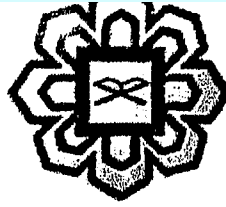




الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



USRAH DATABASE SYSTEM

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ABSTRACT

International Islamic University Malaysia is the only university in Malaysia that takes into accounts both academic performance and also Islamic Fundamental Knowledge. The University aims to produce student with integrated knowledge, intellectual and spiritual, who can fulfill the needs for this world and the Hereafter.

To pursue the mission, IIUM obliged its students to two Islamic based activities, which are Usrah and Ibadah Camp. These two activities are made compulsory for all students as the graduation requirement. Each activity consists of several sub- activities, with marks allocated to them, will be summed up to produce the final result. Since marks will be allocated to each student's performance, so there is a need for a system that can simplify the task of recording the marks for all students in IIUM.

So, Usrah Database system was developed in order to fulfill the need for a computerized system to handle both students' activities in terms of recording, calculating, retrieving, reporting and manipulating the data. The development methodology selected is prototyping. The system consists of are several modules, that is Data Entry module, View Result module and Report module. By having this system, the process of producing and keeping the database of students' result for Usrah and Ibadah Camp will be more efficient and able to optimize the usage of computer technology.

ACKNOWLEDGEMENT

In The Name Of Allah , The Most Gracious The Most Merciful

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BMIS, IIUM

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CHAPTER 1 INTRODUCTION

1.1 PROJECT BACKGROUND

Usrah Database System is a prototype system, which was built as a new system for Student Affairs And Development Division of IIUM (STADD). STADD is one division in IIUM that monitors all students' activities inside or outside the campus. There are a few units in STADD but this system is built for the use of Training and Tarbiyyah unit only.

Training and Tarbiyyah is a sub unit in STADD that monitors Usrah, Ibadah camp and other training for students. Usrah and Ibadah camp are two main religious activities in IIUM, which are compulsory to each student. Marks are given to both activities. These two activities have been made as a graduation requirement, which means that, students who fail to accomplish it, will not be allowed to graduate.

Since there are a big number of students in IIUM, the tasks of preparing the marks will be very tedious if it is done manually, so this system is built as a platform of calculating, recording and retrieving Usrah and Ibadah Camp's results for each student. So it involves three stages starting from data entry stage, view results stage and lastly report stage.

1.2 OBJECTIVES

The objectives of this project are:

1. To manage all students' record of usrah and Ibadah camp result in a single database. So that, there will be no more filing system.
2. To have a systematic system that is able to manage and keep historical results for each student. This mean each student will have a record of all his or her results starting from first year until final year.
3. To minimize problems with current system by producing a more effective computerized database system. By using filing system, the staff had wasted so much time and effort in keeping and searching for the records manually.

1.3 SCOPE

Usrah Database system is focusing on single end users, which is the Training and Tarbiyyah staff. It provides a system for data entry processing and will be used to record a historical Usrah and Ibadah Camp grades. Besides, they also can do calculations, evaluation, updating, deletion, give remarks and produce transcript to the students. Details on each student are taken from the Table Student in Admission & Record Department. But as a prototype system, this project had created a sample of fives students for dummy data.

1.4 BENEFITS

The benefits of the system are as follows:

1. Have a database of all records.

By recording the Usrah and Ibadah Camp's grades in the database, Training and Tarbiyyah staff needs not to flip through various paper works to check whether students are viable for graduation rights.

2. Increase awareness for students.

Before, students may view their result through notice board at their own colleges. The result will be displayed at the beginning of new semester. Meaning to say, student can view only their latest result. But through this system, students may view their previous results, so that they know their performance whether increase or decrease.

3. Increase security.

Currently, there is no security criteria imposed by the staffs. They only used Microsoft Words and Excel to record all the data. The staffs also used diskettes to store the data, which can be easily taken by unauthorized person. So, one of the benefits from Usrah Database System is the use of password to log into the system. It will give permission to log on the system only to the authorized user so that the data will be secured.

1.4 ORGANIZATION OF THE REPORT

In this report, there are seven chapters in which each chapter will be discussing a different topic. As a beginning of the report, **Chapter 1** will give the overview of the project including its background, objectives, scope and benefits.

Chapter 2 will be covering various system methodology solutions, which had been used in today's technology. Selection of project's methodology is also discussed here, which is prototype system development.

Chapter 3 will cover project methodology involving the software tools used, system design strategy and project plan.

Chapter 4 will be covering the design phase of the prototype system, which includes the input/output design and databases design.

Next, **Chapter 5** will be covering the development of the prototype system. This chapter is the most important part in which it will discuss the whole steps involved in the development phase. It includes the development of the screens, databases, coding, testing, feedback from user and the implementation of the prototype.

Lastly, as a closing chapter, **Chapter 6** will be covering the limitations and recommendations for future research or development of the Usrah Database System.

CHAPTER 2 SYSTEM METHODOLOGY JUSTIFICATION

2.1 INTRODUCTION

This chapter presents the system development methodology used for Usrah Database System. Systems development methodology is a standard process followed in an organization to conduct all the activities necessary to analyze, design, implement, and maintain information systems. Most organization uses it to develop and support their information systems. Like many processes, the development of information systems often follows a life cycle. However there are many types of system development methodology, which can be considered. The following sections will discuss some of the common system development methodologies. This chapter also discusses the tools and techniques used in this project.

2.2 SYSTEM DEVELOPMENT METHODOLOGY SOLUTIONS

The four widely used methodologies to develop information system are the System Development Life Cycle (SDLC), Prototyping, Joint Application Design (JAD) and Participatory design. Each one is discussed below.

2.2.1 SDLC

System Development Life Cycle (SDLC) is the traditional methodology used to develop, maintain, and replace information systems. It has seven phases that we have to follow in order to develop a system (Hoffer, George and Valacich, 1999). The first phase in the SDLC is called project identification and selection, in which

an organization's total information systems needs are identified, analyzed, prioritized and arranged.

The second phase is project initiation and planning in which a potential information systems project is explained and an argument for continuing or not continuing with the project is presented. A detailed plan is also developed for conducting the remaining phases of the SDLC for the proposed systems.

The third phase of the SDLC is analysis in which the current system is studied and alternative replacement systems are proposed. The fourth phase of the SDLC is Logical design in which all functional features of the system chosen for development in analysis are described independently of any computer platform. The idea is to make sure that the system functions as intended.

Next, the fifth phase of SDLC is Physical design in which the logical specifications of the system from logical design are transformed into technology-specific details from which all programming and system construction can be accomplished.

The sixth phase of the SDLC is implementation in which the information system is coded, tested, installed, and supported in the organization. During this phase, the physical system specifications are turned over to programmers as the first part

of implementation phase. Supports are usually in terms of finalization of documentation and training programs.

Lastly, the final phase is maintenance in which an information system is systematically repaired and improved. When system is operating the user might encounter some problems or defects, so this can be solved during implementation where programmers can make changes and modification to the system.

2.2.2 PROTOTYPING

Prototyping is another approach to system development, which is commonly used when the programmer wants to try first how the system may operate. By definition, Prototyping is an iterative process of systems development in which requirements are converted to a working system that is continually revised through close work between and analyst and users (Hoffer, George and Valacich, 1999).

Using prototyping as a development technique, the analyst works with users to determine the initial or basic requirements for the system. The analyst then quickly builds a prototype. When the prototype is completed the users work with it and tell the analyst what they like and do not like about it. The analyst uses this feedback to improve and take a new version back to the user. The iterative process continues until the users are relatively satisfied

2.2.3 JAD

Joint Application Design (JAD) is a structured process in which users, managers, and analyst work together for several days in a series of intensive meetings to specify or review system requirements (Hoffer, George and Valacich, 1999). The advantage is, group members are more likely to develop a shared understanding of what the IS supposed to do.

2.2.4 PARTICIPATORY DESIGN

Participatory Design (PD) is a systems development approach that originated in Northern Europe in which users and the improvement in their work lives is the central focus. According to Hoffer, George and Valacich (1999), each user has an equal voice in determining system requirements and approving system design.

2.3 SELECTION OF METHODOLOGY

The system development method that is to be used to develop Usrah Database System is **Prototyping** approach. This method is chosen because of its iterative characteristic, which allows the process to be rebuilt according to user feedback before the real system is implemented as can be seen in Figure 2.1

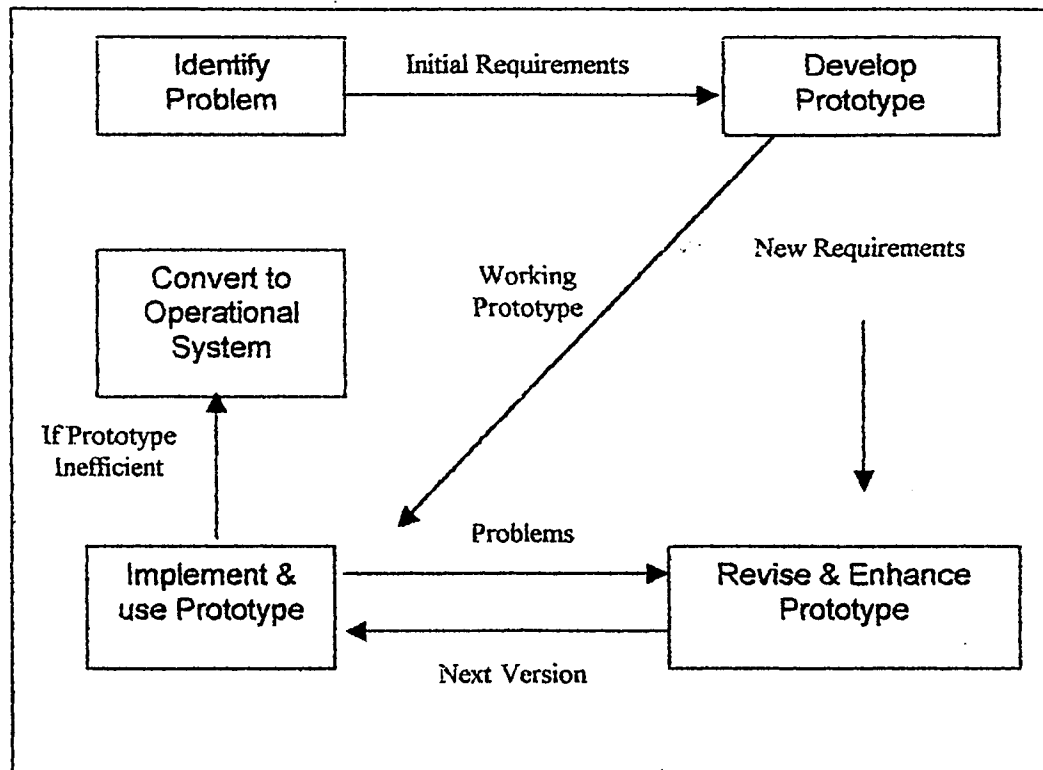


Figure 2.1 Prototype (Hoffer, George and Valacich, 1999).

Prototyping was selected because it allows the analyst interacts with the user to determine the problem and the initial requirements for the system. After all the requirements have been gathered, then the analyst quickly builds a prototype. When the prototype is completed, the analyst will deliver it to the users so that they can work with it and then tell the analyst whether they like it or not.

If the user satisfied with it, then the prototype will be implemented (see Figure 2.1) otherwise; the prototype has to be revised to enhance its performance. The process continues until the users satisfied with the prototype. Then it can be implemented.

Basically this prototyping approach has two advantages, first because of the large extent to which prototyping involves the user in analysis and design. The other advantage is its ability to capture requirement in concrete, rather than verbal or abstract, form. Because of these advantages, prototyping was selected as the system methodology for Usrah Database System.

2.4 SOFTWARE TOOLS

2.4.1 Windows Millennium Edition (ME)

Windows Millennium Edition (ME) is the latest version of operating system.

2.4.2 Microsoft Project 98

Application software that enables user to create his own project plan by using Gantt Chart or Pert Chart. Microsoft Project 98 has been used to design the Usrah Database System's project plan, which is attached in the appendix.

2.4.3 Microsoft Visio Version 5

Application software that can be used to draw context diagram, data flow diagram and entity relationship (ER) diagram.

2.4.4 Microsoft Access 2000

Microsoft Access 2000 had been chosen as the DBMS for this system. It is application software that enables user to create databases and programs to track and manage information.

2.5 SYSTEM DESIGN APPROACH

Usrah Database System follows the Relational Database design approach in which tables are used to represent all the entities involved. It comes for several objectives. First, relational model was developed to allow a high degree of data independence. Application programs must not be affected by modifications to the internal data representation, particularly by the changes of file organizations, record orderings, and access paths.

Secondly, the objective of relational model is to provide substantial grounds for dealing with data semantics, consistency, and redundancy problems. Through the seminal paper, the concept of normalization was introduced in which relations that have no repeating groups. Lastly, relational model is developed to enable the expansion of set-oriented data manipulation languages.

2.6 SUMMARY

In system development process, the analyst is not limited to one type of system methodology; in fact there are many types of methodology that can be followed. However the selection of the best methodology is depends on the functionality and characteristics of the new system that is to be developed.

The decision to choose all these tools and methodology has been made parallel to the requirements of the Usrah Database system itself. Because it deals with a lot of data, so data independencies criteria is very important to ensure the effectiveness of the system.

CHAPTER 3 SYSTEM ANALYSIS

3.1 INTRODUCTION

This chapter is about system analysis phase in which the determinations of the requirements were done. It also covers the structuring of the requirements through process modeling and data modeling.

3.2 REQUIREMENTS DETERMINATION

The first step in analysis is to gather all the information about the system. The purpose of requirements determination is to catch information on what the system should do as a whole. There are many techniques of gathering the information however in this project, the fact gathering techniques used are interview and document analysis.

3.2.1 INTERVIEW

Through the process of interview, a few end-users have been asked individually about the current procedure and system. The users who have been interviewed were from STADD Br. Anas Shamsuddin, its IT manager cum staff for Training & Tarbiyyah Unit , and Ustaz Ismail Chong Abdullah, Usrah Coordinator in Training & Tarbiyyah Unit. These two staffs have been asked about Usrah and Ibadah Camp information in details. For College, Madam Sakinah Jusoh, the Principle of Sumayyah College also has been interviewed about their current process of calculating and recording the result.

Questions during the interviews can be found in the Appendix B.

3.2.2 DOCUMENT ANALYSIS

They also provide the documents containing all the information about the Usrah and Ibadah Camp such as the objectives, grading and marking systems. The outcomes from the interview and document analysis are the overall view of the Usrah and Ibadah Camp process, the problems faced and the required system it supposed to have to overcome the problems.

3.3 RESULTS/DATA GATHERED

From the interviews and documents analysis being conducted, these are the information about the system.

3.3.1 INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA (IIUM)

IIUM is just like typical universities all over the world, which encourages their students to participate in any societies and clubs offered by the university itself. The reason is that the university would like to have students who can excel both in society and their studies.

Missions of IIUM is simply **III CE** or '**Triple ICE**' :

- **Integration**
- **Islamization**
- **Internationalization**
- **Comprehensive**
- **Excellence**

The vision of IIUM is:

“ IIUM aims at becoming a leading international center of educational excellence which seeks to restore the dynamic and progressive role of the Muslim Ummah in all branches of knowledge”

3.3.2 STUDENT AFFAIRS AND DEVELOPMENT DIVISION (STADD)

In order to accomplish their mission, one division named Student Affairs & Development Division had been established. The division is commonly known as STADD among the IIUM residence. It has its own vision and mission and has a big organization structure, which can be seen in the *APPENDIX C*.

The **vision** of STADD is to become an excellent student service division for the development of Islamic personalities and leaders. Their **mission** is to be a friendly partner in the progress of the students by supporting and initiating policies, activities and programmes that create, cultivate and strengthen leadership qualities and Islamic akhlaq and adab in them and enhance their ummatic vision; enabling them to restore and sustain the leadership of Islamic civilization in the world.

The *objectives* of STADD are:

1. To enhance and realize students' full potential by planning, executing and updating training programs effectively and impress upon them with the significance of continuous self development
2. To achieve integration, co-operation, mutual respect and understanding among all students regardless of their ethnic background for the development of a prosperous ummah.
3. To excel in student competitive activities organized nationally as well as internationally.
4. To create a conducive environment in which balanced and integrated persons could be developed through excellent leadership and professional management services.
5. To enhance social change through active involvement of students in community oriented programs.
6. To cultivate the culture of disciplined and healthy lifestyle.

3.3.2.1 Structure of STADD

The main organization structure consists of the Dean Of the Division, Dr. Rahmatullah Khan Abdul Wahab Khan. He is assisted by an administration assistant, Farhana Zainuddin and an executive officer, Norshamsinar M. Nor. *Please refer to the Appendix C.*

STADD is divided into 7 sub-divisions which are:-

- Training & Tarbiyyah Department.
- Special Training & Community Services Department.
- Student Societies/ clubs & association Department.
- International & Inter-cultural Affairs Department.
- Counseling & Career Guidance Department.
- General Administration Department.
- Sports, Recreational & Martial arts Department.

Training & Tarbiyyah Unit is in charged of Religious activities in IIUM. Its main tasks are to handle the Usrah activities and Ibadah Camp. They also conduct religious talk, forum and so on. Special Training & Community Services Unit organizes seminar and courses on training. Students Society, clubs and association concerns about students' activities.

International & Inter-cultural Affairs Unit in charged on International students activities and welfare. Counseling & Career Guidance Unit is handling students' problems and organizes courses and seminar on career.

General Administration Unit in charged on the whole STADD's administration. Lastly, Sports, Recreational & Martial Arts Unit is the only unit that handle all the sports, recreational and martial arts activities. This unit also is the only unit, which is located at Sports Complex, not in the STADD office.

3.3.3 TRAINING AND TARBIAH UNIT

Foundation:

"Knowledge shall be propagated in the spirit of Tawheed leading towards the recognition of Allah as the only absolute, the creator and master of mankind"

3.3.3.1 Structure of Training & Tarbiyyah Unit

In order to achieve the mission and vision of IIUM, Training and Tarbiyyah unit is developed as a sub-unit in STADD, which handles students' religious activities mainly Usrah, Ibadah Camp and other training courses. The Head of Training & Tarbiyyah unit is Dr. Mohammad Akram Laldin. He is assisted by an administrative Assistant, Madam. Merhamah Mohd. Iza. *The structure of this unit can be found in the Appendix D.*