

Report Formatting System (RFS) for FYP Projects

By

Ahmad Khushairy Bin Mohd Nor

Dissertation submitted in partial fulfilment of

the requirements for the

Bachelor of Technology (Hons)

(Business Information Systems)

JULY 2009

Universiti Teknologi PETRONAS

Bandar Seri Iskandar

31750 Tronoh

Perak Darul Ridzuan

CERTIFICATION OF APPROVAL


Report Formatting System (RFS) for FYP Projects

by

Ahmad Khushairy Bin Mohd Nor

A project dissertation submitted to the
Business Information Systems Programme
Universiti Teknologi PETRONAS
in partial fulfilment of the requirement for the
BACHELOR OF TECHNOLOGY (Hons)
(BUSINESS INFORMATION SYSTEMS)

Approved by,



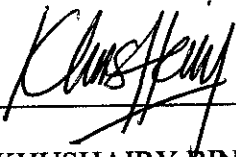
(Dr. Rohiza Binti Ahmad)

**UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK**

July 2009

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.



AHMAD KHUSHAIRY BIN MOHD NOR

ABSTRACT

Conducting a Final Year Project (FYP) at UTP often needs lecturers to be the supervisors for the students to ensure that the projects run smoothly and follow the requirements and objectives of the FYP itself. Even though the projects run on track but there is a problem faced by the lecturers especially on the format of the reports submitted by the students. When they are doing the FYP, the student have to submit reports such as Preliminary Report, Progress Report, Interim Report and others to their supervisors to show some progress regarding their project. However, sometimes they did not follow the format that the FYP committees and coordinator have stated in the guideline. Hence, the format of the report is not standardized between the lecturers and supervisors even though there is a guideline available. Thus, this project intends to develop a web-based system that can help students to simplify the above activities. The system shall provide facilities to the students to choose the type of their report and then the system will show the only format for that report. In order to prepare this system in an effective way, many considerations need to be looked into which requires some research of the suitable programming language or software that will be used for developing this system. Interviews with FYP committees and coordinator have been conducted to clarify the real format of the report which is important to the development of the system. Once the system has been developed, a testing will be conducted that involved FYP students to test it to get the feedback in order to improve the system. The project itself will be developed based on the Phased Development-based Methodology where it is widely used for practical system development and usually produces more stable and reliable systems. It has four main phases which are planning, analysis, design and implementation. This report presents the objectives, problem statements, scope of study as well as the methodology in further detail. Besides that, relevant literatures are also presented to relate the project with some existing ones. Lastly, the results of the project are presented and discussed, and conclusions are drawn from them.

ACKNOWLEDGEMENT

The author wishes to take the opportunity to express his utmost gratitude to the individuals who have taken the time and effort to assist the author in completing the project. Without the cooperation of these individuals, the author would undoubtedly have faced complications throughout the course.

First and foremost the author's utmost gratitude goes to the author's supervisor, **Dr. Rohiza Binti Ahmad**. Without her guidance and patience, the author would not be succeeded to complete the project. To the Final Year Research Project Coordinator, **Ms. Savita A/P K. Sugathan** for providing him with all the initial information required to begin the project.

To the parents, **Mr. Mohd Nor Bin Mat Nali** and **Ms. Aishah Binti Othman** and friends, **Khairul Fahmi, Naguiff Haiz, Ridhwan, Fairoz, Hajar, Endang, Hawa, Sarah Adibah, Ismal, Aminur, Hilal and Firdaus**, thank you for the moral supports.

To all individuals who have helped the author in any way, but whose name is not mentioned here, the author thanks you all.

TABLE OF CONTENTS

CERTIFICATION		ii
ABSTRACT		iv
ACKNOWLEDGEMENT		v
CHAPTER 1:	INTRODUCTION	1
	1.1. Background of Study	1
	1.2. Problem Statements	1
	1.3. Objectives	2
	1.4. Scope of Study.	2
CHAPTER 2:	LITERATURE REVIEW	3
	2.1 Formatting	3
	2.2 Student Portal	3
	2.3 FYP Guideline	4
	2.4 Systems Development Life Cycle	4
	2.5 Technology	4
CHAPTER 3:	METHODOLOGY	7
	3.1 Planning	8
	3.2 Analysis	8
	3.3 Design	9
	3.4 Implementation	9
	3.5 Tools and Equipment	10
	3.6 Gantt Chart	10

CHAPTER 4:	RESULT AND DISCUSSION	. . . . .	12
4.1	Internet Connection	. . . . .	12
4.2	Discussion with FYP Coordinator	. . . . .	12
4.3	Conceptual Diagrams	. . . . .	13
4.4	Print Screen of the RFS System and its coding	. . . . .	17
4.5	Usability Testing	. . . . .	24
CHAPTER 5:	CONCLUSION	. . . . .	26
REFERENCES	. . . . .	. . . . .	27
APPENDICES	. . . . .	. . . . .	29

LIST OF FIGURES

Figure 1	Phased Development-based Methodology	7
Figure 2	Gantt Chart	11
Figure 3	Use Case Diagram	14
Figure 4	Flow Chart	16
Figure 5	Print Screen of Login Page	17
Figure 6	Print Screen of New Registration	18
Figure 7	Print Screen of Forgot Password	18
Figure 8	Print Screen of Home Page	19
Figure 9	Print Screen of My Profiles	19
Figure 10	Print Screen of Create New FYP Report	20
Figure 11	Print Screen of Preliminary Report	20
Figure 12	Print Screen of Preliminary Report's Coding	21
Figure 13	Print Screen of the Example of FYP Report	22
Figure 14	Print Screen of the Example of FYP Report's Coding	22
Figure 15	Print Screen of Edit Report	23
Figure 16	Print Screen of Edit Report's Coding	23
Figure 17	Graph of System Usefulness	24
Figure 18	Graph of System Ease of Use	25

LIST OF TABLE

Table 1	Tools and Equipment	10
---------	-------------------------------	----

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

1.1 Background of Study

Currently, in UTP there is no system that can standardize Final Year Project (FYP) reports based on the actual guideline. Mostly FYP students do their report based on their supervisor and it is common that every student under different supervisors will have different format. Therefore, the system that will be developed can help FYP students to choose the type of the report and then follow the format of the report itself. Furthermore, some research element need to be performed in order to be clear about the system requirement itself. Data gathering also needs to be conducted such as interviews with FYP committees and coordinator in order to clarify the real format of the FYP report for the development of the system soon. The project itself will be developed using methodology of the Phased Development-based Methodology. For the development of system, basic tools will be used such as Visual Basic or PHP for design layout, coding and the function of the system.

1.2 Problem Statements

Listed below are some of the problems that lead to the development of this project:

1. Some FYP students did not follow the format of the FYP reports or the guideline.
2. There is no known software or system that helps FYP students to standardize their report.

1.3 Objectives

To develop a web-based system that is able to help FYP students in formatting their report and produce a standardized format and content for all FYP reports.

1.4 Scope of Study

In order to complete this system, several scope of study had to be achieved where the formatting system will be scoped to cater for all of FYP reports. Hence, the formatting will strictly follows UTP FYP guideline and some interviews will be conducted with FYP committees and coordinator to get clear about the actual format of the FYP reports. Besides that, the system will be developed as a web-based system and therefore, internet connection must be available for users to use.

CHAPTER 2

LITERATURE REVIEW

2.0 LITERATURE REVIEW

A literature review was conducted to develop an understanding of the subject. The goal was to gain a comprehensive understanding of the existing works related to the project. The literature that was reviewed consisted of white papers, journals, and other publications.

2.1 Formatting

Formatting a report means that you modify your items and contents in the report so that it becomes more attractive in term of the text boxes, the images, the field in the report layout, and the data while in design mode and enhances its readability. Besides that, when you are formatting your report, it must be based on the guideline that have stated such as the font, size of the font, the margin and others. The design area are reflected when you formatting changes in the report [1]. As said by Roger Lever, “Project status reporting is an essential and regular task. Project reports must be clear, concise and complete and contain the right level of detail for target audience” [2].

2.2 Student Portal

The Student Portal, UTP-Prism [3] is one system that can be seen as related to this project. The portal has a link to update student’s resume in column Industrial Internship. The same concept would be used when developing the report formatting

system (RFS) where from the portal, we can write and edit the FYP reports and then generate the reports. In other words, the concept is the same with RFS but the output is different.

2.3 FYP Guideline

When developing the report formatting system (RFS), the phases in the methodology should be followed as it is important to know the progress of the system from one phase to other phase. In phase analysis, the UTP FYP guideline should be referring to get the actual format of all FYP reports. In this guideline, the format is clearly explained such the font, images, paragraph, margin and so on to make sure that the FYP students standardized their report [4].

2.4 Systems Development Life Cycle

The systems development life cycle (SDLC) is the process where the understanding on how an information system (IS) can support business needs, designing the system, building it, and delivering it to users. There are four main phases in SDLC which are planning, analysis, design, and implementation. In this project, the four main phases are really used in developing the system [5].

2.5 Technology

The development of the system always uses the technology as the important part in design phase. Without technology the system cannot be developed.

2.5.1 Visual Basic

One of the third-generation event-driven programming languages is Visual Basic (VB) where it is developed by Microsoft. Visual Basic are easy to learn and understand because it is not complicated the language are simple than other programming language and it also based on the graphical development features and BASIC heritage [6].

Visual Basic was derived from BASIC and it is much powerful software that has graphical user interface (GUI) applications, can access to databases and others. Other than that, by using the components that are provided in Visual Basic itself, a programmer can put together an application on that [6].

2.5.2 PHP

Other programming language that is able to use in development of the system is PHP. PHP is “a scripting language originally designed for producing dynamic web page. It has evolved to include a command line interface capability and can be used in standalone graphical application” [7]. Besides that, PHP stand for Hypertext Pre-processor where actually it is a server-side scripting language where it is same with the concept web based as it is use server to run the program. “When your web browser accesses a URL, it is making a request to a web server” [8].

PHP suited for web development and one of the objectives of this project is to develop a web-based system where it is suitable to use it. Besides that, it is widely-used general-purpose scripting language where you can design dynamic interface, can connect the databases and it also can include with other programming language like JavaScript, HTML, XML and others. Furthermore, it generally runs on a web server, taking PHP code as its input and creating web pages as output. According to the PHP manual, “The goal of the language is to allow web developers to write dynamically generated pages quickly” [7] [8].

2.5.3 LaTeX System

LaTeX system is “a document preparation system where it includes features designed for the production of technical and scientific documentation but it can be used for almost any form of publishing and it is also a document preparation system for high-quality typesetting” [9][10]. The concept of the system are similar to the report formatting system (RFS) where it can formatting the report but it does not have the

graphical user interface to insert the data easily. It can use by put some simple coding in front of the data that we want to display and latex is not a word processor.

The scope also not the same as this project focused more on the Final Year Project (FYP) reports. For example, in LaTeX, to code the line “He took a **bold step** forward”. In Plain LaTeX, the same sentence would be coded as “He took a {\bf bold step} forward [11][12]. From this example we can see that some students that are not familiar with the code might have some difficulty to format their report. They have to learn something new in order to use this system where the engineering student might face some difficulties to that.

2.5.4 Survey Monkey Website

In Survey Monkey website, the users can generate the survey form and they can get the fast feedback from their friends and other people by using this system [13]. Even though it is not the formatting system but it is for standardization purpose where they standardize the survey form itself by their own creativity such as they can change the colour, font, size and style of any elements in that form. Besides, this system can generate the graphs and charts for the analysis and result purpose [13].

2.5.5 Wolfram Mathematica: Document Processing Systems: Comparative Analyses

Wolfram Mathematica is another document processing system where it is “a unique bridge between documents and algorithmic computation” [14]. By using it unique symbolic language and built in algorithms, *Mathematica* can handles structured documents just like any other data [14]. “With the ability to import and export hundreds of document, web, graphics, data and other formats, *Mathematica* can automatically extract relevant elements, process and analyze them, then use its built-in typesetting, layout, visualization and interface-building capabilities to programmatically create final static or dynamic content” [14]. It means that this system is quite same with the Latex system but it more focused on mathematics and algorithm.

CHAPTER 3

METHODOLOGY

3.0 METHODOLOGY

The Phased Development-based Methodology was chosen as the methodology for this project. It is widely used for practical systems development and usually produces more stable and reliable systems because the system is continually improved once the requirements are changed and bugs are found. As shown in *Figure 1* the phases of Phased Development-based Methodology are followed closely to ensure a systematic approach to system development is achieved. The four main phases are planning, analysis, design and implementation [5].

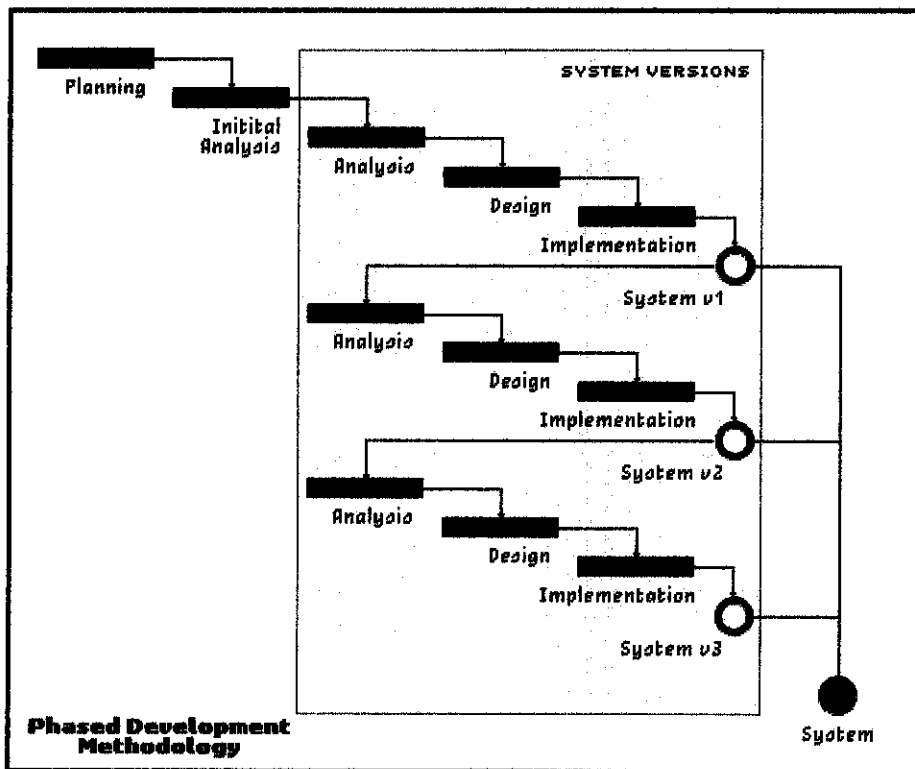


Figure 1: Phased Development-based Methodology

As stated by Dennis, Wixom and Tegarden in [5], the basic idea behind iterative enhancement is to develop a software system incrementally, allowing developer to take advantage of what was being learned during the development earlier, incremental, deliverable versions of the system. Key steps in the process were to start with a simple implementation of a subset of the software requirements and iteratively enhance the evolving sequence of versions until the full system is implemented. At each iteration phase, design modifications are made and new functional capabilities are added.

3.1 Planning

In the planning stage, brainstorming about this project has been done. The main objective of the system will be outlined and how the system should be presented is determined at this stage. The system concept is developed to describe how the system will operate once it is implemented. Moreover, it is important to ensure that the system will provide the required capability on-time and within cost budget, project resources, schedules and tools. Some interviews actually have been conducted in this stage to get the real format of FYP reports for the system.

3.2 Analysis

For the analysis phase, research has been done to find out more about the case being studied which is the formatting system and the software that will be used for the development of the system should be determine as research element in this stage. Besides, there will be analysis on the FYP guideline itself.

3.3 Design

In this phase, the design of the system must be carefully developed to ensure that user's interactivity with the systems meet user's expectation where for this system, design the layout was the first stage. This phase is to transform the requirement statements from the requirement analysis and definition phase into design specifications for construction purpose. Visual Basic or PHP will be using as a software for this stage. The data models and process models that were initially created during requirements and definition phase were analyzed in detail. The design would be simple and user friendly in order to perform the analysis. Design in term of coding and function of the system would also determine in this phase.

3.4 Implementation

This is the phase where the installation of proposed system takes place. After the installation, the prototype of the proposed system is constructed. For this phase, the system will generate a report based on the format that is stated in the UTP FYP guideline. In system testing and evaluation, individual program units or programs that have been integrated into a complete system will be tested to avoid any possibilities of system failure. Testing will be conducted during this phase. Testing must not be deferred until after the entire program has been written.

3.5 Tools and Equipment

For this project, the tools as given in *Table 1* that was used during the development of the project:

Table 1: Tools and Equipment

Software	Hardware
PHP 5	Computer
Macromedia Dreamweaver 8	HTTP Server
XAMPP Version 1.6.6a	
Adobe Acrobat 3D (PDF)	
Internet Browser	

3.6 Gantt Chart

Based on the methodology identified in the Methodology section, *Figure 2* below shows the detail activities planned for the first, second, third and forth phases of the identified model.

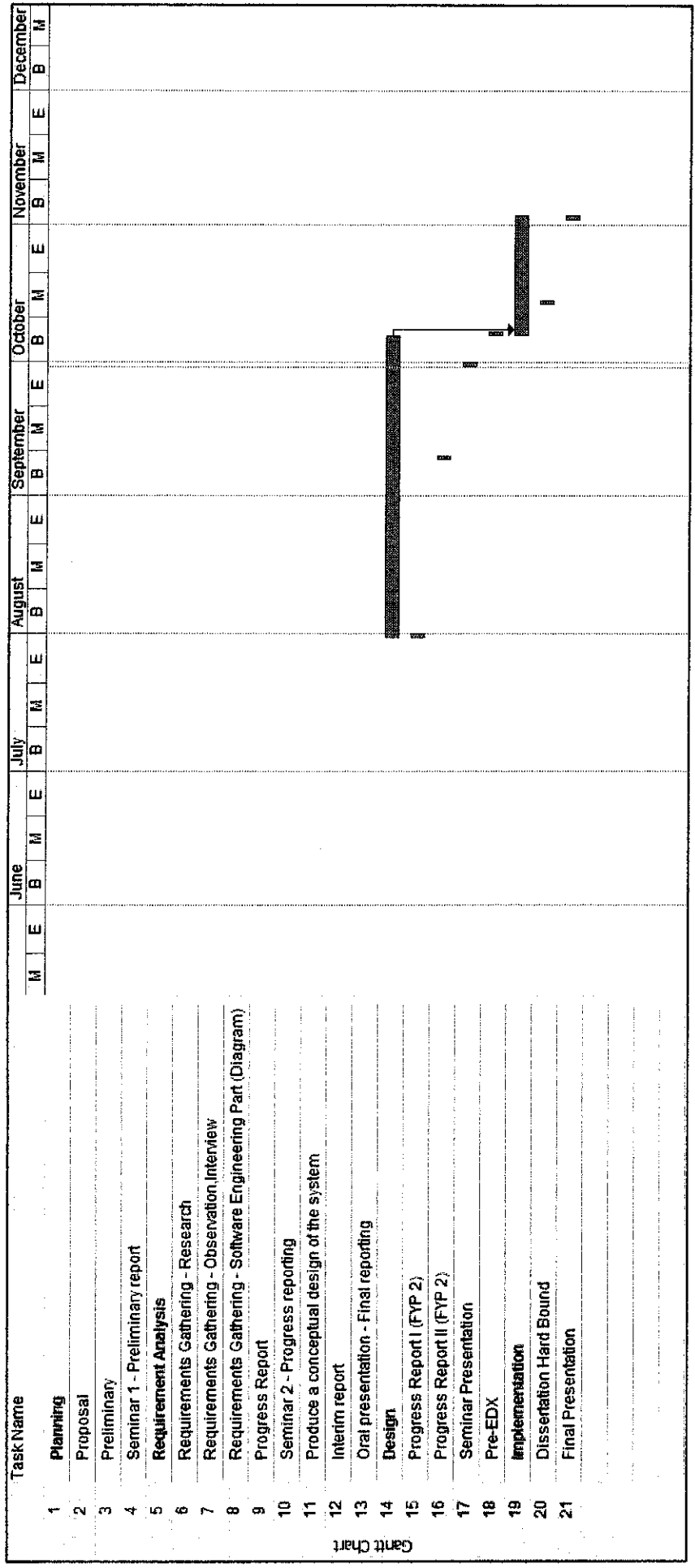


Figure 2: Gantt Chart

CHAPTER 4

RESULT AND DISCUSSION

4.0 RESULT AND DISCUSSION

Results and findings from this project were collected from the Report Formatting System (RFS) development phases.

4.1 Internet Connection

Internet connection is the part of discussion where as the web based system, the Report Formatting System (RFS) will be run by server. For this system, Apache Server in XAMPP is being implemented to run the system with integration of PHP element to ensure its functionality can be used simultaneously by FYP students. If the internet connection down, the student cannot access the system.

4.2 Discussion with FYP Coordinator

In this project, some interviews or discussions with the FYP Coordinator and Committees have been conducted. A discussion with Ms Savita, i.e., the FYP coordinator, confirmed that all students should follow the FYP guideline in writing their reports. This was further backed up by Ms Mazeyanti, a committee member of the departmental FYP committee. She also stressed that following the guideline is a

must. Failure of doing so might result with the report not being marked the supervisors or reviewers.

4.3 Conceptual Diagrams

In order to proceed with the development of the Report Formatting System (RFS), conceptual diagrams were prepared. The diagrams include:

- Use case diagram
- Flow chart

4.3.1 Use Case Diagram

Based on the *Figure 3*, we can see all processes that can be done by the FYP student. An Extend Relationship represents the extension of the use case to include optional behaviour. For example, after generating a report, an FYP student has the option of printing or saving the report. For an Include Relationship, it represents the inclusion of the functionality of one use case within another. For example if the user go to link selects edit report, automatically modify report function will also be executed.

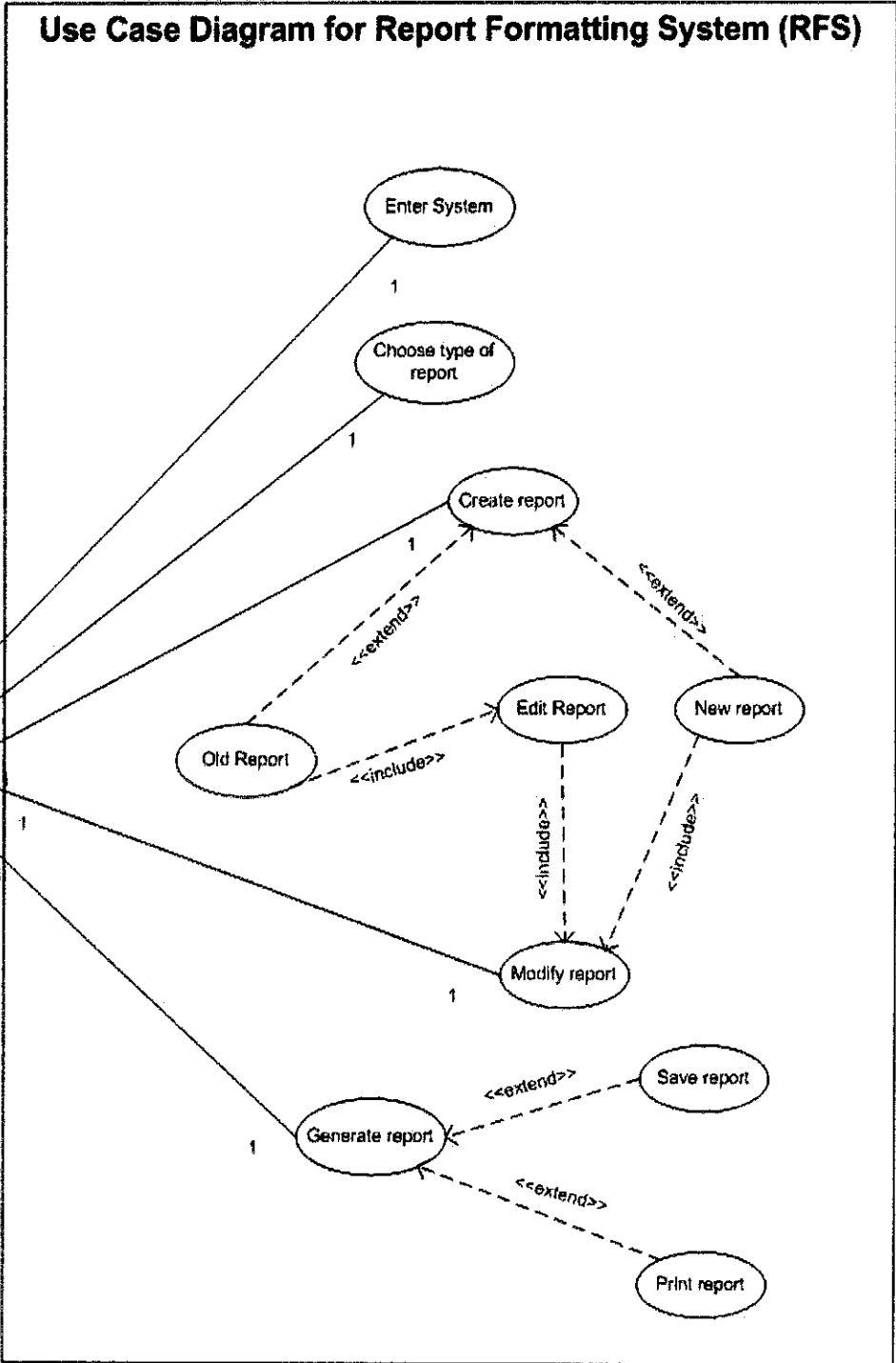


Figure 3: Use Case Diagram

4.3.2 Flow Chart

Figure 4 below shows the functional flow of the system. This diagram is very important as it is reference for the developer in the development of the system. It shows from the first step for user to enter the system where they have to login to the system. For first time login, users will have to register their details and then re-login. After entering the system, they have to go to create new report link to choose type of the report for example the student want to choose preliminary report. Then if the report is new report, if yes they have to insert data into text area based on the chapter given. If it is the old report or if no, they go to edit report link. After the user inserts all the data, they modify until they can generate the report. After the report have been generated, if they want to print the report, if yes they print it then they will save on the computer itself. If they did not want to print, they will save on the computer only and the process end.

FLOW CHART OF REPORT FORMATTING SYSTEM (RFS) FOR FYP PROJECTS

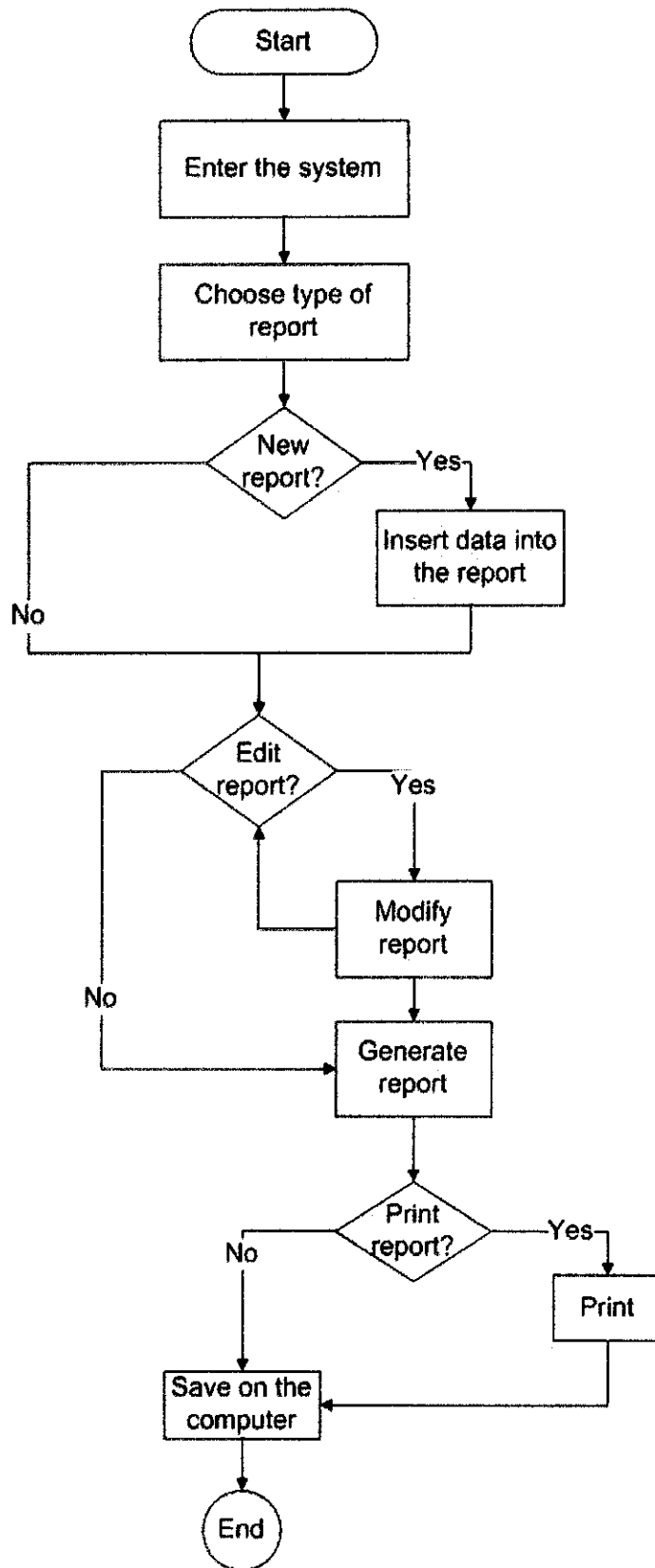


Figure 4: Flow Chart

4.4 Print Screen of the RFS System and its coding

Next, this report will present the system which has been developed. *Figure 5* begins with the login page of the website for RFS and if the user first time login they have to register as shown in *Figure 6* and then login back to the system. If they have registered but they forgot their password, they have to click link forgot password and then it will appear forgot password page as shown in *Figure 7*. Next is login to the home page of the system.

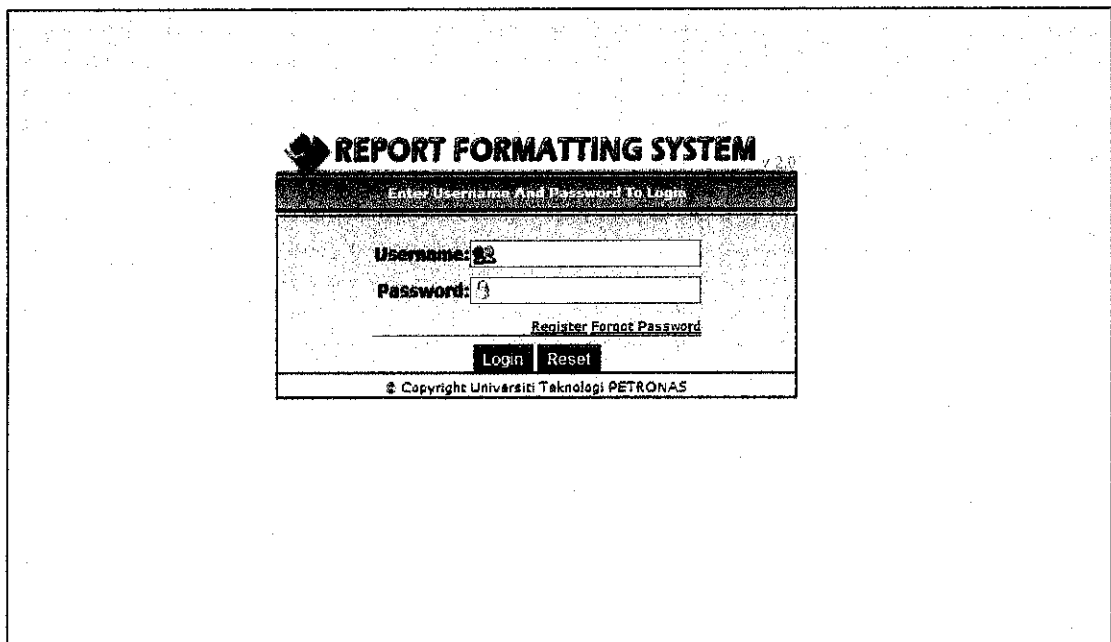


Figure 5: Print Screen of Login Page

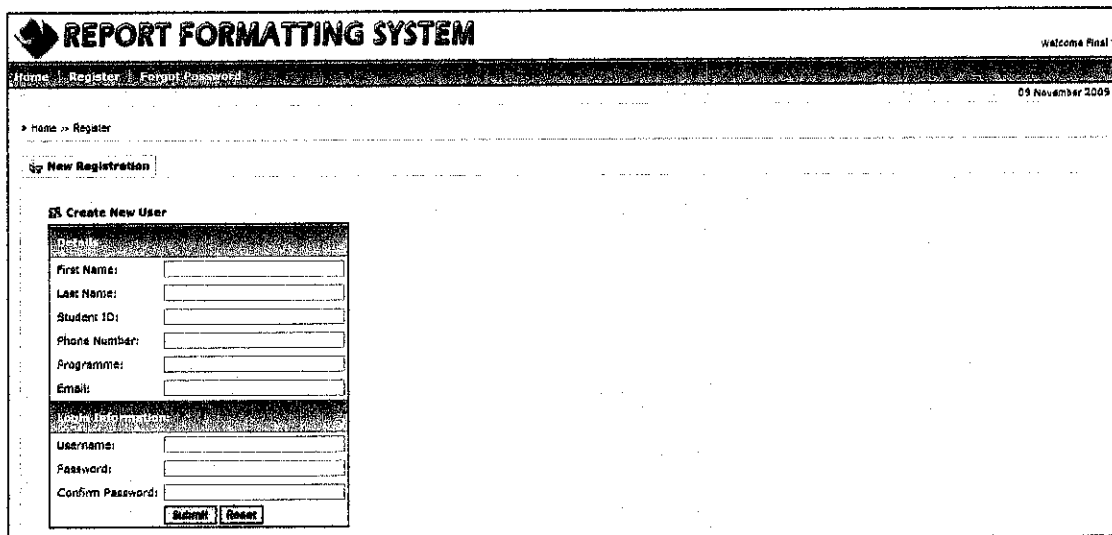


Figure 6: Print Screen of New Registration

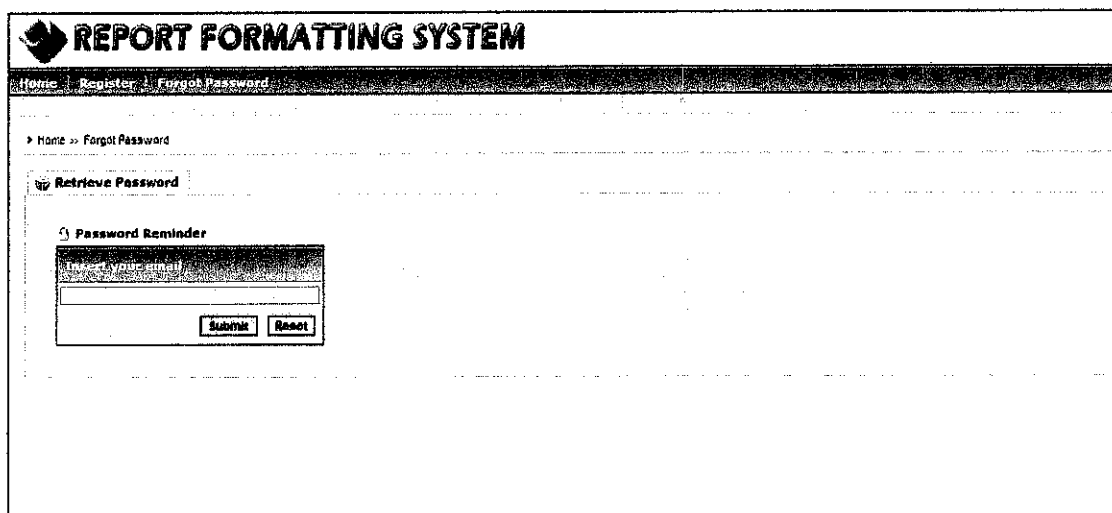


Figure 7: Print Screen of Forgot Password

As shown in *Figure 5*, users will need to login using their username and password in order for them to enter the system. When the system is entered, home page as in *Figure 8* will be displayed. This home page shows about the system features such as create new FYP report and edit report. On the top of left side of the system, you can see My Profile link and it is same with the update profile in quick link table on the left frame of the home page. *Figure 9* shows the user profile that has been registered before they login to the system.

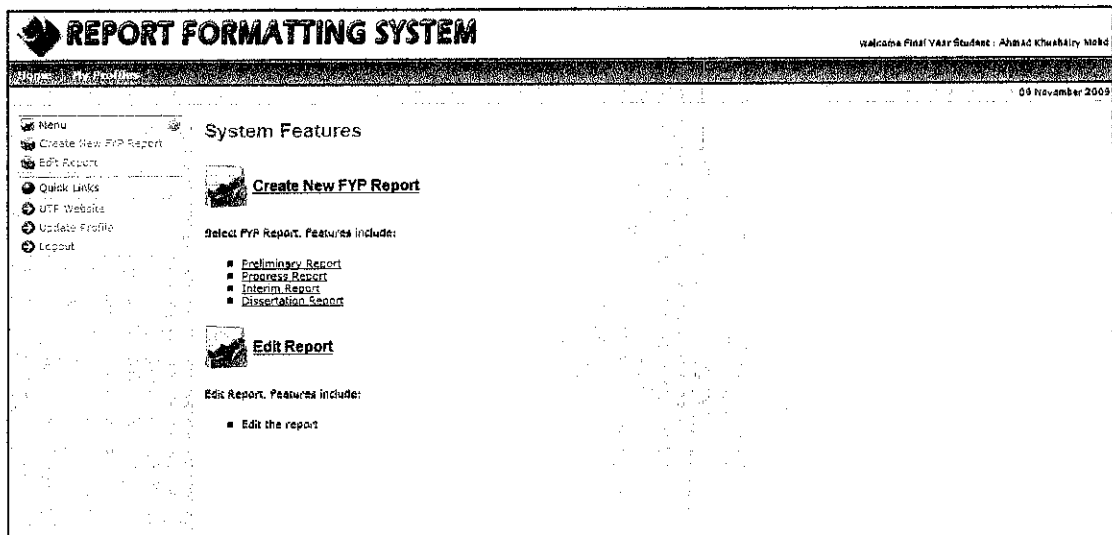


Figure 8: Print Screen of Home Page

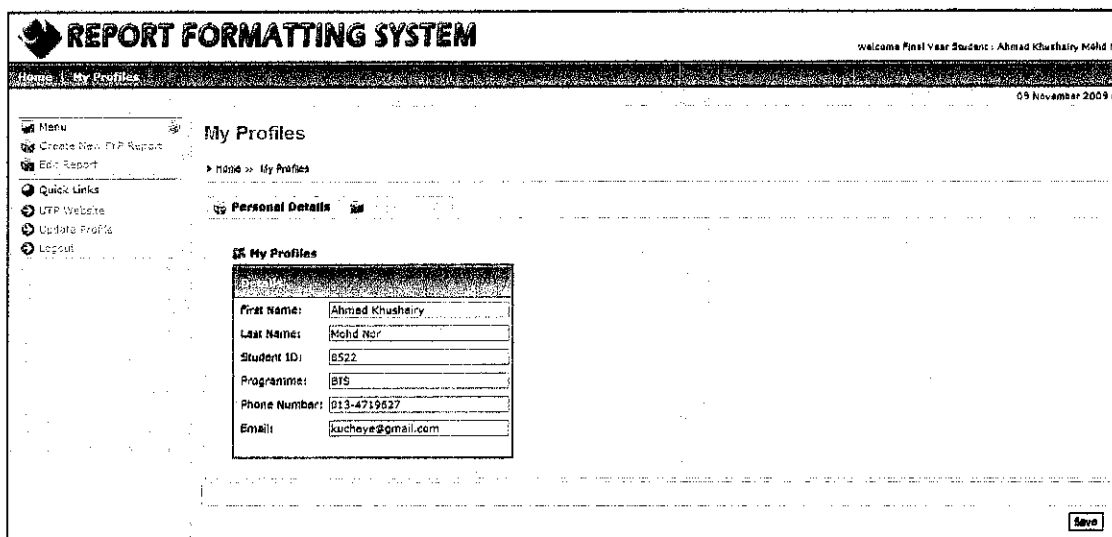


Figure 9: Print Screen of My Profiles

After successful login to the system, a user can proceed with creating a new FYP report. Clicking the “create new FYP report” link on the menu table of the system will invoke another page as shown in *Figure 10*. On this page, the user has to select the type of FYP report that he wants to create.

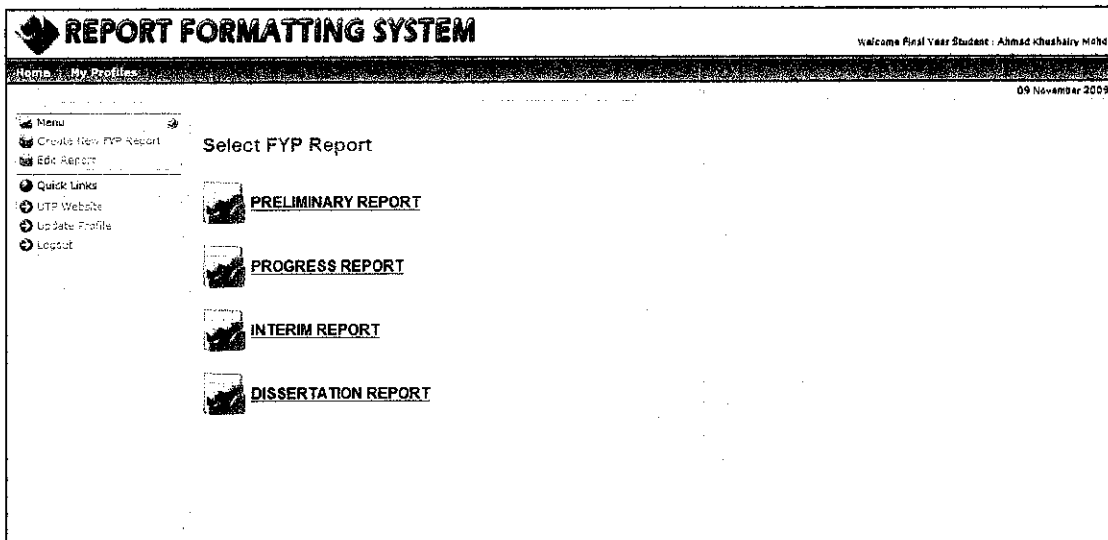


Figure 10: Print Screen of Create New FYP Report

For example, if the user chooses to create a Preliminary Report, page as in *Figure 11* will be displayed. On this page, in the text box, the users can edit their report and it has the edit button as same with the Microsoft Word edit button such as font style, font size and others. In *Figure 12* will show the coding of the design in *Figure 11*.

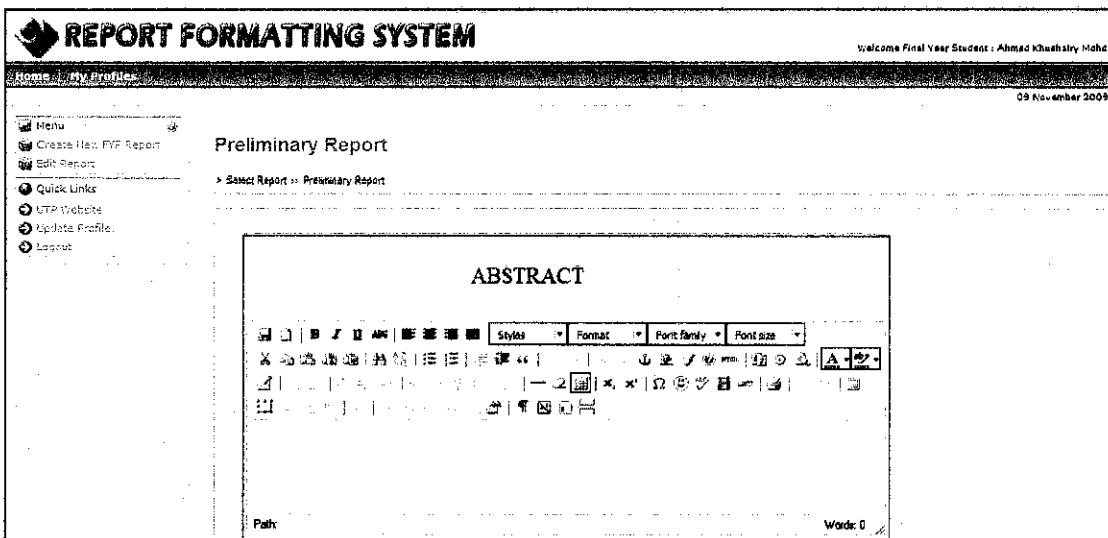


Figure 11: Print Screen of Preliminary Report

```

<tr>
<td width="600" height="86" > <p align="center" class="style1">ABSTRACT </p> </tr>
<tr>
<td ><textarea class="textbox" name="abs_tb" id="kotak_form" style="height:80; width:600;" ></textarea>
<tr>
<td width="600" height="86" > <p align="center" class="style1">&nbsp;</p>
<p align="center" class="style1">CHAPTER 1 </p>
<p align="center" class="style1">INTRODUCTION</p></td>
<tr>
<td ><textarea class="textbox" name="intro_tb" id="kotak_form" style="height:80; width:600;" ></textarea>
<tr>
<td width="600" > <p align="center" class="style1">&nbsp;</p>
<p align="center" class="style1">CHAPTER 2 </p>
<p align="center" class="style1">LITERATURE REVIEW </p></td>
<tr>
<td ><textarea class="textbox" name="lit_tb" id="kotak_form" style="height:80; width:600;" ></textarea>
<tr>
<td width="600" > <p align="center" class="style1">&nbsp;</p>
<p align="center" class="style1">CHAPTER 3 </p>
<p align="center" class="style1">METHODOLOGY</p></td>
<tr>
<td ><textarea class="textbox" name="metho_tb" id="kotak_form" style="height:80; width:600;" ></textarea>
<tr>
<td width="600" > <p align="center" class="style1">&nbsp;</p>
<p align="center" class="style1">CHAPTER 4 </p>
<p align="center" class="style1">CONCLUSION </p></td>
<tr>
<td ><textarea class="textbox" name="cons_tb" id="kotak_form" style="height:80; width:600;" ></textarea>
<tr>
<td width="600" > <p align="center" class="style1">&nbsp;</p>
<p align="center" class="style1">REFERENCES</p></td>
<tr>
<td ><textarea class="textbox" name="ref_tb" id="kotak_form" style="height:80; width:600;" ></textarea>
<tr>
<td width="600" > <p align="center" class="style1">&nbsp;</p>
<p align="center" class="style1">APPENDICES</p></td>
<tr>
<td ><textarea class="textbox" name="app_tb" id="kotak_form" style="height:80; width:600;" ></textarea>
<tr>
<td align="right" cellpadding="5" class="no-border" width="100%">
<tr>
<td width="180" >&nbsp;</td>
<td width="850" ><input title="Generate Report" id="Generate Report" onClick="show_alert()" name="Generate Report"
class="buttons_foot" onMouseover="this.className='buttons_foot_over'" onMouseout="this.className='buttons_foot'" value="Generate Report" type="submit" />
<tr>
</tr>
</tbody>
</table>
</tr>

```

Figure 12: Print Screen of Preliminary Report's Coding

After completing the report, the user can click the "Generate Report" button. Doing so will produce the document as shown in *Figure 13*. The output which is FYP report has been following the format of the FYP Guideline for example the margin, the font, font size and others. In the *Figure 14*, it shows that the format has been set by using PHP to PDF programming language.

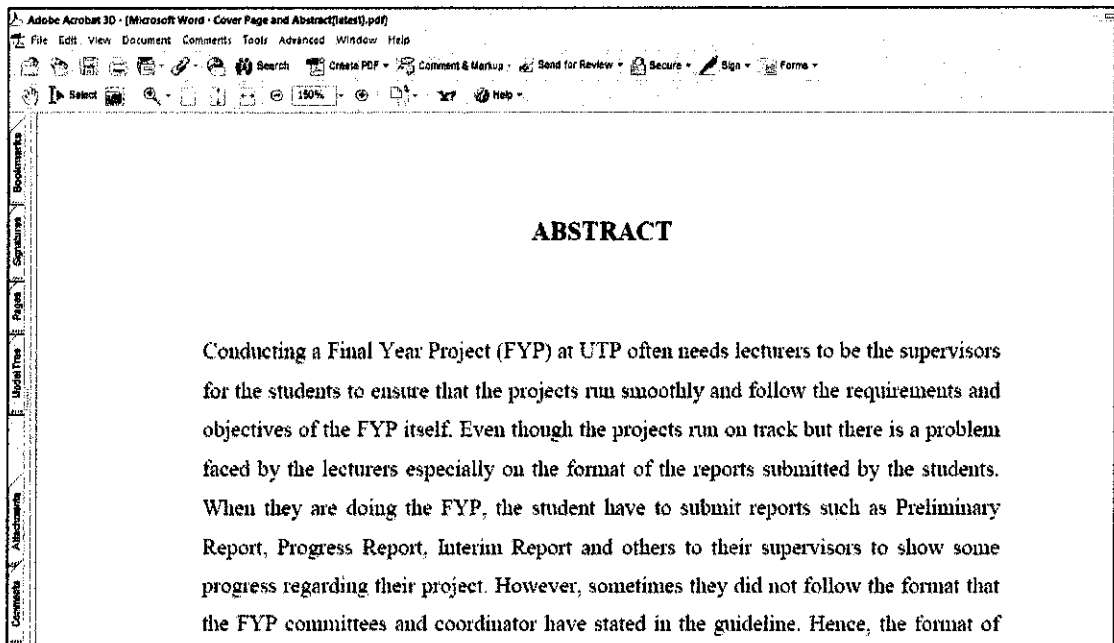


Figure 13: Print Screen of the Example of FYP Report

```

spdfnew PDF_HTML();
spdf->setFont('Times','',12);
spdf->addPage();
spdf->cell(0,0,'ABSTRACT',0,1,'C');
spdf->setMargins(40,0,25);
spdf->setLineWidth(1);
stext_cons=POST('aba_ed');
if(int_get('magic_quotes_gpc')==1)
stext=stripslashes(stext);
spdf->writeHTML(stext_cons);

spdf->addPage();
spdf->cell(0,0,'INTRODUCTION',0,1,'C');
spdf->setMargins(40,0,25);
spdf->setLineWidth(1);
stext_intro=POST('intro_ed');
if(int_get('magic_quotes_gpc')==1)
stext=stripslashes(stext);
spdf->writeHTML(stext_intro);

spdf->addPage();
spdf->cell(0,0,'LITERATURE REVIEW',0,1,'C');
spdf->setMargins(40,0,25);
spdf->setLineWidth(1);
stext_lr=POST('lr_ed');
if(int_get('magic_quotes_gpc')==1)
stext=stripslashes(stext);
spdf->writeHTML(stext_lr);

spdf->addPage();
spdf->cell(0,0,'METHODOLOGY',0,1,'C');
spdf->setMargins(40,0,25);
spdf->setLineWidth(1);
stext_method=POST('method_ed');
if(int_get('magic_quotes_gpc')==1)
stext=stripslashes(stext);
spdf->writeHTML(stext_method);

spdf->addPage();
spdf->cell(0,0,'CONCLUSION',0,1,'C');
spdf->setMargins(40,0,25);
spdf->setLineWidth(1);
stext_cons=POST('cons_ed');
if(int_get('magic_quotes_gpc')==1)
stext=stripslashes(stext);
spdf->writeHTML(stext_cons);

spdf->addPage();
spdf->cell(0,0,'REFERENCES',0,1,'C');
spdf->setMargins(40,0,25);
spdf->setLineWidth(1);
stext_ref=POST('ref_ed');
if(int_get('magic_quotes_gpc')==1)
stext=stripslashes(stext);
spdf->writeHTML(stext_ref);

spdf->addPage();
spdf->cell(0,0,'APPENDICES',0,1,'C');
spdf->setMargins(40,0,25);
spdf->setLineWidth(1);
stext_app=POST('app_ed');

```

Figure 14: Print Screen of the Example of FYP Report's Coding

In *Figure 15*, if the user wants to edit their report, they have to click edit report link at the menu on the left frame of this page and then they can edit from the system itself and then generate again the report while in *Figure 16* show it's coding on how to get this function work properly.

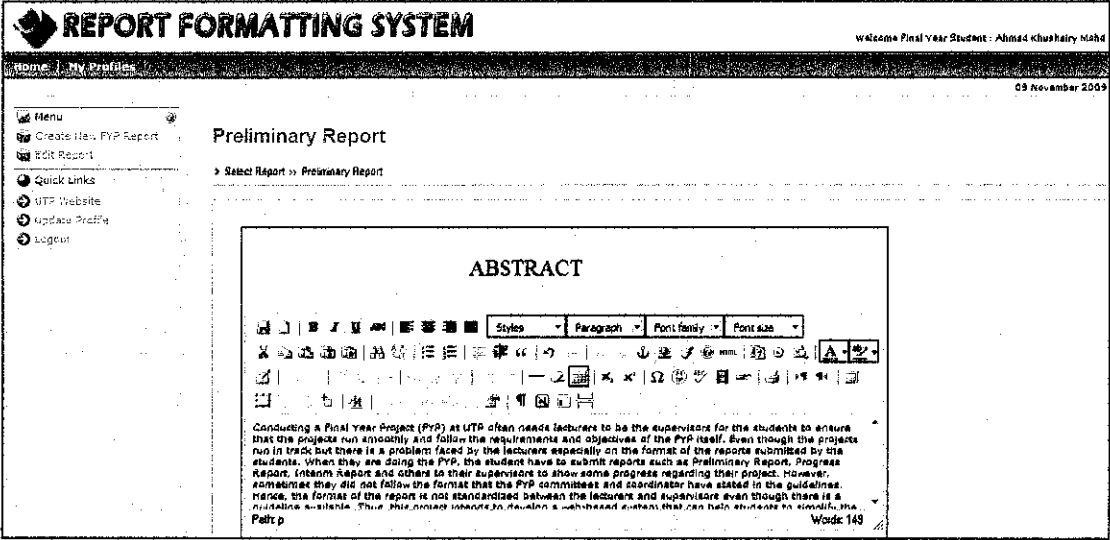


Figure 15: Print Screen of Edit Report

```

<form method="post" action="update_report.php">
  <div style="display: block;" id="scl" class="tabcontent">
    <table border="1">
      <tr>
        <td width="600" height="86" ><p align="center" class="style3">ABSTRACT </p> </td>
      </tr>
      <tr>
        <td ><textarea class="textbox" name="abs_tb" id="abs_tb" style="height:80; width:600;" ><? $sql= "SELECT abs_tb FROM report WHERE student_id='<? echo $rows['abs_tb'];>";></td>
      </tr>
      <tr>
        <td width="600" height="86" ><p align="center" class="style3">&nbsp;</p>
        <p align="center" class="style3">INTRODUCTION</p>
      </td>
      <td ><textarea class="textbox" name="intro_tb" id="intro_tb" style="height:80; width:600;" ><? $sql= "SELECT intro FROM report WHERE student_id='<? echo $rows['intro_tb'];>";></td>
      </tr>
      <tr>
        <td width="600" ><p align="center" class="style3">&nbsp;</p>
        <p align="center" class="style3">CHAPTER 2 </p>
        <p align="center" class="style3">LITERATURE REVIEW </p>
      </td>
      <td ><textarea class="textbox" name="lr_tb" id="lr_tb" style="height:80; width:600;" ><? $sql= "SELECT lr_tb FROM report WHERE student_id='<? echo $rows['lr_tb'];>";></td>
      </tr>
      <tr>
        <td width="600" ><p align="center" class="style3">&nbsp;</p>
        <p align="center" class="style3">CHAPTER 3 </p>
        <p align="center" class="style3">METHODOLOGY</p>
      </td>
      <td ><textarea class="textbox" name="m_tb" id="m_tb" style="height:80; width:600;" ><? $sql= "SELECT m_tb FROM report WHERE student_id='<? echo $rows['m_tb'];>";></td>
      </tr>
    </table>
  </div>
</form>

```

Figure 16: Print Screen of Edit Report's Coding

4.5 Usability Testing

Usability testing was done by 10 persons who are from final year students. The purpose of the testing is to test system usefulness and system ease of use. Each of them has to answer the questionnaire after using the Report Formatting System (RFS).

From *Figure 17*, the graph has shown the results of testing on the system usefulness. For the first question which is ask on the RFS useful or not. 10 persons answer all yes. It means that RFS is useful for the user. For second question ask where RFS meets the user needs or not. 8 persons answer yes and 2 persons answer no. We can see that RFS still meets their needs. Third question asking about RFS enables them to accomplish task more quickly or not. 6 persons answer yes and 4 persons answer no. Next for the forth question asking about RFS does things their expected it to do or not. This question the answer is average where 5 persons answer yes and 5 persons answer no. Last question that have been asking is 'Without RFS, m job would be difficult to perform'. 6 persons answer yes and 4 persons answer no.

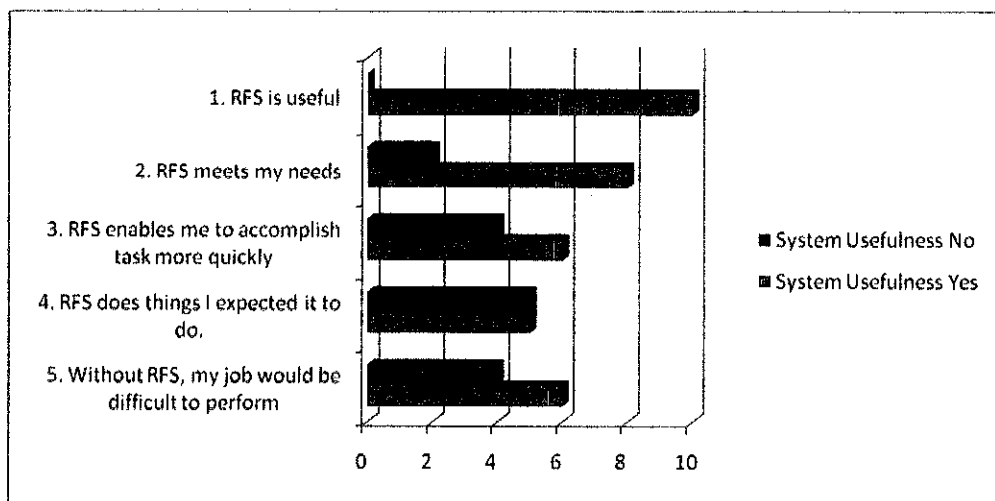


Figure 17: Graph of System Usefulness

Next is graph that has shown below in *Figure 18*. From this graph we can see that for first, second and third questions all 10 persons answer yes for the respected question. First question asking whether RFS is easy to use or not, second question asking about the user friendly of the system while third question asking whether the instruction given is simple and to follow or not. For forth question asking about if the user make the error frequently when using RFS or not. 8 persons answer no and 2 persons answer yes. 8 persons answer yes and 2 persons answer no for the last question where it is asking the user ‘My interaction with RFS is easy for me to understand’.

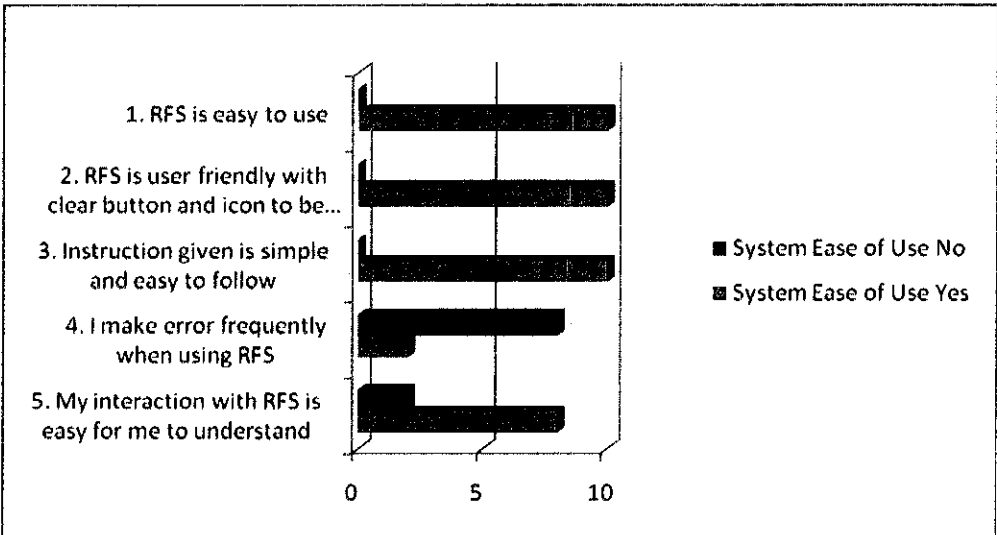


Figure 18: Graph of System Ease of Use

CHAPTER 5

CONCLUSION

Report Formatting System (RFS) is a web-based system that can be used by FYP students where they can choose any report and then follow the format or guideline such the font, margin and others. The methodology in developing this project is focused more on development methodology. Design phases were the most important phases in the Phased Development-based Methodology where it clarified the framework of the system in term of the design interface, coding and function. By applying the methodology, RFS was successfully developed, and for the time being able to produce one type of FYP report which is the Preliminary report. As for the other report types, few adjustments will need to be made to add the specialized components needed by each report. By having the system, it is believed that this system can also be expanded to various aspects and ability to help the FYP students to standardize their reports. This system also will help the lecturers who complained that their FYP students did not follow the format of the report and hope it will achieve the objective of the project.

REFERENCES

- [1] <http://msdn.microsoft.com/en-us/library/aa337140.aspx>, *SQL Server 2008 Books Online (February 2009), Formatting a Report (Report Builder 1.0)*, (access dated on 14/2/2009).
- [2] Roger Lever (Jan 9, 2009), <http://www.suite101.com/>, *Example Project Report Format for Project Status, Project Reporting Tells Project Progress and Key Project Risks*, (access dated on 14/2/2009).
- [3] Universiti Teknologi PETRONAS Student Portal, <http://.studentportal.utp-prism.my/studentportal/StudentLogin.aspx>, (access dated on 14/2/2009).
- [4] Universiti Teknologi PETRONAS, *Final Year Research Project Guideline for Supervisors and Guidelines*, Doc.Ref.No: UTP-ACA-PROG-FYP-01, Issues Version: 2.0.
- [5] Alan Dennis, Barbara Haley Wixom, and David Tegarden (2005), *Systems Analysis & Design an Object-Oriented Approach with UML Version 2.0*, Second Edition, John Wiley & Sons.
- [6] Visual Basic (VB), http://en.wikipedia.org/wiki/Visual_Basic, (access dated on 15/2/2009).
- [7] PHP, <http://en.wikipedia.org/wiki/PHP>, (access dated on 15/2/2009).

- [8] Julie Meloni (2004), *PHP 5 Fast & Easy Web Development*, Thomson Course Technology.
- [9] LaTeX, <http://en.wikipedia.org/wiki/LaTeX>, (access dated on 16/2/2009).
- [10] LaTeX – A document preparation system, <http://www.latex-project.org/>, (access dated on 16/2/2009).
- [11] Helmut Kopka and Patrick W.Daly (2004), *Guide to LaTeX, Tools and Techniques for Computer Typesetting*, Fourth Edition, Addison-Wesley, Pearson Education, Inc.
- [12] Frank Mittelbach and Michel Goossens with Johannes Braams, David Carlisle, and Chris Rowly (2004), *The LaTeX Companion, Tools and Techniques for Computer Typesetting*, Second Edition, Addison-Wesley, Pearson Education, Inc.
- [13] SurveyMonkey.com – Powerful tool for creating web surveys. Online survey software made easy! , <http://www.surveymonkey.com/Default.aspx>, (access dated on 31/7/2009).
- [14] Wolfram Mathematica: Document Processing Systems: Comparative Analyses, <http://wolfram.com/products/mathematica/analysis/content/DocumentProcessingSystems.html>, (access dated on 31/7/2009).

APPENDICES

APPENDIX 1: UTP FYP GUIDELINE BASED ON THE FORMATTING REPORTS SAMPLE

WRITING FORMAT

The writing of the preliminary report (initial report), progress report, interim report and dissertation should adhere to the following format.

Preliminary Report/Progress Report/Interim Report/Dissertation Outline

The report consists of many parts arranged in a certain order. It is recommended that the contents be arranged in the following order:

- a) Title Page
- b) Certification (*only applicable for dissertation*)
- c) Abstract
- d) Acknowledgements (*only applicable for dissertation*)
- e) Table of Contents
- f) List of Figures
- g) List of Tables
- h) Abbreviations and Nomenclatures
- i) Chapter 1: Introduction
 - Background

- Problem Statement
- Objectives and Scope of Study
- j) Chapter 2: Literature Review and/or Theory
- k) Chapter 3: Methodology/Project Work
- l) Chapter 4: Results and Discussion
- m) Chapter 5: Conclusion and Recommendation
- n) References
- o) Appendices

Students may write more than five chapters in their dissertations.

General Writing Format

Students must follow specific guidelines for writing all the reports as indicated.

a) Language

The dissertation must be written in acceptable and formal English. Use the passive voice.

b) Font and Spacing

All text should be 1.5 spacing between lines and 3 spacing between paragraphs (Times New Roman regular font-style, size 12) written on a white A4 paper on one side of each sheet.

The following however should be single spaced:

- Tables and figures
- Computer programs/source codes (must be reduced to font size 8)

c) Length

The maximum length of the report, excluding appendices is as follows:

Preliminary Report - 5 pages

Progress Report - 15 pages

Interim Report - 25 pages

Dissertation - 50 pages

Students are encouraged to use brief and straightforward wordings and avoid jargon and passive voice as much as possible.

d) Pagination

All pages must be numbered in proper sequence from introduction to the end of the report including pages on figures, tables, computer programs and appendices. All front materials are numbered in small Roman numerals (e.g. i, ii, iii). Page numbers appear by themselves and are not to be enclosed in parenthesis, hyphens or other decorative symbols. Page number must be positioned at the bottom and centred.

e) Margin

The top, bottom and right margins are 25 mm except the left margin, which is 40 mm. All paragraphs should start from the left margin.

f) Mathematical Equations

Mathematical equations must be spaced out; superscript and subscript must be clearly shown and numbered.

g) Heading

The report should not have more than three levels of numbered headings as follows:

1 FIRST-LEVEL HEAD

1.1 Second-Level Head

1.1.1 Third-Level Head

All headings should be in Times New Roman and bold. Chapter and major headings should be in capitals and in 14 font size and 12 font sizes, respectively. Secondary

and tertiary headings should be in title case and in 12 font size. If there are more than three levels of headings, please use italicised bold font.

h) Tables and Figures

Tables and figures are considered part of the report if it is within the main text. If they have the size that less than a page, they should be inserted into the text near the point of reference with a 3 spacing from the text. Tables should be on the same page. Margin limits of figures and tables should be the same as the full-page text. All tables and figures should be numbered consecutively. Table heading should be positioned at the top middle of each table. The numbers for figure should be positioned at the bottom middle of each figure. Refer to each table or figure clearly in the text before placing it on the page. (For example, "Figure 1 below shows")

i) Documenting Sources

Students are required to cite the sources from which ideas they are using. The documentation system to be used is American Psychological Association (APA).

j) References

The method of writing references must follow the standard format. The sample reference format is in Appendix. This sample is using the APA system.

k) Title Page

The title page of *preliminary report (initial proposal)*, *progress report* and *interim report/dissertation* should be set out in accordance with the attached specimen sheet in Appendix and should include the following:

- The title of the dissertation.
- The full name of the candidate in FULL.
- The degree for which he/she is submitting the dissertation.
- The month and year in which the dissertation is submitted.
- The Universiti Teknologi PETRONAS address.

General Content

This section will elaborate more about the general content needed in each part for each report format.

a) Title Page

The title of the report should reflect the focus on core issues of the project work or related to it.

b) Certification

This section is divided into two: certification of approval and certification of originality. The certification of approval should be signed by Supervisor after he/she is satisfied with the corrections or amendments done by the student.

c) Abstract

An abstract is a short version of a report. It covers the report's purpose, scope, methodology, results and conclusion. Abstract should be not more than one page.

d) Acknowledgements

Acknowledgements should include the names of the contributors to the project work including the supervisors and the members of the group, preferably not more than one page.

e) Table of Contents

Table of Contents lists all headings and sub-headings, tables, figures, appendices, bibliography with the page numbers. It also includes the certification, abstract and acknowledgement (if applicable).

f) Introduction

Introduction must include the background of the project, the problem statement, the objective(s) and scope of the study. Problem statement needs to focus on the situation of the problem and research question which lead to the objective(s) of the study. Students are required to clarify the boundary project work to ensure the feasibility within the given time frame.

g) Literature Review and/or Theory

Literature Review is the analytical, critical and objective review of written materials on the chosen topic and area. It provides the background information on the research question and to identify what others have said and/or discovered about the question. It contains all relevant theories, hypotheses, facts and data which are relevant to the objective and the findings of the project.

h) Methodology/Project Work

Methodology refers to methods/procedure used by the student to achieve the objective(s) of the project. The methods/procedure must be relevant and acceptable.

i) Results and Discussion

This section presents the finding or outcome of project work. All the gathered data from the project work must be presented in the form of tables and figures such as graph, diagram or others. The data need to be analysed, and the results need to be discussed.

j) Conclusion and Recommendation

Conclusion highlights the most significant findings in relation to the objective(s) of the project. This section should also include recommendations for future project work.

k) References

This section is the list of references used in the project. The method of writing references must follow the standard format.

l) Appendices

Lengthy calculations, figures, raw data, computer programs/source codes, outputs, etc. are to be enclosed as appendices. They should be titled and numbered in chronological order and capital letters. The appendices and their titles need to be listed in the Table of Contents.

Provide title for each appendix, like “Appendix 1. Questionnaire Sample”.

APPENDIX 2: USABILITY TESTING QUESTIONNAIRE

The FYP project called Report Formatting System (RFS) is the system that helps students to formatting their FYP reports. These questionnaire objectives are for analysing the project **usefulness** and **ease of use**. Please tick (✓) either yes or no for each question. Thank you for your cooperation.

System Usefulness

Yes No

1. RFS is useful.
2. RFS meets my needs.
3. RFS enables me to accomplish task more quickly.
4. RFS does things I expected it to do.
5. Without RFS, my job would be difficult to perform.

System ease of use

Yes No

1. RFS is easy to use.
2. RFS is user friendly with clear button and icon to be click.
3. Instruction given is simple and easy to follow.
4. I make error frequently when using RFS
5. My interaction with RFS is easy for me to understand
