UNIVERSITI MALAYA

STUDENTS ADVISEE SYSTEM (SAS)

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Abstract

Students Advisee System(SAS) is a system that will help as a way for interaction among students and with their academic advisor. This system may be very useful for the Faculty of Computer Science and Information Technology areas.

The main objective of SAS project is to create a web based application for interaction between students and academic advisor. In this system students allow to share their problem with their academic advisor directly without any limit. SAS includes 7 important modules and the main modules are Chat Room and Mail modules.

Hopefully this system will be the most useful system and may be a very good system for students to share the problems with their academic advisor and this interactions can helps students to improve their archivements in their study and life.

Chapter 1- Introduction

1.1 Project Background

Most people now have access the internet, several paper works had been replaced by the fact, efficient and more powerful digital computer system. Many of the web sites are actually created by everyday people who have a hobby or interest of some kind and would like to share this with others.

Faculty is an autonomous entity of a university whereby the operations were managed itself. For the case study purpose, FSKTM which is one of the faculties of UM has been chosen as a primary faculty for developing due to existing support of computer facilities. The new system like Student Advisee System can be build as one of new facilities for students especially for students Faculty of Computer Science and Information Technology.

I would like to develop this system because I'm thinking of some way how to create one web site that focus on interaction between students and their academic advisor. Thus, my main focus is develop a web site that can provide interaction for the our faculty students. It's will be include problem sharing between students with their academic advisor as a main module.

Hopefully the system can give some benefits to the students specially for Faculty of Computer Science and Information Technology areas. The Student Advisee System web site will be build together with Mail, and Chat Room as a main modules and hope its can make the web site become more interactive and interesting.

1.2 Project Overview

Student Advisee System(SAS) is a web based online application for helping and give a way for interactions between students and their academic advisor. By using this system students can share any problems that they face with the academic advisor in the faculty without need to meet their academic advisor. The project overview will be :-

1.2.1- Student Advisee System

The Student Advisee System can be defined as a personal web site whereby electronic communication plays private roles in increasing efficiency and improving education. It also plays a vital role in developing better relationship among academic advisor and his/her students. It is created mainly to help the students in their study life. The main modules are Mail and Chat Room.

1.2.2- Chat Room

Chat Room Module allow the students to have online chatting with their academic advisor. The implementation of the chat room also requires a standardized, fast and reliable communication. Chat Room allows students to post the question to their academic advisor for the answer as well as asking their problems. It provides a system where can increase efficiency and to improve communication between educators and their students.

It provides sufficient information to the students. Different students will have access different answer according to their academic advisor.

1.2.3- Mail

Mail allows student to publish their experiences facing the problems to another their advisor. The need of this systems had long been foreseen because there is not any such as a web site student s can publish their personal and studying problems.

By sharing out the solution, it will benefits most of the student. The first task is finding the best methods to build a web site that will create the usability of the interested systems and simplify navigation. It must also include interesting web site interface.

1.3 Objective of the Project

The purpose of Students Advisee System(SAS) is to first and foremost to develop a web site that specially for interaction among students and their academic advisor. Of course, in pursuing this undertaking, there would be certain constrains in terms of the availability of technology as well as the various functions and criteria desired from the system. Sub-objectives of this project are divided into two sections. One is for the Chat Room Module and another for Mail Module.

1.3.1- Objective of the Mail Module

The objectives of this module include :-

(a) To provide a system that will enable user(students) to talk their problems with their academic advisor and another students directly

(b) Allow academic advisor to give the problems solution for their student respectively

(c) This module allow students to share everything without any limit

(d) To increase efficiency in communication between students and their academic advisor

(e) To reduce printing costs and user respond delay associated with paper

(f) To provide a user-friendly system for all stakeholders

(g) Between students can share anything under chat room conversation

1.3.2- Objective of the Chat Room Module

The objectives of this module include:-

(a) To develop an attractive web site and allowing the students to share their experiences in solving problems with another course mates in the faculty

(b) To help the students search for the problems solution in their study by ask to another friends an the Chat Room Module

(c) To publish sufficient updated information revolving around computer domain

(d) To increase the possibility of students viewing the information posted

(e) To developed a back-end database system

(f) To provide a user-friendly web page for all students

1.4 Scope of The Projects

The implementation of a complete Student Advisee web site significantly is time-consuming and needs manpower. Therefore, implementation of this project would be restricted to a certain extent. This project would not include the mail notification function. The Student Advisee System web site would include the following :-

- Login button
- Admin
- Advisor
- Student
- Students Data
- Chat Room button
- Update
- Delete

When a user clicks on each button, it will link them to a new page that has hyperlinks to all the various systems developed for the respective party.

1.4.1- Scope of The Mail Module

The Mail will create for allow interaction between the students and their academic advisor in FSKTM. The students can access the web pages and will get chat with their academic advisor. The Mail Module allow the students to ask their problems and get the problems solutions directly from their academic advisor when interactions happen.

1.4.2- Scope of The Chat Room Module

The web site will be present to the students of FSKTM and administrator and also advisor. All students will be able to visit the web site or post the problems and solutions they faced by logging in the main page. Only authorized user with a valid username and password will be able to post such as problems by Mail. It is a site mainly used in order to help students of FSKTM who faces issues pertaining to their study or facing any another problems and everything else involved around it to find out the solutions or answers by asking their academic advisor or join the Chat Room Module.

Basically, the minimum requirements of this module are lists below :-

(a) The database system should be able of matching searchers by users , display the search results and process user's requests

(b) Enable user to access to the web site from any location at any times, as long as the users have access to the internet/intranet

(c) To make the system more efficient compared to others because password checking reinforces the security and authorized system administrators can view the database and make relevant changes.

There are two different categories of users, normal users as well as system administrators.

Normal User

Normal users are largest group. Basically, they are students of FSKTM. They are provided with common access to the system where they can only view partly the web page and navigator through the application to interact with their academic advisor. They are not authorized to add new users into the database.

System Administrator

Basically, there are two types of administrator, super user and database administrator. Super user areas are the clerks on FSKTM. Their roles are to enter a new user(student) authority to access the whole system and categorize the students according their academic advisor. Normally, super user is not involved in the database maintenance.

Database administrators have access to the systems database and make changes or modification on the data including all the maintenance. They have to ensure the correctness, accuracy and completeness of data in the system as well as to update the data with the latest information.

Advisor

Advisor also be the important user for this module. Without advisor interaction cant be happen.

1.5- Importance of The Project

Students Advisee Systems(SAS) will be as a importance web site for students to share their problems either study or anything else with their academic advisor. This systems will help the students to find out the right solutions for their problems by asking the academic advisor. Therefore the Academic Advisor can always guide the students and know what's going on to their students under them.

1.6 Project Definitions

The definitions of Students Advisee System web site is not a static one. In other words , we cannot fix the definition and pattern of Students Advisee web site for more than 10 months. Even as the new opportunities have get to fully exploited, new net working technologies or application software are available at a fast rate.

Below are the tables for a list of specific terms in Student Advisee System and meanings.

Word/Phrase	Meaning
Students	A learned person(especially in the humanities) a learner who is enrolled in an educational institutions
Advisee	Someone who receives advices
Students Advisee System	A management system about students and their advisor in the institutions
Academic Advisor	The lecturer's for the students who giving the advices to their student

Table 1. : Table for Definition Project

1.7- Chapter Summary

Chapter 1 is an introduction to the Students Advisee System that is being studied. In this chapter, few important things have been mentioned before starting of the project. Firstly, the whole picture of the system that is going to build is described briefly, then the reasons why this systems has to implement, the project scope or limitations and also the importance of the project. Lastly, some phrases or terms that will exist in the system have been described to make a clear vision on what is Students Advisee System actual purpose.

Chapter 2- Review of Literature

2.1 Role of Literature Review

A Literature Review is an classification of what accredited scholars of researches have written on a topic, organized according to a guiding concept such as my research objectives, thesis or issues.

There are some important reasons of having literature review, there are :-

i. to collect information on system that need to be developed

ii. to review and make an assessment on existing systems with same or different concepts which are relevant and have been developed to ensure any strengths and weakness in the systems and could also point out any mistakes on the specific system

iii. to get a better understanding on each concept in the systems development process and to compare some software and methodologies that had been used for other systems and may help on making a decision what software and methodology will suite the system that I'm going to produce

2.2 Approach to Literature Review

It would never be a complete job without doing some research on collecting any related information with the systems that India developed. Therefore, finding all the information were very important on deciding what are the objectives and importance of having this project. Information can be retrieve from any resources and every resources would give different information and require methods findings.

There were some techniques that available on having a research and analysis on existing system and system that will be developed. Examples of searching for the information are collecting the data method and written method.

2.2.1 Information Collection Techniques

The process of information gathering technique is carried out in order to have a better understanding of the proposed system and also user's requirements. Among few of the suitable methods used for this process were :

1- Internet Surfing

Internet has been a very helpful and up to date on getting a quick information in order to develop this system. From the internet, I found so many sites that really gives me ideas on how am I suppose to develop and organize this system.

Also I got to retrieve some web sites, which showed me some existing system that similar with my system but presented in a different ways. Internet contains infinite amount of information that nobody can measure. I'm most interested to use several search engines like Google , Altavista , Advanced Search and others.

I'm also use subject directories as Yahoo!. These search engines has proven to be very helpful for me as a author of this final year project in many ways. Most of the information and examples in my this final year projects were obtained form the internet.

2- Discussion and Informal Interview

Discussions are made with the supervisor, especially when problem arises and certain clarifications are needed. Besides, the discussion also is carried out between friends for some related matters. Many good discussions and advices are obtained through the discussions to overcome the problems and improve the system design. This type of method is chosen on getting the information on the operational system existed. I'm also conducted personnel interviews with my seniors and another batch mates to get more information and some ideas on how this systems could be develop. These interviews were done in an informal ways that did not require the formal forms to fill in.

3- Final Year Projects

Senior's project was been another major references for me. These projects were obtain from the Document Room which is a place where the faculty stores all the selected student's final year projects. I'm use the available projects as a guide to write my own reports. The formats and the structures from the final year projects were help me to be clear when making my own reports for my project.

2.2.2 Writing Method

1- Analysis on writing resource

Analysis on all the information that had been retrieved with simplifies all the data and information in a simpler form and may follow the project development requirements.

2- Comparative

Conclusion and decision had been done in order to make sure that there would be difference in the existing system and proposed system base on the information that had been collected.

2.3 Findings

Here are some of the literature reviews that I have seen and gone through and I think that these sites really help me and give me a broad idea on how the student advisee system actually is. I'm just put the important sites even though I have seen so many sites that really useful for this project.

2.3.1- Current Web site Approach With Student Advisee Management System

With information and knowledge Sharing becoming a global trend, the networking community is moving fast to disseminate information, fast and hassle free. This picture can be widely seem in the internet and intranet of factories, firms and corporations.

Most approached system are developed on the Internet to enable users to access the systems, post and view other messages posted by other people whenever and wherever there are some companies, which developed their personal web site within their intranet restricts the access from outsiders.

Now there are many companies which have developed software that are download able or sold in the market. Those who are interested in setting up their own forums or systems can do so with ease by installing or paying a company to host if for them.

Currently, there are not other systems exactly the same with student Advisee System (SAS). The following sections reviews the web site evaluated.

2.3.2- Comparison Among Other Web Sites

This section describes the features of Delphi.com Forums and others approach system found from the Internet. Table 2.1 Features of the existing approach system.

Web Site (URL)	Description	Features
Web Host Directory Forums (http://www.freeforums.com)	User can particulars in any hundreds of forums provided or create a unique forum to link to a web site	Authentication & Authorization - Registration as new user to post a message allow only authorized user's to edit, quote and delete their own posts Categorical - Post categories into many fields, such as business development and

		design, community and etc Rules of Posts - May not post attachments if "smile" are ON - May not edit your post if [IMG] code is OFF - May not post new threads if HTML code is OFF - May not post replies if VB code ON FAQ - Provide FAQ for the purpose helps users to use the system Profiles of Technicians - Profiles for technicians allow some interactive between users Sorting - Sorted by date either in descending or ascending order Attachment - Allow user to use attachment feature of this board - Thee will be a limit to the file of any attachment user make - Only certain file can be attached - gif,jpg,Ext,zip,bmp,jpeg Hyperlinks

		- Hyperlinks at top of pages to ease the user browse the web site Others - E-mail function to sent e-mail to submitter Site map - Search based on submitter - Special codes, tags for users format their post and messages, such as emphasize certain words - Moderators, rewarded to users who are particularly helpful and knowledgeable in the subject of the forum oversee specific forums - Certain works censored by the administrator or system automatically
Delphi.com Forums (http://www.delphi.com)	Provides Chat Rooms and forum and a database library for members. Includes a registration form and an archive of business-strategy articles	Authentication & Authorization - Create a Delphi.com account to particular in Delphi.com's personalized discussion services - Allow only the valid user to post and reply a message Categorization - Many subjects category such as White House, Philosophies, Gun

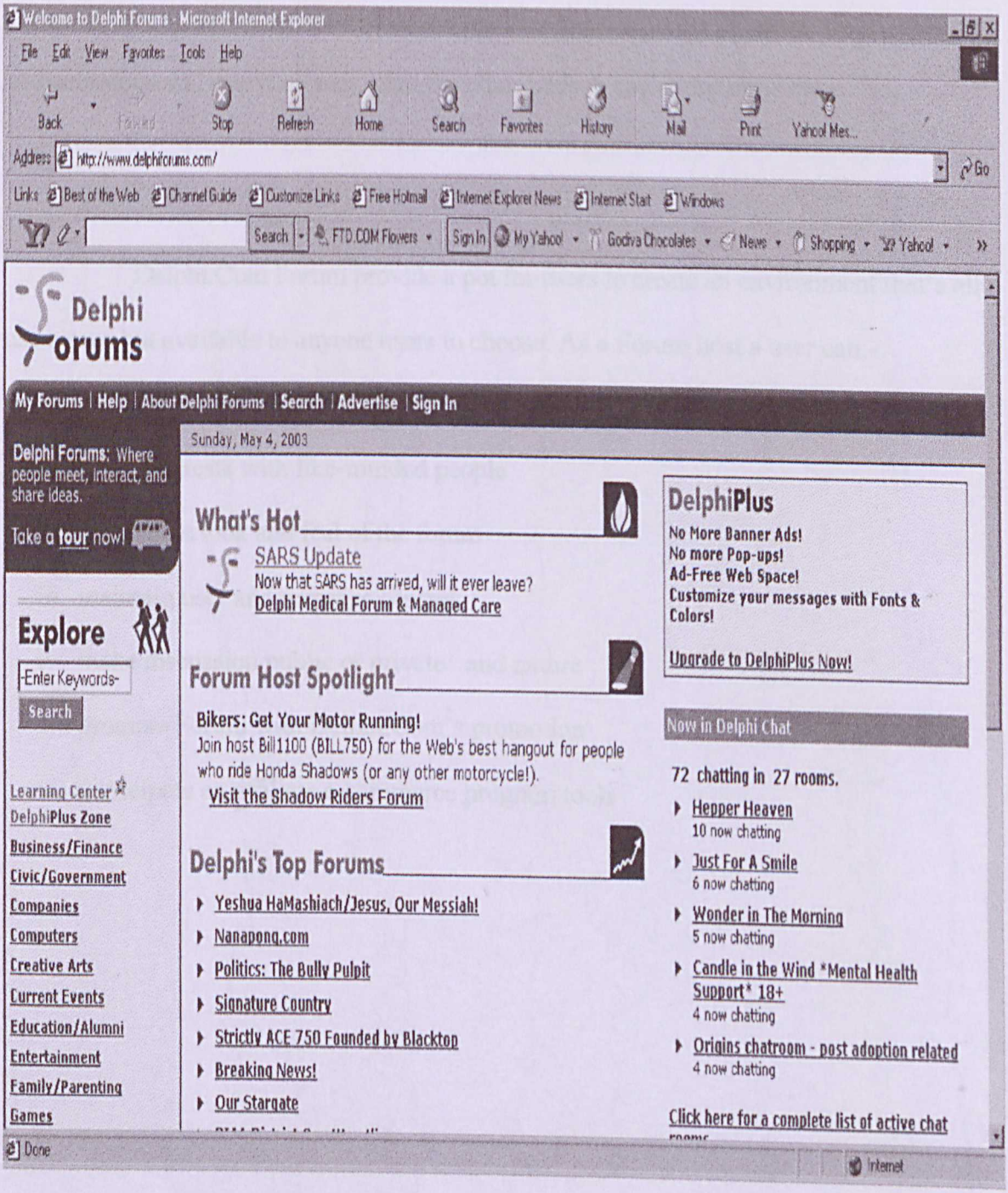
		Control, Politics and the Media etc Search Engine - Search on all the works or any of the works or exact phase - Search based on the type of the folders, submitter, receiver and the duration of dates Tutorials - Provide tutorials to help the user uses the system Useful Links - Some quick links to helpful sports on Delphi.com - Useful links to some teaching materials such as forum maintenances, forum promotion and etc - Provide functions explore to some topics such as business, finance, computers, current evens, educations and entertainment - Provide site frame, ease the users to click on interested topic Others

		- Provide chat rooms - Allow user to create a free forum - Ignore user filter - to hide messages from specific users you do not want to read - Attach files - Other users profile where members can post an image and personal information to share with others - E-mail notification to submitter when somebody replies to their messages - Prints e-mail, messages and report violation

Table 2.1 : table for Comparison Web Site

2.4 Existing Systems

i) Delphi.Com Forum



A Delphi.Com Forum is an activated community forum, where friends , community members, team mates, workgroups share their common interest. Delphi.Com Forum is better than phone calls or the e-mail because it let's the whole group participate in discussions and everyone sees what the other have to say at the same time.

Delphi.Com Forum provide a pot for users to create an environment that's all users own but available to anyone users to choose. As a Forum host a user can:-

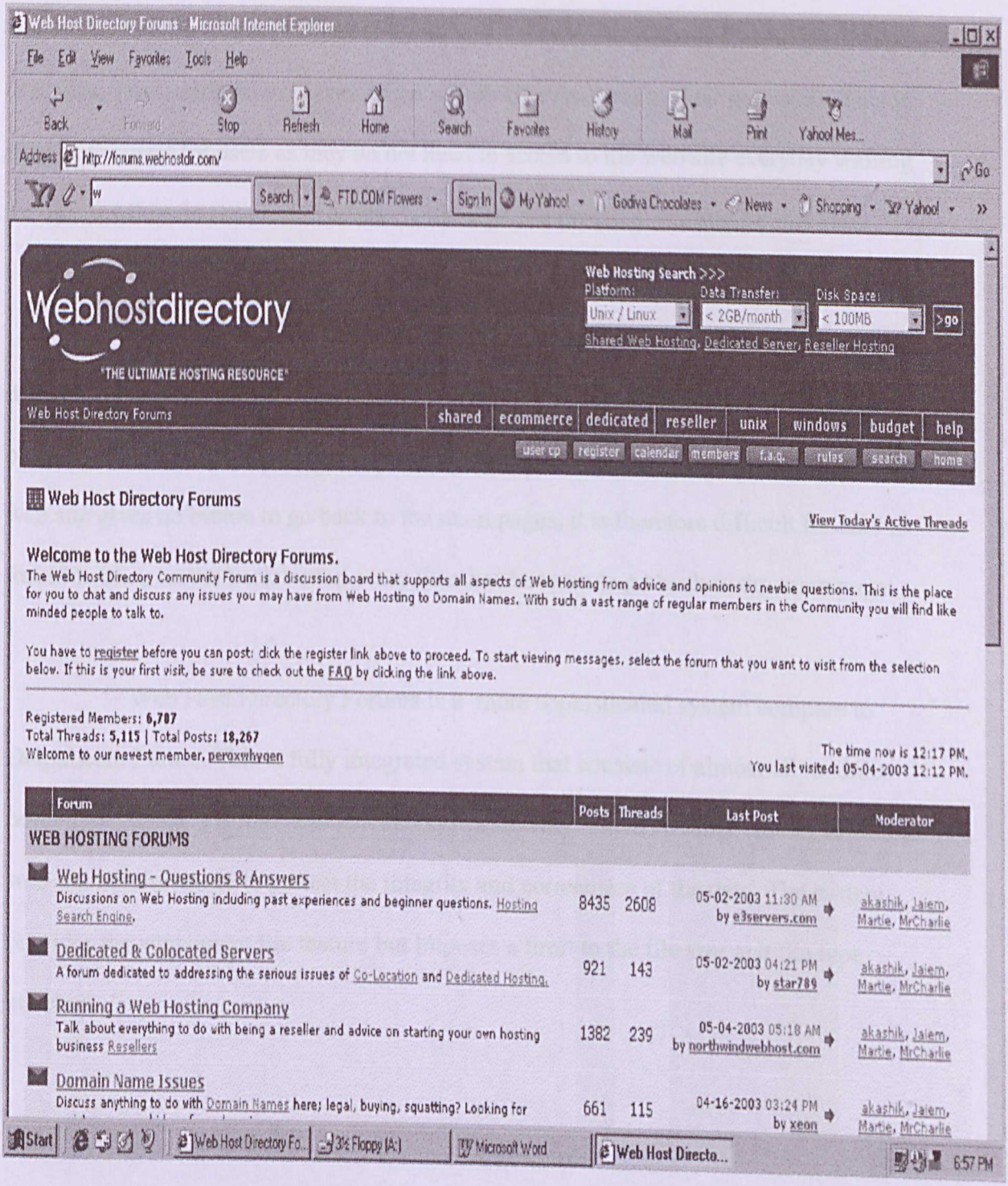
i. share interests with like-minded people
ii. control the look and feel of the forum
iii. maintain user and message control
iv. make discussion public or private and nature
v. promote Forum with Delphi.Com's promotion
vi. participate an affiliate e-commerce program tools

Delphi.com Forums is a way to stimulate interactions in user's student/personal/professional web site. User's who participate in message board discussions will get e-mail notification when somebody replies to their message and there are new messages in the Forum they are interested in.

Delphi.com also offers profiles, where members can post an image and personal information to share with others.

Besides, Delphi.com can work with used to create a co-branded Forum that will give visitors a new reason to visit user's site.

ii) Web Host Directory Forums



Comment and Summary

Delphi.Com Forums is a very complete world wide web chat room and forum which also provide a spot for user to create a free forum. It's provide features that old user filter, mail notification to user when somebody responses to their questions. This is more convenient for users as they do not need to access to the web site everyday waiting for users as they do not need to access to the web site everyday waiting for answers.

However they cannot delete the folders but only rename them. Only users can delete the messages they post or more then to a private folder. Besides, there are problems in current when edit and no space are given for attachments. Some pages of the web site gives no button to go back to the main pages, it is therefore difficult for user to forced to click on the back button every time he/she want to go back to the main page.

Web Host Directory Forums is a more sophisticated system compare to Delphi.com Forum. This is fully integrated system that consists of almost all modules needed to manage a forum efficient and systematically. There Are moderators as well as web site administrator to protect the integrity and correctness of the data. The system provides the attachment file feature but imposes a limit to the file size and file type attached.

2.5 Relationship to Proposed Project

Basically I had made some reviews that I've been discussed, I came out with an idea to produce a system which is more simpler, very useful for the sstudents faculties and will have more things to provide.

Students Advisee System is a web site open only to stakeholder in Faculty of Computer Science and Information Technology to help students in their study as well as improve the interactions between students and their academic advisor. Therefore, the login feature of the system needed to recognize the authorized users as well protect the data integrity.

I tried to combine all the main modules for SAS project and finally 7 modules were decided, which are :

i. Login System Module for Advisor, Admin and Student
ii. Introduction
iii. Chat Room Module
iv. Mail Module
v. Update
vi. Delete
vii. Student's Data

Most web site reviews categorized the posted messages for users. Thus, this will be a feature provided by the Students Advisee System(SAS). The main differences between Students Advisee System and the system reviewed are :

- Students Advisee System(SAS) will be easy to understand by the students because this web site only provide simple module
- provided with simple interface, therefore students can go through system easily. The system are not complicated like the system's existed
- Easy to handle because this system are opened only for stakeholders in FSKTM
- The main modules are Chat Room and Forum Modules will be the important modules for students for their interaction with their academic advisor

2.6 Chapter Summary

In this chapter, basically, finding on related systems. The previous studies and research on the project topic were described in this chapter. It's focus on a study of the existing web site, which approach with the Student Advisee System. The description, comparison and analysis of the research were done that can help me to build my own system.

By the research, I had identify some relevant web sites that may help me on developing my Student Advisee System. From this literature Review, I get some ideas hot to get a better view on my proposed system, SAS and also to get a better understanding on my system that will be develop. In the next chapter, the approach on how to develop the system will be discuss.

Chapter 3- Methodology

3.1 Project Objectives

This project is produced definitely to give me a chance on how to develop a system. I had chosen Student Advisee System(SAS) as my system topic and with this experience on how to start a system is very new for me. In fact, this is my first time for me to create a new system and that's why I need a step-by-step instruction that can help me to present a good systems later on.

After I had done with my literature review, a summarization has been made and the best way to develop the systems is decided. There are some methodologies such as Development Life Cycle(SDLC), V Model, Prototyping Model and Transformational Model.

The choice of methodology used would be the Prototyping Methodology. I will explain the approach of how to build up the systems and also the systems requirement will be described.

3.2 Development Methodology

There are several reasons for modeling a process:

I. After writing down a description of the development process, it forms a common understanding of the activities, resources and constrains involved in software development

II. Creating a process model helps the developer find inconsistencies, redundancies and omissions in the process as in its constituent parts. As these problems are noted are corrected, the process becomes more effective and focused on building the final product

III. The model should reflect the goals of development, such as building high quality software, findings faults early in development, and meeting required budget and schedule constraints. As the model is built, the developer evaluates candidates activities for their appropriateness in addressing these goals. For example, the developer may include requirements view, so that problems with the requirements can be found and fixed before designs begin

IV. Every process should be tailored for the special situation in which it will, be used. Building a process model helps the developer understand where that tailoring is to occur.

3.3 Rationale for Proposed Methodology

After comparing a few system-developing model, the Prototyping Model is chosen. The Prototyping Model was selected to develop a system because it is created quickly, often within a matter of a few days or weeks. This model also relatively in expensive to build, compare with the cost of a conventional system. The emphasis is on trying out ides and providing assumptions about requirements, not on system efficiency or completeness.

This model will be very useful in helping developers lay out what they need to do. It simplicity makes it easy to explain to those people who are not familiar with software development; it makes explicit which intermediate products are necessary in order to begin the next stage of development.

Since the prototyping Model allows all or part of a system to be constructed quickly to understand and clarify issued, it has the same objectives as an engineering prototype, where requirements design require repeated investigation to ensure that the developer, user and customer have a common understanding both of what is needed and what is proposed.

Rather than have separated specification, development and validation activities, these are carried out concurrently with rapid feedback across these activities(Summerville, 1995). This model is based on size steps and shown in figure below:-

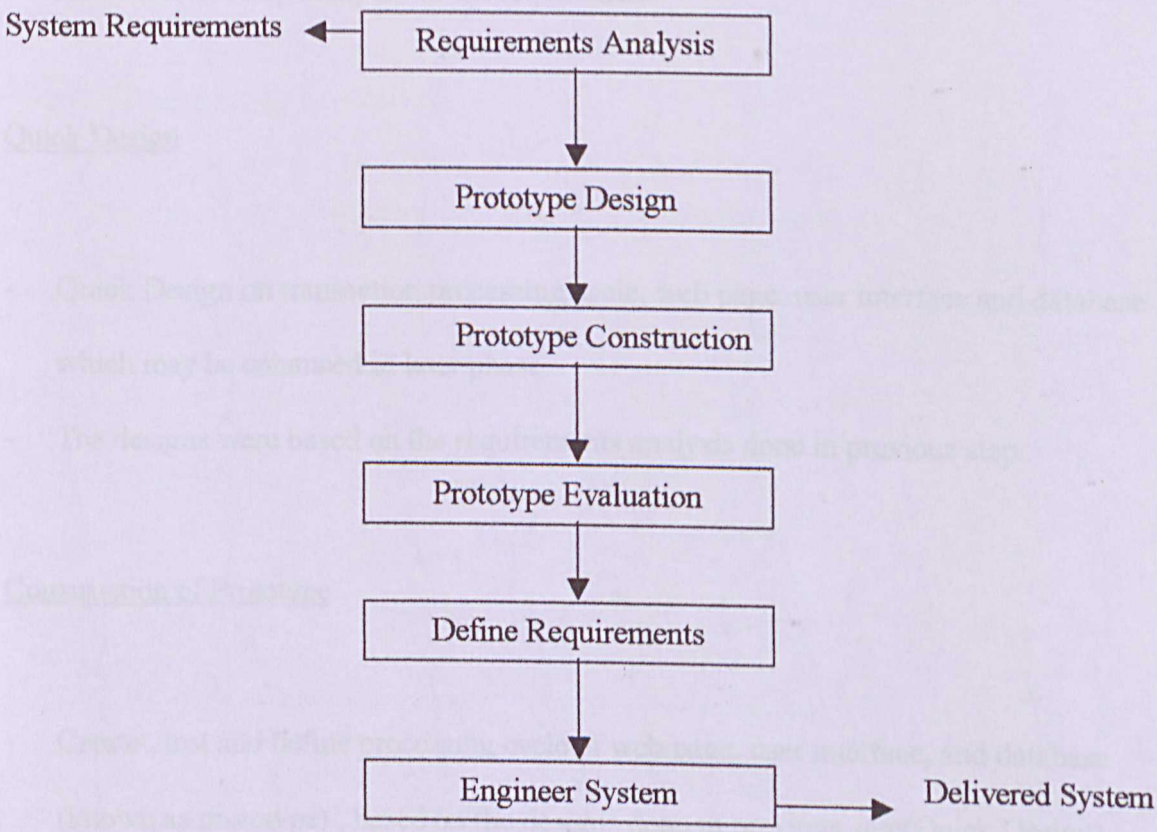


Figure 2.1 : The Prototyping Model

There are six major steps in the Prototyping Model as described below:-

Requirements Analysis

- To array out literature review and research on software, programming tools, technologies and e-commerce trends
- After that, develop analysis all the requirements

Quick Design

- Quick Design on transaction processing cycle, web page, user interface and database which may be enhanced in later phase
- The designs were based on the requirements analysis done in previous step

Construction of Prototype

- Create , test and define processing cycle of web page, user interface, and database (known as prototype) , based on the designs done in previous step(Quick Design)

Prototype Evaluation

- Present tested versions if the prototype for evaluation
- All the modifications and enhancement needed are added to designs in Quick Design step.

Define Requirements

- Justify the existing requirements or add in new requirements
- This step is importance before a real internet sales system carried to Engineer Product Step.

Engineer Product

- Repeat step 2 to 5 until all requirements are formalized or until the prototype has involved into a production system.

3.4 Requirement Analysis

A requirement is feature of the system or a description of something that the system is capable of doing in order to fulfill the system's purpose. Requirements analysis covers 2 main categories, which are functional and non-functional requirements.

3.5.1 Functional Requirement

Functional Requirement is a set of functions that are required by the users to be included into the system. Also, it described the interaction between the system and its environment. Below are the functional requirements that have to be included after reviewing on the existing systems.

i. *Login System*

This module is the main interface module. This module will need the user password and to login to get through of the system. It's important for system safety where not to allow outsides from using the system. Login System will be do for Admin, Advisor and Student.

ii. *Introduction*

Interface which talk about a the Student Advisee System. This short introduction will be display in a first main page.

iii. *Mail Module*

The way for interaction between users/student with their advisor.

iv. *Chat Room Module*

Typically, this module will be invite for those who want to join the chat. Open to students, advisor and also administrator

v. *Students Data*

Display the students data

vi. Update Module

The main purpose of the module is for user to change their password, email , and telephone number

vii. *Delete Module*

The module allow's advisor to delete the students record

3.5.2 Non-functional requirement

Non-functional requirements are essential definition of the system properties and constrains under which a system must operate. Below are the non-functional requirements for the proposed system :

Reliability and accuracy

The entire system must be a consistent and an accurate system to the user. The system will also have the ability to tolerate error. The system should be stable and consistent in all environments.

Efficiency

This system should provide an efficient data storage retrieval. The new user should be able to be familiar with the system in short time. This system also enable users to handle their jobs efficiently by reducing time, manpower and other resources.

Integrity

This system allow only authorized user to access the system. The valid users have to log on the system by using their user procedured. This will ensure the integrity of data and the system.

Unity of Environment

The entire system must appear to the user as a single working environment and not as amalgamation of distinctly separate units. The system must provide a standardized interface design as well as standardized method for function invocation by the user.

User-friendliness Interface

Interface of this system have to simple and easy to understand. Therefore, user's will be able to use it within a short period.

3.5 System requirements

A more proper computer is needed to build up the proposed system so that the process can run smoothly. Below is the list of the hardware and software that are going to be used:

i- Hardware Requirements :

a) Pentium II 400Mhz or above

b) 64 MB of RAM

c) 3 GB of hard disk space or higher

d) 15" Digital Monitor

e) Other computer-compatible accessories

ii- Software Requirements :

a) Windows 98, Window2000/Millennium Edition

b) Macromedia Dreamweaver MX

c) Macromedia ColdFusion Express Administrator

d) Microsoft FrontPage

e) Microsoft Office 2000 Suite: Microsoft Words, Microsoft Access

Macromedia Dreamweaver Dreamweaver MX

I had choose Macromedia Dreamweaver MX is because :

i. This software provides a set of easy to use application building tools that shields from the complexity of writing server side programs
ii. It also can create a page design and add dynamic functionality to the page as well as provides for executing these development phases
iii. It teaches me on how to plan design for web pages to meet any kind of audiences
iv. iv. this software may connect to a database to display data dynamically and define data sources for web pages
v. Can create interesting, full-featured, interactive web pages with the Dreamweaver features of Dreamweaver MX

ColdFusion Express Administrator

I'm use this software as my generator for develop my system. This is because this software are really easy to especially when to connect to databases.

Microsoft Access 2000

The back end database system where Microsoft Access 2000 is the choice. It is because of the ease of use and builds up a small-scaled system.

3.6 Chapter Summary

In this chapter, the methodology of developing the system has been decided, as the Prototyping Model approach will be used. Also the user requirement analysis has been done and needs are listed. After I had gone through will the research and reading, the system requirement when developing and implementing the system are also been covered. In the next chapter, the actual system design will be mainly focused, as the actual data flowing will be covered.

Chapter 4- System Design

4.1 Preface

System design is a process where all the user requirements will be transformed into a real world application, which will be develop conceptually or logically. The purpose of system design is to select and plan system that meets the requirements needed to develop that system derived.

System design is a very important stage to develop a system. A system design specification is needed to do system design. The design specification describes components or elements of a system and their appearance to the user. There are three stages in the system design process, they are architecture design, database design and user interface design.

System Design also known as a process to convert the conceptual ideas from the requirement specification in system analysis into more technical specification. Design is the creative process of transforming problem into a solution.

The description of a solution is also called design. In general, this system design is formulated to fulfill the objectives below:-

- Incorporates system features that are user friendly and easy to understand
- Minimize system failures and improper procedures

4.2 Program Design

There are several design methodologies for the program design. Student Advisee System is design based on data flow design method or structured design. Data flow oriented – design in earlier design concepts the stressed on modularity, top – down design and structured programming.

4.2.1 Structure Chart

Structured Chart show the top-down design of a system. Each box or modules in the chart indicates a task that the diagram must accomplish. The following Figure 4.1 chart is clearly describing the Student Advisee System (SAS) together with its subsystem.

4.2.2 Data Flow Diagram

Data Flow Diagram is a means of representing a system at any level of detail with a graphic network of symbols showing data flows, data processes, and data sources / destinations. The goal of data flow diagramming is to have a commonly understood model of the system.

The diagrams are the basis of structured systems analysis. Data flow diagrams are supported by other techniques of structured systems analysis such as data structure diagrams, data dictionaries and procedure-representing techniques such as decision tables, decision trees and structured English.

The purpose of data flow diagrams is to provide a semantic bridge between users and system developers. The diagrams are graphical, eliminating thousands of words; logical representations, modeling WHAT a system does, rather than physical models showing HOW it does it; hierarchical, showing systems at any level of detail; and jargonless, allowing user understanding and reviewing.

Reasons Why Using DFD?

The data flow approach has four chief advantages over narrative explains of many data moves through the systems. The benefits are :

i. Freedom from committing to the technical implementation of the system too early

ii. Further understanding of the inter relatedness of system and subsystem

iii. Communicating current system knowledge to users through data flow diagram

iv. Analyst of proposed system to determined if the necessary data and process have been defined

Data Flowing Diagrams are composed of the four basic symbols shown below:

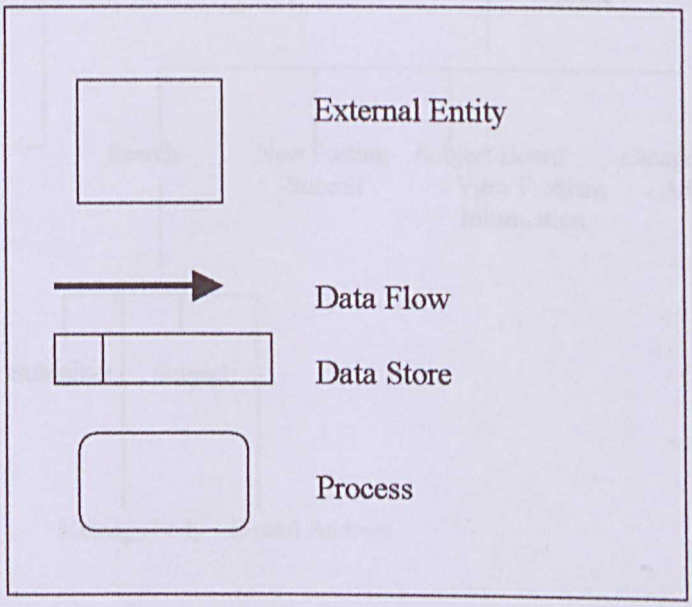


Figure 3.1 : Figure for DFD Convention

a) The External Entity symbol represents sources of data to the system or destinations of data from the system.

b) The Data Flow symbol represents movement of data.

c) The Data Store symbol represents data that is not moving.

d) The Process symbol represents an activity that transforms or manipulates the data (combines, reorders, converts, etc).

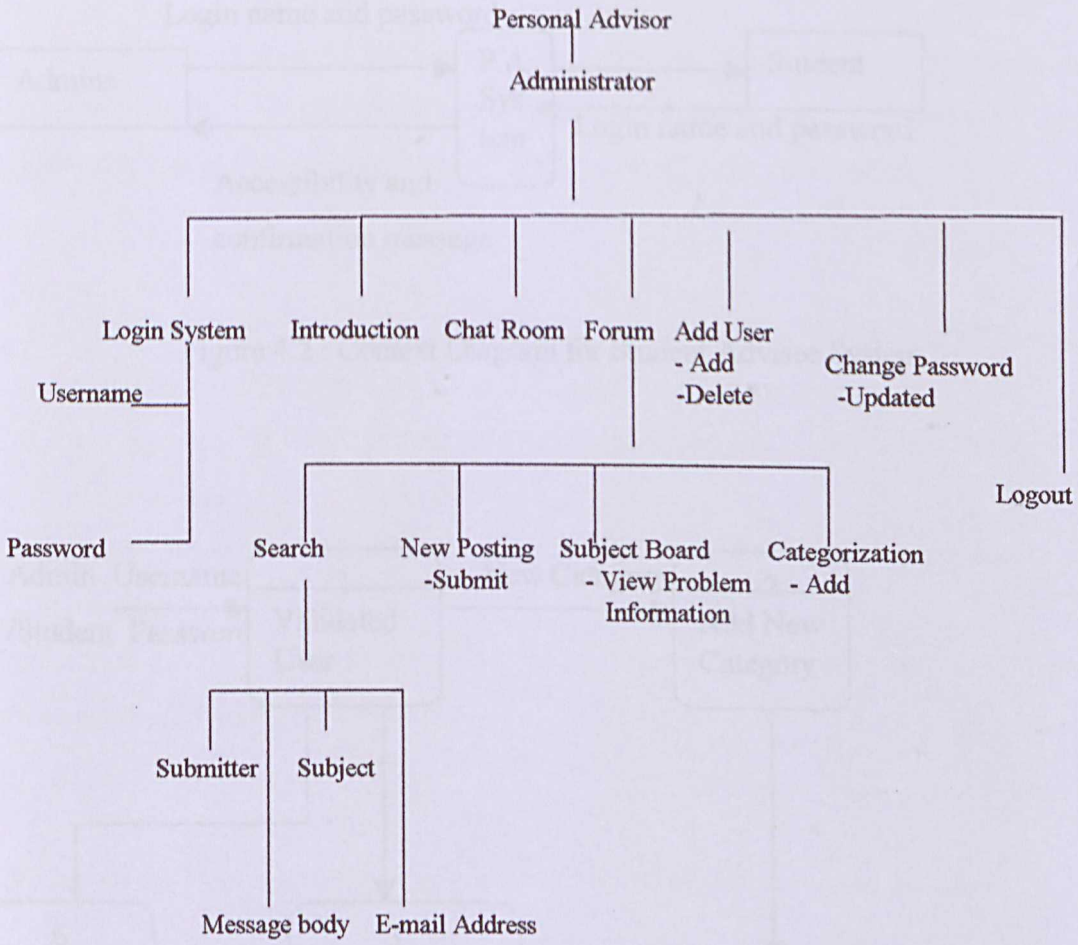


Figure 4.1 : SAS Structure Chart

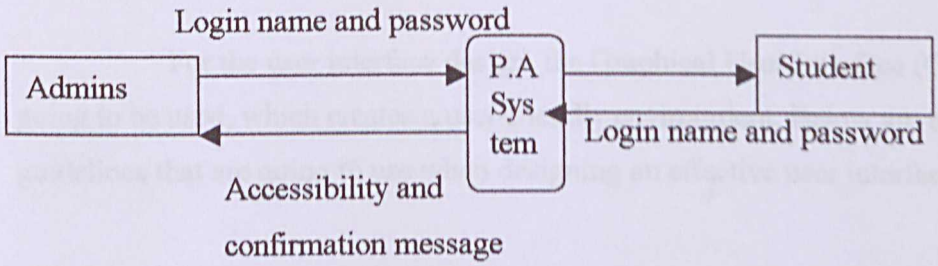


Figure 4.2 : Context Diagram for Student Advisee System

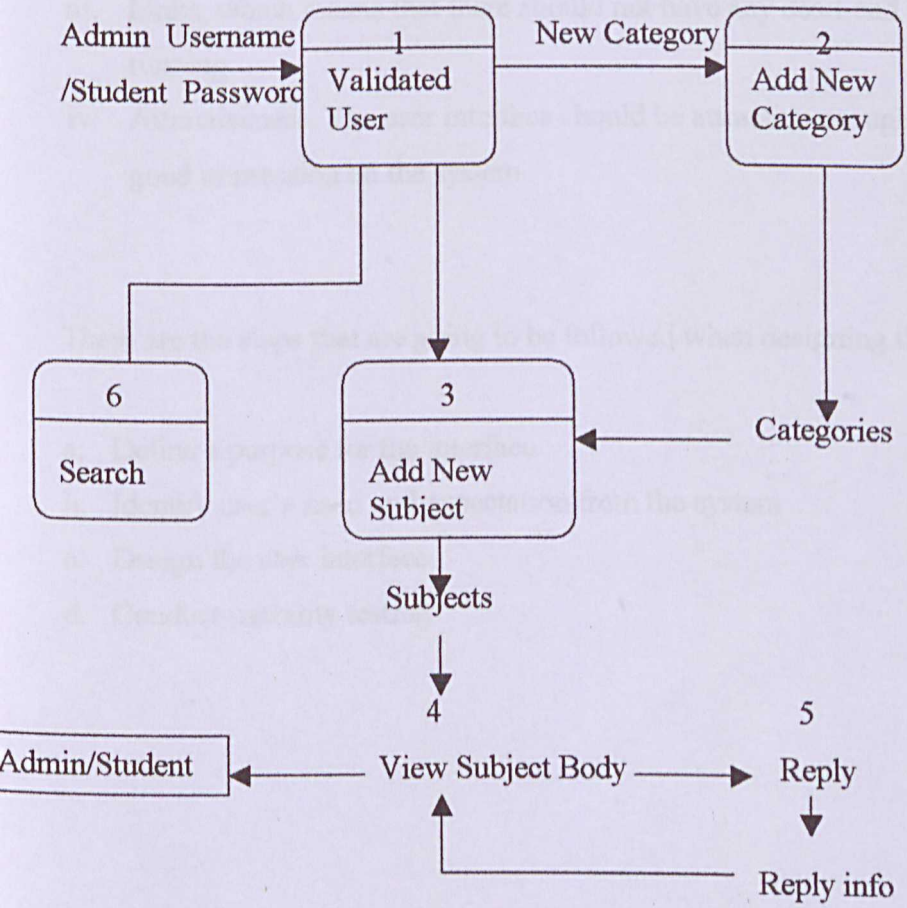


Figure 4.3 : Data Flow Diagram for Mail

4.3 User Interface Design

For the user interface design, the Graphical User Interface (GUI) approach is going to be used, which creates a user-friendly environment. Below are the some of the guidelines that are going to use when designing an effective user interface.

i. The purpose of the system. When designing the interface, developer has to make sure that the user interfaces created are suite to the system's purpose
ii. Navigation aids like hyperlink and icons should be used to enhance the simplicity of the interface
iii. Links, which means that there should not have any dead-end pages when the system running
iv. Attractiveness. The user interface should be attractive enough to let user's have a good impression on the system

These are the steps that are going to be followed when designing the interface:

a. Define a purpose for the interface
b. Identify user's need and expectation from the system
c. Design the user interface
d. Conduct usability testing

4.4 Database Design

Database Design involves the activity on modeling the structure of a database that will store and maintain the data records. It's will also includes the transformation of a user's processing requirements. All the data entry by user's will be stored into databases.

Therefore, database design is important in order to archive the objectives of data availability, data integrity, information retrieving, efficient data storage and efficient data updating.

The database that will be used for Student Advisee System(SAS) is Microsoft Access 2000, which is easy to build up relational database system. There are some tables that will be used in standardize the database. All the data are saved in the tables to show the different entities. All these tables will explain on attribute that is in each entity used.

Here are the table that include in this SAS system.

TABLE: STUDENT

Attribute	Data Type	Size	Description
G-ID	Auto Number	Long Integer/Increment	Auto generate for user ID
Lname	Text	50	Lecturer Name(Advisor)
Lemail	Text	50	Lecturer Email(Advisor)
LPswd	Text	50	Lecturer Password(Advisor)
Sname	Text	50	Student Name
SPswd	Text	50	Student Password
Semail	Text	50	Student Email
Phone	Number	Long Integer	Student telephone number
ID	Number	Long Integer	Student ID number
CGPA	Number	Double	Student result
GPA	Number	Double	Student result
Ycredit	Number	Long Integer	Collected total credit hours
Ecredit	Number	Long Integer	Expected credit hours that must be
Comments	Text	250	Any comments field
Reply	Text	250	Command for send the data

Table 2: Database for the system

4.5 Screen Shot of Future System

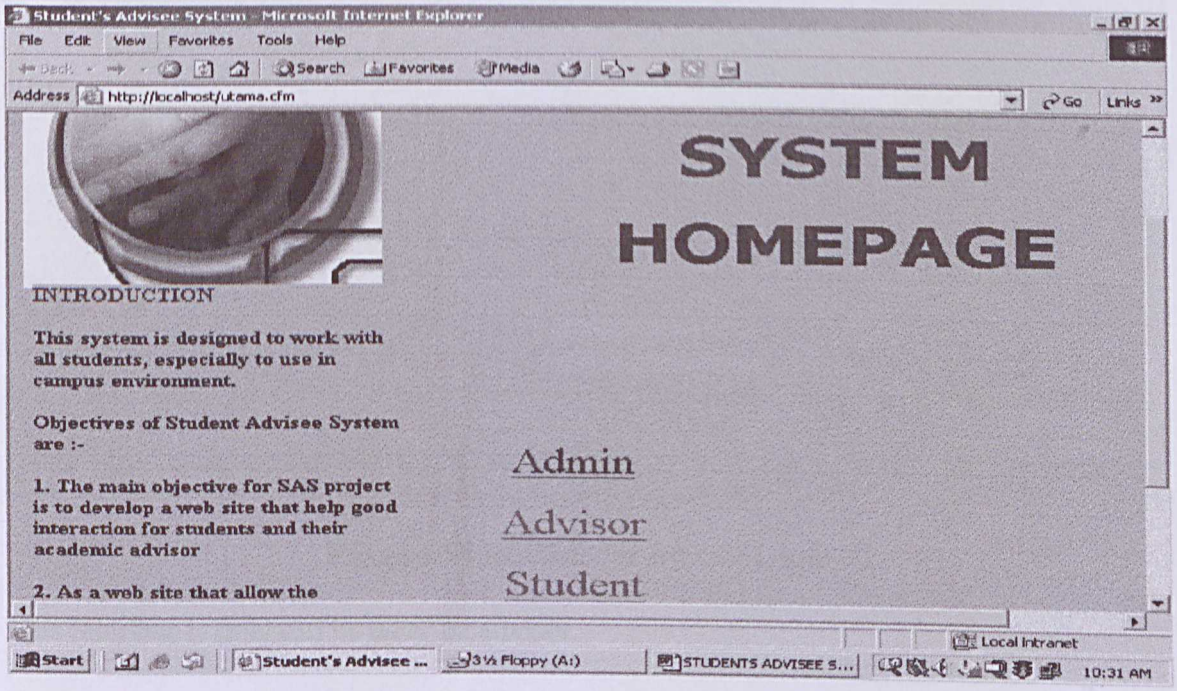


Figure 4.4 : The main page of SAS Homepage

This is will be the main page for my becoming system. I was made many changing for the interface from the first proposal this before.

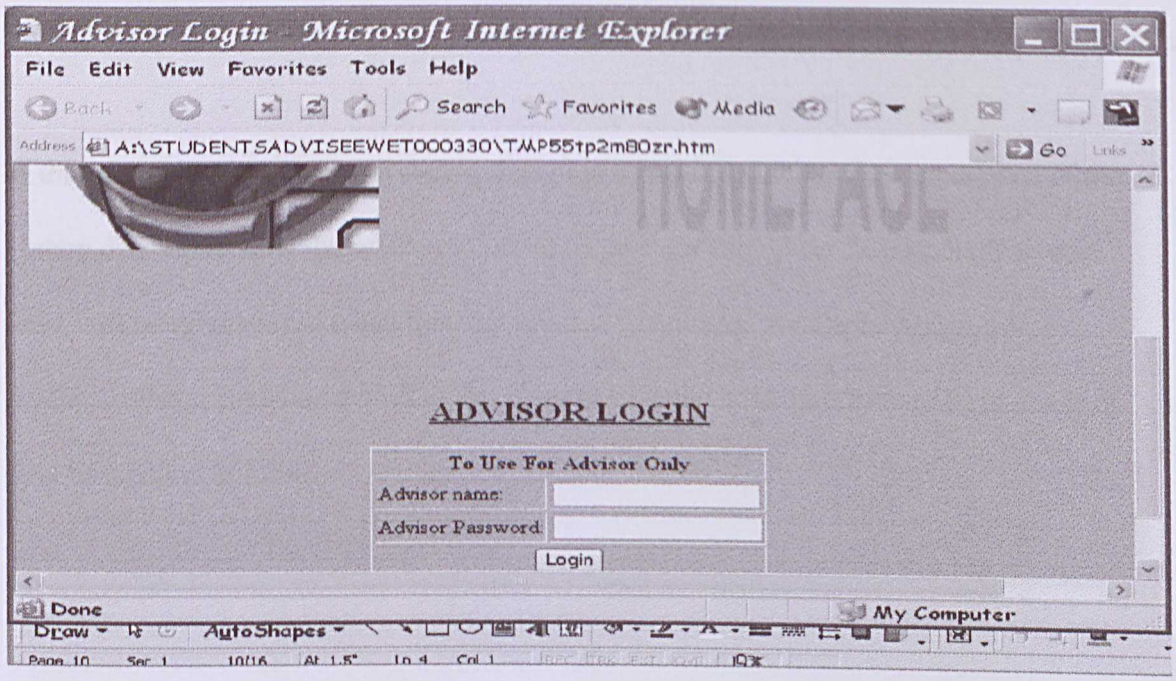


Figure 4.5 : Interface for Advisor Login

This interface is only can be enter by advisor.

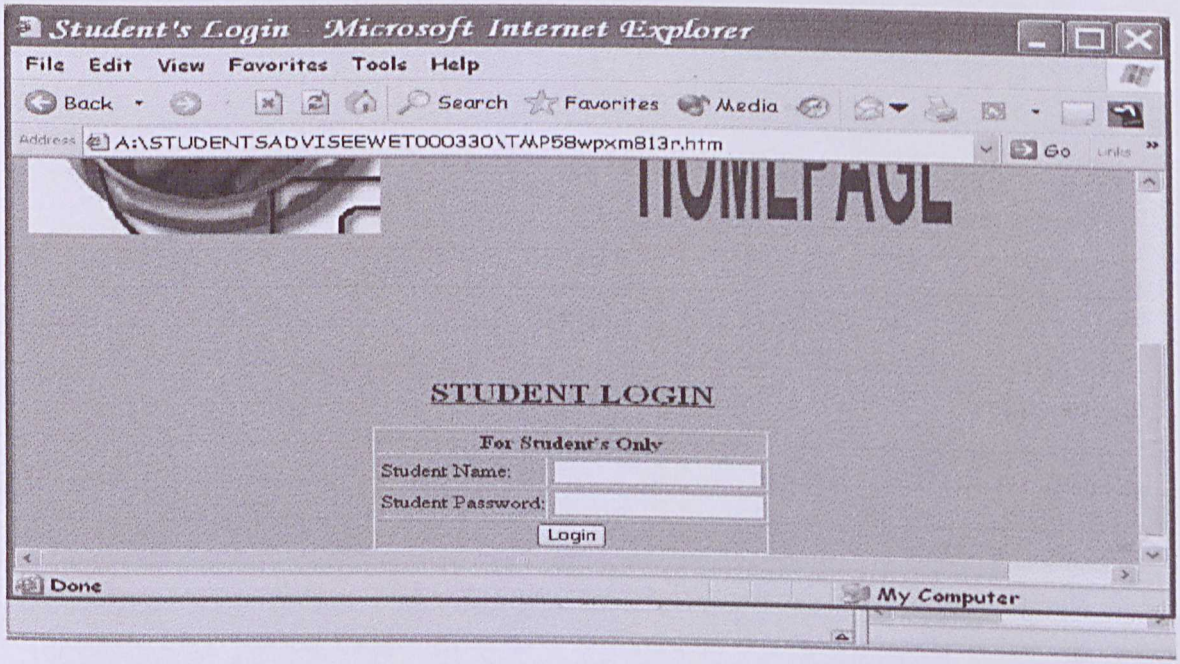


Figure 4.6: Interface for Student Login

This interface was design for student login to start enter the SAS system.

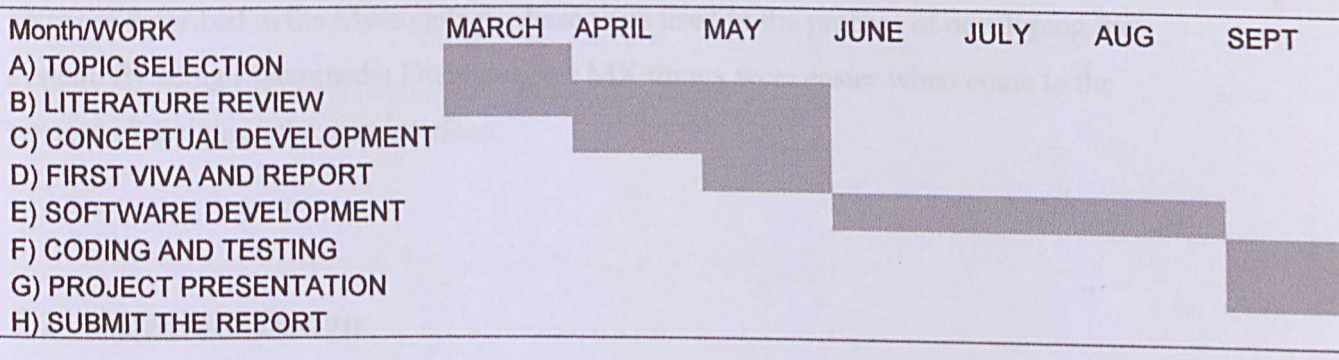
4.6 Chapter Summary

In this chapter, the proposed system's design is mention, which is the crucial part of the system development as the whole picture of the system should be clear enough so that there will be no mistakes when the next process is running. A simple yet complete database design is also included in this chapter to make sure that users need in sense of data retrieval is fulfilled.

Statement of Expected Outcome

By the end of this stage, the whole system clear enough to expect the product's outcome. The final system is expected to have a user-friendly interface, which can attract use's to use the system. Which the modules that I had proposed, I hope that the system will be the best among the best system that can manage the student advisee system.

Project Schedule



Project Schedule

Chapter 5- System Implementation

5.1 System Implementation

System Implementation is a phase transforming the design model of the system into a workable system. The major sections of system implementation are coding and testing. The primary goal of this phase is the production of a simple, clear source code with internal documentation that will ease the process of verification, debugging, testing, modification and further enhancements. In order to archive that appropriate tools and languages are needed to code the program. As mentioned earlier, all the hardware and software described in the Methodology phase were used in the process of developing the system. By using Macromedia Dreamweaver MX things were easier when come to the process of designing the user interface.

5.2 Interface Design

The goal of interface design is to provide the v\best way for people to interact with computers. Provision of good interfaces is becoming more important because of its impact on organizations. This impact is increasing, because most people in organizations are spending more time interacting with computers as party of their work, like entering the SAS system. I'm using the Dreamweaver MX for design my interface.

In the process of learning Dreamweaver MX, I had make some efforts by reading books, try and error by using the software itself, did some tutorials from the given software and surfing the internet for the online tutorials on Dreamweaver MX and of course some help from friends that know better with the Dreaweaver.

5.3 Coding the Program

5.3.1 Learning ColdFusion Express

I'm using Cold Fusion as my coding language. ColdFusion is a software program that runs on the same computer that runs the web server software. ColdFusion only be the platform to generate my system by using the ColdFusion Administrator. At first I'm using ASP, but there are too many problems I need to faced a especially when I want to connect with database. But when I'm using ColdFusion Administrator as a generator, my work become easily and because of that I change to use ColdFusion as my coding language. Before I write and execute ColdFusion code, I need to install ColdFusion server software. ColdFusion was saved in C:\INETPUB\WWWROOT.

5.4 Learning Microsoft Access 2000 for Databases

Learning Microsoft Access 2000 is a windows- based database management system. It is one of the programs in Microsoft Office. With Access I learnt much on how to manipulate all the information that will be stored in the database in variety of ways. Some things that I learnt with Access are :

a) Open tables and enter data into them
b) Manipulate and perform calculations on the data
c) Format the data
d) Design queries for retrieving information in a database
e) Define the primary key
f) Access the internet/intranet and view related information anywhere on the localhost or in database.

I learnt database subject during my second year and I was quite familiar already with it but not into depth since I just had a chanced on designing some simple database and not too big to use like I was doing for my thesis.

5.5 Database Connections

The ColdFusion Express Administrator allows us to create a connection to a database easily. Below are the steps that I've done to connect to my database.

a) Open the ColdFusion Express Administrator under the Programs
b) Under the server grouping, select the ODBC option
c) Drop down the ODBC Driver select box to see the available databases that ColdFusion Express supports. Select Microsoft Access, which is the first option
d) Put in a data source name "Student.mdb" and click Add
e) Next to the Database File text field, click Browse server. My data source name is "Pelajar" and next just click Create.
f) After creating a data source, ColdFusion Express will test to be sure that the connection was successful.

5.5.1 Open database Connectivity (ODBC)

Open Database Connectivity(ODBC) emerged as a solution to provide connectivity between databases and applications. The standards sets by ODBC enable connectivity to a wide variety of databases that existed in different formats on different platform. The standards are implemented in ODBC Application Programming Interface(API) to communicate with a database. The application communicates with the driver through a set of SQL statements. By using ODBC API, the driver translates these SQL statements into a format the databases can understand. ODBC has rapidly gained widespread acceptance, and a number of databases comply with the ODBC standards. Databases can comply with the ODBC standards are known as ODBC compliant databases.

5.5.2 ODBC Connections: Data Source Name(DSN)

Data Source Name is created on a Windows computer to connect to ODBC compliant databases and a connection string is used to connect to ODBC database. In ColdFusion Express Administrator, ODBC databases will be connect by using DSN. When I create to a database, I have to specify vital information such as the database's name and location and the name of the database driver that supports the a database. A DSN encapsulates all this information by providing a name that can be used as a shortcut while creating a database connection. Therefore, when I created the connection using DSN, I need to specify just the DSN without having to specify just the DSN without having to specify all the connection information.

An ODBC connection to an Access Databases:
Driver={Microsft Access Driver(*.mdb)};DBQ=path of the database(pelajar.mdb);

5.6 Microsoft Internet Information Server(IIS)

Microsoft Internet Information Server(IIS) is a Web Server. That running in windows NT and Windows 2000.Web server must be install before application server (ColdFusion Express)is installed. To make sure that my web server as running, first I will open to the browser and go to http://localhost. If IIS are display, it's mean that my web server are running on that computer.

5.7 Identifying ColdFusion Scripts

ColdFusion applications are written in a language called CFML, or ColdFusion Markup Language. Unlike many other languages used for Web application development, CFML was designed specifically for use on the web. To know that a tag is a CFML tag is by the fact that all CFML tags begin with CF.

5.7.1 Important Tag in ColdFusion Markup Language (CFM)

i) <CFOUTPUT> Tells ColdFusion Express that something is going to be generated and returned in the browser to the user for viewing. In other words, this tag instructs to start looking for variables that need to be processed. Like HTML tags, the <CFOUTPUT> tag has both an opening and a closing tag:

```
<CFOUTPUT>
  things to be shown to the user
</CFOUTPUT>
```

ii) <CFSET> Allow to create and manipulate variables, but it wont cause any output to be returned to the user. In order to print out the values of variables, we need to use the <CFOUTPUT> tag.

For Example :

```
<CFSET Age="29">
<CFOUTPUT>
#Age#
</CFOUTPUT
```

iii) <CFIF> To used for purpose.

For example :

<CFIF Expression IS "TRUE">

Do something if the expression is true

</CFIF>

iv) LOOP> Allow to create programming loops in CFML.

For Example :

<CFLOOP..>

HTML OR CFML code to loop over…

</CFLOOP>

5.8 Using A Basic SQL Statements

CREATE VIEW

CREATE VIEW is used to create a new view of one or more tables.
CREATE VIEW viewname AS
SELECT columns,…
FROM tables,…
[WHERE…]
[GROUP BY…]
[HAVING…]

DELETE

DELETE deletes one or more rows from a table.
DELETE FROM tablename
[WHERE…]

INSERT

INSERT adds a single row a table.
INSERT INTO tablename [(columns,…)]
VALUES(values,…)

INSERT SELECT

INSERT SELECT inserts the results of a SELECT into a table.
INSERT INTO tablename[(columns,…)]

SELECT columns,... FROM tablename,...
[WHERE...]

SELECT

SELECT is used to retrieve data from one or more tables(or views).
SELECT columname,...
FROM tablename,...
[WHERE...]
[group by...]
[having...]
[order by...]

UPDATE

UPDATE is updates one or more rows in a table.
UPDATE tablename
SET columname=value,...
[WHERE...]

5.9 Creating A Connection to A Database

In ColdFusion langunge to create a connetinn to adatabase is using the <CFQUERY> CF brought meang the tag is ColdFusion tag.

For Example :

```
<CFQUERY NAME="qGetGuest" DATASOURCE="student">
SELECT Sname,Semail,phone,spswd,G_ID,comments,reply
FROM Pelajar
Where G_ID=#URL.GID#;
</CFQUERY>
```

5.10 Inserting, Updating and Deleting the Records

Inserting databases to the program use the command <CFINSERT>

For example :

```
<CFINSERT DATASOURCE="student"
TABLENAME="Pelajar"
Formfields="Sname,spswd,semail,phone,id,gpa,cgpa,Ecredit,Ycredit,Lname,lpswd,lemai
l">

<CFLOCATION URL="http://localhost/adminmenu.cfm">
```

For update the data is use command UPDATE

For Example :

```
<CFQUERY NAME="qGetGuest" DATASOURCE="student">
UPDATE Pelajar
Where GID=#URL.G_ID#;
</CFQUERY>
```

Deleting from the database just use as a normal command and include with DELETE

For example :

```
<CFQUERY NAME="qGetGuest" DATASOURCE="student">
DELETE *
FROM Pelajar
Where G_ID=#URL.GID#;
</CFQUERY>
```

5.11 Chapter Summary

This chapter basically summed up all the methods that I've been using while implementation my system. With the help of Dreamweaver MX books and tutorials I managed to come up with an idea on how to build a web based system and understand and ColdFusion application . I had include all the steps action taken during the implementation of the system by looking up on how did I came up with the requirements and put the coding inside the Appendix.

Chapter 6- System Testing

6.1 Overview of Testing

System errors and failures occur mainly because of inadequate or improper testing. Quality system however demands that system be tested properly. The purpose of testing is to detect the presence of errors in systems ; errors that have not been discovered yet. That means, a good test case is one that has high probability of finding as a yet undiscovered error.

A successful test is one that discovers errors whereas an unsuccessful test is one that discovers no errors. The goal is to design tests that will uncover the greatest number of errors or classes of errors in minimum amount if time and effort. Successful testing will result in quality system ; system with fewer errors and which work according to specification and performance requirements. It will lead to dependable and reliable system.

6.2 Testing Principles

Several principles have been suggested for testing system:

ii- tests should be planned long before testing begins

iii- testing should begin in a small and progress towards testing in the large, from micro to macro or from small modules too large modules

iv- all tests should be traceable to customer requirements. That means, the software must meet all the requirements of the user

6.3 Testability

The system designed must be enable to testing. That means the system must have the following characteristics:

i- Simplicity-The simpler the system, the easier it is to test it. System simplicity means that it is functionality and structurally simple and that its follows proper standards

ii- Understandability- A system is understandable if its design and the interfaces between modules are easy to understand. Understandability also implies that the associated documents are accurate, complete, accessible and easy to follow

iii- Operability-The system must work properly if you want to test it. That means, it must have as fewer errors as possible and that no bugs block the execution of tests.

iv- Observability - This means the system states and variable are visible or can be queried during execution, all factors affecting the output are visible, source are accessible, internal errors are detected and reported, distinct outputs are generated for each input, and incorrect outputs are easily identified.

v- Controlability- This implies that all code is executable through some combination if input, input/output formats are consistent and structured, and tests can be conveniently specified, automated and reproduced.

vi- Decomposability- The system is built from independent modules and that each module can be tested independently. This helps to isolate errors and perform retesting more easily.

vii- Stability- The system changes are infrequent and controlled, changes do not invalidate existing tests, and recovers well from errors.

6.4 Attributes of a Good Test

i- It should not be redundant, have the same purpose as another test. It will simply waste time and resources . That means every test must have different purpose

ii- It must have a high probability of detecting an error

iii- It must uncover a whole class of errors

iv- Each test case should be executed separately

6.5 Designing Test Cases

One of the objectives in test case design is to encover the most number of errors with the minimum amount of time and effort. The test case must have the highest likelihood of detecting errors in the system. A number of approaches or strategies have been proposed to this end with verifying degrees of success. They are:

a- Functional/ Black-box Testing

This is intend to exercise or test the functions specified in the system. It derives its test cases from the program specification. Know each of the function must do and design test cases to demonstrate that it works properly.

b- Structural/ White-box/Glass Testing

This is used to exercise or test the internal structure of the system. It derives its test cases from the knowledge of the program's internal structure.

c- Interface Testing

This is to test the user interface. It derives its test cases from the program specification as well as from the knowledge of its internal interfaces. This is specially important in the Windows environment.

Even I don't have enough time in develop my system, but the end I can spent a little time for doing system testing. The coding and integration stage after the my design phase is complete. During this phase of the system development cycle module is a code and documented using the detailed design as a blueprint.

For each module in SAS system, it is test for errors discovered are removed. The modules are then assembled together to build the system. A the modules are integrated, the system is tested. After the integration is completed, the entire system is tested further for errors. It is important to consider ahead of time the order in which the modules are to be coded and the strategy used to build the system.

The approach used in coding the modules and assembling the system is called an integration strategy. There are several alternative methods, each of which has its pros and cons.

Coding and testing are carried out in parallel. The approach chosen to guide integration affects both the progression of the coding and the scheduling activities. The levels of testing include:

- ***Module Testing-*** Test if all the modules meet the required specifications are correctly coded.
- ***Integration testing-*** Test if all the modules (when integrated) work correctly. This ensures that the modules are correctly interfaced.
- ***Function Testing-*** Test if all the functions required by the application and specified in requirements.
- ***Performance Testing-*** Test if all the performance of the system meets the required specifications(Non-Functional Requirements(Chapter 4)).
- ***Acceptance testing-*** Tests if the system can be accepted for operation.

6.6 Testing Strategies

6.6.1 Integration Testing

After performing the unit test, the modules are integrated or combined into a working system. The integration in planned and co-coordinated so that when a failure occurs, it can be solved immediately. There are two major approaches to integration:

i- Incremental approach : The modules are added one by one to the set of the of already integrated modules. When performing the integration test , the system is viewed as a hierarchy of modules

ii- Big bang/Non-incremental approach: All modules are combined together in one step

These are 4 types of integration testing : Bottom-Up, Top-Down, Sandwich and Big-bang Testing.

6.6.2 Testing The Entire System

This refers to testing of group of modules, up to and including the entire system. The first level of testing in the large is integration testing. Integration testing begins by testing small groups of modules and ends with the testing the entire system.

Integrating testing has two board purposes:

- To test the interfacing and integration of the modules in the system
- To test the functional performance of the system

Acceptance testing is the second level of testing in the large. In acceptance testing, the user tests the entire system. The goal of this testing is to make sure the system meets the user's requirements.

6.6.2.1 Acceptance Testing by Users

Once of the system tests have been satisfactorily completed, the system is ready for acceptance testing, which is testing the system in the environment where it will eventually be used. The purpose of acceptance testing is for users to determine whether the system meets their requirements.

6.6.2.2 Test Planning and Scheduling

The testing process should be precisely specified and set out in the project plan. It is desirable to start test planning at a relatively early stage in the system development process. It is a good practice to start to develop the system and acceptance test suite

during the latter stages of requirement specification. The reasons for preparing the system tests and acceptance tests early are that:

- It helps the developer in carrying out requirements analysis
- It helps to predict the resources required for system and acceptance testing
- It helps to anticipate special-purpose testing tools needed

6.7 System Debugging

Testing is done through out system development, not just at the end. It is meant to turn up heretofore unknown problems, not to demonstrate the perfections of programs, manuals or equipment. So to make my SAS works smoothly an well I tried to figure out on method of testing the system before finally present it to the supervisor and moderator.

First of all after I had done with all the user interfaces of SAS, I had to make sure that all the links are linked properly and any errors that occurred in the system , I need to eliminate them step by step. Using ColdFusion , were very easy since if there were any coding errors, message to alert will pop up straight away and I change the errors periodically.

When it came to the database, Microsoft Access was helping me wonderfully since I was not familiar enough to use this at the beginning. But with the helps of my friends and by reading the book, I managed to handle the situation and finished the part of database.

Next step was linking the database with the ColdFusion . I really had to put much effort on this part since I didn't know anything on this. Again researched had been made and from the tutorials that I downloaded from the internet, really help me out.

This part I really used to try and error method and when it was successfully created the link, I was quite relieved. Next to make it run in IIS, I searched for this program since my computer was not set up before with this intranet server, and I learned on how to use of it by asking my friends who were already familiar with this.

Although testing is tedious, it is an essential series of steps that helps assure of the eventual system. It is far less discruptive to test beforehand than to have a poorly tested system fail after setting it up.

Testing is accomplished on program modules as work progress. Testing is done in many different levels at various intervals. Before the system is put into production, all programs must be desk-checked, checked with test data and checked to see if the modules work together with one another as planned.

6.8 Chapter Summary

This chapter includes on main testing techniques, approaches to incremental integration, and steps in integration testing. During the design stage, the system under construction is decomposed into modules. Initially each module must be tested. When debugging the system any errors found, were tried to solve and sincerely this part was quite hard for me. When doing this phase, I need to spent too much time its because there are always got errors.

I learnt to be patient to find the solution till my system can run without any error. I had asked my friend and refer to books when getting the error and system cant run. From this phase I learnt to get the solution with try and error with doing in the source code. And at last my system can work properly.

Chapter 7- System Evaluation

7.1 System Evaluation

System Evaluation is a process of evaluating the developed system to identify the systems to identify the system's strength and limitations as well as future enhancements. It also enables the developer to problem encountered during the development of the system.

7.2 Problem Encountered and their Solutions

During this Students Advisee System, too much problems were encountered. The following are the some of the major problems gained and the approaches taken to solve them from the beginning through the end of the system development process.

7.2.1 Inexperienced in Using Macromedia Dreamweaver MX

Without the experienced is not easy for me to use this software . To overcome this problem, much time was really spent in learning and grasping the new language.

7.2.2 Difficulties in Choosing a Programming Language and tools

There are many software tools available in the market for developing web based system and choosing a suitable tool was a critical process for me. Once I became give up, but I'm try again till success. For me, this is a critical process because lack of adequate knowledge of these languages in this software. The web based languages is different from the normal stand alone language.

I'm never use this software this before. I'm become give up when I'm doing coding in ASP languages. And I try to find the most easy programming language to use, and at last

I'm using ColdFusion languages as my script side. I learnt from books, tutorials from the Macromedia Dreamweaver MX under Help, surfing from the internet the related materials were also some of the approaches taken to solve the problems. Discussion with friends that using the same script side was a great help.

7.2.3 Lack of time

Due to lack of time, some specification proposed before failed to be developed during the time frame given. Since I have to catch up also with other subjects, I really have to squeeze in my time in order to finish up my final projects. In the Future Enhancement I will explain thoroughly what had I changed in my system proposed before.

7.3 Systems Strength

After finishing developing my system, I found out there are a little strengths in my system even though I was not really satisfied with my job. I'm still want to change to make my system better then now, but as I said before, I don't have enough time and without any experienced I cant give the bet for my this first time project. But I'm still happy and so pleasure, because even I ever feel to give up, but I'm still can produced something. I'm glad because without any basic knowledge, I still can produce a system like Students Advisee System (SAS). I think bellows are strengths from my system tat I'd developed.

7.3.1 Friendly and easy of Graphical User Interface (GUI)

The major advantages that I figured from SAS is that provided a friendly and easy to use the interfaces. Everything is so simple and easy to handle even for the first time user. I designed everything using Dreamweaver MX . Hyperlinks are provided to users to choose which user are them. At the screen were display Admin, Advisor and Students. User's must choose between student or advisor to use the benefit from this system.

Hyperlinks are provided to users to enable them to navigate from page to page easily by pointing and double clicking.

7.3.2 Step by Step Performance

For the first time users, they only need choose which user are them and click. The just need to follow what's were display on the screen.

7.4 Current Enhancements

I had made more changing from what I had proposed earlier in the proposal and below I'll mention all the changing. The reason of changing are because of my lack of knowledge to make my system better as well as I had proposed this before. I just try my best to do the modules that I can do and I was give my very best for my system even my system are very simple. Sometimes, I feel so difficult to do my system because I 'm never have an experienced doing the home page with coding. In my Multimedia System subject in my second year, I'm just learn to do static web page. And with the supported from my Supervisor also with my good friends, I'm try my best to keep go on with my system.

This is only a simple home page, but the objectives of Students Advisee System where to make a good interaction between students and their students advisor together with discussion between students are still archived. The relation between students and advisor can be better if this system will be use. It's because in our faculty there no specific web based for interaction between students and their advisor.

For this moments I'm still make improvements for my interface. I'm also try to add some module like validation but it's not finish yet. I managed to keep track with all I proposed in the first part presentation, and there were a quit big changes including my interface design. For the first previous interface I had made some mistakes on designing and I'm more comfortable with the current design even my interface design is very simple.

I'm supposed design better for my interface, but I had change too many things when I'm doing my project. I'm more concentrate for my coding programming till I doesn't have much time to improve my interface.

I made some changes in my development system where I 'm change to use ColdFusion as my script side. I'm feel very easy to use this language tom compare with ASP languages.

The database also was changed regarding to my systems. There are some items that I had faced some alteration during the implementation phase. There were some items that I had missed during the proposal and I had made some and major changes. A lot of changes actually for my system design especially for the modules.

Even though there are many changing in my system to compare with what I had proposed last semester, but the objectives of this system are still archive. This is because I can make interaction between students and their advisor. I'm using mail for interactions between student and the students advisor while Chat Room are open to all users include admin. Under Chat Room students can discuss anything between students and also they can interact directly with advisor if the advisor join the Chat Room.

SAS is a web based system, but it's still can't be archive to others because I'm using localhost to run my system. I'm supposed to save it with IP address. But before presentation I don't have enough time to change it. Maybe it's will be decide in my future enhancements.

7.5 Future Enhancements

If there are still some times for me to change in my current system, I want to add some more interesting modules and I really elaborate on some of the certain modules proposed.

There are always new ideas encountered during the development of the system. However due to time constrain, not all of these ideas could be incorporated into the system. Some of my ideas that I want to do as my future enhancements are :

i- Upgrading for the admin module. Admin can change all the record s anytime and improve the functional in this current system

ii- Make this system to be online. But it's need long time because all the students record together with their advisor name must be have in the databases

iii- Display time when the advisor available to interact directly with their students

iv- Make my interface design more interactive with more nice color

v- Include the announcements for the faculty students from the lecturers

7.6 Problem Encountered

In order to obtain a proper conclusion, there were a few problems to be countered in the developing my system. I would like to mention, that at first, I'm using ASP languages for coding. There are a lots of problems till I make a change at the last minute which I'm change to use ColdFusion Markup Language(CFM) coding. Among the problems to be considered when I'm using ASP are shown below.

i) Lack of knowledge in web based application.

During development SAS, there were problem faced when choosing the appropriate languages. The reason is the lack of knowledge and experience in developing the system using web based technologies such as ASP. Basically

the problems encountered in web pages coding involved ASP and scripting code.

ASP Coding

Actually most of the ASP coding problems were encountered in the early stages of project development. This is because of the ambiguity and lack of understanding of the language initially. In fact, as the project development on, a better understanding of most of the ASP coding was obtained and problems encountered in the earlier stages of development.

ii) Not enough time to upgrade the system

Due to lack of the resources such time, the system could not be fully completed as what I want. When I become better in coding I think I want to make additional for my system, but with a short time, how could I make my system better. This is because I was used too much time to find a suitable and easy coding language for my system. And at last I don't have enough time to add extra function on my SAS system.

iii) Unfamiliarity of development tools used

At the early stages of system implementation, problems were encountered in using development tools that were used to develop the system. Among the development tools that are used were Dreamweaver ColdFusion MX as a generator, Macromedia Dreamweaver MX as a platform for interface design and Microsoft Access 2000 for create database. In a short time, I have to learn and be master to the tools. However with constant use and through examples and tutorials from help files and books for all the development tools, at last I was able to manipulate the tools to help me in developing the program that have need.

7.7 Solution to the Problems

Although there were a few problems faced as mentioned previously, they were managed to be overcome with below listed solutions.

i) I'm using ColdFusion as my coding language to replace the ASP. By using ColdFusion the coding become easy even though I change the language in development my system at the last minute.

ii) Guidance and discussions with friends provided a clearer understanding on the system. The suggestions and help from course mates make the ideas to develop the system clearer and easier even in the short time given

7.7.1 Useful knowledge gained

In fact there was no doubt a lot of knowledge obtained throughout development entire of the SAS. Among knowledge which has gained was stated as below :

i) Learnt additional software tools

ii) Instead of the programming tools studied in C,C++ and Java Programming, there are some other tools learnt up during developing the system such as Dreamweaver MX, ColdFosion Coding and HTML which used to create active web application. Besides that, the other technologies such as database programming and manipulation also improved and new knowledge on it was obtained. I also discovered that in order to develop and organized and systematic application, the following practice must be followed:

a) Flow Chart: The system structure is designed and draw before actual coding to avoid illogical design and to ensure that then programming task is easier and more systematic. But not all the flow chart that I follow. This is because there are many changing that I have done doing the system development. As well, this flow chart only be my guideline to start my project

b) Mastered the Process of Creating a Software: During the developing the system, the whole process of creating software was learnt and implemented. Beginning from the user's requirements to the system analysis, coding and finally the testing of the system.

c) Good User Interface: Actually I'm not spent more time for interface design because I most concentrate with my programming coding till the system can be run. I just can prepare a simple interface but, it's easy to understand by anybody.

d) Experience in Problem solving : The solution of problems can be obtained by discussion with my friends. Also the useful experiences was gained especially in the section of implementation a system.

e) Skills in writing Documentation : I also obtained the knowledge of the proper format of writing documentation. Good documentation serves the aim of supporting testing and maintenance of the system. All changes are recorded for consistency while system implementation and testing are conducted based on the requirements and specifications to ensure that no requirements are left out. A user manual is also documented to help users to use the system. Thus, I have learnt to prepare documentations and adhered to known standards and guidelines

f) Skills in Time Management: Time and management was very important in this case to finish the system . But, I'm not a good in manage my time. May be I'll improve it for the future working environment

g) Hand on Experience : Practical exposure such as this project has given me the knowledge and prepared me for the actual working environment. As the computing world is constantly evolving and changing, I have taken this opportunity to improve my weakness and enhance my knowledge.

7.8 Chapter Summary

Even though I'm really feel give up to do my system, but till now I'm still feel very happy because I have given the opportunity to develop the system such as what activities should be encountered inside each phase of developing the system. Although there were some problems being facing along developing the system, I can trained how to face the problems and solve them successfully. It dives me the useful and meaningful experienced before I involve myself in to the working environment.

Conclusion

Overall, the SAS has archived the system objectives where interactions between student and their advisor.

As a conclusion, SAS it's own strength and limitation as a mentioned in the earlier chapter. Besides that the system has met it's objectives of being a interactions system. Mainly SAS focuses on providing a guidance on interacting between students and advisor in faculty environment.

In fact, building a web based system which is stand alone application is quite challenging task. Quite a lot of researches, time and effort have been involved in making this system. In addition, a comprehensive knowledge of building and created by using client and server as the main communication feature to a web based application.

Besides that a lot of knowledge and experience gain throughout the development process of SAS. It is significantly that there has been an opportunity to show the capability in system development. Furthermore, one of the most essential knowledge gained from this project is the techniques on problem solving and knowledge on software development.

This leaving process proves how critical it is to make up to date information. It is important to do that in order to keep up with the progressive and ever changing field on Information Technology.

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