Residential College Student Activities Management System (RCSAMS)

By

Nurul Fateha Binti Adam

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

SEPTEMBER 2011

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CERTIFICATION OF APPROVAL

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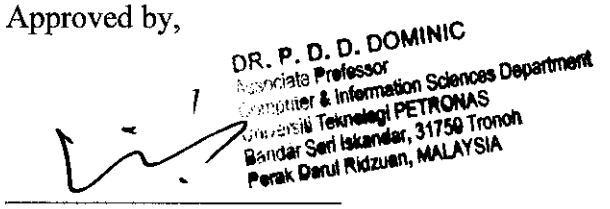
Approved by,



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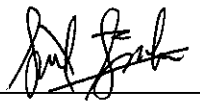
UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK
September 2011

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.



NURUL FATEHA BINTI ADAM

ABSTRACT

The title of the project is Residential College Students Activities Management System (RCSAMS). This system mainly about having a system development of helping students in having an organized system to make cafe complaints, room defect complaints and meeting room booking. All these are under residential college students activities. The problem of current system is that they are having or doing it manually. With large amount of data, the probability of making mistakes is higher, the data might loss, consume a lot of time, space, and money. Students are busy with classes everyday on office hours, so it will be a little bit time wasting to go to the residential office only for complaints or booking. Sometimes they need to do it because it is urgent. If one meeting room in certain residential village is already occupied, the students need to go to another residential village only for booking. The scope of study includes on research on current system that being used by University Technology Petronas Residential College (UTPRC) management. It also includes the advantages and disadvantages of having the current manual system and the impact of having the system online. Research also includes possible tools that will be used in developing the system, the database, programming language and user acceptance of the system. This is done during FYP 1. During FYP 2, the development of the system will be started. The methodology used for the system is Prototyping based development from the System Development Life Cycle (SDLC). Other than that, the author used the method of interviewing the RC staffs besides conducting a survey for the students. This is to see how important and relevant the system is towards the students. The surveys had been analyzed and attained encouraging result towards the system itself. The sample of survey conducted limited to thirty (30) students with few related questionnaires. Twenty – six (26) out of thirty (30) students agreed that the system needs to be developed.

ACKNOWLEDGEMENT

Alhamdulillah, first of all I would like to express my gratitude to Allah, for his grace I enable to accomplish this project. I believe that His blesses and mercifulness has given me the strength and wisdom to complete this project.

I would like to extend my thank you to Universiti Teknologi PETRONAS for the opportunity given to me to accomplish my final year project. I greatly appreciate all the lessons and experiences gained throughout the period.

I would like to express my highest appreciation first of all to my parents for their full support and believe in me. I would like to express my highest acknowledgement to my respected supervisor, Dr. Dominic for his commitment, comments, guidance, and idea sharing throughout the process of completing this project. Not to forget the other lecturers that have been really helpful during the process of every phase of the system development, thank you. Your knowledge, kindness and patience will always be remembered and appreciated.

I would say my appreciations to the Residential College Staffs who had been giving me great cooperation, support and feedbacks, especially Madam Roshidah. Thank you for being tolerate in answering my questions patiently.

Lastly, to all my friends who generously help me out with my project. Thank you for sharing your knowledge, thank you for your kindness through my good and bad times. Thank you for teaching me something new. Thanks for the value of friendship which I will never forget. Also, to those names that are not mentioned, your help and advises are so beneficial to me for the success of this project.

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1.1 Project Background

The project title is Residential College Record Management System (RCRMS). This project is mainly being planned to be develop for the usage of Universiti Teknologi Petronas (UTP) staffs and students. Basically, UTP provides accommodation which is furnished with basic facilities, as well as recreation and social amenities which includes common room, meeting room, surau, cafeteria, and sports (outdoor & indoor) facilities. The facilities and services provided are conformed to residential requirements as required by UTP. The vision of Residential College (RC) is mainly to create conducive living environment that will make students feel comfortable and able to adapt to university life. RC Management is headed by Manager of Residential College and his main function is to manage the overall Residential College facilities in order to ensure its facilities and services conform to residential requirements. He is assisted by one executive, eight fellows and seven residential college supervisors in carrying out his duties. The fellows are staffs from executive level (lecturers and executives) who carry out their task as fellows after office hours. They are selected after going through an interview process and the appointment is made by Human Resource Management (HRM). The position is appointed on contract basis for two years and the renewal of the contract is subject to the discretion of the management. Currently RC has the budget of RM 380,000 with 6 residential villages with 6610 no of beds. The executive of Residential Village is the one who shall supervise the day-to-day running of the RV and all activities pertaining to the administration and management of the RC facilities. The hostel supervisors is the one who shall conduct day to day routine checking on RV's assets, facilities and services and take necessary actions upon deficiencies.

Records management is the systematic control of an organisation's records, throughout their life cycle, in order to meet operational business needs, statutory and fiscal requirements, and community expectations. Effective management of corporate information allows fast, accurate and reliable access to records, ensuring the timely destruction of redundant information and the identification and protection

of vital and historically important records. Records management is a must-have function of companies, nonprofit organizations, government agencies, social agencies, medical, commerce, financial, schools, colleges and

universities and all other types of entities that generate information that needs kept for a defined amount of time. Individual households also need to practice good records management. Records management is furthermore a systematic, organized, planned and controlled process of managing or tracking the life cycle of records. A record can be a tangible paper object or it can be in digital or electronic form. Records can be kept on financial, medical, informative, formal documents, office documents, payroll, government forms and emails among hundreds of other types of records. Information is every organisation's most basic and essential asset, and in common with any other business asset, recorded information requires effective management. Records management ensures information can be accessed easily, can be destroyed routinely when no longer needed, and enables organisations not only to function on a day to day basis, but also to fulfil legal and financial requirements. The preservation of the records of government for example, ensures it can be held accountable for its actions, that society can trace the evolution of policy in historical terms, and allows access to an important resource for future decision making.

Web-based applications are being used widely in today's world. Many companies are moving towards online application not only in the business environments but also in the educational purposes. Web-based application using institutional on their daily works to improve the efficiency of the way they run their daily activities by improving their online application.

From the project title itself, Residential College Student Activities Management System (RCSAMS) it is to assist the RC staffs and students in their tasks regarding RC records. Currently students still need to register their house and room manually, problems complaint, meeting room booking, cafe complaints, and also room defects complaints. In 2009, PRISM system was established and being used by the RC staffs for house and room student registration, but students still needs to register manually. It also can be used for defects complaints but have not being fully utilised and students still need to do it manually. But then having the system for defects complain still the RC staffs cannot update the progress of the complaints to

the students using the system. This means students need to come to office and check for themselves for the status of the complaints. For cafe complaints and meeting room booking, there students still need to do it manually.

Currently, the cafe that being registered in UTP are V1 – Cafe Sajian Ria, V2-Gerai Kak Sufiah and Kafe Sayang, V3 – Pocket C Cafe' and Catering, and Aroma cafe, V4 Restoran Anjung Rawa and Sinar Madina, V6 – Rifa Maju Ent., V5 – Sinar Selera, Anna Setia Ent, Al-Quds, Water World, and Pocket D Cafe Paprika. While current meeting rooms available for student bookings are, V2 meeting room, V3 meeting room, V4 meeting room, and V5 with two meeting rooms.

The system is hoped to help the staffs in managing better and proper records in the same time make them easier to check the database. It is also hoped that it could help the students having better platform in placing the record of meeting room booking and also make any complaints for the cafe.

1.2 Problem Statement

The record data for the RC Management personnel are currently done manually especially for the room status problems (defects / room summons), cafe complaints and meeting room booking. With a large amount of data, the probability in making mistakes becomes higher. For the students, it might consume a lot of time to go to the office just because having certain things to complain or just to book the meeting room. The office only operates during office hours, while classes also are on-going during that particular time. Some of the problems include :

1.2.1 Inefficient way of recording and data storing

As the most of the complaints and bookings are done manually using paper based. So, this might cause problem as the records items maybe misplaced or overlooked. There is also no standardized format in reporting and recording the complaints and bookings. There is possibility that the students forget to include important details for example their phone number during the booking. It is important to have the data structured correctly. If anything happens, there is a proper record to be refers to.

1.2.2 Consume more time, money and space

Each and every time, management needs to buy new logbook or print new date on paper when they run out of paper or logbook. This is a waste of money and paper too. Time is also taken for the students to go to the office and make the complaints or bookings. Meeting room booking only can be done during office hours and the status of meeting room only can be check during that particular time. Students are also busy with classes during office hours so, it might be a waste of time just to check on the meeting room status. If during that time there is also other students in the office, so that particular student needs to queue and wait for his turn. That particular room might have been booked by other students Spaces also being used to place all the papers and logbooks in or anywhere near the office.

1.2.3 Less awareness towards RC info

Since this system is created for RC, so in the system itself certain information about RC staffs and fellow should be placed. Most of students don't really understand the procedure of getting help if they faced key loss problems. They can make key loss report to Village Supervisor (SV) only during office hours. If out of office hours time, they need to report and get help from respective fellows. Fellow is also act like a counsellor or advisor in helping the students. These are common information that most students don't really know. New students might as well don't really aware of the facilities provided and they can make complaints for cafe and can book meeting room through RC. By having the system, it hoped that this could help informing the students on the facilities provided and the student's right on the facilities provided.

1.3 Objective and scope of study

In every beginning of a project, objectives need to be identified so targets can be set and achieve by the end of allocated period. The **main objective is to develop a system which could help students and management in record management including meeting room booking, defect complaints and cafe complaints,** increase the effectiveness and efficiency and in the same time, cost saving. The other objectives are :

- Identify the current area of manual system that needs more improvement.
- Determine the design requirements in order to develop a prototype for the data and information identified.
- Develop a web base RC Student Activities Management System and manage the system database.
- To help user on how to input data to the system.
- To make an easier process for report complains, meeting room booking and information research on RC better and easier.
- To provide information of RC for students and to store records of the students in a more manageable system.
- Reduce cost and time consuming.

For the scope of study, few areas have been identified in order for the project to be well-completed by the end of two-semester period. The scopes for research area includes :

- Research on current system that has been used by UTP RC management.
- UTP Residential Village, currently focus will be on Village 3 as prototype.

- Research on the advantages and disadvantages of using the existing system (manual) and the impact to the students and management by using web-based system.

Other than that, the study will also include and stressed on website development, using few softwares which includes Adobe DreamWeaver; interface design, Adobe Photoshop; image editing, MySQL; database and PHP on application development. PHP is an open source server side scripting, so the codes are easier to be learnt through the internet.

1.4 Feasibility study of the project within scope and time

Basically the scope of study will include on research for Final Year Project (FYP) 1 & 2. So, the data need to be gathered on the research on current system, the advantages and disadvantages of existing (manual) system. Feasibility study also being assessed in few ways, which are operationally, technically, and economically. The time line includes one semester to do the research (FYP 1) and another one semester (FYP 2) to complete the development prototype of the project. So, for FYP 1 which is having 13 weeks will be fully utilized in doing research and data gathering and during FYP 2 the time taken for 14 weeks will be fully utilized for the system development.

Chapter 2 : Literature Review

Literature review is important in building a strong foundation before the project can be continued further. The theories or evidence designed for some purpose in one literature could help in making theories in another research. Further researches need to be done from time to time in order to gain more knowledge on issues related to project.

The web based system is mainly developed to overcome the weaknesses of the existing manual in UTP. Basically, it is meant the web based system is available online and tend to help human in making their job easier. Online basically means anything digital, from any source, in any time **(G.E Gorman, 2006).** Online includes documents on the World Wide Web, e-mail, file-sharing, newsgroups, streaming media, and etc. The online system was the first to employ the practical use of hypertext links, the mouse, raster-scan video monitors, information organized by relevance screen windowing, computer presentation (such as power point), and other modern computing concepts. Technically, computers that are on a network are online even if they are not connected to the internet.

Web based is an application that access with a web browser over a network such as internet or intranet. Web applications are popular due to the usage of the browser as a client, also known as thin client. Based on research carried out by a lecturer, the lecturer pointed out that using online base system as an assessment and reporting tool will indirectly saves the environment. This is because less paper being used in submission of assignments, reports, tests, which leads to fewer tree been cut down for the purpose of producing papers.

Record literally means products of business activities, which arise naturally from the functions, processes and transactions, substantive and facilitative, of the creating organisation. Some definitions are based on the medium of the record, while others look at it from the broader context of information. Mostly now days records are crucial for quality certification, and they have been defined to meet the purpose. ISO 9001 defines record as "A document that contains objective evidence which shows how well activities are being performed or what kind of result are being achieved. It always documents what has happened in the past". This definition is rather similar to the one accorded by ISO 15489 (2001), which states that records is

as "Information created, received and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business". Record management however moved from archives perspectives to information technology perspective. These changes have influenced the status and function of records from that of documenting organisational activities to providing information for decision making, providing evidence and proving that an organization is complying with relevant laws and regulations **(A.Prof Zawiyah M. Yusof, 2008).**

Having a proper system for data record management for having less usage of paper might same with the term "paperless office". It is the term that being use for office for the future which includes the usage of computers, e-mails, and online information. The technology enhancement now days had created many portable devices to be secured to each other in order to communicate better. On one hand technology might reduce the usage of paper, but it also creates more information. According to national filing survey (done by Kardex Systems, UK) over one million pounds are wasted on a daily basis to find lost file. Office filing staff in UK earn roughly euro 8 to euro 9 per hour and the average cost for locating each file is approximately euro 10. Kardex's managing director claims that "6 percent of UK's 2.1 million businesses admit to losing at least one file per day which contributes to 120,000 lost files. In estimation, poor filing practices are costing UK businesses euro 1.2 million every working day or more than euro 240 million a year." During that survey they found out that 55 percent of files missing are actually misplaced, 48 percent are on other staff's table, while 13 percent is on the boss' desk, another 2 percent are never found. This means that too much paper can contribute to confusion and paper waste. Companies might not afford to be complacent and rely on the outdated method of using filing cabinets for storing important information. Thousands of dollars are wasted in companies all over the world to store information relying on only papers which the efficiency and profitability are greatly compromised. The situation now days is many paper-based processes are time consuming and costly. Based on the research survey, the benefit of having less paper environment includes cost, space and time savings, easier retrieval of information, less clutter in the office, reduction in stationary cost, increased efficiency, more productive, increased communication, positive environment impact, data can be

easily shared and transferred and less physical storage space needed. However, in directing to a new phase towards less paper environment there are few things that needs to be observes first. Those include, the end user of the system needs to be educate on the usage of the system, the number of end user with each group/department need to be identified, the information that needs to be created or kept must be identified, the format and consistency and focal person of the system must be identified, the user and system developer need to discuss on how timeline of each information to be kept, and the early participation of the end user of the system is very important. **(Mardene Rosalee Carr, 2005).**

The current system that relates to online booking system is Online Accommodation Booking, Curtin University Malaysia.

University Accommodation Booking

Curtin University
Sarawak Malaysia

Personal Details	* Denotes required fields	**Confirmation will be sent via email		New Application
Name*			Home Address*	
Course Offered*	Degree Foundation ELB Diploma IEP Postgraduate Summer		City*	
Gender*	Male Female		Postcode*	
Date of Birth*	- - (dd-mm-yyyy)		State*	
IC/Passport No*	(i.e. 921225135678)		Country*	Afghanistan
Student ID			Tel (Hm)	
Nationality*	American		Next to Kin*	
Tel (Hp)*			Next to Kin Contact No.*	
Email*			Next to Kin Email	
Religion	Undefined		Medical History	No

Types and Details of Accommodation

Please check this box to confirm that you understand and accept the terms and condition to continue.

Minimum payment per semester: 5 months

1st Choice	:	Lakeside Apartment I Single Room Air-Conditioned RM500/person/month
2nd Choice	:	Lakeside Apartment I Single Room Air-Conditioned RM500/person/month
3rd Choice	:	Lakeside Apartment I Single Room Air-Conditioned RM500/person/month
Semester	:	IEP Term 1 (January-March 2011)

Submit

Figure 1 : University Accommodation Booking

source : (http://www.curtin.edu.my/future/accommodation/ApplicationForm.php)

By developing the online system, it will expect that it can solve some of the problem that causes by the manual system. As the above, it is the current online system that had been used by the Curtin University Malaysia in Sarawak. The system mainly used by the students for room bookings and being used by the staffs to keep track on the students hostel booking and online registration which includes Curtin Village,

Curtin Villa, and Curtin Lakeside Apartment. The official website for the university also provides a platform in doing complaints based on standardized complaint form.

Another current system that similar to meeting room booking system is, hotel booking system.

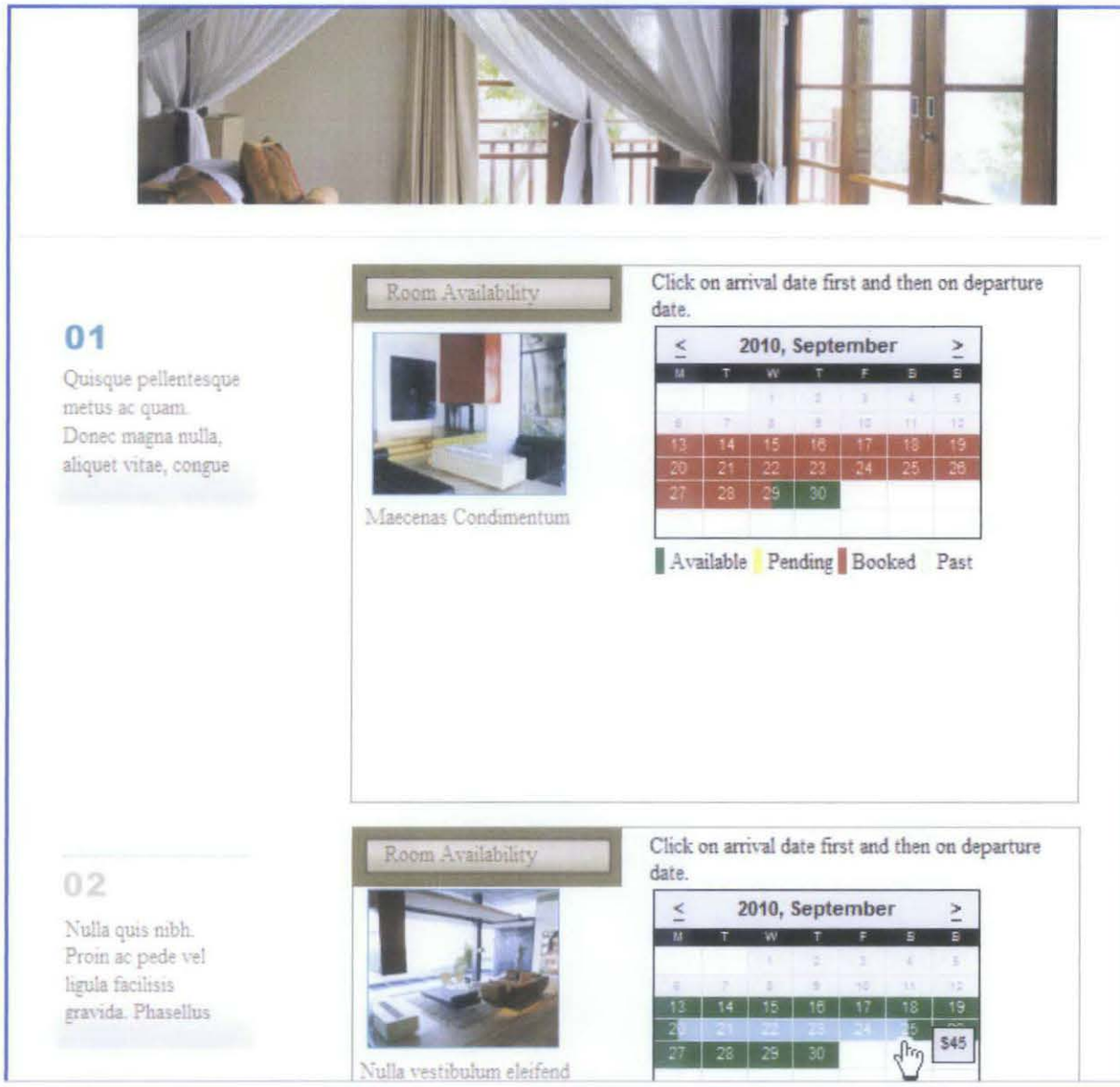


Figure 2 : Hotel Booking System

source : (http://www.fileguru.com/Online-Hotel-Booking-System/screenshot)

While some system uses decision support system for bookings. For example, for airplane ticketing booking system, if the customer want to buy a ticket but it had already occupied the system will suggest that the other time or other class for the customer.

A Decision Support System (DSS) have evolved in the era of distributed processing. DSS is the advancement of Management Information System (MIS), whose main purpose was to provide information to managers. Apart from providing MIS functionalities, like making right information available to the decision makers at the right time (storing, organizing, retrieval, and maintaining the security and integrity of data), DSS also provides model-based reasoning capabilities that enables the decision – makers to generate, evaluate, and select an alternative solution for a given problem in a given scenario **(Ravi, 2006).**

A Decision Support System (DSS) is a collection of integrated software applications and hardware that form the backbone of an organization's decision making process. Companies across all industries rely on decision support tools, techniques, and models to help them assess and resolve everyday business questions. The decision support system is data-driven, as the entire process feeds off of the collection and availability of data to analyze. Business Intelligence (BI) reporting tools, processes, and methodologies are key components to any decision support system and provide end users with rich reporting, monitoring, and data analysis. There are few structure of the system, named :

- **Structured Decision**

A structured decision is one in which all three components can be fairly well specified, i.e., the data, process, and evaluation are determined. Usually structured decisions are made regularly and therefore it makes sense to place a comparatively rigid framework around the decision and the people making it. An example of this type of decision may be the routine credit-granting decision made by many businesses. It is probably the case that most firms collect rather similar sets of data for credit granting decision makers to use. In addition the way in which the data is combined is likely to be consistent (for instance, household debt must be less than 25 percent of gross income). Finally, this decision can also be evaluated in a very structured way (specifically when the marginal cost of relaxing credit requirements

equals the marginal revenue obtained from additional sales). For structured decisions it is possible and desirable to develop computer programs that collect and combine the data, thus giving the process a high degree of consistency. However, because these tend to be routine and predictable choices, a DSS is typically not needed for highly structured decisions. Instead, there are any number of automated tools that can make the decision based on the predefined criteria.

- **Unstructured Decisions**

At the other end of the continuum are unstructured decisions. These decisions have the same components as structured ones; however, there is little agreement on their nature. For instance, with these types of decisions, each decision maker may use different data and processes to reach a conclusion. In addition, because of the nature of the decision there may also be few people that are even qualified to evaluate the decision. These types of decisions are generally the domain of experts in a given field. This is why firms hire consulting engineers to assist their decision-making activities in these areas. To support unstructured decisions requires an appreciation of individual approaches, and it may not be terribly beneficial to expend a great deal of effort to support them. Generally, unstructured decisions are not made regularly or are made in situations in which the environment is not well understood. New product decisions may fit into this category for either of these reasons. To support a decision like this requires a system that begins by focusing on the individual or team that will make the decision. These decision makers are usually entrusted with decisions that are unstructured because of their experience or expertise, and therefore it is their individual ability that is of value. One approach to support systems in this area is to construct a program that simulates the process used by a particular individual. These have been called "expert systems." It is probably not the case that an expert decision maker would be replaced by such a system, although it may offer support in terms of providing another perspective of the decision. Another approach is to monitor and document the process that was used so that the decision maker(s) can readily review what has already been examined and concluded. An even more novel approach used to support these decisions is to provide environments that are specially designed to give these decision makers an atmosphere that is conducive to their particular tastes, a task well suited for a DSS. The key to support of unstructured decisions is to

understand the role that individual experience or expertise plays in the decision and to allow for individual approaches.

- **Semi-structured Decisions**

In the middle of the continuum are semi-structured decisions, and this is where most of what are considered to be true decision support systems are focused. Decisions of this type are characterized as having some agreement on the data, process, and/or evaluation to be used, but there is still a desire not to place too much structure on the decision and to let some human judgment be used. An initial step in analyzing which support system is required is to understand where the limitations of the decision maker may be manifested, i.e., will it be in the data acquisition portion, or in the process component, or possibly in the evaluation of outcomes. For instance, suppose an insurance executive is trying to decide whether to offer a new type of product to existing policyholders that will focus on families with two or more children that will be ready to attend college in six to nine years. The support required for this decision is essentially data oriented. The information required can be expressed in terms of the following query on the insurance company's database: "Give me a list of all of our policyholders that have a college education and have more than two children between ages 10 and 12."

A major role of DSS is simple information processing; the program makes a large array of facts and considerations more digestible. They also automate tasks at which humans tend to be slow and inaccurate, such as sorting and mathematical calculations.

- **What-if Analysis**

For instance, the insurance executive who wanted to offer the new product now has to decide on a price for the product. In order to make this decision, the effect of different variables (including price) on demand for the product and the subsequent profit must be evaluated. The executive's perceptions of the demand for the product can be captured in a mathematical formula that portrays the relationship between profit, price, and other variables considered important. Once the relationships have been expressed, the decision maker may now want to change the values for different variables and see what the effect on profits would be. The ability to save

mathematical relationships and then obtain results for different values is a feature of many decision support systems. This is called "what-if' analysis and is a common application for DSS to automate.

The output from such a system is only as good as the model or data being used; if the demand model is inaccurate or outdated or based on dissimilar products, the outcome projections may be worthless. Thus, decision makers must be aware of the risk of potential inaccuracies and understand the underlying logic behind a DSS's output, as opposed to accepting its output blindly, in order to make an informed decision. The object of a good DSS is to obtain useful information for human consideration rather than to let the computer make the decision itself. Advanced DSS may contain safeguards and pointers to help users avoid misinterpreting output or creating meaningless output.

PHP is a server side scripting language for the Web. Within HTML page, PHP can be embedded. PHP codes will be interpreted at the web server and generates HTML or other output that the visitor will see. PHP was conceived in 1994 and was originally the work of one man, Rasmus Lerdorf. As of November 2007, it was installed to more than 21 million domains worldwide and it keeps in growing **(Luke Welling, 2011).** PHP is an open source project which means that the access of the codes and the usage of the codes includes altering, or redistribute the codes are all free without any charge. PHP originally stood for Personal Home Page but was changed to Hypertext Preprocessor.

MySQL is a very fast, robust relational database management system (RDBMS). A database enables the user to efficiently store, search, sort and retrieve data. The MySQL server controls access to the data to ensure that only authorized user can obtain success. Hence, MySQL is a multiuser, multithreaded server. It uses Structured Query Language (SQL), the standard database query language. MySQL has been publicly available since 1996 but has development history going back to 1979. It is the world's most popular open source database. MySQL is available on dual licensing scheme. It can be used under open source licence (GPL) for free as long as abide to the licensing rules or the commercial licence can be bought if the user wishes to distribute a non-GPL application using MySQL.

Before a system is developed, few items needs to be considered includes ; the hardware for the web server, an operating system, web server software, a database management system, a programming or scripting language. Some of these choices are dependent on the others. Not all operating systems runs on all hardware, not all web servers support all programming languages and others. Mostly PHP and MySQL works with any major operating system and many of the minor ones. PHP has many strengths including the performance, scalability, interfaces to many database systems, built in libraries for many common web tasks, low cost, ease of learning and use, strong object oriented support, portability, flexibility of development approach, availability of source code and availability of support and documentation.

While some MySQL strengths includes high performance, ease of configuration and learning, portability, availability of source code and availability of support.

Chapter 3 : Methodology

3.1 Significant Methodology

In the system development life cycle (SDLC) there are few fundamental phases; planning, analysis, design and implementation. **(Alan Dennis, Barbara Haley Wixom, and David Tegarden, 2010).** The methodology used is prototyping. A prototyping-based methodology performs the analysis, design, and implementation phases concurrently and all three phases are performed repeatedly in a cycle until the system is completed. With these methodologies, the basics of analysis and design are performed, and work begins on a system prototype, a "quick-and-dirty" program that provides minimal amount of features. The first prototype is usually the first part of the system that is used. Key advantage of a prototyping – based methodology is that it very quickly provides a system which the users can interact, even if it is not ready for widespread organizational used at first. Prototyping reassures the users that the project team is working on the system and prototyping helps to more quickly refine real requirements. Rather than attempting to understand a system specification on paper, the users can interact with the prototype to better understand what it can and cannot do.

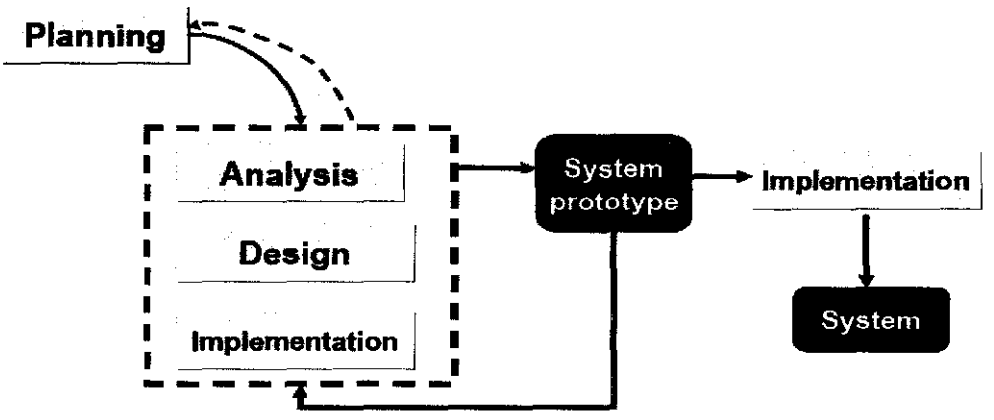


Figure 3 : Prototyping-based methodology

The traditional Systems Development Lifecycle (SDLC) involves:

- **Planning** - Plan the project
- **Requirements Analysis** - Understand & document the existing system, determine requirements for new system
- **Systems Design** - Develop overall plan for new system
- **System Acquisition/Development** - Acquire/develop necessary hardware & software
- **System Implementation** - Build & put new system into use

3.1.1 Plan, Research and Review

During this phase, certain research needs to be done in order to get better idea on the developing system. The research will include previous and current technology for web base system. In the same time, the research will include the benefit of the system, how does it works and how do it can business advantage. The research will also include in reviewing the concept and function in the existing system, offers by other organizations. This is also a crucial in having knowledge of how well the web base system operates in helping humans get their tasks done effective and efficiently. The result from the journals and articles could also help in generate more ideas on the design and concept of the system. Research being done by reading out the journals, magazine and online articles on steps of developing a reliable web-base system and review some of web page that is develop for student usage.

3.1.1.1 Survey

The survey need to be done to a group of students by asking their opinion and towards for the existing manual system. Other than that, also need to do some surveys towards their respond on the web base system that going to be develop and their preferences towards the system. There are few suggested stages of conducting survey.

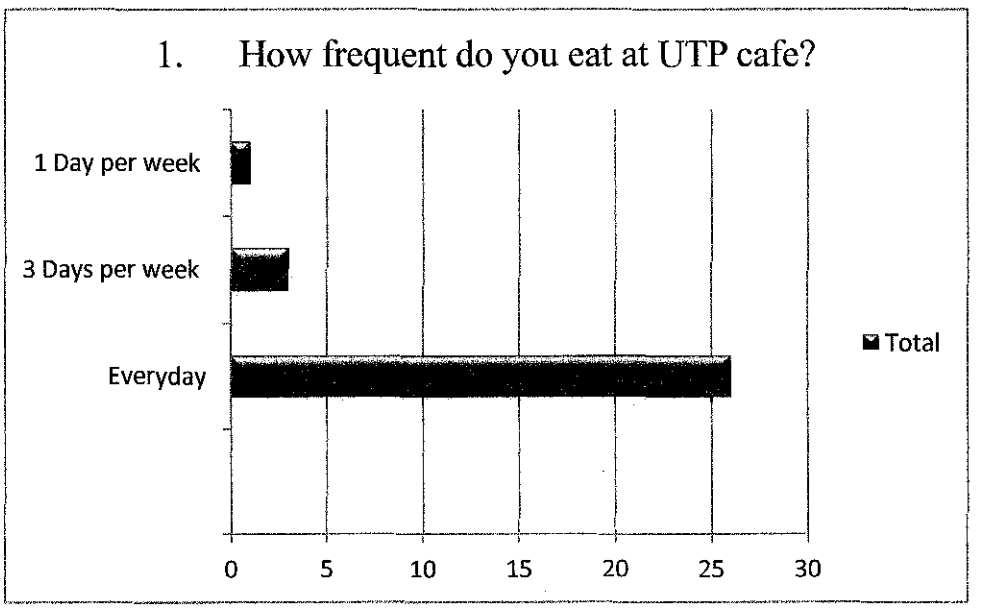
- Questionnaire creation; prepare few questions regarding the system and get the feedback to foresee the preferences of the users towards the system.

- Questionnaire distribution; distribute the questionnaire as per limitation group of people with certain amount set of questionnaire. It can be distributed using hardcopy and softcopy. For now, the limitation is targeted to the RC staffs and Village 3 or Village 5 students as almost 60 percent final year students are staying there. Final year students might have broader view and having more experience in facing the manual system problem.

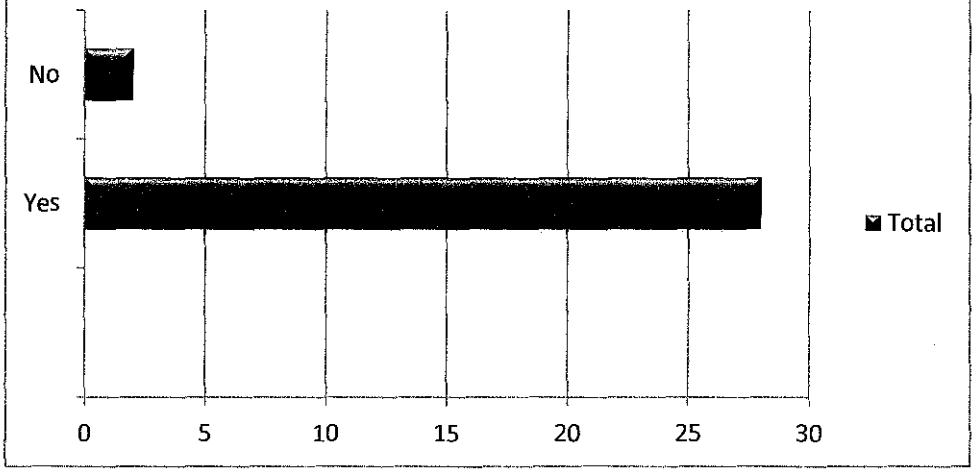
- Survey time-line and data collection; the time-line for the survey might take at least one week, and after that collect all the data and analyse the data.

Since the system is more on cafe complaint, meeting room booking and defect complaint, the questionnaires will be involving cafe, meeting room and defects matters.

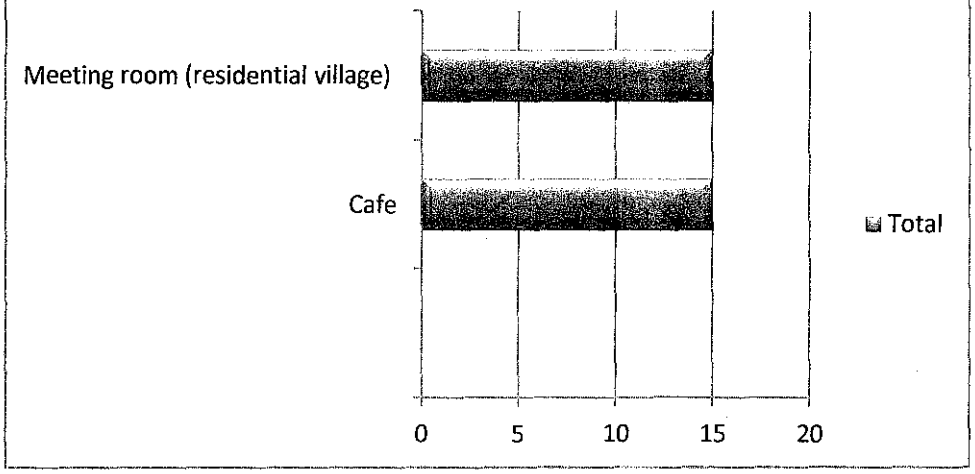
Based on the survey that had been conducted, the results obtained as per below :



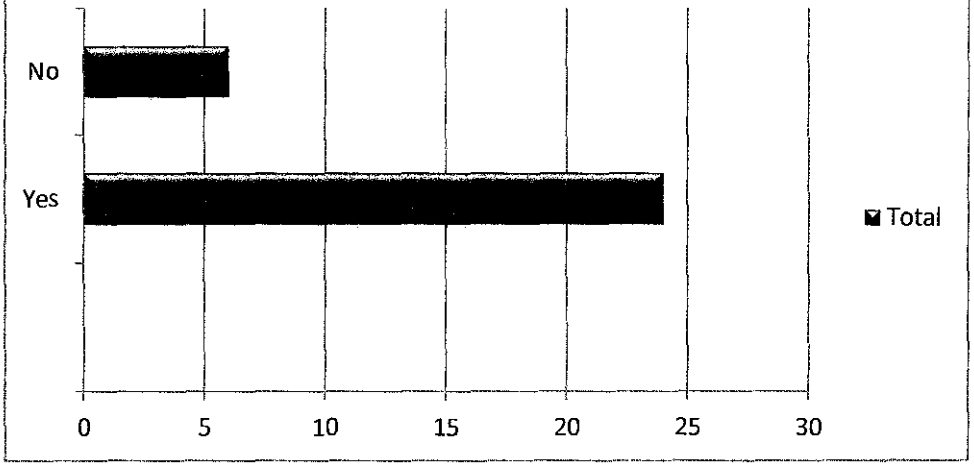
2. Do you have any complaints towards UTP cafe?

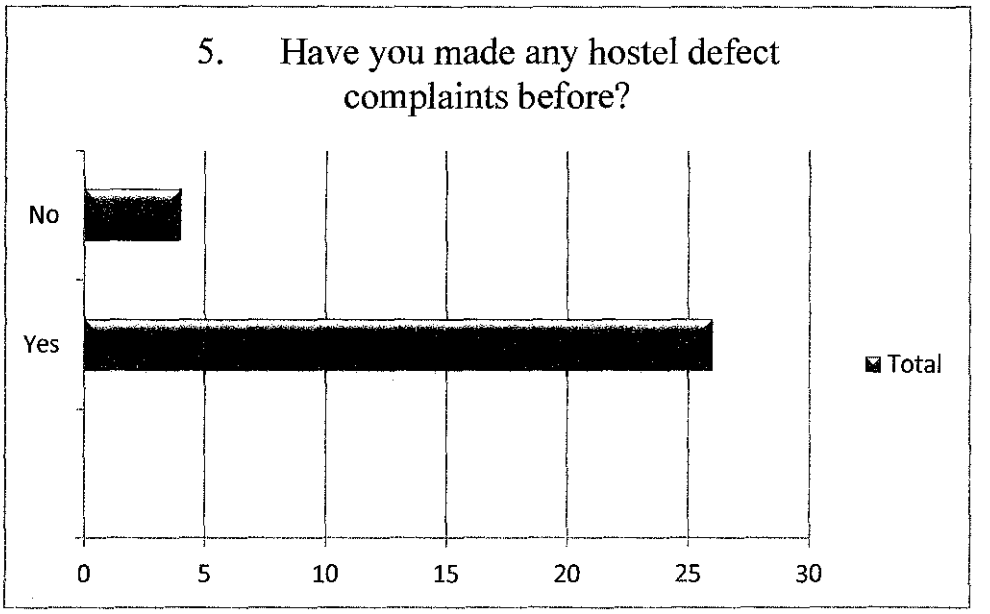


3. Where is the most suitable venue to have meeting ?



4. Have you done any meetings at the meeting room? (residential village)





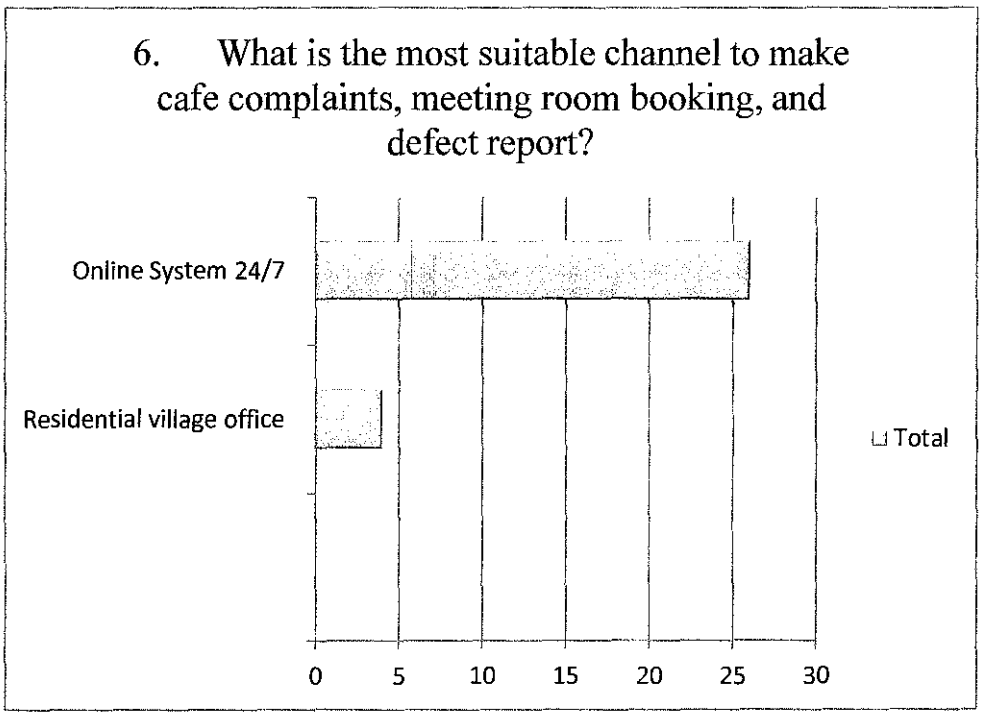


Figure 4, 5, 6, 7, 8, 9 : Data Survey

The survey has been conducted among thirty (30) students around campus and residential village. The survey conducted to see the relevancy of the system for the students and the acceptance of the students towards the system itself.

Based on survey conducted, most of the students eat at the students cafe located in UTP RC almost everyday. Twenty six (26) out of thirty (30) students eat at the cafe everyday. A number of twenty eight (28) says that

they have complaints to be made towards the cafe. Half of thirty (30) students agree that meeting room is better place of having meeting conducted. Twenty six (26) students claimed that they had made defects complaints before. A total of twenty six (26) respondents agree the system needs to be developed online rather than having it manually. This means that the system is relevant and usable for the students. Based on the data gathered from the RC office, not less than three times per week there will be meeting room bookings.

3.1.1.2 Interview

During this stage, interview needs to be done especially to the RC staffs. This is important to make sure the system is aligned with the business value or service offered.

From the interview conducted, the current online system being used by the residential college staffs is PRISM portal. The PRISM system is mostly used for the hostel (room) management.

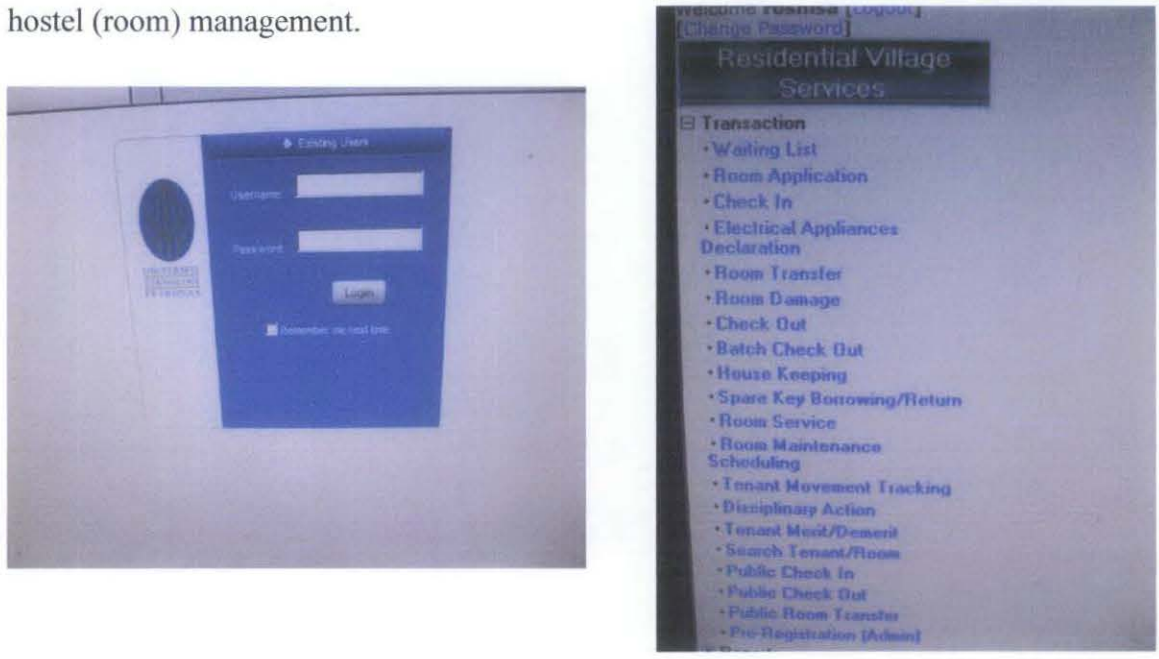


Figure 10 : PRISM (Hostel Room)

Manual system is currently been used for defect complaints especially in Village Three (V3). Different logbook being used for electrical and civil defect complaints. The students are also using own handwriting, which makes the probability of making

mistakes, miscommunication or misunderstanding of encoding the message becomes higher.

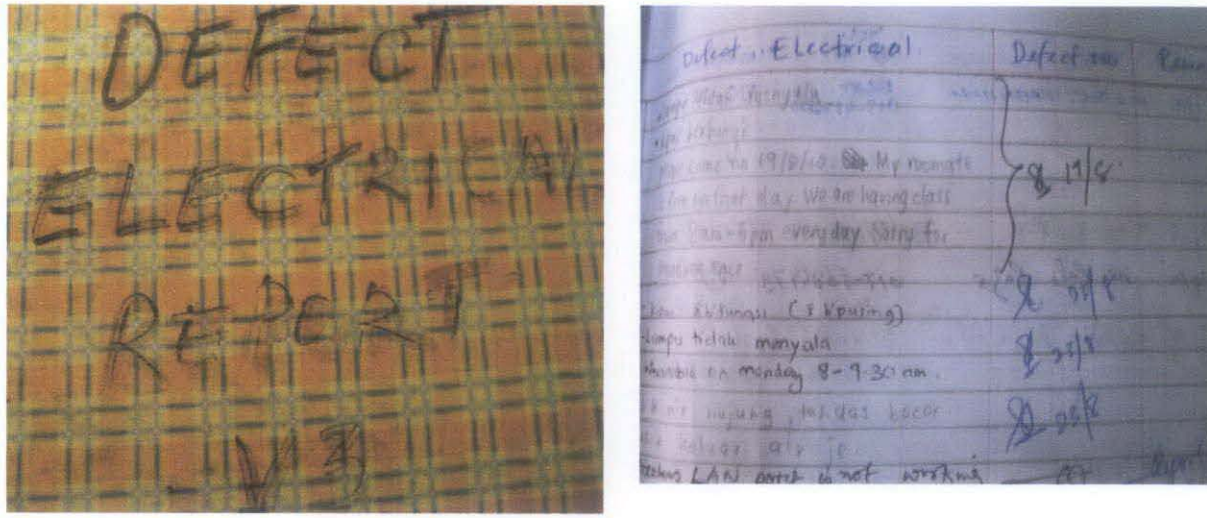


Figure 11 : Logbook (Defect Complaints)

This is the current system being used for meeting room booking is also manual, as per image shown. This would waste papers, uses a lot of space, and inefficient. While for the cafe complaint it is not being implemented formally yet.

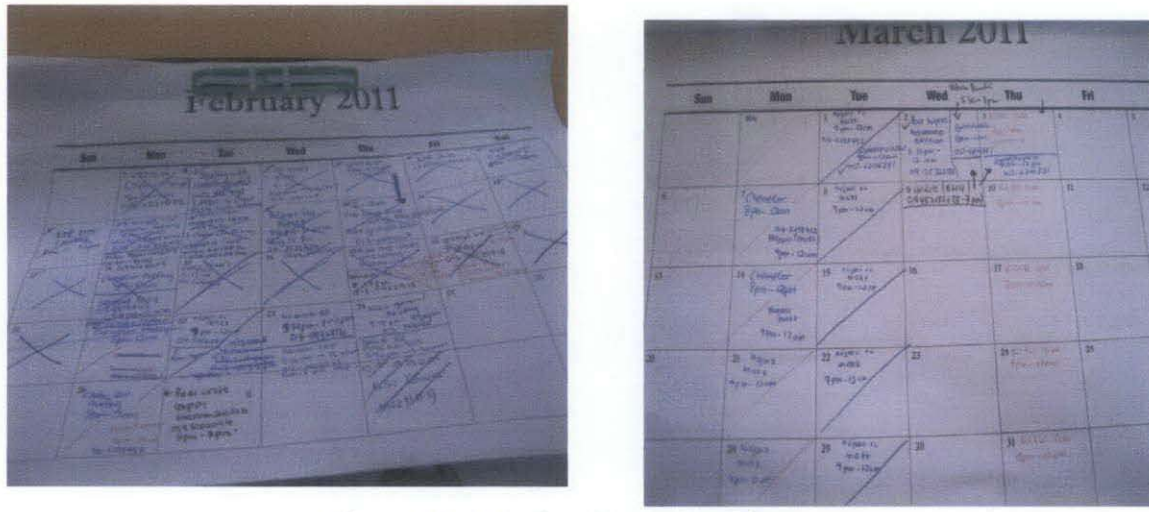


Figure 12 : Meeting Room Booking

3.1.2 Data and system requirement analysis

In this analysis stage, the survey result, comments and feedback will be gathered and analyze. Some new ideas might be gain from the feedback. This is important to consider and decide on the functionality of the system itself. All the stages taken will be identified to make sure the system meet the scope and objective of having the system that will be develop. During this phase, further analysis need to be done for the information requirement and application needs. In the end of the analysis phase, all the requirements being identify in order to achieve the project's objective.

3.1.3 Design of the system

During the design phase, developer need to decide on the functionality of the system, how does it operates, the user interface, the form, report, specific programme, main function, additional function, database, and file that needed. In identifying the database and file selection, it is important to know what are the data and where the data will be stored. During this phase, the user interface is also being drafted. The other interfaces design will help the users to understand and move through the system. During this phase, the coding system development or the technical part need to be develops. The system will focus more on the meeting room booking, problem complaints, defects status, and room / summon status. The current system prototype that has been developed is as per below :

Figure 13 : The Main Page

Figure 14 : Homepage

3.1.4 Implementation and system construction

The development of the project is done. All the codes and the database need to be constructed and design in this phase. The building of the system needs to be done and functionality of the system should be monitor from time to time. If any error occurs, the developer needs to debug it. The testing will have a series of test plan that will be conducted. There are two approaches of doing testing; black box and white box testing. Black box testing focuses whether the system meets the requirements and white box testing is a test of a major element of the system by looking inside the system itself, which sometimes errors of codes or function can be found. System testing is important in examining of how good the system meet its requirement, how convenience the system is used, how convenience the system is to be used, and how secure the system is. Acceptance test is the final test that will be done. This is to make sure the system is complete, meet the requirement and acceptable by users. Acceptance testing will be done in two stages; alpha testing and beta testing. Alpha testing will be done using a made-up data, while the beta testing will be done using real data.

3.1.5 System Operation and Support

After the system had been developed, this is the stage where the developer needs to educate the user on how the system work and how it can benefit them. This is where the system keeps on being monitored and maintained to make sure the system is still relevant to the user. Maintenance and upgrading (if needed) for the system based on feedback also will be done during this stage.

3.2 Project Activities, Key Milestone, and Gantt Chart

- **FYP 1 :**

Week ,Time / Activities	Week 9					Week 10					Week 11					Week 12					Week 13				
Date	21	22	23	24	25	28	29	30	31	1	4	5	6	7	8	11	12	13	14	15	18	19	20	21	22
Proposal Defence & Evaluation																									
Research continuation; feasibility, database, diagrams & data gathering																									
Interim Report preparation																									
SV Consultation																									
Interim Report Submission																									
Technical research; Technical report preparation																									
SV Consultation																									
Technical Report Submission																									

Figure 15: Gantt Chart

- **FYP 2 :**

Week, Time, Activities	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Data Gathering, Codes Searching, Collecting Materials														
System Prototype Development (Interface and basic function)														
Progress Report Submission														
System Prototype Development Continuation														
Survey / feedback on prototype, Data Analysis,														
Dissertation Submission														
System Prototype Development Continuation														
Technical Report / Final Dissertation														

Figure 16 : Gantt Chart

Project Activities :

3.2.1 System Architecture

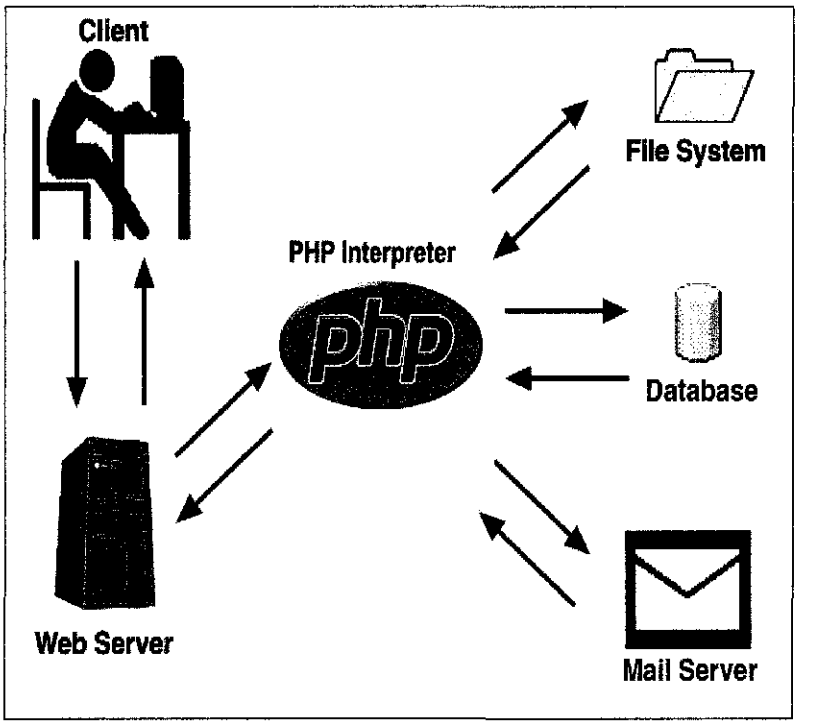


Figure 17 : PHP Implementation

When a user navigates in her browser to a page that ends with a .php extension, the request is sent to a web server, which directs the request to the PHP interpreter. As shown in the diagram above, the PHP interpreter processes the page, communicating with file systems, databases, and email servers as necessary, and then delivers a web page to the web server to return to the browser.

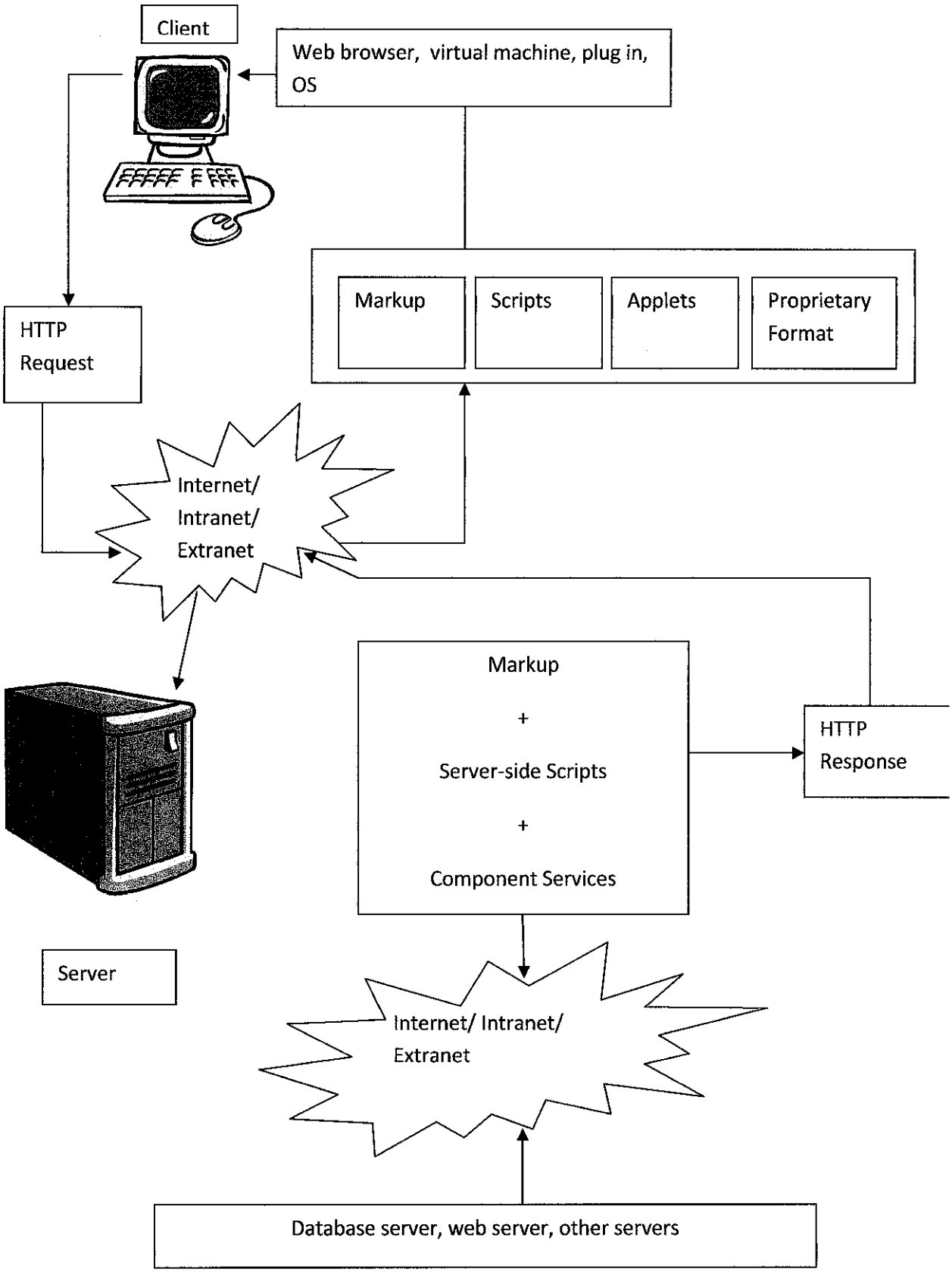


Figure 18 : System Architecture

The actual architecture that is going to be implemented is quite simple. Most Web-based are built using 3-tier or 4-tier architecture. A user sends a request using the hypertext transfer protocol (HTTP) to a web server. The web server processes the request, using a program. The program will then process the request and produce result. The program will then process the request and produce result. The results are returned to the user's web browser for displaying purpose.

3.2.2 Use Case Diagram

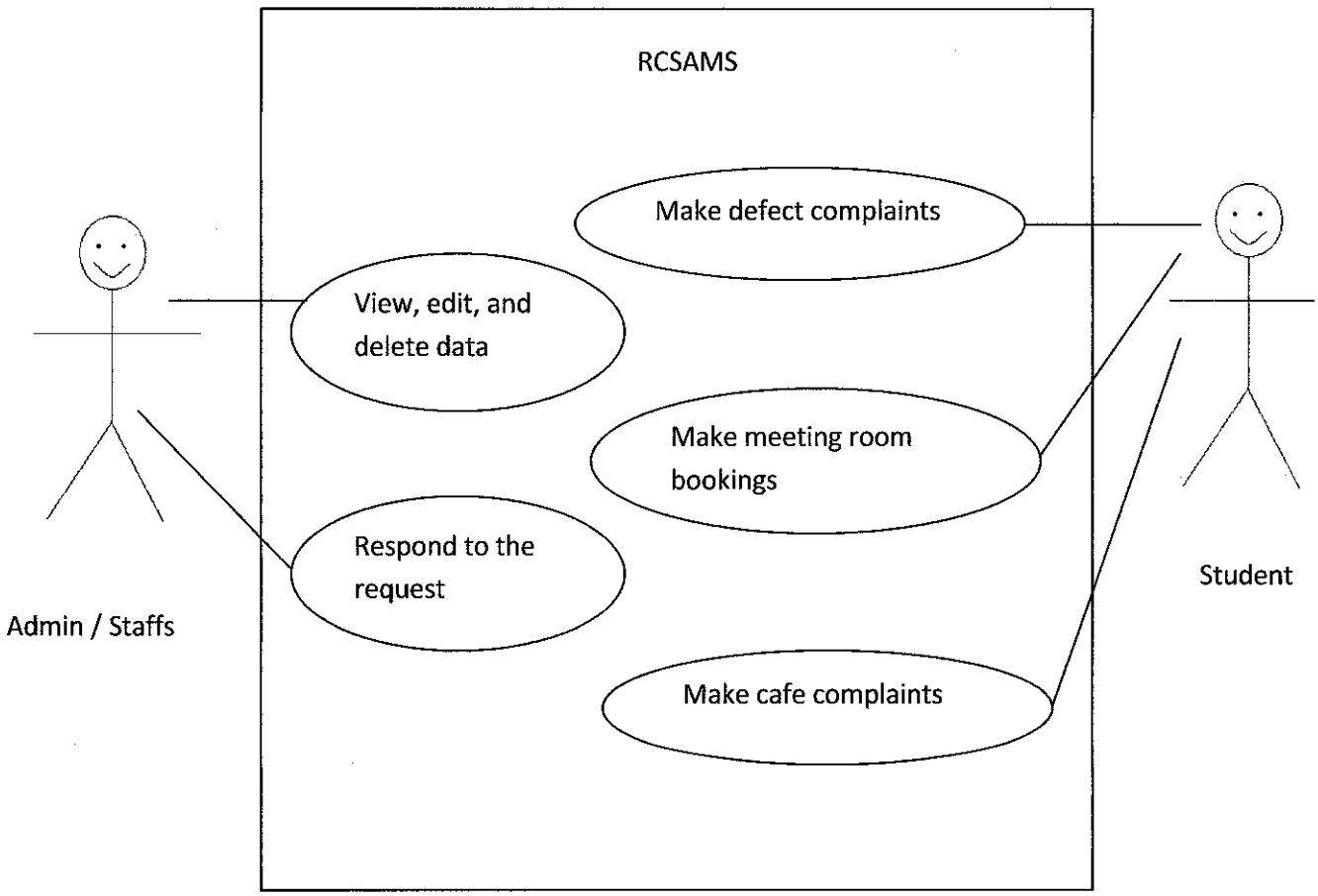
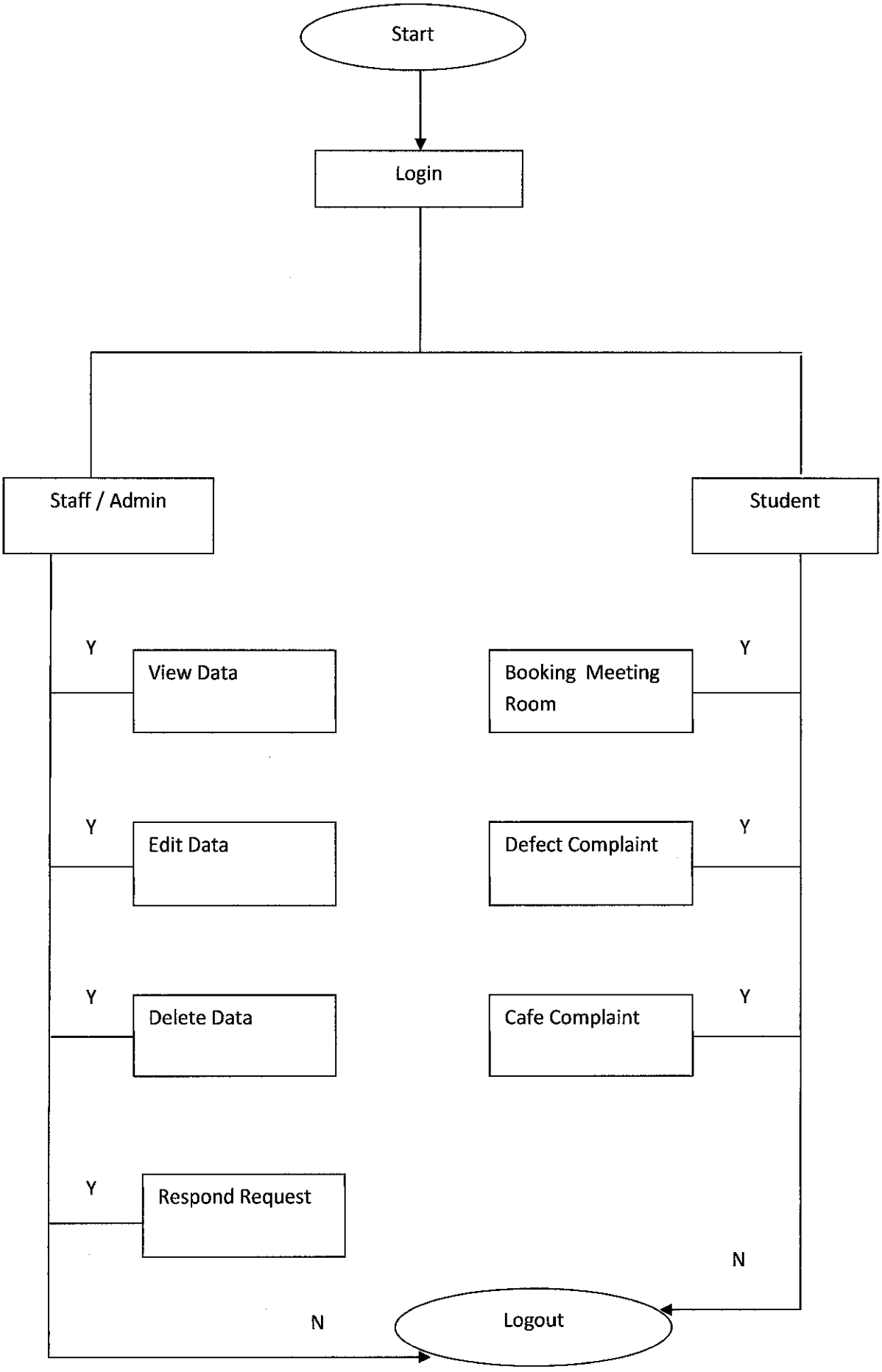


Figure 19 : Use Case Diagram

3.2.3 Flow of the system



3.2.4 ER Diagram

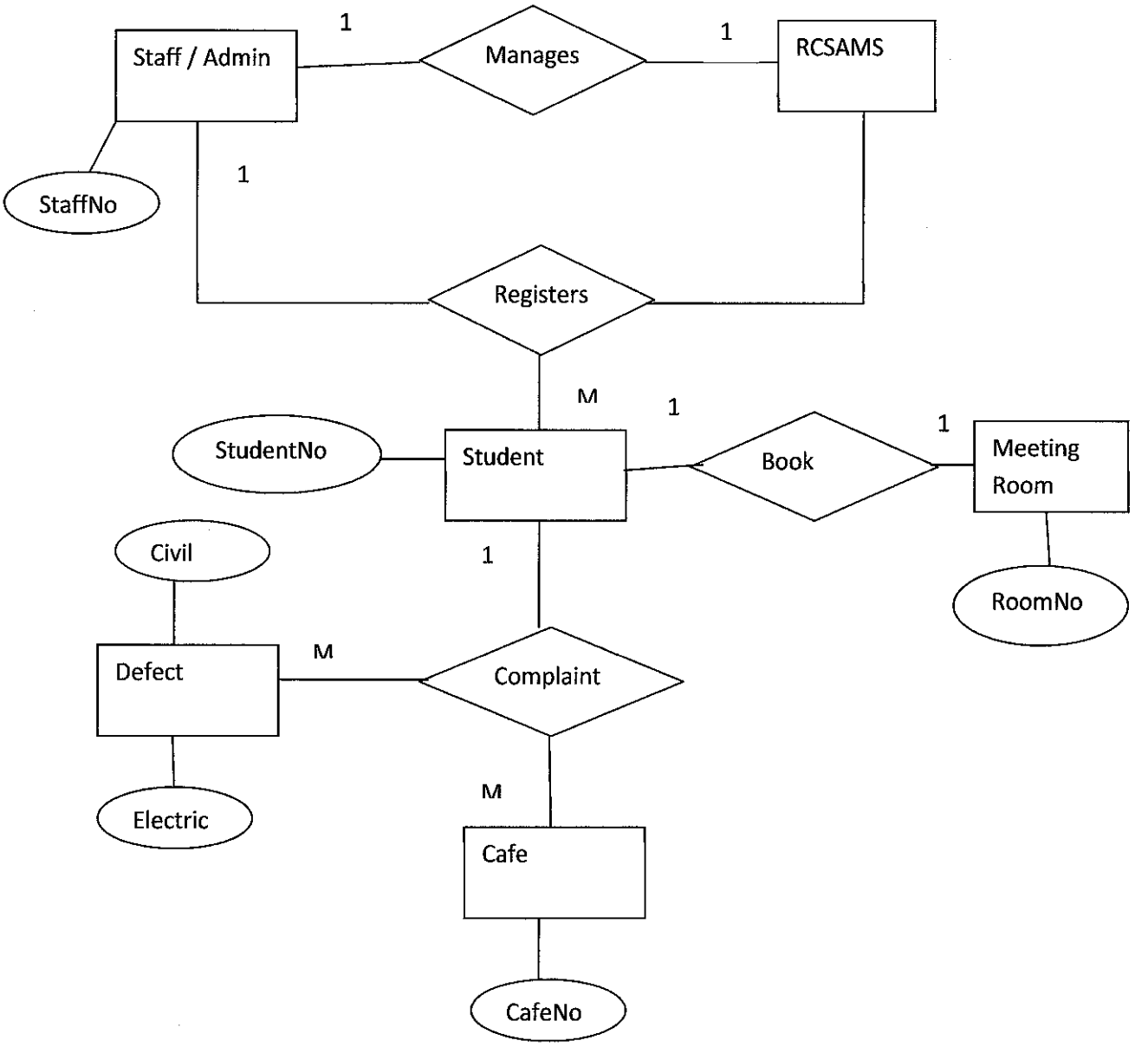


Figure 20 : ER Diagram of the system

3.3 Tools

Research on technical matters explains on the reasons of certain programming language, database server, and other technical matters are chose. Among the tools used are :

3.3.1 Hardware / Software requirements

- Standalone server. The server can be used as in UTP server as it is free or the server and web hosting can be bought for a year. It will cost around RM 100 for a year usage.
- Adobe DreamWeaver. Use the application to edit the interface and view the result of the codes. Very useful in terms of interface development.
- Adobe Photoshop CS. This application is used in order to edit photos before place the photos in the system.
- AppServ ; Apache/Php/MySQL open source software installer packages. The most important element for the system. Using PHP codes as it is open source codes which supports MySQL as the database of the system. PHP is one of the most popular server side scripting languages running today. It is used for creating dynamic webpages that interact with the user offering customized information. PHP offers many advantages; it is fast, stable, secure, easy to use and open source (free). PHP is derived from Hypertext Preprocessor. PHP is a server side technology the user does not need any special browser or plug-ins to see the PHP in action. The beauty of PHP lies in its simplicity. It is easy to understand and learn, especially for those with backgrounds in programming such as C, javascript and HTML. The language is similar to C and Perl so that anyone with a background in either C or Perl programming will feel comfortable using and understanding PHP. PHP also runs on just about every platform including most UNIX, Macs

and Windows versions. PHP doesn't use a lot of the system's resources so it runs fast and doesn't tend to slow other processes down. It is typically used as an Apache module, written in C, so it loads and executes quickly. It works well with other software and can be quite fast. PHP is also fairly stable and since it is open source, the PHP community works together to fix any bugs. The community offers technical support and continuously updates the code further expanding PHP's capabilities. PHP offers many levels of security to prevent malicious attacks. These security levels can be adjusted in the .ini file. Another key advantage of PHP is its connective abilities. PHP uses a modular system of extensions to interface with a variety of libraries such as graphics, XML, encryption, etc. In addition, programmers can extend PHP by writing their own extensions and compiling them into the executable or they can create their own executable and load it using PHP's dynamic loading mechanism. In addition to extensions, PHP has tons of server interfaces, database interfaces and other modules available. Of the server interfaces, PHP can load into Apache, IIS, Roxen, THTTPD and AOLserver. It can also be run as a CGI module. Database interfaces are available for MySQL, MS SQL, Informix, Oracle and plenty of others.

Chapter 4 : Results and Discussion

4.1 Prototype Development / Modelling

The timeline given has been fully utilised to develop the system. The current status of system prototype is now in progress and updated from time to time. The basic function of the system is currently developed. Most of the time spent was during the planning and development phase as it is not that easy to find suitable codes running in the system in order to fulfil the user's requirement.

4.2 Database

The database used is MySQL which includes the command of creating database, use database, creating tables, insert, and the usage of primary key. Few tables has been created including the data type been finalized into the database. This includes the user data, meeting room data, defect data and meeting room data.

4.3 Prototype Development Design and Implementation

The system first been developed in the localhost. After that it been transferred to personal hosting as the usage of email notification function needs to be done using world wide web.

The current design of the prototype is as per below :

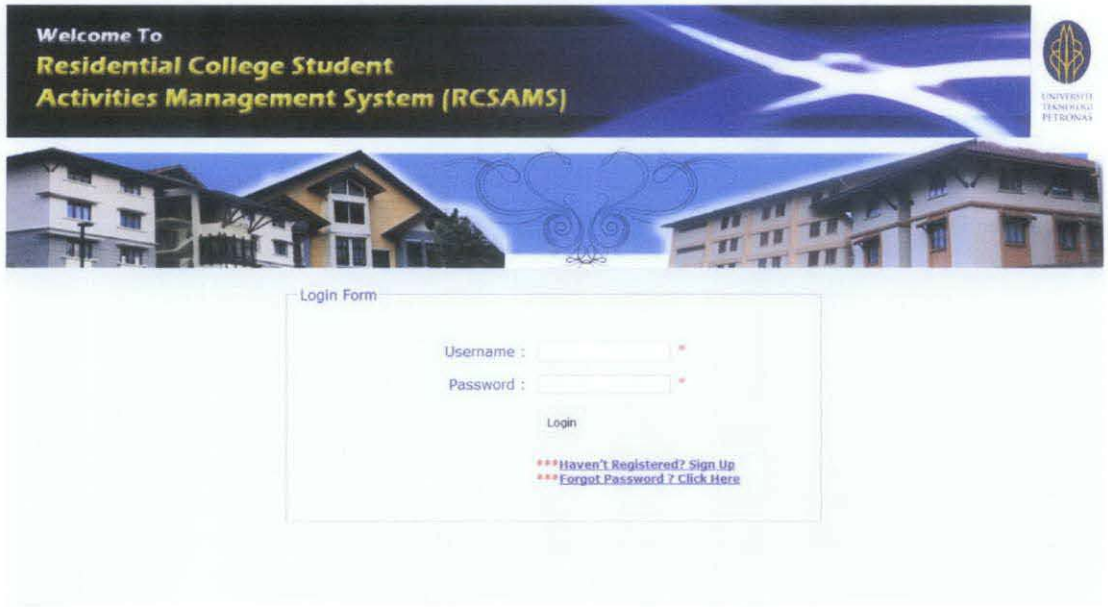


Figure 21 : Main Page (Login)

The main page is where the user and admin will login to the system using own username and password. The password is been encrypted using certain command of code. If the users haven't registered to the system, they need to register first before using the system. If the user forgot their password, they can get new password and login to the system using the new password. The password is encrypted using the function 'MD5'. This is for security purposes.

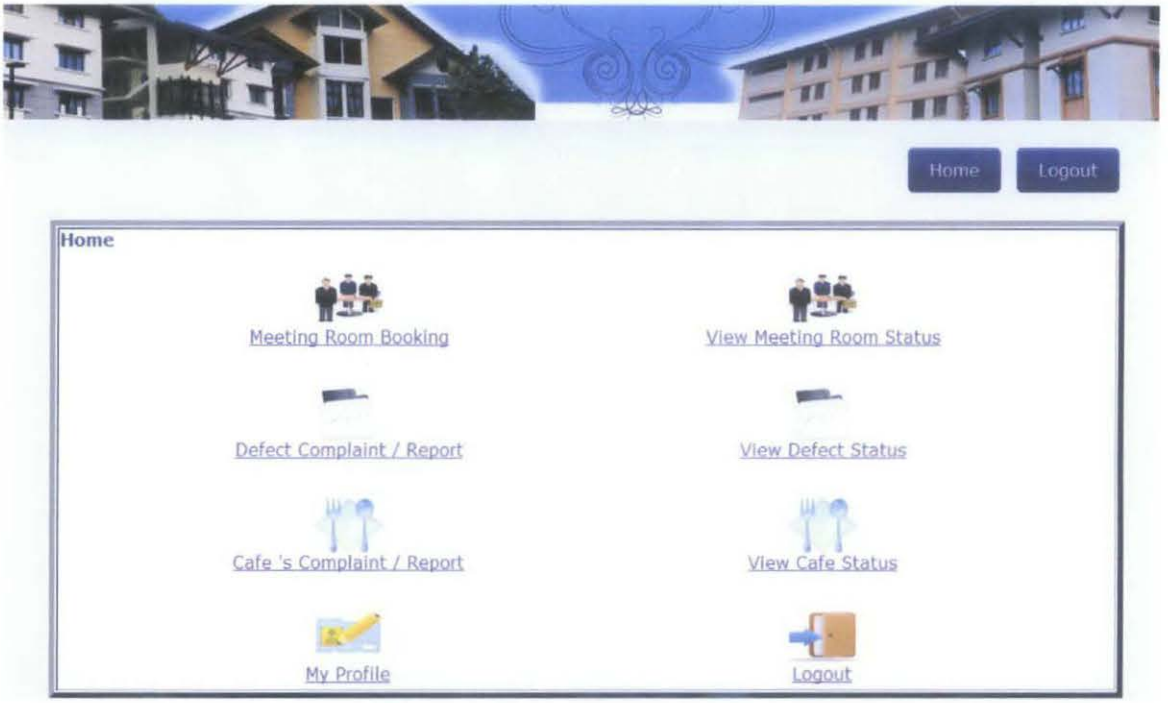


Figure 22 : User Homepage

This is the homepage after user has logged in. The users could choose to book meeting room or to view meeting room status that they have booked. If admin has updated the status, they can get the latest status of meeting room booked. User also can report on defects and view defect status. They can make cafe' complaint and also view the cafe status. User can simply edit their profile using the system.

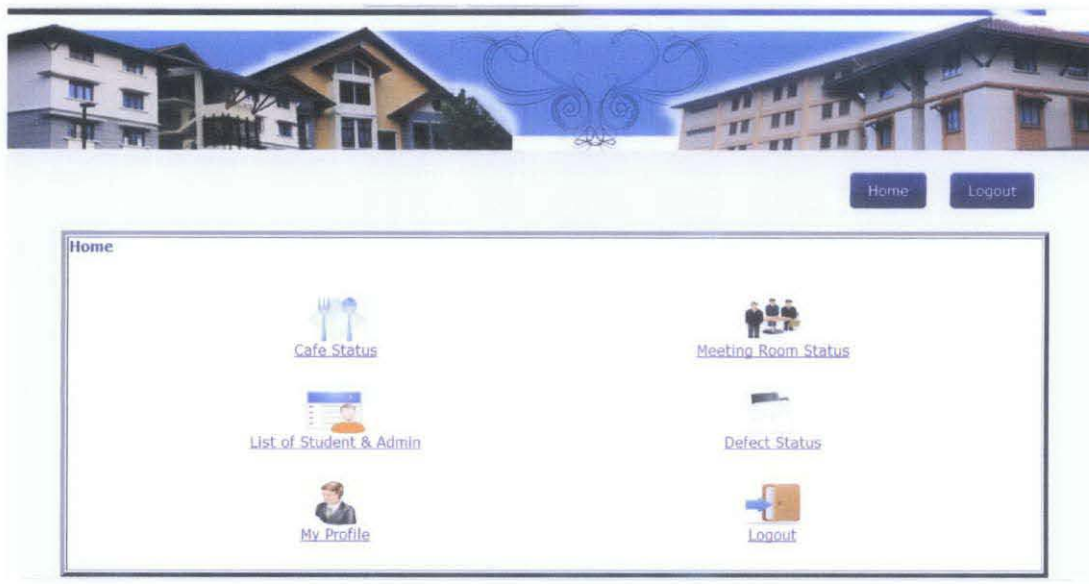


Figure 23 : Admin Homepage

If the admin logged in to the system, admin could view his/her profile, view the list of students, view and update the cafe status, meeting room status, and defect status. After admin has updated any of these statuses, user will receive an email notification on the information updated.

Figure 24 : Error checking mechanism (room has been booked)

The system also has function to check whether the meeting room has been booked on the date. If it has been booked, the system will not allow the meeting room to be booked again.

Figure 25 : Error checking mechanism (Start date greater than End Date)

The system also does not allow the user to book meeting room with the start date greater than end date.

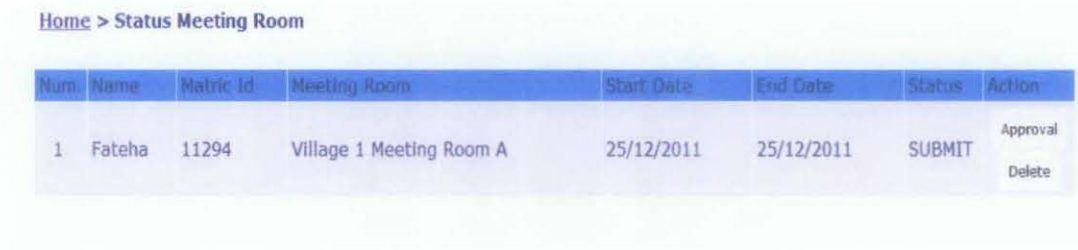


Figure 26 : Update meeting room status

The admin could login and update the status of meeting room, cafe complaint and defect report. The current status which is 'SUBMIT' appeared because the admin has not update the status yet. When the admin click 'Approval' button, the admin could update the status to new status. Either the meeting room booking is approved or rejected it can be updated after click the approval button. The admin may give reasons why the meeting room booking request being rejected (if rejected). After the admin has updated the status, user (student) will receive email notification notifying students with the new status. The email notification of updated status also applies with cafe complaint and defect report.

Figure 27 : Admin update status

Figure 28 : Email Notification ; Updating the current status

Figure 29 : Admin could search users or add new user

4.4 Acceptance of the user towards the system

After surveys had been made and few feedbacks have been received, most of the students gave positive reaction towards the system. The system is simple and easy to be used. The benefit of having such system where students could make meeting room booking, cafe complaint and defect report from anywhere, anytime makes daily activities much more organized and efficient. Users who have smart phones also can online and use the system anytime they wish. The email notification also received positive reaction as users can have the updated information as soon as the admin has approved / update the data.

Chapter 5 : Conclusions and Recommendation

The main purpose of the system development is to achieve its objective and satisfy the needs of the users and requirement needs. By developing the system, it is hoped that the process of defect problem complaint, meeting room booking, and cafe complaint can be done in a better way instead of having it manually. Initially, before develop the system the author has discussed with few RC staffs on type of system that they need to be implemented. The system's idea is also based on the author's experience, where the author needs to make a meeting room booking. After went to V2 residential office the author finds out that the meeting room was occupied. Author then walks again to V5 residential office to check and make another booking. The location's distance is not that near. This actually waste a lot of time. By having manual system may increase the probability of data redundancies. The security for manual system is also not that good. This is because others person can view the personal details of person who lodge the report. By having the system, it is hoped that the RC staffs or the administrator could easily manage all the data. Having the system, which can be used 24/7 will increase the efficiency usage of time, and the system needs user to log in makes the security of data is better. Manual system also consumed a lot of space comparing to online system. This system is developed in hope that it will help the admin and students making their daily tasks easier. The next phase is construction and integration phase. The construction of the system needs to be done after the design phase. The integration is more on integration both web pages and system into the web – based system, and testing before could really publish in the internet.

5.1 Recommendation of future work expansion / enhancements

The suggested future work for expansion and continuation includes :

- Improvement on the system interface of its interactiveness. The system is currently has simple design due to certain limitation. This includes the limitation of time, money, space and bandwidth of the server/hosting. As this is only a prototype which focuses on its main functionality, the main function needs to be working first before designing a very impressive interface. For example, to include flash banners the developer first need to study on how to develop one, and

sometimes the usage of too much animation could slow down the system. This might cause inconvenience to the users to use the system. A better hosting/server which has larger amount of space and better bandwidth might cost a lot of money to be considered.

- The system could be build and integrate with mobile system. This means that the students or admin could use and log into the system anywhere they want. The admin could endorse any request form the students using phone. Other than that, notification system using phone is also better to be done. For example, a student reported on the defects problem. After that, the system will automatically update the status of the report to the maintenance people. After the maintenance people had received the report, a notification should be received by the student that the report is in progress and had been accepted by the maintenance people. Currently it has not been done due to the trial installer software of the mobile system notification only can be used for certain period which might not be sufficient for the system development. To buy the software might cost more money and other than that, a GSM modem needs to be used for SMS notification. The GSM modem also could cost more money.

- The other suggestion is that the database of the system needs to be synchronized with the database of student affair department or registrar department. This will make the system more accurate and will ensure the integrity of the data from the user who used the system.

- The issue of server down and network down normally happens. The system could not being accessed or log in if the server is down. This system as well as it database needs to installed backup server to ensure the efficiency of the system. One way of maintaining the database is to have the database both of the server being updated frequently to avoid data loss. If the main server goes down, the system will be automatically being redirected to the backup server along the updated database.

- The system also can be integrated with payment system. For example, if the student being fined due to late returning the keys or having other residential related summons the students may pay it through online transaction. Such system should provide online payment system, such as money transaction from CIMB clicks to RC account.

The fact that the development of the system will be useful and beneficial is one of the most important things. It is hoped that others will support the development of such system and use it in the future.

References

[1] Focal Person : Ms Noor Idahwati (2011) Supervisor Village 1, UTP

[2] Focal Person : Madam Roshidah (2011) Supervisor Village 3, UTP

[3] Focal Person : Ms Ikin (2011) Supervisor Village 5, UTP

[4] G.E Gorman, (2006), "*What does online means in 2006?*" 30(5)

[5] Associate Prof. Zawiyah M. Yusof, (2008), "*Nurturing attitudes for records management in Malaysian financial institutions*" 19(3)

[6] Mardene Rosalee Carr, (2005), "*An analysis of the feasibility of a paperless environment-the case of Mona School of Business*" 16(4)

[7] Nigel Craig and James Sommerville, (2007), *"Records management and information processing on construction sites using digital pen and paper"* 17(3)

[8] Howard Falk, (1999), *"Storing and viewing electronic documents"* 17(1)

[9] Alan Dennis, Barbara Haley Wixom, and David Tegarden, (2010) *"Systems Analysis and Design with UML-An object oriented approach"* John Wiley & Sons, Inc.

[10] Brendan Murphy, (2002) "*Dreamweaver 4 : Made Simple*" Jordan Hill, Oxford

[11] Taruna Goel and Rachna Chaudry (2002) "*Microsoft VBA : Professional Project*" Premier Press

[12] Julie C. Meloni (2004) "*SAMS Teach Yourself PHP, MySQL, and Apache*" Sams Publishing

[13] University Curtin, Sarawak; Accommodation Booking (2011) retrieved from *<http://www.curtin.edu.my/future/accommodation/ApplicationForm.php>*

[14] Hotel Booking System Example (2011) retrieved from *<http://www.fileguru.com/Online-Hotel-Booking-System/screenshot>*

[15] Ravi Kumar Jain V (2006). *Decision Support System : Development and Application.* India. The Icfai University Press.

[16] Luke Welling (2011). *PHP and MySQL Development.* USA. Pearson Education.

Appendices

1. System Prototype Interface

2. Residential College Forms/Documents

Sign Up Page :

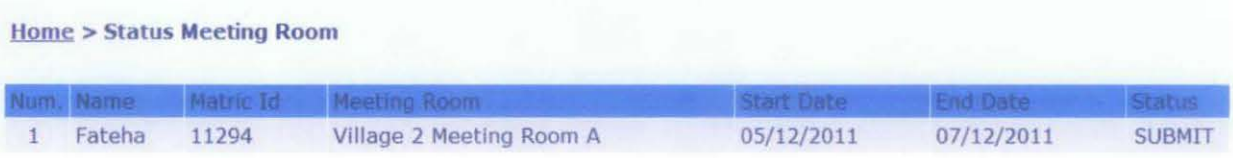
Forgot Password :

Meeting Room Booking :

Defect Complaint :

Cafe' Complaint :

View Meeting Room Status :



STUDENT SATISFACTION SURVEY ON UTP CAFETERIA

UTP is continually seeking to improve the quality of services offered to students. Please spare a few minutes to answer the questions below. Your feedback is very important to us and will be treated with strictest confidential

Your Village | 1 | 2 | 3 | 4 | 5 | Old V |

Gender | M | F |

Status of study | Foundation | | UG | | PG |

Nationality Malaysian International

Please rate the service provided by the café by circling the appropriate number in the box.
You may not anwer the question on certain café if you have not eaten there.
Please use the following rating:

Not Satisfactory | 1 | 2 | 3 | 4 | 5 | Very Satisfactory

Old Village RZM Cafe

1 Courtesy and friendliness of the staff	1	2	3	4	5
2 Price of food sold	1	2	3	4	5
3 Cleanliness of café and service area	1	2	3	4	5
4 Variety of food served	1	2	3	4	5
5 Taste/flavour of food served	1	2	3	4	5

Comments, if any. _____

Student Centre (KakSufiah - nasi campur)

1 Courtesy and friendliness of the staff	1	2	3	4	5
2 Price of food sold	1	2	3	4	5
3 Cleanliness of café and service area	1	2	3	4	5
4 Variety of food served	1	2	3	4	5
5 Taste/flavour of food served	1	2	3	4	5

Comments, if any. _____

Student Centre (Kafe Paprika -Western Food)

Courtesy and friendliness of the staff	1	2	3	4	5
Price of food sold	1	2	3	4	5

BORANG PEMERIKSAAN GERAI/KAFETERIA

)KASI: _____ PEMERIKSAAN MINGGU: 1 / 2 / 3 / 4 / 5 BULAN: _____ TAHUN: _____ TARIKH PEMERIKSAAN: _____

ota: Skor: G-"Green" (Baik) Y-"Yellow" (Memuaskan) R- "Red" (Tidak Memuaskan)

ANDATORI : 1. Suntikan kesihatan 2. Tidak merokok di kawasan dapur dan kaunter

BIL.	PERKARA	Skor (sila tanda /) G	Y	R	BIL.	PERKARA	Skor (sila tanda /) G	Y	R
1	Uniform, apron, kuku, rambut dan penutup kepala				11	Meja penyediaan makanan sentiasa dilap & bersih			
2	Lantai dapur tidak basah				12	'Exhaust fan'/kipas/lampu tidak kotor atau rosak			
3	Bekas/pinggan dan sisa makanan tidak terdedah				13	Susunan makanan dan minuman yang kemas/menarik			
4	Tong sampah sisa makanan dan plastik disediakan				14	Bahan mentah/kering yang kemas/tidak bercampur aduk			
5	Ruang sampah/tong sampah bersih dan tidak berbau				15	Peralatan dapur seperti periuk dan kuali bersih/tiada karat			
6	Peti ais dan 'freezer' bersih dan berfungsi				16	Penggunaan peralatan elektrik tidak melampaui beban			
7	Kaunter sajian bersih dan makanan bermasak ditutup				17	Saliran longkang & sinki bebas dari tumpahan sisa makanan			
8	Tiada vektor seperti lalat, lipas dan tikus				18	Perangkap gris dicuci & tiada bau			
9	Memakai kasut yang sesuai				19	Dinding, tingkap dan siling berkilat, bersih dan tiada sawang			
10	Penyimpanan & pengendalian bahan mentah				20	Tong gas mempunyai troli & paip saliran gas tidak bocor			
	Jumlah skor					Jumlah skor			

JUMLAH SKOR KESELURUHAN: G ☐ Y ☐ R ☐

BIL.	PERKARA	Skor (Y/R)	Komen/catatan* (Sila guna lampiran berasingan yang disediakn jika ruang tidak mencukupi	Jangkamasa untuk pembetulan & tarikh jangka siap

emeriksa 1 (UTP): Pemeriksa 2 (UTP): Dipersetujui oleh (operator kantin):

ama: Nama: Nama:
abatan: Jabatan: Syarikat:

aya telah memeriksa dan mengesahkan komen-komen di atas diperbaiki pada / / ..... (Tarikh)
an berpuashati terhadap tahap pembaikan yang telah dibuat.

emeriksa 1/2 (UTP): Disahkan oleh (operator):

ama: Nama:

Salinan borang ini telah dihantar ke Jabatan Kesihatan, Keselamatan & Persekitaran (HSE)

Pemeriksa 1
Nama: Tarikh:

Diterima oleh (HSE):

Nama: Tarikh:

utih) - Pemeriksa 1 (Biru) - Pemeriksa 2 (Hijau) - Jabatan HSE

Village 1	Kafe Sajian Ria Village 1, Universiti Teknolog PETRONAS	En Ali Harun	016.5552.124
Village 2 (Malay)	Gerai Kak Sufiah No 43, Kampung Serkai Jadi, 31750 Tronoh, Perak.	Pn Sufiah Othman	012.5411.238
Village 2 (Western)	Kafe Sayang Village 2, Universiti Teknologi PETRONAS	Pn Maimun Yusof	012.5059.525
Village 3 (Malay)	Pocket C Café n Catering 71, jalan Maju 3, Taman Maju, 31750 Tronoh, Perak.	Pn Zalina Ismail	016.5464.431
Village 3 (Western)	Aroma Café Aroma Bakeries & Caterers, 18, Taman Maju, 31750 Tronoh, Perak.	Pn Norma M Saleh	019.2302.055
Village 4 (Malay)	Restoran Anjung Rawa Village 4, Universiti Teknologi PETRONAS	En Chairul Anwar	017.5276.119
Village 4 (Western)	Sinar madina Village 4, Universiti Teknologi PETRONAS	Pn Salina Sadhree	016.5404.341
Village 6	Rifa Maju Enterprise 29 Regat Rokam 2 Pekan Razaki 31350 Ipoh	En Farizul A Malek	016.5462.042
Student Centre (Malay) VS	Sinar Selera No 11, 1st Floor, Jalan Putra Mahkota, 7/6B Putra Heights, 47650 Subang Jaya, Sel.	En Manshah Othman	016.2258.091
Student Centre (Western)	Kafe Paprika Pocket D, Universiti Teknologi PETRONAS	Pn Nuraini Yusof	012.3735.020

ontract - new Village 5

Malay Kitchen	Mokkien Ventures Sdn Bhd No 99A, jalan Wira Jaya, Taman Ipoh Jaya Timur 1, 31350 Ipoh, Perak.	Pn Nor Azliza M Said	019.5555.548
Western Kitchen VS	Anna Setia Enterprise No 3, Jalan PP4, Bandar Universiti, Seri Iskandar, 31750 Tronoh, Perak.	Pn Rohana Wabong En Syed A Karib	012.2481.870
Noodles Kitchen	Selera Matang Enterprise Berhadapan Rumah JKR 625 Jalan Besar 31750 Tronoh, Perak	En Kamaruddin Baini	012.5354.855
Oriental Kitchen VS	Al Quds Café No 10, Lot 134, Jalan Mat Saleh, Kpg Melayu Bali, 31750 Tronoh Perak	Pn Noriah Yunus	017.5048.900
Beverages Outlet VS	JFV Enterprise / Water World No 162 A, Jalan SM 1A/5, 32040 Seri Manjung, Perak.	En Johari Hashim	019.5775.357

Indian / Sinar Selera

Arabic
1001 Nights
Restaurant