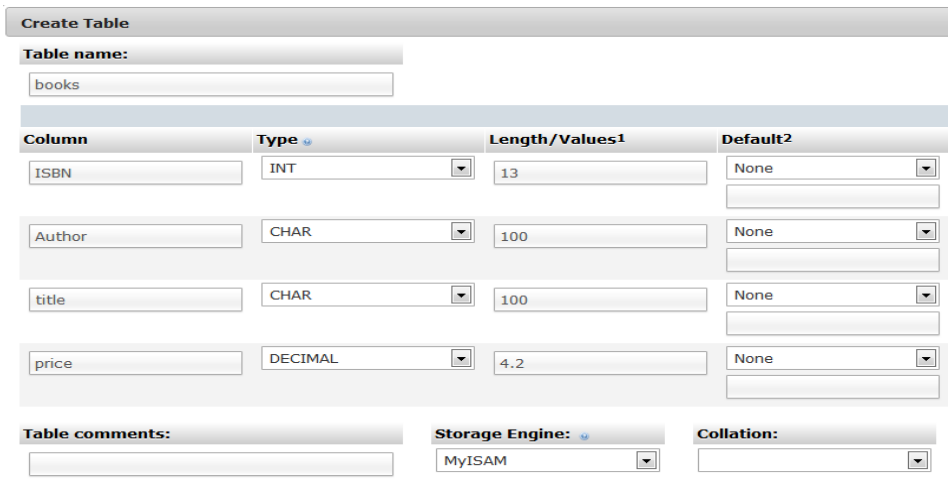


Figure 15: Create table and column in database

Next, set the data types and length/values as show below. The ISBN will serve as the primary key. A primary key is used to uniquely identify each row in a table. To set the primary key, choose the database and then the table and click on the *primary* icon as shown in Figure 16 below.

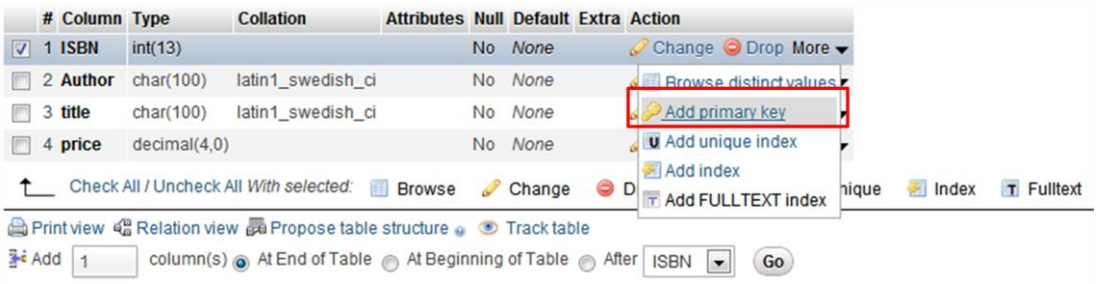


Figure 16: Set primary key in database

- **Insert Data into the Table**

Next is insert data into the table. Select book_shop from the database link on the left side bar and then select the books table below it. Click on the Insert tab and continue to fill in the different fields with values, as shown in Figure 17.

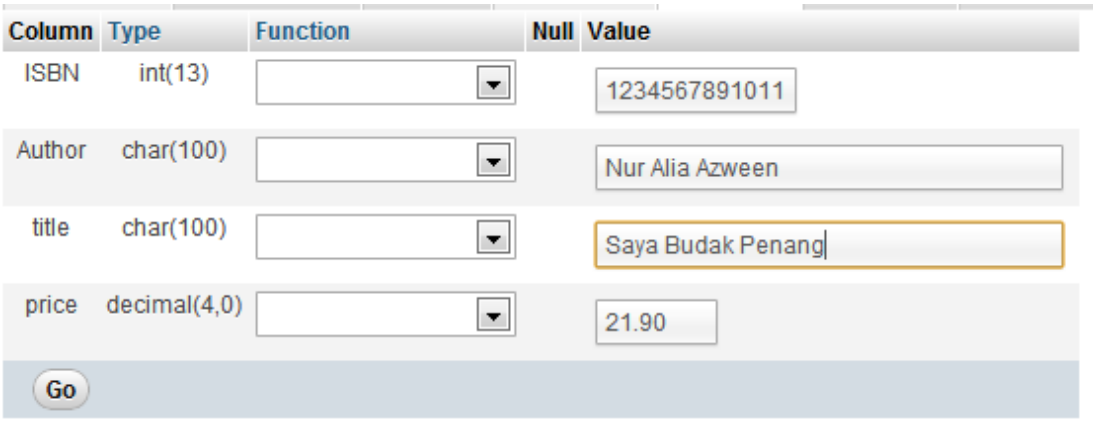


Figure 17: Insert data in database

➢ Managing the database

To view and manage database, select it in database link on the left side bar of the PHPmyAdmin website. There will be an overview of database (Figure 18) and nine tabs for carrying out certain actions as follows:

- Structure: displays the different tables and allows creating a new table. A small drop-down menu that can perform drop, empty, print view, check, optimize, repair and analyze on tables selected.
- SQL: execute SQL queries on the database.
- Search: search for words and phrases in the database.
- Query: allows queries to be executed using the interface components and manual SQL queries to be run.
- Export: allows saving database into a file format chosen (CSV, Excel, Word, LaTex, PDF, SQL and XML).
- Import: import an SQL file.
- Operation: allows creating a new table, renaming and copying the database.
- Privileges: shows what users have access to the current database and their rights.
- Drop: delete the database if needed.

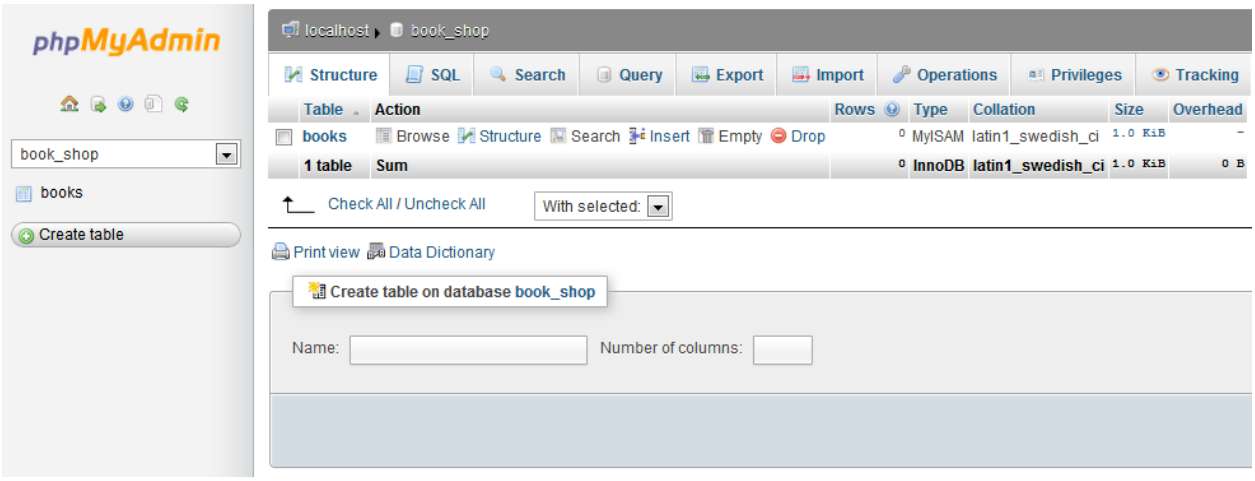


Figure 18: Overview of PHPmyAdmin

- **Advantages of PHPmyAdmin**

PHPmyAdmin is a usable, graphical tool for creating and organizing MySQL databases. The interface is simple and easy to understand and it allows users to execute SQL queries manually. It is also open source that can download anywhere and it is for free. PHPmyAdmin is available on the server, can be used from anywhere with any browser, and can directly manipulate MySQL via the Web using the existing web server with PHP support.

Other advantages in PHPmyAdmin are;

- Can browse and drop databases, tables, views, columns and indexes
- Can create, copy, drop, rename and alter databases, tables, columns and indexes
- Can load text files into tables
- Can export data to various formats: CSV, XML, PDF, ISO/IEC 26300 - OpenDocument Text and Spreadsheet, Word, and LATEX formats
- Can import data and MySQL structures from OpenDocument spreadsheets, as well as XML, CSV, and SQL files
- Can manage MySQL users and privileges
- Can communicate in 62 different languages

2.4 Scripting Language

A scripting language is a form of programming language that is usually interpreted rather than compiled. Scripting languages is to enhanced features of web sites. In most cases, it is easier to write the code in a scripting language than in a compiled language. However, scripting languages are slower because the instructions are not handled only by the basic instruction processor. Scripting languages allow rapid development and can communicate easily with programs written in other languages. Examples of scripting language are PHP, Perl, Phyton, C Shell, Java and Rexx.

2.4.1 PHP

PHP stands for Hypertext Preprocessor (PHP) language and its web server is Apache because only Apache can support PHP language. [11] Moreover, PHP Structured Query Language (SQL) for the database is MySQL. PHP can be run in windows by installing XAMPP software. XAMPP is basically an open source cross-platform web server solution stack package, consisting mainly of the Apache HTTP Server, MySQL database, and interpreters for scripts written in the PHP and Perl programming languages.

2.4.2 Advantages of PHP

There are several rationales why PHP is the suitable element for FYPOS. The reason is stated as follows:

- *Database Compatibility*

As PHP uses MySQL for the purpose of database connectivity, it is highly flexible in nature. PHP is compatible with almost all servers used today such as Apache and IIS. In addition, PHP also can runs on many server such as Linux and Windows servers (using XAMPP). It is also work well with the web and makes it more concise and straightforward to make website [12].

- *Cost*

PHP is free to download and MySQL can be accessed for free too. Compared to ASP.Net, it uses Microsoft-SQL (MS-SQL) for connecting database but MS-SQL cannot be availed free from Microsoft. On the other hand, Internet Information Server (IIS) need to be installed on a Windows server platform to run ASP.Net program.

- *General Run Time*

PHP runs efficiently on the server side. PHP is also faster than ASP.Net. This is because ASP.Net utilizes server space while running but PHP inbuilt memory space while running.

- *Coding Simplicity*

PHP codes are very simple and a programmer does not have to make a diligent effort because it is comparatively easier than other types of programming languages [13].

- *Platform Connectivity Issue*

PHP codes have unique advantages that can be linked with different types of platforms such as Windows, Linux and UNIX.

- *Background Language Support*

The codes that are used in PHP are very much similar to that of C++ language. These PHP scripting language are easier to understand and learn.

As a result, generally PHP is cheap, secure, fast and reliable for developing web applications.

CHAPTER III

3. METHODOLOGY

3.1 Project Work & Research Methodology

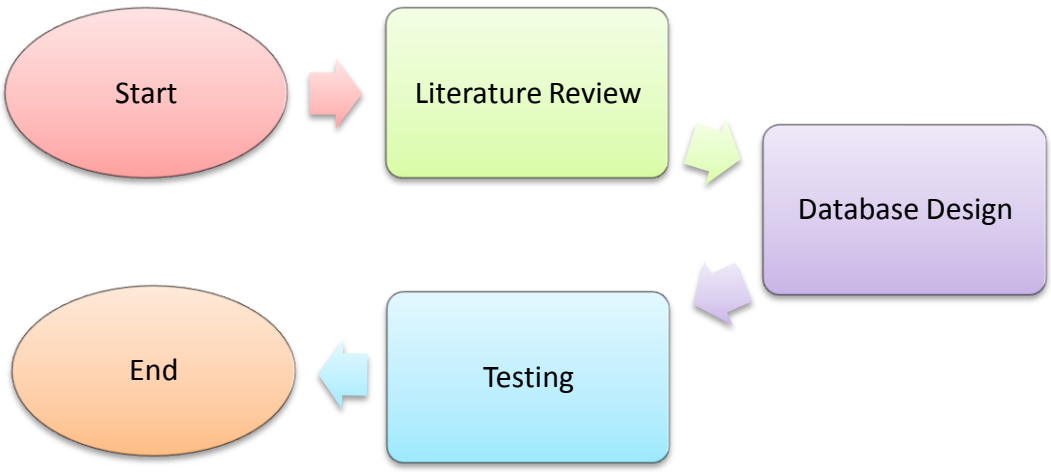


Figure 19: Flow of project work

There are several methodologies to complete these FYPOS. The methodologies of FYPOS are as follows:

- Literature review

  FYP1 - All the information about open-source, database, structured query language, and also scripting language were being study, examine and understand. Next, all of the information was compared to choose the best choices among all. These parts that the decision of what open-source is the best, what database that suit the OS and also the scripting language were made. On these parts, all the choices that have been made will have all the details.

  FYP2 - Furthermore, Relational Database Management System (RDBMS), Entity-relationship Diagram (ER-Diagram) and PHPmyAdmin were being study, examine and understand. Next, start creating ER-Diagram for FYPOS and also the database in PHPmyAdmin.

- Database design

  These are where the design of the web database came in. There will be several process of designing the web database as follows:

  - STEP 1 : Define ER-Diagram
  - STEP 2 : Create tables and relationships with PHPmyAdmin
  - STEP 3 : Use PHP and SQL to create tables and relationship.

- Testing

  On testing process, the database will be test such as follows:

  - Delays in relieving information and queries.
  - Simultaneous access (stress test)
  - Scalability (size of the database itself)

3.2 Tools

There are only two tools that been using throughout the FYPOS project. The tools are as follows:

- Hardware (PC and laptops) is used to observe the output of the coding and database systems.
- Software
  - Apache – For the web server of FYPOS online system.
  - MySQL server – For stored all information of database.
  - PHPmyAdmin – To edit, create or delete the database design.
  - Notepad++ - To edit, create or delete the coding of PHP.
  - Google Chrome – To produce output in localhost system.
  - Command windows

3.3 Activities/Gantt Chart and Milestone

3.3.1 Gantt Chart and milestone for FYP1

No	Detail/Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Research (Apache, MySQL & PHP)														
2	Study coding of PHP language														
3	Study the database design														
4	Produce output of database system														●

Table 1: Gantt chart and Key Milestone for FYP1

From the chart above:

- **Week 1-3** : Doing research about Apache web server, MSQL database & PHP language. For example advantages, disadvantages and also statistics.
- **Week 4-8** : Study a basic of PHP coding such as echo and print to produce output.
- **Week 9-14** : Focusing on database design. Start to create tables with relationship itself.
- **Week 14** : Produce some output about database design.

3.3.2 Gantt Chart and milestone for FYP2

No	Detail/Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Resolve the problem of ER-Diagram														
2	Create the database in PHPmyAdmin														
3	Database collaborate with server design														
4	Produce output of FYPOS														

Table 2: Gantt chart and Key Milestone for FYP2

From the chart above:

- **Week 1-2** : Research about ER-Diagram by indentifies the entities, attributes and also relationships. Moreover, resolve the M:M (many to many) relationship to be 1:M or M:1 so that the database can be design.
- **Week 3-7** : Study a basic of PHPmyAdmin such tables, SQL, query, drop, primary keys, unique keys and relationship between all of them. Additionally, database was created in PHPmyAdmin.
- **Week 8-14** : Start collaborate the database system with Raihanah on the server side using query, php and html of website page.
- **Week 14** : Produce output of FYPOS online management system.

CHAPTER IV

4. RESULT & DISCUSSION

There are three basic steps that need to undergo while do the database system. The three steps are as follows: [14]

- STEP 1 : Define ER-diagram (tables, attributes, and relationships)
- STEP 2 : Create tables and relationships with PHPmyAdmin
- STEP 3 : Use PHP and SQL to create tables and relationships

4.1 STEP 1 : Define ER-Diagram

ER-Diagram is the most crucial part before create the database FYPOS. After several revisions and times recreating ER-Diagram, the final ER-diagram is as shown in Figure 20.

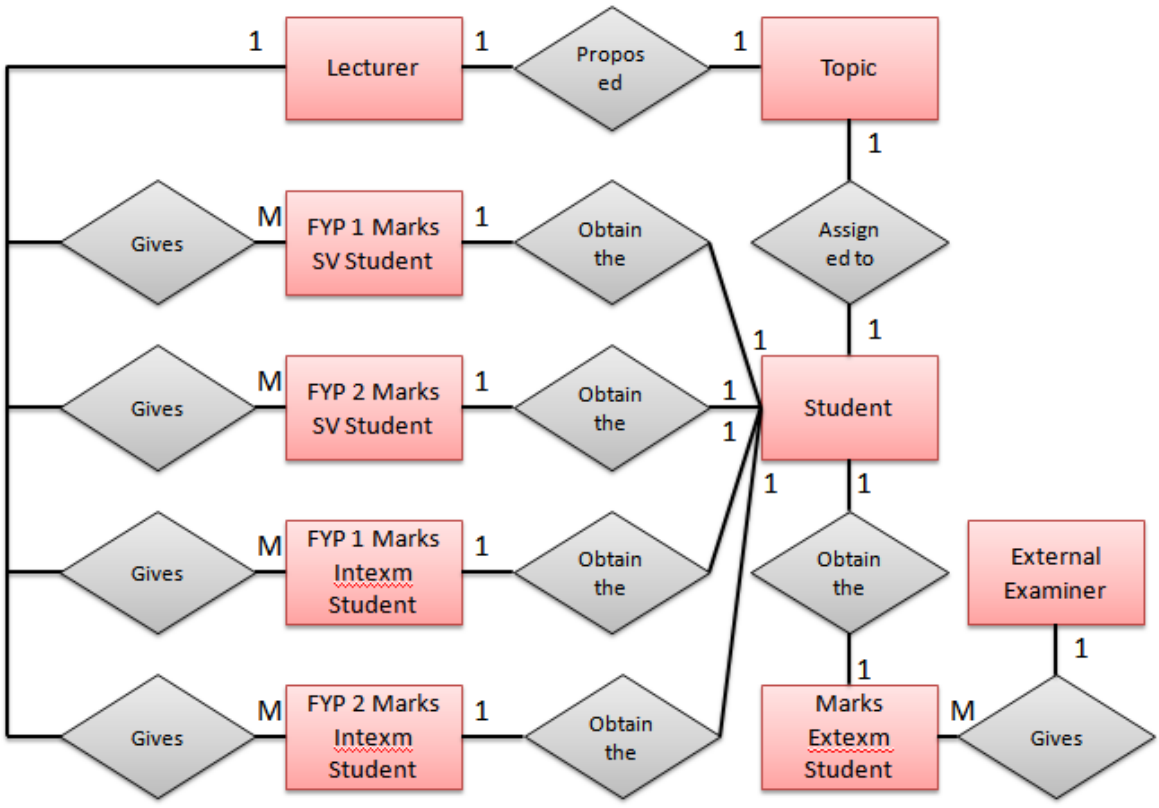


Figure 20: The Entity-Relationship Diagram for FYPOS

Figure 20 shown relationships between the entities which are 1:M and M:1 only. This is because, M:M relationships will cause troublesome to database when create and query the table. There are nine entities that connected to each other which are lecturer, topic, student, external examiner, FYP1 marks sv student, FYP2 marks sv student, FYP1 marks intexm student, FYP2 marks intexm student and marks extexm student.

4.2 STEP 2 : Create tables and relationships with PHPmyAdmin

Using PHPmAdmin software, creating, modifying or deleting databases, tables, fields and row can be perform without difficulty. Figure 21 below is the current FYPOS tables in PHPmyAdmin and Figure 22 is the column (attributes) in topic entity.

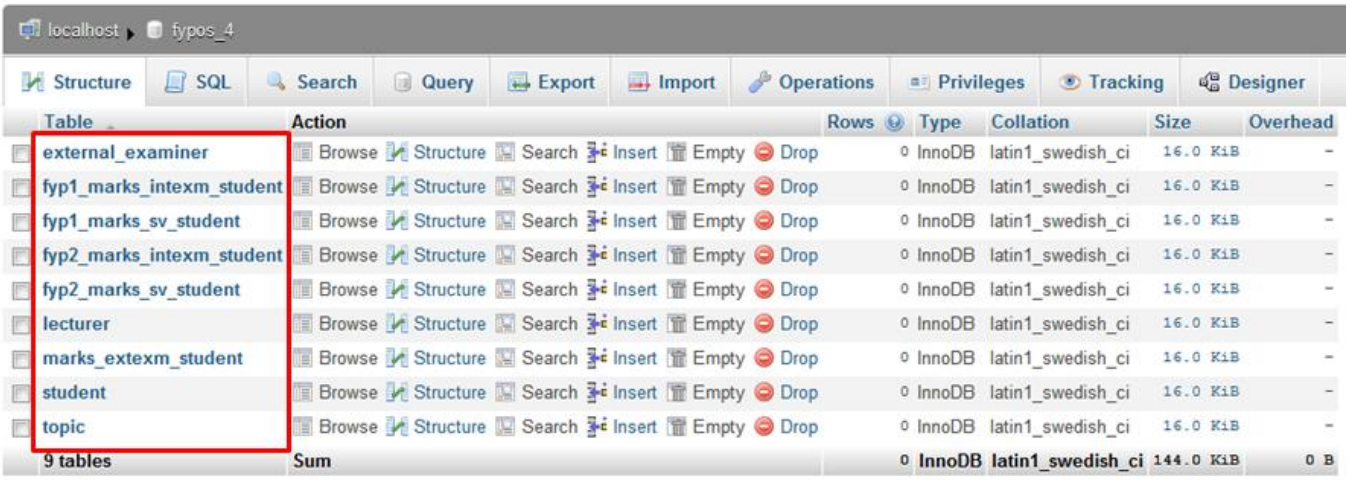


Figure 21: Entity of the database FYPOS

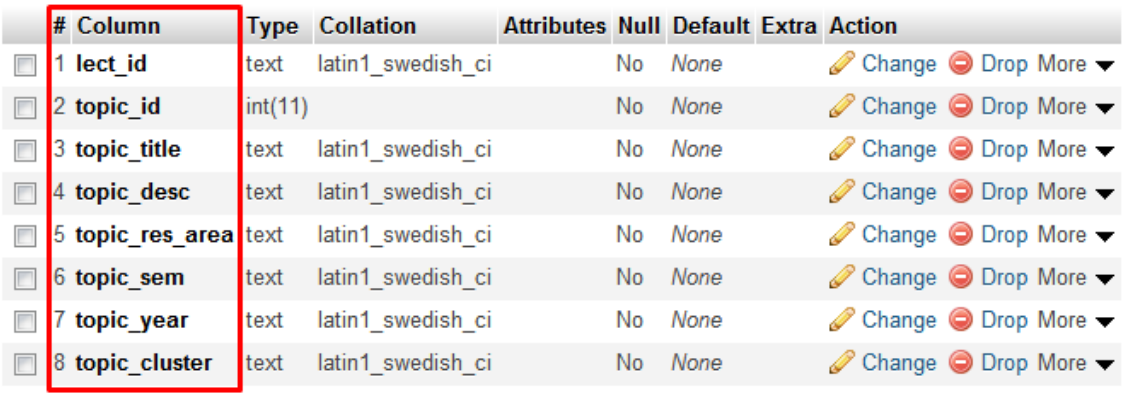


Figure 22: Attributes for topic entity

Each of the entities in the table has its own attributes as shown on Figure 23 below. Every attributes have different category. For instance:

- Type of student_id is integer that limited only 5 decimal places
- Type of extexm_id is integer that will auto increment until 11 decimal places.
- Type of topic_desc is text that is unlimited character.

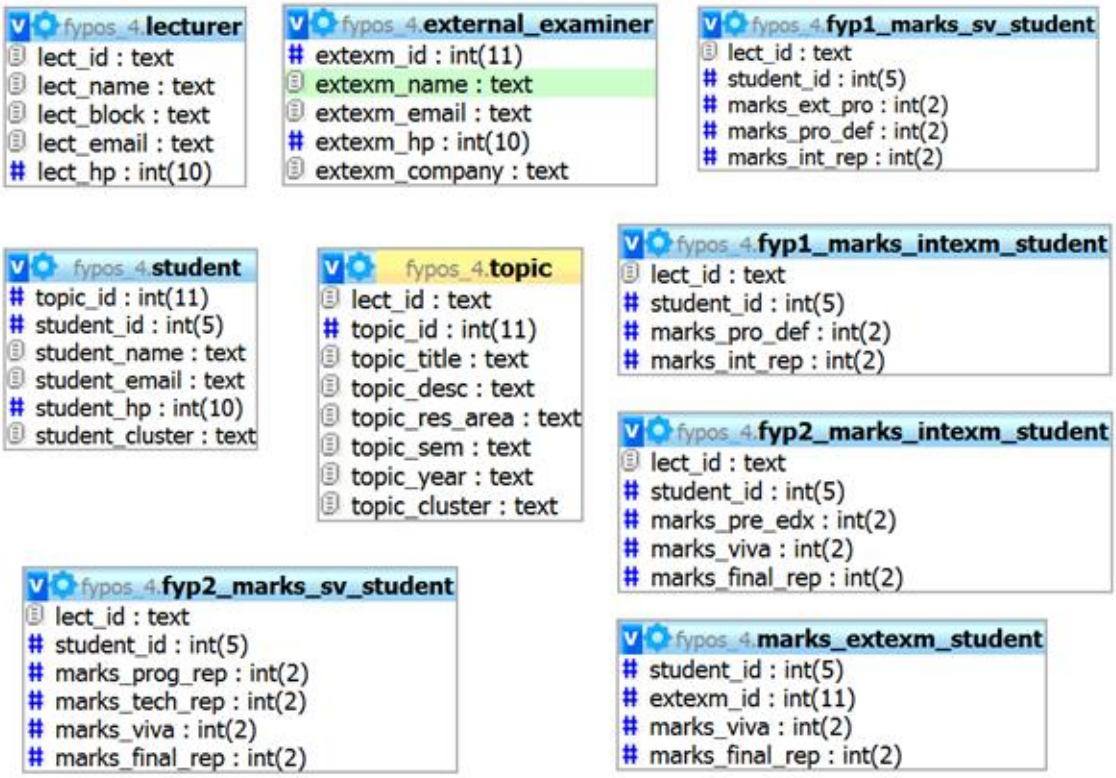


Figure 23: Entities and attributes of the database

4.3 STEP 3 : Use PHP and SQL to create tables and relationships

PHP and SQL must collaborate with each other to create simpler, easier and smoother online system management. Explanations below are the example of how lecturer wants to propose topic to the student in FYP.

First of all, lecturer will have to click the link of "Add Project Topic" on left sidebar. Then, for topic cluster, there will be drop down box as shown in figure 24 and for the query part is on the figure 25 where PHP called the table from topic cluster in database.

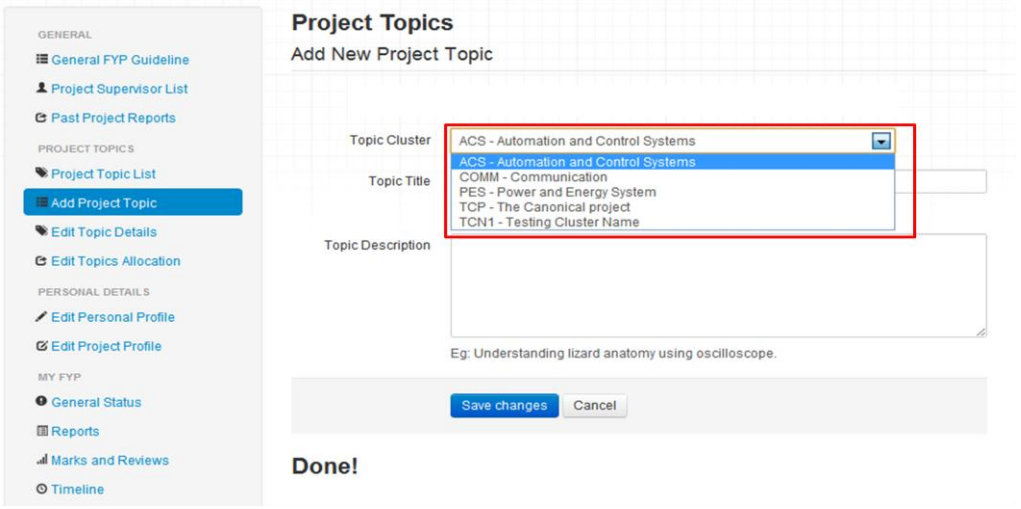


Figure 24: Dropdown box for topic cluster

```
28                  </select>
29              </div>
30          </div>
31
32          <!-- topic_cluster -->
33          <div class="control-group">
34            <label class="control-label" for="topic_cluster">Topic Cluster</label>
35            <div class="controls">
36                  <select class="span10" id="topic_cluster" name="topic_cluster">
37                  <?php
38                  //Query to get List of Clusters
39                  $c_query = "select * from topic_cluster";
40                  $c_result = mysql_query($c_query);
41
42                  //Now display it for HTML's <option> tag.
43                  while ($c_row = mysql_fetch_assoc($c_result)) {
44                    echo '<option value="'.$c_row['cluster_id'].'">'.$c_row['cluster_cname'].' - '.$c_row['cluster_nam
45                  }
46                  ?>
47                  </select>
48            </div>
49          </div>
50
51          <!-- topic_title -->
52          <div class="control-group">
53            <label class="control-label" for="topic_title">Topic Title</label>
54            <div class="controls">
55              <input type="text" class="input-xxlarge" name="topic_title" id="topic_title">
```

Figure 25: Query for Topic Cluster in PHP that collaborated with database system

Next, for topic title and topic description, lecturer can fill with their own topic (Figure 26). And for the query part is on the figure 27 where PHP save the topic title and description on database

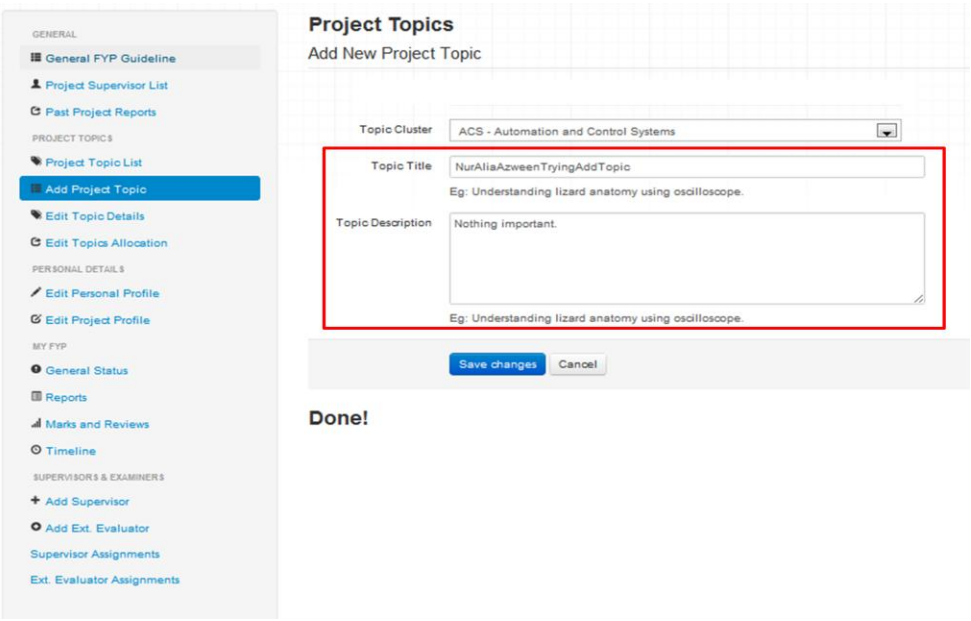


Figure 26: Empty box for lecturer fill the topic title and topic description

Figure 27: Query Topic Title and Topic Description in PHP that collaborated with database system

After the lecturer fills all the form, they have to click link “Save Changes”. Next, the new addition of topic list will appear in “Project Topic List” page (Figure 28). The topic can be edit and delete anytime the lecturer want by pressing X icon for delete and pencil icon for edit.

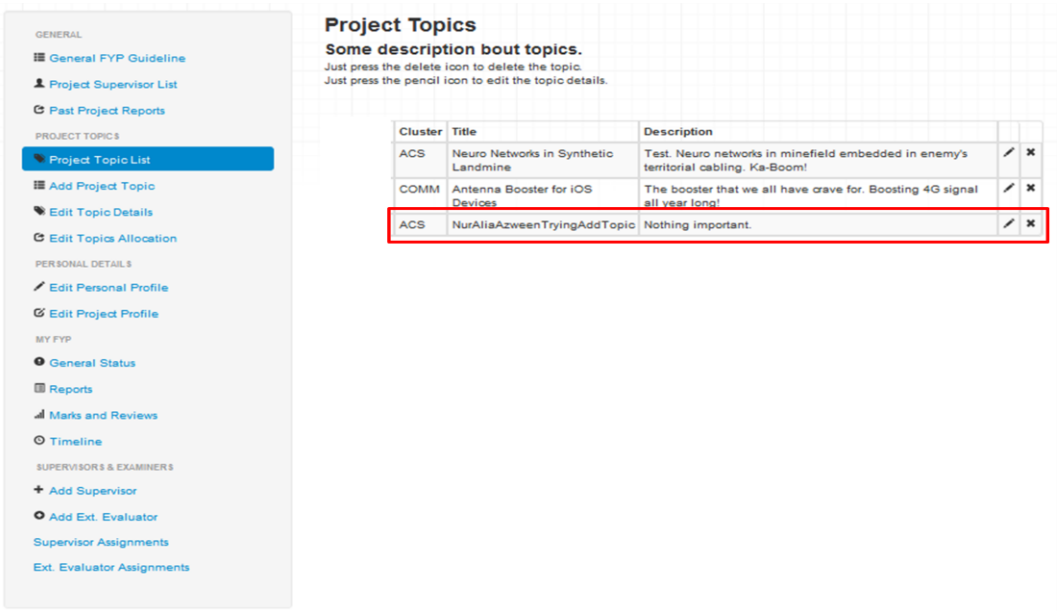


Figure 28: Project topic list updated after add topic

All category of form, such as add supervisor, add cluster or add marks for student, will use the same method as above. Database inside the PHPmyAdmin also will automatically update as shown in Figure 29.

Figure 29: Database updated after lecturer add topic

From the beginning of discussion FYPOS, things needed are database in PHPmyAdmin, query in PHP and some HTML command in website page. And this is FYPOS online system management is all about.

CHAPTER V

5. USER GUIDE

5.1 Student Access

FYP students can only view title and supervisor, select title and supervisor plus view it via online.

5.1.1 Sign-in

Figure 30: Student's sign-in interface

Student will be login for the first time by:

- *Username : <matrix ID>*
- *Password : <matrix ID>*

Example is on red square at the figure 30. Students can change their password after login the first time but the username remain the same and cannot change it.

5.1.2 Topic List

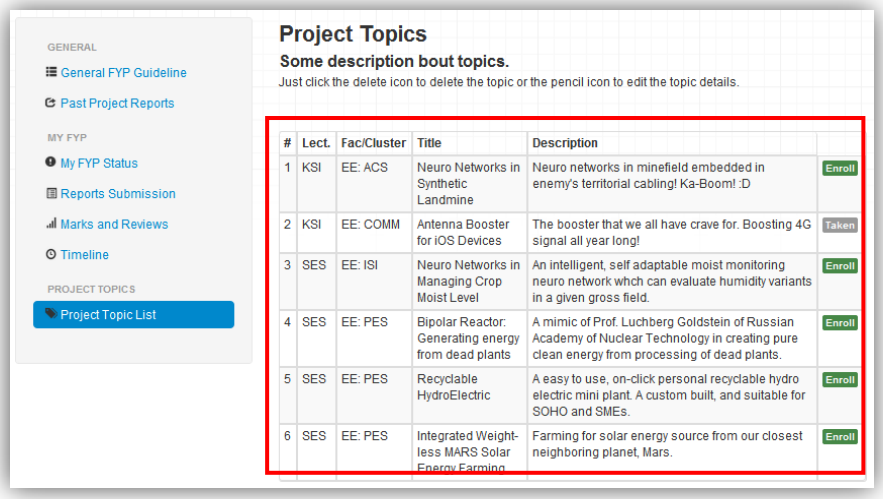


Figure 31: List of topics

Student can list all the topic and supervisor by click on tab *Project Topic List*. There will be the topic that can be enroll or taken.

5.1.3 Notification

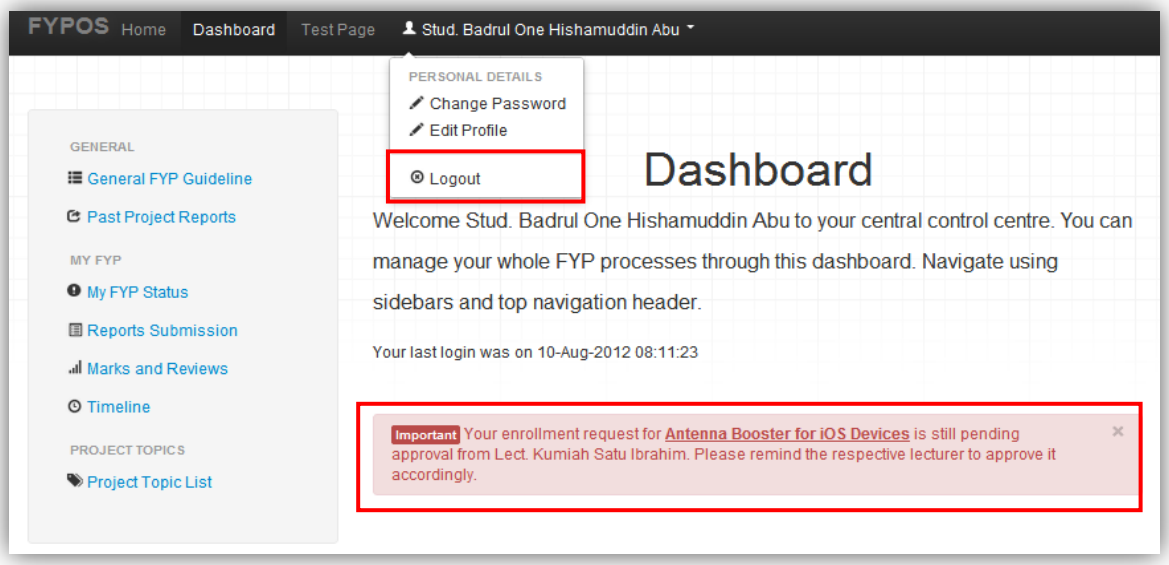


Figure 32: Notification enrollment

The notification will pop-out at dashboard and the student needs to see the lecturer for approval. Furthermore, there is log-out button to exit from the FYPOS.

5.2 Lecturer and Internal Examiner Access

FYP lecturers and internal examiners can propose titles, view titles, gives mark to student and views it via online.

5.2.1 Sign-in

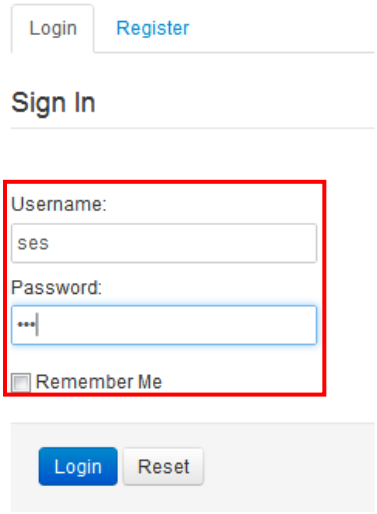


Figure 33: Lecturer's sign-in interface

Lecturer will be login for the first time by:

- *Username : <acronyms>*
- *Password : < acronyms>*

Example is on red square at the figure 33 which is the username is *ses* the acronyms for *Salmiah Empat Sulaiman*. Lecturers can change their password after login the first time but the username remain the same and cannot change it.

5.2.2 Topic Proposal

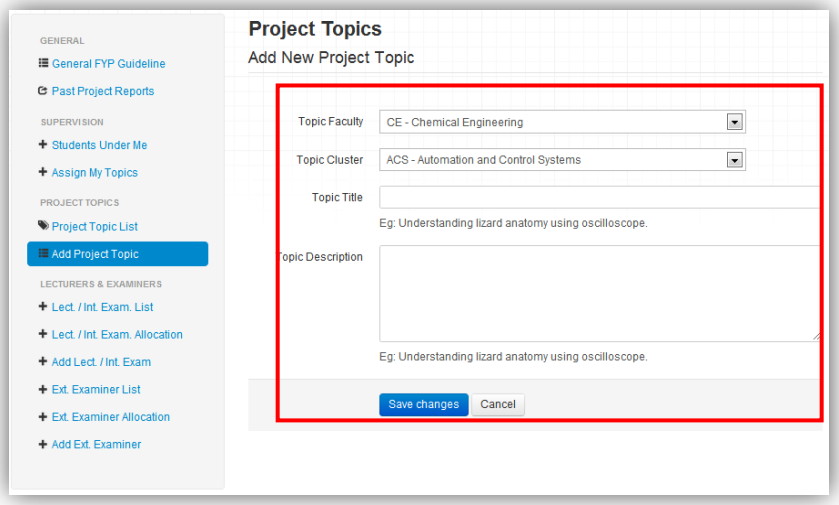


Figure 34: Section for propose topic

Lecturer can add topic by click on tab *Add Project Topic*. There will be option and empty box that need to be filled. After that, click *Save changes* and the topic will be updated on the system.

5.2.3 Notification

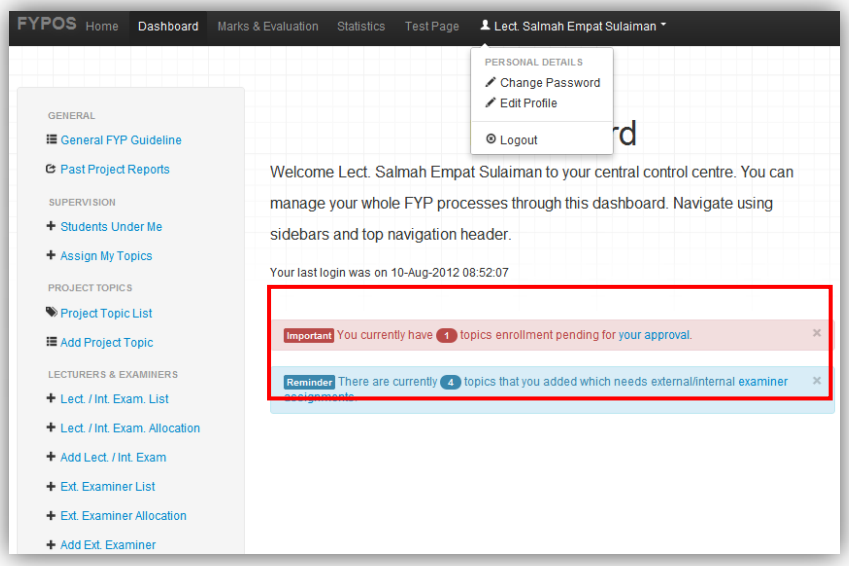


Figure 35: Lecturer's notification

The notification will pop-out at dashboard if lecturer's title were choosing from the student and needs to approve it or not. Click on *your approval*, there will be another pop-out pages that show that is the student want the desired topic.

Figure 36: Topic enrollment approval

5.2.4 Marks and Evaluation form

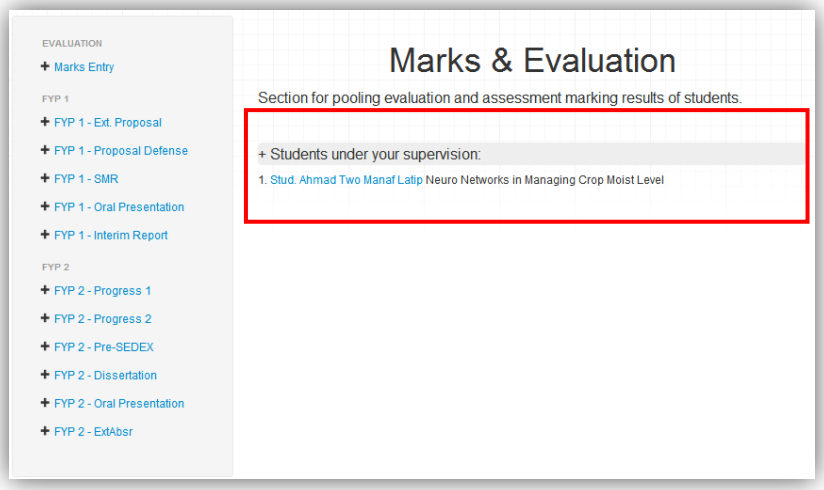


Figure 37: Marks and evaluation form

On *Marks* & Evaluation tab, there will be separated FYP1 and FYP2 marks. So, the lecturer can insert there student marks by clicking the link on the student's name such as figure 37 above.

5.3 Administrator Access

FYP admin have full access on system FYPOS. That means, admin can view, edit or delete the title plus marks. Admin also can assign external examiners to the student and view it online.

5.3.1 Sign-in

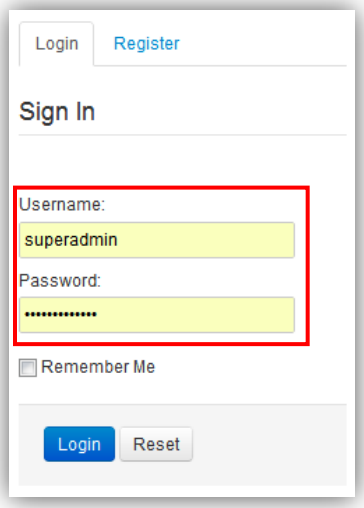


Figure 38: Admin's sign-in Interface

Admin will be login for the first time by:

- *Username :* superadmin
- *Password :* superpassword

Example is on red square at the figure 38. Admin can change their password after login the first time but the username remain the same and cannot change it. After log-in, there will be dashboard pages as shown in figure 39.

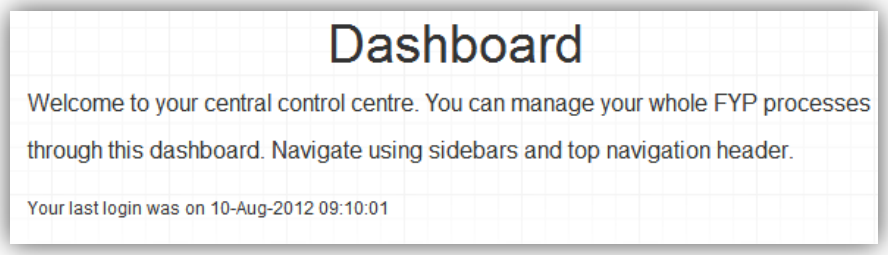
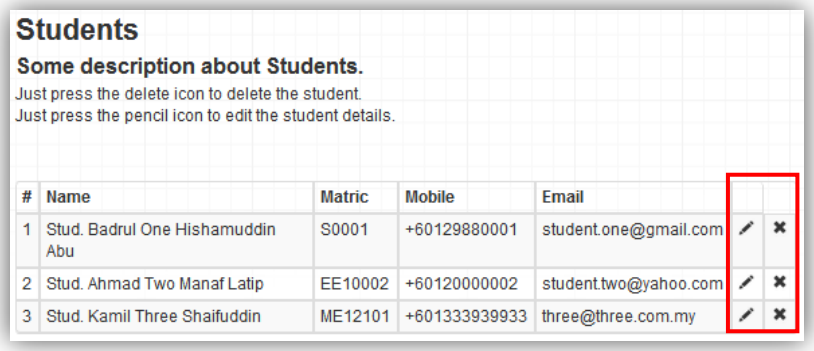


Figure 39: Admin's Dashboard

5.3.2 Edit, delete or add students, lecturers, internal examiners, external examiners, topics and marks

Admin have full access which they can edit, delete or add all of the system. Admin can delete the data by click cross icon or edit the data by click pencil icon on the right side of the table as shown in figure 40 and figure 41.



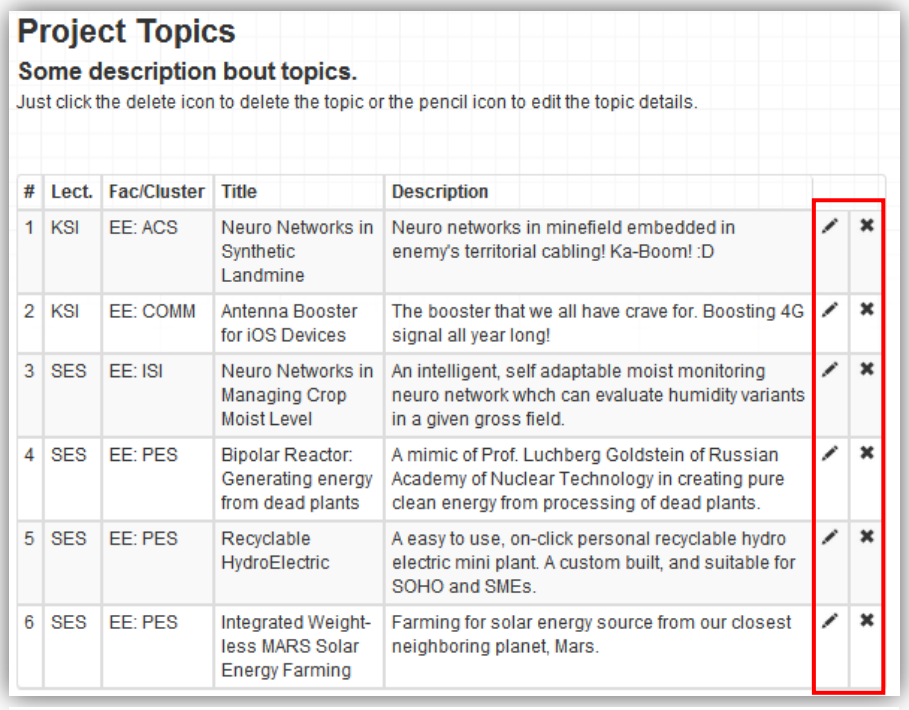
Students

Some description about Students.

Just press the delete icon to delete the student.
Just press the pencil icon to edit the student details.

#	Name	Matric	Mobile	Email		
1	Stud. Badrul One Hishamuddin Abu	S0001	+60129880001	student.one@gmail.com	✎	✖
2	Stud. Ahmad Two Manaf Latip	EE10002	+60120000002	student.two@yahoo.com	✎	✖
3	Stud. Kamil Three Shaifuddin	ME12101	+601333939933	three@three.com.my	✎	✖

Figure 40: Student list



Project Topics

Some description bout topics.

Just click the delete icon to delete the topic or the pencil icon to edit the topic details.

#	Lect.	Fac/Cluster	Title	Description		
1	KSI	EE: ACS	Neuro Networks in Synthetic Landmine	Neuro networks in minefield embedded in enemy's territorial cabling! Ka-Boom! :D	✎	✖
2	KSI	EE: COMM	Antenna Booster for iOS Devices	The booster that we all have crave for. Boosting 4G signal all year long!	✎	✖
3	SES	EE: ISI	Neuro Networks in Managing Crop Moist Level	An intelligent, self adaptable moist monitoring neuro network whch can evaluate humidity variants in a given gross field.	✎	✖
4	SES	EE: PES	Bipolar Reactor: Generating energy from dead plants	A mimic of Prof. Luchberg Goldstein of Russian Academy of Nuclear Technology in creating pure clean energy from processing of dead plants.	✎	✖
5	SES	EE: PES	Recyclable HydroElectric	A easy to use, on-click personal recyclable hydro electric mini plant. A custom built, and suitable for SOHO and SMEs.	✎	✖
6	SES	EE: PES	Integrated Weight-less MARS Solar Energy Farming	Farming for solar energy source from our closest neighboring planet, Mars.	✎	✖

Figure 41: Topic list

5.3.3 Statistic

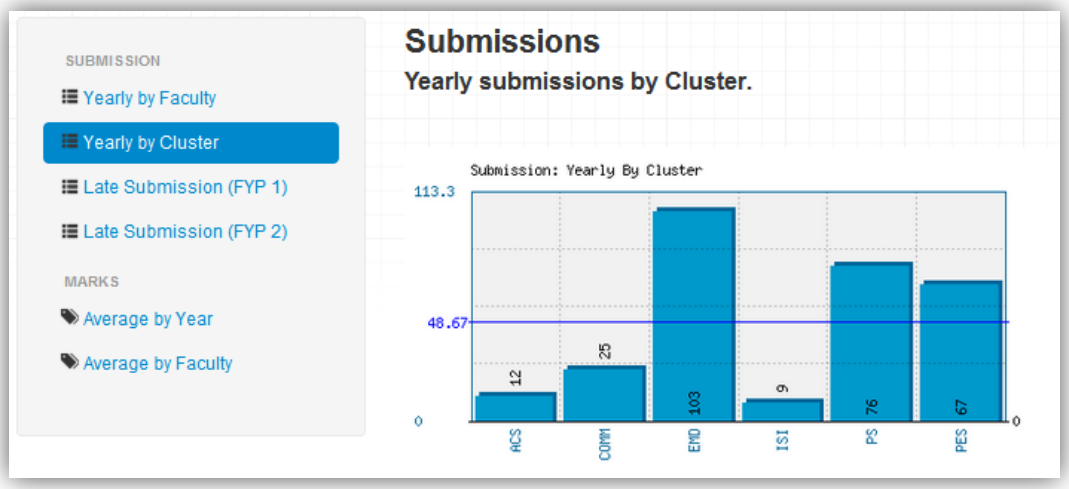


Figure 42: Statistic submission

Each and every semester, admin can see the statistic yearly by faculty, yearly by cluster and late submission as shown in figure 42. This statistic will be the references for FYP Universiti Teknologi Petronas.

5.4 FYPOS Copyright

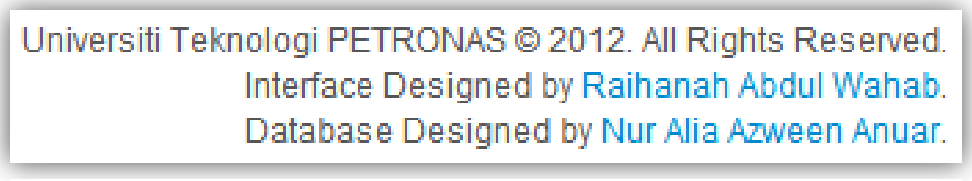


Figure 43: FYPOS copyright

Every single webpage of FYPOS, there will be a copyright (figure 43) on the bottom right of the webpage. This copyright is a right in any computer programs or online systems. Copyright also will protect FYPOS system, interface or script or be taken from another party.

CHAPTER VI

6. LIMITATIONS AND FUTURE ENHANCEMENTS

6.1 Limitations

The new system has been designed to meet almost all of the requirements but there has certain limitations that which can be enhanced in the future enhancements or updates. The limitations are as follows:

6.1.1 No section for upload files

Students have to submit report via email or manually (hand to hand) to the supervisor, internal and external examiner. This is because; the server that UTP gives to FYPOS is enough to store the database of student, lecturer, external examiner, topics and marks only. If it includes the "upload files", the server will be jam-packed and eventually crush.

6.1.2 Database cannot import spreadsheet

Database does not have the capability to import name lists or student marks from a spreadsheet. So registration of student names must be made manually by filling the form, rather than getting a student list from the Registry.

6.1.3 No add-ons field

If there is add-ons field, so there will be another table or form. So, these add-ons will require relationship and must change the ER-Diagram for the system. If not, the system may crush or disable.

6.2 Future Enhancements

Enhancements are the advantage for improvement of a system. Every existing system has future enhancements which make it better system, easier to use and more protected. The enhancements that have been proposed for FYPOS are as follow:

6.2.1 Bigger storage for the server

If there is bigger storage for the server, so, we can make the section of "upload files" available. This will makes both student and lecturer life easier and faster.

6.2.2 Back-up information on notepad files (.txt)

Eventhough database cannot import data from spreadsheet files, but database can import from *.txt file.* So, name lists or student marks must be transfer to *.txt files* to make it can be import directly through the database.

6.2.3 Feasible ER-Diagram

When the ER-Diagram is feasible, the add-ons field will disturb or change the system. Since the add-ons field can be combined with the other field if there is possible relationship in the system.

CHAPTER VII

7. CONCLUSION & RECOMMENDATION

In a conclusion, this project is a new method to improve and enhance the Final Year Project manual system management to online system management (FYPOS). The project is related to the study on the server design and database design. From the studies, the scripting language that will be used is PHP because it supports Apache web server and MySQL database server. Furthermore, PHP is free to download, runs efficiently on the server side and the coding is easier to understand. The FYPOS are proved and validated using all the software (e.g. PHPmyAdmin, Notepad++ and query PHP) during Final Year Project I and Final Year Project II.

In the future, the testing of FYPOS such as delays in relieving information and queries, simultaneous access and scalability will be conduct. FYPOS also will be comfortable environment of management and also the solution to the problems faced by the manual FYP management. The possibility of the project is guaranteed so this project should really be developed and implemented. Last but not least, the FYP Online Management System is hoped to perform very well in enhancing the quality of FYP management.

CHAPTER VIII

8. REFERENCES

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