Online Community System

Information System

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Abstract

With the tremendous growth of the Internet and the expansion of the Internet and the expansion of the World Wide Web, more and more facility and information is being put on the Internet. The Internet creates a global communication that break the barrier of time, place and distance within which conducts Online Community System.

Online Community System is a system that allows world wide people to create their own community through the Internet for their propose like communicate to each other or sharing an information. This thesis describe the Online Community Information System that allows Internet users sharing information, news and ideas at anywhere at anytime through the Internet.

The Online Community Information System has seven modules. Structure diagram is used to shows an overall subsystem of the project. Besides, this project will review the method, technologies and development tools (like waterfall model with prototyping, using Active Server Page on Windows 2000 platform, the web server with back-end database – Microsoft SQL server 7.0) that are used to set up Online Community Information System.

At the end, this project will implement the entire requirement into a real system and analysis the strengths and weakness of the system. It is hope that the major problems faced by current system can be solved through this project.

Acknowledgement

First of all, I would like to express my warmest gratitude to my supervisor Mr. Chiew Thiam Kian who has given me invaluable guidance throughout this thesis. I sincerely direct this appreciation for his enormous concern, innumerable pieces of advice, patience and insightful criticism.

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CHAPTER 1
INTRODUCTION

1.0 Project Overview

Internet is a worldwide system of computer networks. The most widely used part of the Internet is the World Wide Web. By using the Web, people can access to million of pages of information. For many Internet users, electronic mail (e-mail) and Internet Relay Chat (IRC) are the most widely used application to communicate each other. Online-Community system provides any group of people with the ability to establish their own private and interactive online community trough the Internet. It provides a lot of application that allows Internet users to sharing ideas, interests, and felling without geographical boundaries. Online Community Information System have application that allows Internet users to share information over the Internet in their own private community and secure area. It also provided a suite of powerful tools that enable a community effectively get organized, communicate, shares knowledge and information instead of using e-mail and IRC for many Internet users.

Online Community system can be divided into 3 main subsystems :

- Online Information system
  - Member information
  - Discussion Groups
  - Image Gallery
  - File Sharing
  - Vote center/decision maker
  - Announcement
  - Message Board

- Online Chatting and communication system
  - Real-time Chat
  - Online chat

- Online Administration system
  - Security section
  - Community administration
  - Create community
  - Web-based Administration (community creator)
  - Web-based Administration (member of community)
  - Electronic mail system

1.1 Project Objective

The main objective of Online Community Information System is to allow people to effectively share knowledge and information online in a secure environment. Besides, Online community information system makes user easy to use, as no programming skills are required and no software to download or install. It also enable user to access the web page for :

- Edit, view, send and reply message or information
- Create or join an interactive forum
- New user familiar with the power tool

1.2 Project Scope

Online Community Information System is a web – based application. It is divided into database server, web server, and client side. The database is stored in the database server and client can access the data or store the data through the web server, which will interact directly with the database and retrieve information. The target user of this system includes all the Internet users that would like to join Online Community Information System. The Online Community Information System will have the following function that listed below :

Online Community Information system	
Module	Description
Announcement	User can post their announcement, notice and event to all member
Discussion Groups	An interactive forum that allow a large group of people to take part in the same conversation.
Image Gallery	User can post their photo to share with others member. Each image has its own note board so members can make comments.
File Sharing	Users can share file with others member. Each uploaded file also receives its own note board to collect members' comments.
Member information	Provide information for all members including address, phone number and date of birth.
Vote center	Users can post their topic to let others member to vote and make the final decision regarding the topic
Message Board	Users can post message to other member in the group.

Table 1.1 The Modules of Online Community Information System

1.3 Development Methodology

Figure 1.1 shown the development life cycle used in developing of Online Community Information System. The waterfall model with prototyping approach is selected for development of Online Community Information System. This method is adopted because ease of implementation.

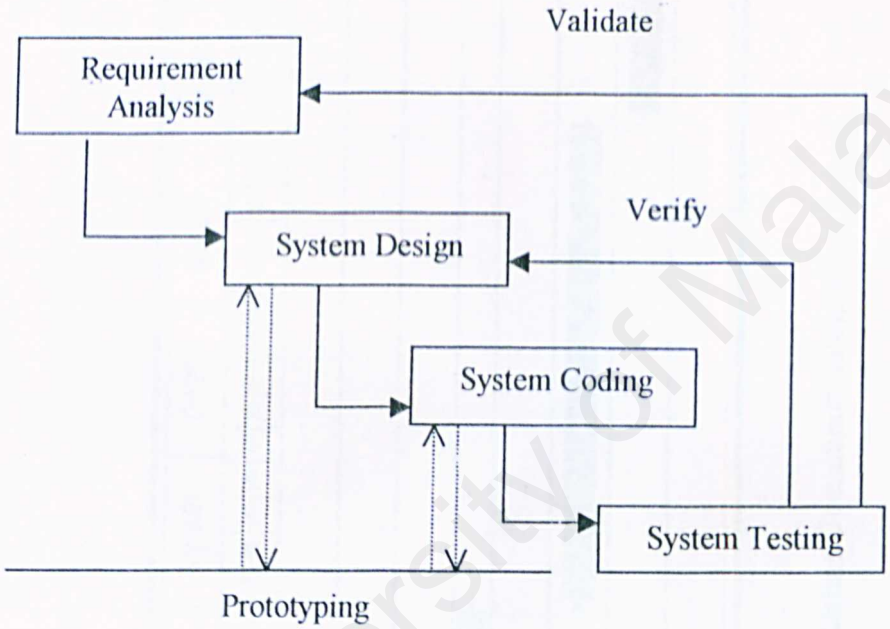

Figure 1.1 Project Development Strategy

1.4 Project Schedule

This project spans over a couple of months. As a result, Gantt chart is used to schedule tasks that will be carried out through this period.

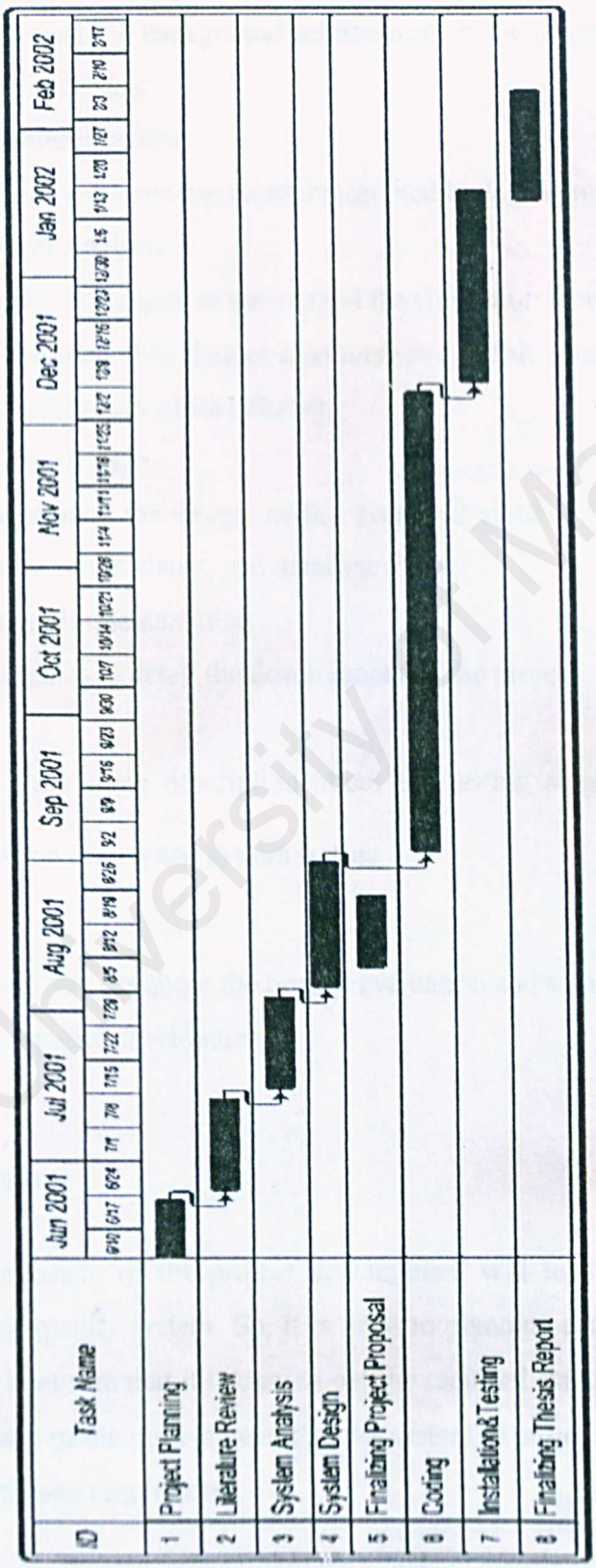

Figure 1.2 Schedule of Online Community Information System

1.5 Report Layout

This report consists of four chapters, a summary of all these chapters in the documentation is listed as below :

Chapter 1 : Introduction

This chapter presents the background information on the project and introduction of Online Community System.

Chapter 2 : Literature Review

This chapter reviews various literatures researched in developing this project.

Chapter 3 : System Analysis

This chapter seeks thoroughly to understand the current problem and the requirements of the project. Besides, this chapter also analyzes and discusses the adopted system development methodology of this project.

Chapter 4 : System Design

This chapter discusses the design of the proposed system. System design includes process design, structure charts, and database design.

Chapter 5: System Implementation

This chapter explains in detail the development of the project.

Chapter 6:

This chapter gives some description about the testing stage, which involves unit testing, integration testing and system testing.

Chapter 7:

This chapter will discuss about the project evaluation and some problems encountered throughout the project development.

1.6 Conclusion

A good management of the project development will lead to project success and produce a high quality system. So, it is need to planning and scheduling the project development to ensure that it is carried out the required standard. All of this planning is the first phase of the project development system to ensure that it is consistent with the project goal and requirement.

CHAPTER 2
LITERATURE REVIEW

2.0 Introduction

In order to ensure the success in a system development, a careful planning is essential. So, in developing this project, research has been conducted in several related areas to gather the prerequisite information. The information is gathered through net surfing, reading on books, references, and journals.

The research areas are focused on the following aspects:

- Online community information system
- Networking
- Operating system platform
- Web management system
- Database

2.1 Online Community Information System

2.1.1 The Internet

The Internet is a worldwide system of computer networks - a network of networks in which users at any one computer can get information from any other computer It was conceived by the Advanced Research Projects Agency (ARPA) of the U.S. government in 1969 and was first known as the Advanced Research Projects Agency Network. The original aim was to create a network that would allow users of a research computer at one university to be able to "talk to" research computers at other universities.

Today, the Internet is a public, cooperative, and self-sustaining facility accessible to hundreds of millions of people worldwide. Physically, the Internet uses a portion of the total resources of the currently existing public telecommunication networks. Technically, what distinguishes the Internet is its use of a set of protocols called TCP/IP (for Transmission Control Protocol/Internet Protocol). Two recent adaptations of Internet technology, the intranet and the extranet, also make use of the TCP/IP protocol.

For many Internet users, electronic mail (e-mail) has practically replaced the Postal Service for short written transactions. Electronic mail is the most widely used application on the Net. You can also carry on live "conversations" with other computer users, using Internet Relay Chat (IRC). More recently, Internet telephony hardware and software allows real-time voice conversations.

The most widely used part of the Internet is the World Wide Web. Using the Web, you have access to millions of pages of information. Web browsing is done with a Web browser, the most popular of which are Netscape Navigator and Microsoft Internet Explorer. The appearance of a particular Web site may vary slightly depending on the browser you use. Also, later versions of a particular browser are able to render more "bells and whistles" such as animation, virtual reality, sound, and music files, than earlier versions.

2.1.2 Virtual Community

A virtual community is a community of people sharing common interests, ideas, and feelings over the Internet or other collaborative networks.

Before the Web, virtual communities existed on bulletin board services (bulletin board system). Some virtual communities or facilitators of them use the metaphor of a coffee house or something similar to help users visualize the community. In general, there are two kinds of communication among virtual community members - message postings and real-time. Usenet newsgroups are an example of the former. Many Web sites, such as Geocities, foster subject information exchanges. For real-time chat,

Internet Relay Chat (Internet Relay Chat) is a system used by many Web sites that foster virtual communities.

2.1.3 Information

Information is stimuli that have meaning in some context for its receiver. Some kinds of information can be converted into data and passed on to another receiver. Relative to the computer, we can say that Information is made into data, put into the computer where it is stored and processed as data, and then put out as data in some form that can be perceived as information. Knowledge is information that is readily accessible to its user.

2.1.4 Analysis on the existing Online Community System

2.1.4-1 Analysis on "MyFamily.com"

URL address : http://www.MyFamily.com

MyFamily.com is the leading provider of free, private Web sites for families around the world. MyFamily.com provides a unique venue to connect and strengthen families on the World Wide Web. In a secure, password-protected environment, MyFamily.com users can hold family discussions, create online family photo albums, maintain a calendar of family events, share family history information and buy gifts for family members quickly and easily.MyFamily.com sites are free, easy to use, and private. Users can create and access multiple MyFamily.com sites enabling participation in sites dedicated to different sides of the family and various groups such as old school classmates.

Advantages of the system are:

- Have an Online Home - Create your family's home on the Internet in a matter of minutes
- Ensure Privacy - Your site is password-protected, so only you and those who are invited to participate can access it. Keep family secrets in the family.

- Save Money - Do you have a widespread family? Chat and talk online without spending a dime!
- Stay Current - Gives you an easy and accessible place to keep all contact information. Each person can update their personal information as it changes.
- Free of charge – Anyone can setup community without any of charge.
- Easy to use - Anyone able to access the Internet can quickly set up a MyFamily.com site and use its features without programming languages skills.

Disadvantages of the system

- User cannot choose his or her own layout. Besides, the user interface is not user-friendly.
- Lack of tool and feature in the community.
- The help file is difficult to use and it not contain 'search' for keyword.

2.1.4-2 Analysis on "Communityzeo"

URL address: http://www.communityzero.com

CommunityZero is an interactive website that allows agroup of people to communicate and exchange information over the Internet in their own private and secure area. Within each area, called an online community, participants are provided access to a suite of powerful tools that enable a group to effectively get organized, share knowledge and communicate. CommunityZero is essentially a private interactive website, otherwise referred to as an intranet. Only authorized users are granted access, thus protecting the privacy of the sensitive information contained within the community. The degree of security can be set by the administrator of the community. Any individual is welcome to create their very own Core ™ community by visiting communityzero.com. A form-driven interface will guide users through the simple setup process. No technical knowledge is required and no software needs to be installed. CommunityZero allows any Internet user to create their own private area on the Web to connect a group of people in fast, 3-step setup.

Step 1 : name and describe the community.

Step 2 : choose a privacy setting.

Step 3 : send invitation by email.

Advantages of the system

- The user capacity and text storage are not limited.
- Administrative interface provides a series of tools to manage member accounts, communities, look & feel, custom brand settings, broadcast e-mails and more.
- It is free of charge.
- Private and secure online communities. Powerful tools for collaboration and interaction.
- Easy to use – no need programming knowledge or soft download.

Disadvantages of the system

- Image and file storage are limited (5 Mb).
- Cookies are required when you want to be a member of CommunityZero.
- User interface is not user-friendly. The layout is too complex and not attractive.

2.1.4-3 Analysis on "SmartGroups.com"

URL address : http://www.smartgroups.com

SmartGroups.com is all about making life easier. It's a great, new way of organizing the different groups of people in your life using email and the Internet. SmartGroups.com keeps you in touch, helps you to share information, manage events and even make group decisions. Anyone can set up and run a SmartGroup. SmartGroups.com combines web-based group information together with email messaging, keeping group members updated of urgent or interesting group issues. All SmartGroups.com members can control where, when and how they use the service to ensure it exactly fits their lifestyle and different group interests.

Each SmartGroup has a:

- homepage with basic group information
- message area
- event calendar
- files area
- picture albums
- voting area
- classified ads
- simple database system
- management area

Group members can email the group, add events and files and create votes and lists SmartGroups.com members can create and join as many groups as they like and groups can be publicly visible or totally private.

Method of the system work - Setting up a new group takes about a minute and you can instantly invite friends, colleagues, club members or whoever you like to join your group. You just enter their email address and SmartGroups.com does all the work.

Members can choose how to read group messages, they can have them sent to their normal email in-box or read group mail *via* the web at SmartGroups.com. Each SmartGroup has its own home page with all the latest group information on it and the shared group calendar means you'll never miss another important group event again.

Advantages of the system are:

- It is free of charge.
- The layout is attractive and the tools are easy to use..
- Having policy to prevent you from receiving unsolicited commercial email
- Easy to use – no need programming knowledge or soft download.
- Provide private and secure online communities

Disadvantages of the system

- Need time to customize the features in the community.
- Cookies are required when you want to be a member of CommunityZero.
- The storage space is limited

2.2 Networking

In information technology, networking is the construction, design, and use of network, the selection and use of telecommunication protocol and computer software for using and managing the network, and the establishment of operation policies and procedures related to the network.

2.2.1 Client/server

Client/server describes the relationship between two computer programs in which one program, the client, makes a service request from another program, the server, which fulfills the request. Although the client/server idea can be used by programs within a single computer, it is a more important idea in a network. In a network, the client/server model provides a convenient way to interconnect programs that are distributed efficiently across different locations. Computer transactions using the client/server model are very common. For example, to check your bank account from your computer, a client program in your computer forwards your request to a server program at the bank. That program may in turn forward the request to its own client program that sends a request to a database server at another bank computer to retrieve your account balance. The balance is returned back to the bank data client, which in turn serves it back to the client in your personal computer, which displays the information for you.

In the usual client/server model, one server, sometimes called a daemon, is activated and awaits client requests. Typically, multiple client programs share the services of a common server program. Both client programs and server programs are often part of a

larger program or application. Relative to the Internet, your Web browser is a client program that requests services (the sending of Web pages or files) from a Web server (which technically is called a Hypertext Transport Protocol or Hypertext Transfer Protocol server) in another computer somewhere on the Internet. Similarly, your computer with TCP/IP installed allows you to make client requests for files from File Transfer Protocol (File Transfer Protocol) servers in other computers on the Internet.

2.2.1-1 Two-Tier Client/Server Architecture

With Two-Tier Client/Server Architecture, the user system interface is usually located in the user's desktop environment and the database management services are usually in a server that is a more powerful machine that services many clients.

Two-tier architecture consists of three components distributed in two layers – client and server. The three component are:

1. User System Interface – such as session, text input, dialog, and display management services.
2. Processing Management – such as process development, process enactment, process monitoring and process resource services.
3. Database Management – such as data and file services.

The two-tier architecture design allocates the user system interface exclusively to the client. It places database management on the server and splits the processing management between client and server, cresting two layers. In general, the user interface client invokes services from the database management server. In many two-tier architecture design, most of the application portion of processing is in the client environment. The database management server usually provides the portion of their processing related to accessing data (often implemented in store procedures). Clients commonly communicate with the server through SQL statement or a call-level interface. It should be noted that connectivity between tier can be dynamically changed depending upon the user's request for data and services. The flexibility and usability is to provide a customized user system interface make two-tier architecture more suitable in non-complex, non-time, critical information processing system.

2.2.1-2 Three-Tier Client/Server Architecture

Three-tier architecture include a user system interface top tier where user services reside. The middle tier provides process management services that are shared by multiple applications. The third tier provides database management functionality and is dedicated to data ad file services that can be optimised without using any proprietary database management system languages. The data management component ensures that the data is consistent throughout the distributed environment through the use of features such as data locking, consistency and replication. It should be noted that connectivity between tiers could be dynamically changed depending upon the user's request for data and services.

The middle tier server, which is referred to as the application server improve performance, flexibility, maintainability, reusability, and scalability by centralizing process logic. Centralized process logic makes administration and change management easier by localizing system functionality so that changes must only be written and placed on the middle tier server to be available throughout the systems. With other architecture designs, such as two-tier architecture, a change to a function would need to be written into every application. Therefore, the adoption of three-tier architecture will make the system easier to develop.

Three-tier architecture is more scalable than two-tier architecture. The three-tier architecture can accommodate by two-tier architecture. Therefore, the high scalability of three-tier architecture really makes sense in the case of online information system where it may be access by a large number of users concurrently.

2.2.2 Web Servers

A Web server is a program that, using the client/server model and the World Wide Web's Hypertext Transfer Protocol (Hypertext Transfer Protocol), serves the files that form Web pages to Web users (whose computers contain HTTP clients that forward their requests). Every computer on the Internet that contains a Web site must have a Web server program. The most popular Web servers are Microsoft's Internet

Information Server (Internet Information Server), which comes with the Windows NT server; Netscape FastTrack and Enterprise servers; and Apache, a Web server for UNIX-based operating systems.

Web servers often come as part of a larger package of Internet-related and intranet-related programs for serving e-mail, downloading requests for File Transfer Protocol files, and building and publishing Web pages. Considerations in choosing a Web server include how well it works with the operating system and other servers, its ability to handle server-side programming, and publishing, search engine, and site building tools that may come with it.

2.2.2-1 Microsoft Internet Information Server (IIS)

Microsoft Internet Information Server (IIS) is a group of Internet servers (including a Web or Hypertext Transfer Protocol server and a File Transfer Protocol server) with additional capabilities for Microsoft's Windows NT and Windows 2000 Server operating systems. With IIS, Microsoft includes a set of programs for building and administering Web sites, a search engine, and support for writing Web-based applications that access databases. Microsoft points out that IIS is tightly integrated with the Windows NT and 2000 Servers in a number of ways, resulting in faster Web page serving.

IIS includes security features and promises that it is easy to install. It works closely with the Microsoft Transaction Server to access databases and provide control at the transaction level. It also works with Microsoft's Netshow in the delivery of streaming audio and video, delayed or live.

2.2.2-2 Apache

Apache is a freely available Web server that is distributed under an "open source" license. Version 2.0 runs on most UNIX-based operating systems (such as Linux,

Solaris, Digital UNIX, and AIX), on other UNIX/POSIX-derived systems (such as Rhapsody, BeOS, and BS2000/OSD), on AmigaOS, and on Windows 2000.

Apache complies with the newest level of the Hypertext Transport Protocol, HTTP 1.1. Free support is provided through a bug reporting system and several Usenet newsgroups

2.3 Operating System Platform

2.3.1 Operating System

An operating system (OS) is the program that, after being initially loaded into the computer by a boot program, manages all the other programs in a computer. The other programs are called application programs. The application programs make use of the operating system by making requests for services through a defined application program interface (API). In addition, users can interact directly with the operating system through a user interface such as a command language or a graphical user interface (GUI).

An operating system performs these services for applications:

- In a multitasking operating system where multiple programs can be running at the same time, the operating system determines which applications should run in what order and how much time should be allowed for each application before giving another application a turn.
- It manages the sharing of internal memory among multiple applications.
- It handles input and output to and from attached hardware devices, such as hard disks, printers, and dial-up ports.
- It sends messages to each application or interactive user (or to a system operator) about the status of operation and any errors that may have occurred.
- It can offload the management of what are called *batch* jobs (for example, printing) so that the initiating application is freed from this work.

- On computers that can provide parallel processing, an operating system can manage how to divide the program so that it runs on more than one processor at a time.

All major computer platforms (hardware and software) require and sometimes include an operating system. Linux, and Windows 2000 are all examples of operating systems.

2.3.2 Platform

In computers, a platform is an underlying computer system on which application programs can run. On personal computers, Windows 2000 and the Macintosh are examples of two different platforms.

A platform consists of an operating system, the computer system's coordinating program, which in turn is built on the instruction set for a processor or microprocessor, the hardware that performs logic operations and manages data movement in the computer. The operating system must be designed to work with the particular processor's set of instructions. As an example, Microsoft's Windows 2000 is built to work with a series of microprocessors from the Intel Corporation that share the same or similar sets of instructions. There are usually other implied parts in any computer platform such as a motherboard and a data bus, but these parts have increasingly become modularized and standardized.

Historically, most application programs have had to be written to run on a particular platform. Each platform provided a different application program interface for different system services. Thus, a PC program would have to be written to run on the Windows platform and then again to run on the Macintosh platform. Although these platform differences continue to exist and there will probably always be proprietary differences between them, new open or standards-conforming interfaces now allow many programs to run on different platforms. A platform is any base of technologies on which other technologies or processes are built.

2.3.3 Windows NT

Windows NT is a Microsoft Windows personal computer operating system designed for users and businesses needing advanced capability. NT's technology is the base for the Microsoft successor operating system, Windows 2000. Windows NT is actually two products - Microsoft NT Workstation and Microsoft NT Server. The Workstation is designed for users, especially business users, who need faster performance and a system a little more fail-safe than Windows 95 and Windows 98. The Server is designed for business machines that need to provide services for network-attached computers. The Server is required, together with an Internet server such as Microsoft's Internet Information Server (IIS), for a Windows system that plans to serve Web pages.

2.3.4 Linux

Linux is a UNIX-like operating system that was designed to provide personal computer users a free or very low-cost operating system comparable to traditional and usually more expensive UNIX systems. Linux has a reputation as a very efficient and fast-performing system.

Linux is a remarkably complete operating system, including a graphical user interface, an X Window System, TCP/IP, the Emacs editor, and other components usually found in a comprehensive UNIX system.

2.3.5 Windows 98

Windows 98 is a widely-installed product in Microsoft's evolution of the Windows operating system for personal computers. In Windows 98, Microsoft's Internet Explorer is an integral part of the operating system. Using the Active Desktop of Windows 98, you can view and access desktop objects that reside on the World Wide Web as well as local files and applications. The Windows 98 desktop is, in fact, a Web page with HTML links and features that exploit Microsoft's ActiveX control.

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With Windows 98, you can set up news and other content to be push technology to you from specified Web sites. Other features in Windows 98 include - Support for Universal Serial Bus (Universal Serial Bus), which makes it easy to plug in new devices Support for Digital Versatile Disc (digital versatile disk) Support for a new industry-standard form of power management called Advanced Configuration and Power Interface (ACPI)

Windows 98 is being replaced by versions of Windows 2000 that are designed for personal or small-office professional or business use.

2.3.6 Windows 2000

Windows 2000 is evolutionary and "Built on NT Technology." Windows 2000 is designed to appeal to small business and professional users as well as to the more technical and larger business market for which the NT was designed.

Windows 2000 is reported to be more stable than Windows 98/NT systems. A significant new feature is Microsoft's Active Directory, which, among other capabilities, enables a company to set up virtual private networks, to encrypt data locally or on the network, and to give users access to shared files in a consistent way from any network computer.

2.4 Web Management system

2.4.1 Web Languages

2.4.1-1 Markup Languages

Markup refers to the sequence of characters or other symbols that you insert at certain places in a text or word processing file to indicate how the file should look when it is printed or displayed or to describe the document's logical structure. The markup indicators are often called "tags." For example, this particular paragraph is preceded by a:

<p> (or paragraph tag)

so that it will be separated by an empty line from the preceding line.There is now a standard markup definition for document structure in the Standard Generalized Markup Language (Standard Generalized Markup Language).

Markup can be inserted by the document creator directly by typing the symbols in, by using an editor and selecting prepackaged markup symbols or by using a more sophisticated editor that lets you create the document as you want it to appear (this is called a WYSIWYG editor).

2.4.1-2 HTML (Hypertext Markup Language)

HTML (Hypertext Markup Language) is the set of markup symbols or codes inserted in a file intended for display on a World Wide Web browser page. The markup tells the Web browser how to display a Web page's words and images for the user. Each individual markup code is referred to as an element (also refer to it as a tag). Some elements come in pairs that indicate when some display effect is to begin and when it is to end.

HTML is a formal Recommendation by the World Wide Web Consortium (W3C) and is generally adhered to by the major browsers, Microsoft's Internet Explorer and Netscape's Navigator, which also provide some additional non-standard codes. However, both Internet Explorer and Netscape implement some features differently and provide non-standard extensions. Web developers using the more advanced features of HTML 4 may have to design pages for both browsers and send out the appropriate version to a user. Significant features in HTML 4 are sometimes described in general as dynamic HTML.

2.4.1-3 Dynamic HTML

Dynamic HTML is a collective term for a combination of new Hypertext Markup Language (HTML) tags and options, that will let you create Web pages more animated and more responsive to user interaction than previous versions of HTML. Much of dynamic HTML is specified in HTML 4.0. Simple examples of dynamic HTML pages would include:

- having the colour of a text heading change when a user passes a mouse over it
- allowing a user to "drag and drop" an image to another place on a Web page.
- can allow Web documents to look and act like desktop applications or multimedia productions.

2.4.1-4 XML (Extensible Markup Language)

XML (Extensible Markup Language) is a flexible way to create common information formats and share both the format and the data on the World Wide Web.

XML is similar to the language of today's Web pages, the Hypertext Markup Language (HTML). Both XML and HTML contain markup symbols to describe the contents of a page or file. HTML, however, describes the content of a Web page (mainly text and graphic images) only in terms of how it is to be displayed and interacted with. For example, the letter "p" placed within markup tags starts a new paragraph. XML describes the content in terms of what data is being described. For example, the word "phonenum" placed within markup tags could indicate that the data that followed was a phone number. This means that an XML file can be processed purely as data by a program or it can be stored with similar data on another computer or, like an HTML file, that it can be displayed. For example, depending on how the application in the receiving computer wanted to handle the phone number, it could be stored, displayed, or dialed.

2.4.1-5 CFML (ColdFusion Markup Language)

CFML (ColdFusion Markup Language) is a Web page markup language that allows a Web site developer to create pages with variable information (text or graphics) that is filled in dynamically in response to variables such as user input. Along with the usual Hypertext Markup Language (HTML) tags that determine page layout and appearance, the page creator uses CFML tags to bring in content based on the results of a database query or user input. CMFL is a proprietary language developed for use with ColdFusion.

CFML tags perform all server-side tasks (such as database queries) by condensing complex processes, that would normally require knowledge of programming languages such as Java or C++, into four basic tags: CFQUERY, which is used to submit a structured query language (SQL) request to the database; CFOUTPUT, which is used to display the result of a query; and CFTABLE or CFCOL, which are used to display a preformatted table containing the results of a set of queries. Files created with CFML are saved as ColdFusion templates and use a ".cfm" extension.

2.4.2 Web Technologies

2.4.2-1 Active Server Page (ASP)

An Active Server Page (ASP) is an HTML page that includes one or more scripts that are processed on a Microsoft Web server before the page is sent to the user. An ASP is similar to a server-side include or a common gateway interface (CGI) application in that all involve programs that run on the server. Typically, the script in the Web page at the server uses input received as the result of the user's request for the page to access data from a database and then builds or customizes the page on the fly before sending it to the requestor.

ASP is a feature of the Microsoft Internet Information Server (IIS), but, since the server-side script is just building a regular HTML page, it can be delivered to almost any browser. You can create an ASP file by including a script written in VBScript or

JScript in an HTML file or by using ActiveX Data Objects (ADOs) program statements in the HTML file.

2.4.2-2 PHP

In Web programming, PHP is a script language and interpreter that is freely available and used primarily on Linux Web servers. PHP is an alternative to Microsoft's Active Server Page (ASP) technology. As with ASP, the PHP script is embedded within a Web page along with its HTML. Before the page is sent to a user that has requested it, the Web server calls PHP to interpret and perform the operations called for in the PHP script. Like ASP, PHP can be thought of as "dynamic HTML pages," since content will vary based on the results of interpreting the script.

2.4.2-3 ColdFusion

ColdFusion is a popular and sophisticated set of products for building Web sites and serving pages to users. ColdFusion can build a content database using input templates and combine these with application programs to create a Web site in which pages are developed dynamically as they are served. ColdFusion consists of ColdFusion Studio, which is used to build a site, and ColdFusion Server, which serves the pages to users. ColdFusion Studio is described as "a complete integrated development environment (IDE)" and ColdFusion Server as "a deployment platform."

ColdFusion is the ability to build Web sites as "piece parts" that can be stored in a database and then reassembled for Web pages, e-mail newsletters, and other uses. ColdFusion provides a visual interface for building Web pages directly or for building the "piece parts."

ColdFusion can be coordinated with distributed applications that use Common Object Request Broker Architecture (CORBA) or Microsoft's Distributed Component Object Model (DCOM) to interact with other network applications.

2.4.2-4 Common Gateway Interface (CGI)

The common gateway interface (CGI) is a standard way for a Web server to pass a Web user's request to an application program and to receive data back to forward to the user. When the user requests a Web page, the server sends back the requested page. However, when a user fills out a form on a Web page and sends it in, it usually needs to be processed by an application program. The Web server typically passes the form information to a small application program that processes the data and may send back a confirmation message. This method or convention for passing data back and forth between the server and the application is called the common gateway interface (CGI). It is part of the Web's Hypertext Transfer Protocol (HTTP).

The common gateway interface provides a consistent way for data to be passed from the user's request to the application program and back to the user. This means that the person who writes the application program can makes sure it gets used no matter which operating system the server uses. It's simply a basic way for information to be passed from the Web server about your request to the application program and back again.

Because the interface is consistent, a programmer can write a CGI application in a number of different languages. The most popular languages for CGI applications are: C, C++, Java, and PERL. An alternative to a CGI application is Microsoft's Active Server Page (ASP), in which a script embedded in a Web page is executed at the server before the page is sent.

2.4.3 Web Application Development Tools

2.4.3-1 Microsoft Visual Interdev 6.0

Visual Interdev is a development tool for building a dynamic and data-driven web site. Visual Interdev offers a user interface similar to those for Visual Basic and Visual J++. This interface is importance since that every aspects of client/server application development can now be accomplished visually, rather than through hand-

coding projects in a simple text editor. It contain WTSIWYG (what you see is what you get) page editor that allows developers to create and edit static HTML content visually in "design view". This editor also allows users to write VBScript and Jscript code in "source view" and then visually test that code in "quick view". These different views are fully integrated with each other.

Visual Interdev also support for visual design-time controls that allow developers to create data-driven web pages in a simple drag-and-drop manner. It includes data-access support for large client/server database systems – Microsoft SQL Server and Oracle. Web site is accessed to almost any database using Microsoft's Universal Data Access – Active X Data Objects, Open Database Connectivity and OLE DB. Visual Interdev has a powerful integrated debugger that can step through script code from the client side to the server side and back again. In addition, server-side code running on a Windows NT system can be debugged from a remote computer. It also includes IntelliSense scripting assistance. This will provides developers with the names and properties of objects as they are typed. This feature can help eliminate syntax errors as well as the need for external reference materials while coding.

Visual Interdev supports major object-based technology such as Microsoft Active X Control and Java Applet. It also supports third party Active X control where users are allowed to integrate custom Active X control. Local web server enabled developers to work on their own copy of project without interfering the team. Developers can also deploy changes to the Shared Master Web Server after finishing their tasks. This function is good for a website development team which they are work together.

2.4.3-2 Microsoft FrontPage

- A WYSIWYG page editor that come with Microsoft Office Professional 2000.
- FrontPage is a robust and feature-packed application that will suit people. As part of the Office 2000 Professional suite, it has been closely integrated with the other applications.
- It provide a function for easily creating cascading style sheet (CSS).

- It also has ability to create dynamic HTML effect – button rollover, hover button, marquee, and hit counter.
- It is not an ideal tool for database connections. So, FrontPage is not suitable for developing web application such as E-Commerce.

2.4.4 Scripting Languages

2.4.4-1 Script

In general, script languages are easier and faster to code in than the more structured and compiled languages such as C and C++ and are ideal for programs of very limited capability or that can reuse and tie together existing compiled programs. However, a script takes longer to run than a compiled program since each instruction is being handled by another program first (requiring additional instructions) rather than directly by the basic instruction processor.

2.4.4-2 VBScript

VBScript is an interpreted script language from Microsoft that is a subset of its Visual Basic programming language.

VBScript is designed to work with an interpreter that comes with a Web browser. VBScript is designed for use with Microsoft's Internet Explorer browser together with other programming that can be run at the client, including ActiveX control, automation servers, and Java applet. VBScript is best used for intranet Web sites that use the Internet Explorer browser only because Netscape does not support VBScript.

2.4.4-3 JavaScript

JavaScript is an interpreted programming or script language from Netscape. It is similar in capability to Microsoft's Visual Basic.

JavaScript is used in Web site development to do such things as:

- Automatically change a formatted date on a Web page
- Cause a linked-to page to appear in a pop-up window
- Cause text or a graphic image to change during a mouse rollover

JavaScript uses some of the same ideas found in Java, the compiled object-oriented programming language derived from C++. JavaScript code can be imbedded in HTML pages and interpreted by the Web browser (or client). JavaScript can also be run at the server as in Microsoft's Active Server Pages (Active Server Page) before the page is sent to the requestor.

2.4.5 Browsers

A browser is an application program that provides a way to look at and interact with all the information on the World Wide Web. Technically, a Web browser is a client program that uses the Hypertext Transfer Protocol (HTTP) to make requests of Web servers throughout the Internet on behalf of the browser user.

While some browsers also support e-mail and the File Transfer Protocol (FTP), a Web browser is not required for those Internet protocols and more specialized client programs are more popular.

2.4.5-1 Netscape

Currently, almost all Internet users use either Netscape's browser or Microsoft's Internet Explorer (Microsoft Internet Explorer) browser, and many users use both.

Although Netscape was initially the predominant product in terms of usability and number of users, Microsoft's browser is now considered superior by many users and has taken a slight lead in usage.

A primary source of revenue for Netscape is the Netscape line of Web server products that it develops and has marketed on the success of its wide-scale browser usage. Netscape also envision the Netscape Web site, now transformed into a leading Web portal, as a leading source of revenue through advertising and e-commerce.

2.4.5-2 Microsoft Internet Explorer (MSIE)

Microsoft Internet Explorer (MSIE) is the graphical World Wide Web browser that is provided with the Microsoft Windows operating systems. The MSIE browser competes closely with an earlier browser, Netscape Navigator. (Currently, Internet Explorer was the dominant of the browser market.)

2.4.5-3 Opera

Opera is a Web browser that provides some advantages over the two most popular browsers from Netscape and Microsoft. Opera is known for being fast, smaller in size and stable. Opera offers the same capabilities of the more popular browsers including integrated searches and Instant Messaging, support for JavaScript, cascading style sheets, and mail. Because Opera is so compact, it is being promoted as the browser of choice for hand-held Internet devices. Opera does not support Active-X or Visual Basic.

2.5 Database

A database is a collection of data that is organized so that its contents can easily be accessed, managed, and updated. The most prevalent type of database is the relational database, a tabular database in which data is defined so that it can be reorganized and accessed in a number of different ways. A distributed database is one that can be dispersed or replicated among different points in a network. An object-oriented programming database is one that is congruent with the data defined in object classes and subclasses.

2.5.1 Database Management System (DBMS)

A database management system (DBMS) is a program that lets one or more computer users create and access data in a database. DBMS also ensures the integrity and security of the data. The most typical DBMS is a relational database management system (RDBMS). A standard user and program interface is the Structured Query Language (SQL).

A DBMS can be thought of as a file manager that manages data in databases rather than files in file systems. A DBMS is usually an inherent part of a database product. Microsoft Access is a popular example of a single- or small-group user DBMS. Microsoft's SQL Server is an example of a DBMS that serves database requests from multiple (client) users

2.5.1-1 Oracle

Oracle's relational database was the world's first to support the Structured Query Language (SQL). Oracle supports high-end workstations and minicomputers as the server platforms on which to run its database systems. It now develop and deploy 100 percent Internet-enabled enterprise software across its entire product line: database, server, enterprise business applications, and application development and decision support tools.

2.5.1-2 MySQL

MySQL is an open source relational database management system (RDBMS) that uses Structured Query Language (SQL), the most popular language for adding, accessing, and processing data in a database. MySQL is noted mainly for its speed, reliability, and flexibility. It works best when managing content and not executing transactions.

The mySQL relational database system is fully multi-threaded using kernel threads, provides application program interfaces (APIs) for C, C++, Java, Perl, and PHP allows for many column types, and offers full operator and function support in the SELECT and WHERE parts of queries.

2.5.1-3 Microsoft Access

Microsoft Access is a relational database management system created by Microsoft for small office or home user for storing data in relational format.

An Access database consists of objects. These objects are tables, queries, form, reports, macros, and modules. With data access interface paradigm such as Remote Data Object (RDO) and Data Access Object (DAO), Microsoft Access can be used as a database in a client/server or an n-tier architecture system. It provides a good interface to develop tables and relationships. This means that creating can be done easily.

2.5.1-4 Microsoft SQL Server 7.0

As database grows and becomes more complex, there is some point when a Microsoft Access database should be upsized to a Microsoft SQL Server database. This is to optimize database and application performance, scalability, security, reliability, recoverability, and availability. The following reviews on different areas in SQL server :

a) High performance and scalability – SQL server can support very large database up to on terabytes in contrast to only two gigabytes for Access. Moreover, SQL Server is well integrated with Windows NT thus makes it works efficiently on the platform. Besides, SQL server 7.0 can run on the stand-alone laptop computer running Windows 95/98.

b) Increased availability – Dynamic backup can be carried out while the database is being used. Users do not need to exit from the database to do the backup. Hence, the database can be available at all time.

c) Improved security – SQL server integrates tightly with Windows NT that user needs only single log-on to the network and database. A user cannot use SQL server without accessing to the network first. This results in better security and eases the administration.

d) Immediate recoverability – When a system suddenly break down, SQL server database can have a automatic recovery mechanism that recovers the database to the last state of consistency without administrator intervention.

e) Reliable distributed data and transactions – SQL server supports atomic transactions with transactions logging. This guarantees that all changes performed within a transaction are either committed or rolled back.

f) Server-based processing – SQL server is designed as a client/server database residing on a server. It reduces network traffic by processing database queries first before sending them to clients. Processing is always done on the server stored procedures and triggers are also supported to be processed on the server.

2.5.2 Database Connectivity

2.5.2-1 ActiveX Data Objects (ADO)

ActiveX Data Objects (ADO) is an application program interface from Microsoft that lets programmers writing Windows applications get access to a relational or non-relational database from both Microsoft and other database providers. For example, if you wanted to write a program that would provide users of your Web site with data from an IBM DB2 database or an Oracle database, you could include ADO program

statements in an HTML file that you then identified as an Active Server Page. When a user requested the page from the Web site, the page sent back could include appropriate data from a database, obtained using ADO code.

ADO is an object-oriented programming interface. It is also part of an overall data access strategy from Microsoft called Universal Data Access. A feature of ADO, Remote Data Service, supports "data-aware" ActiveX controls in Web pages and efficient client-side caches. As part of ActiveX, ADO is also part of Microsoft's overall Component Object Model (COM), its component-oriented framework for putting programs together.

2.5.2-2 RDO (Remote Data Objects)

RDO (Remote Data Objects) is an application program interface from Microsoft that lets programmers writing Windows applications get access to from both Microsoft and other database providers. In turn, RDO statements in a program use Microsoft's lower-layer Data Access Objects (Data Access Objects) for actual access to the database. Database providers write to the DAO interface.

RDO has evolved into ActiveX Data Objects (ActiveX Data Objects) which is now the program interface for new programs. ADO also provides access to non-relational databases and is somewhat easier to use.

2.5.2-3 DAO (Data Access Objects)

DAO (Data Access Objects) is an application program interface (API) available with Microsoft's Visual Basic that lets a programmer request access to a Microsoft Access database. DAO was Microsoft's first object-oriented interface with databases. DAO objects encapsulate Access's Jet functions. Through Jet functions, it can also access other Structured Query Language (SQL) databases.

2.5.2-4 Open Database Connectivity (ODBC)

Open Database Connectivity (ODBC) is an open standard applications programming interface (API) for accessing a database. By using ODBC statements in a program, you can access files in a number of different databases, including Access, dBase, DB2, Excel, and Text. In addition to the ODBC software, a separate module or driver is needed for each database to be accessed.

ODBC is based on and closely aligned with The Open Group standard Structured Query Language (SQL) Call-Level Interface. It allows programs to use SQL requests that will access databases without having to know the proprietary interfaces to the databases. ODBC handles the SQL request and converts it into a request the individual database system understands.

When writing programs in the Java language and using the Java Database Connectivity (JDBC) application program interface, you can use a product that includes a JDBC-ODBC "bridge" program to reach ODBC-accessible databases.

2.5.2-5 JDBC (Java Database Connectivity)

JDBC (Java Database Connectivity) is an application program interface (application program interface) specification for connecting programs written in Java to the data in popular database. The application program interface lets you encode access request statements in structured query language (Structured Query Language) that are then passed to the program that manages the database. It returns the results through a similar interface.

JDBC is very similar to the SQL Access Group's Open Database Connectivity (Open Database Connectivity) and, with a small "bridge" program, you can use the JDBC interface to access databases through the ODBC interface. For example, you could write a program designed to access many popular database products on a number of operating system platform. When accessing a database on a PC running Microsoft's

Windows 95 and, for example, a Microsoft Access database, your program with JDBC statements would be able to access the Microsoft Access database.

JDBC actually has two levels of interface. In addition to the main interface, there is also an API from a JDBC "manager" that in turn communicates with individual database product "driver", the JDBC-ODBC bridge if necessary, and a JDBC network driver when the Java program is running in a network environment

JDBC specifies a set of object-oriented programming class for the programmer to use in building SQL requests. An additional set of classes describes the JDBC driver API. The most common SQL data type are supported. The API provides for implementation-specific support for Microsoft Transaction Server requests and the ability to commit or roll back to the beginning of a transaction.

2.5.2-6 OLE DB

OLE DB is Microsoft's strategic low-level application program interface (application program interface) for access to different data sources. OLE DB includes not only the Structured Query Language (Structured Query Language) capabilities of the Microsoft-sponsored standard data interface Open Database Connectivity (ODBC) but also includes access to data other than SQL data.

OLE DB is a set of method for reading and writing data. The object in OLE DB consists mainly of a data source object, a session object, a command object, and a row set object. An application using OLE DB would use this request sequence:

1. Initialize OLE.
2. Connect to a data source.
3. Issue a command.
4. Process the results.
5. Release the data source object and uninitialize OLE.

2.6 Conclusion

In this chapter, a complete Literature Review had been carried out. As a result, it may identify the most compatible tools or methods to be used during the development phase. Besides, all the possibility and consideration also must take into account during the analysis for the project development.

CHAPTER 3
SYSTEM ANALYSIS

3.0 Introduction

In order to understand the process of a program when developing a system, establishing the services that the system should provide and the constraints under which is must operate are very important. This chapter will analyze the methodology and the requirements used for this project.

3.1 Methodology

A Waterfall model with prototyping has been chosen as Online Community Information System process model. The Waterfall and prototyping model has been justified to suit this project.

Requirement Analysis is the first phase of this Waterfall model with prototyping. In this phase, all of the information about this project is gathered through Internet, books, journals and newspaper. The system's functionality and constraint are also established and the problems are defined. The software and hardware requirement for this project also has been determine during this phase.

System Design involves designing system sections and determining the functionality and the feasibility of the system sections. System Design established an overall system architecture. It is also involves drafting out data flow diagrams that resembles the functionality of the system and its subsystem. Prototyping is used in this phase together with the Waterfall model to reduce the uncertainty about what the system should do. Prototyping is also a means of requirements validation that lets the system developers discovered the requirements errors in the process.

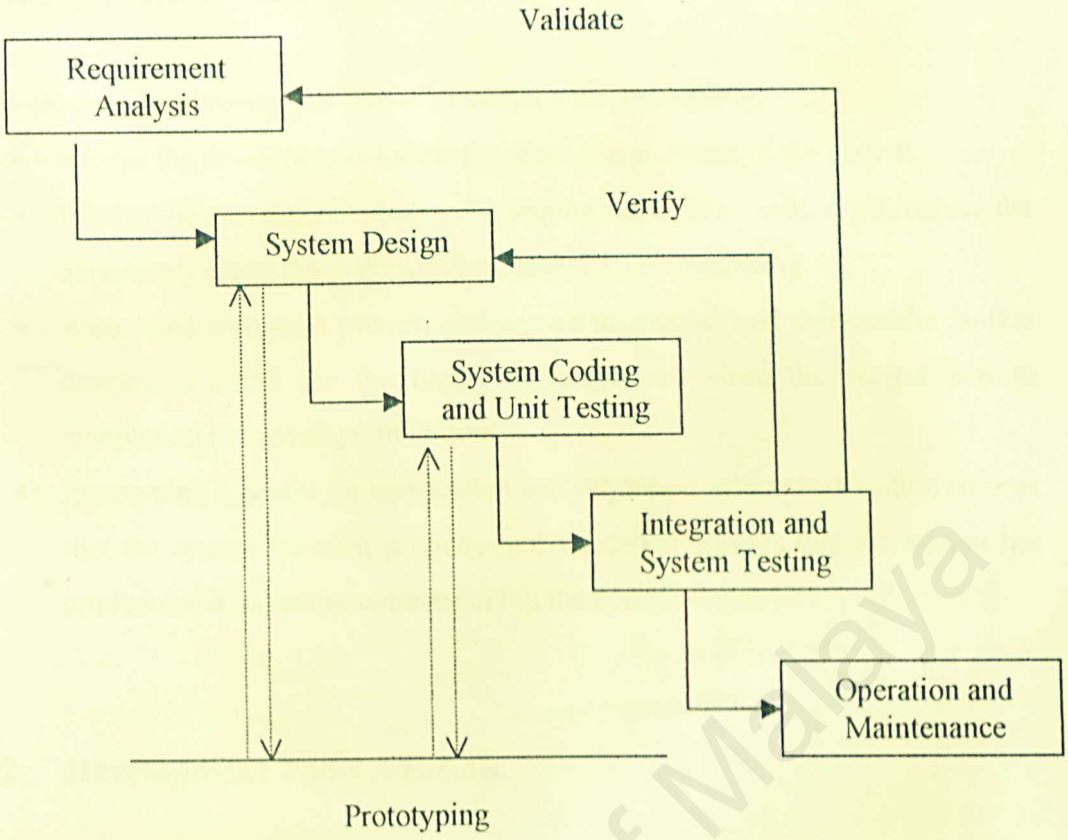


Figure 3.1 Waterfall model with Prototyping

The following phase of this methodology is the system coding where all programs will be coded and using selected programming languages and application development tools based on the design determined in the System Design. Unit testing involves verifying that each section meets its specification. Prototyping is also used in this phase to ensure that the output of the coding meets the design that determined in the System Design phase.

Integration and System Testing is the next phase of this methodology. The sections of the project are integrated and tested as a complete system to ensure that the system requirements have been meet.

The final phase of this methodology is the operation and maintenance. In this phase, the system is installed, will be use and involves fixing errors. If an error occurs during

the operation, it will be fixed to improve the implementation of the system units and enhancing the system's functionality.

This are the advantages of the Waterfall model with prototyping:

- It helps the developers to follow the sequence of events of the system.
- It helps the developers to layout the requirement. As a result, it will reduce the uncertainty about the system and enhance the understanding
- Associated with each process activity are milestones and deliverables so that developers could use the model to gauge how close the project was to completion to a given point in time.
- Prototyping is useful for verification and validation, where verification ensures that the system function properly and validation ensures that the system has implemented the entire requirement in the specification.

3.2 Development Tools Analysis

After doing some literature review on software development tools that has been done in Chapter 2, a most suitable tool for the system has been decided. These tools include the entire platform, servers, web application programming language and technology.

3.2.1 Operating System

- Windows 2000 has been chosen as main server operating server. It is chosen because of its user friendliness and stability feature. Windows 2000 is evolutionary and "Built on NT Technology." It is designed to appeal to small business and professional users as well as to the more technical and larger business market for which the NT was designed. Besides, Windows 2000 provides an authentication and files system that can be used in the system's data repository components.

3.2. 2 Web Server

- Microsoft Internet Information server is chosen as the web server because it can be well integrated with Windows 2000 operating system and resulting in faster Web page serving. Beside, Microsoft Internet Information server is easy to install and suitable for medium size to large size doing high volume serving.

3.2. 3 Web Database System

- Microsoft SQL Server 7.0 was chosen as systems database platform because it is stable and work well with other Microsoft components. It provides dynamic backup that can be carried out while the database is being used. When a system suddenly breaks down, SQL server database can be automatically recovers the database to the last state of consistency. It supports multi-user environment and it can handle more burden of database processing even in a distributed environment. Besides, SQL server also integrated tightly with Windows 2000 that will be used as the operating system of the project.

3.2. 4 Web Browser

- Microsoft Internet Explorer and Netscape is the most suitable browser for the system. It is needed for this web application system because it supports most of the HTML scripts that are used in the project. Besides, it also dominates the current web browser market nowadays.

3.2. 5 Web Development Tools

- Microsoft Visual Interdev is chosen because it is the editor for the ASP coding. It provides more features that are helpful for ASP coding. The

graphical design can be drawn easily by using Microsoft Visual Interdev 6.0. It also provides the script outline as well as the toolbox and server object that minimizes the burden to build a web application. Besides, it also supports for database system – Ms SQL Server, which makes it easy to set up database by combining ASP and SQL server.

3.2.6 Web Application Programming Language

- In this project, ASP is chosen as the primary web application programming language. This is because ASP provides all of the functionality of CGI application in an easier-to-use and more robust environment. ASP is an easier way for your server to access information in a form not readable by the client (such as an SQL database), and then act as a gateway between the two to produce information that the client can view and use. ASP instead run in the same process as the web server, more handling client requests faster and more efficiently. It is much easier to develop dynamic web application with ASP. ASP also does better than other web application tools. ASP leverages your existing skills and knowledge, data sources, components and applications to quickly bring them to the web. Other tools create static HTML, or lock you into a non-standard programming model or language. In addition, ASP is a feature of the Microsoft Internet Information Server (IIS) that use as the web server of the project.

3.2.2-7 Web Markup Language

- HTML is the basic markup language for developing web pages. HTML is easy to implement and needed to generate layout and design for web page. HTML does not support some dynamic feature. However, combination of HTML and ASP will produce an interactive web application.

3.2.8 Server Side Scripting Language

- VBScript is the basic server side scripting language for ASP. It is a subset of VB language. Its function is to make web pages more dynamic and it is better support than JavaScript when it is used in ASP environment.

3.2.9 Client Side Scripting Language

- JavaScript and VBScript is the basic client side scripting language. It is used to generate information on the client side. JavaScript is chosen because it supports two major browsers - IE and Netscape Navigator.

3.2.10 Summary of Development Tools

Operating System	Windows 2000 Professional
Web Server	Internet Information Server 5.0 (IIS 5.0)
Web Database System	Microsoft SQL Server 7.0
Web Markup Language	HTML
Web Application Programming Language	ASP
Web Development Tools	Ms Visual Interdev 6.0
Web Browser	Internet Explorer 5.5, Netscape 4.7
Server Side Scripting Language	VBScript
Client Side Scripting Language	JavaScript

Table 3.1 Summary of Development Tools

3.3 Requirement Analysis

Requirement analysis is an important method that enables the system engineer to specify software elements, and establishes design constraints that software must meet.

Requirement analysis can be divided into functional requirements and non-functional requirements. The following will discuss in detail about the functional and non-functional requirements.

3.3.1 Functional Requirements

Functional Requirements describe functions and features that the system should provide for the users. The system is considered incomplete if any of the necessary function is not included. The following are some of the functional requirement of the system:

- Announcement

Online Community Information system has Announcement facility where users can easily post their announcement, notice and event to all members. You can organize the news and it is easy to upload and delete. Every member of the group can be notified when a new is added to the system. Announcing news in the announcement can save time and money by reducing posting and fax costs. Members of the group can get the news wherever they are, at anytime of the day.

- File Sharing

Online Community Information system has a file space allocated to it where group files can be easily stored and shared. You can organize the information and it is easy to upload and delete files. Every member of the group can be notified when a new file is added to the system. Sharing information in the Files Sharing can save time and money by reducing posting and fax costs. Members of the group can access information wherever they are, at anytime of the day.

- Image Gallery

Online Community Information system has a Picture Album space allocated to it where group photos and pictures can be easily stored and shared. You can organize the pictures into albums and it is easy to upload and delete pictures. Every member of the group can be notified when a new picture is added or a new album created in the Image Gallery. Sharing information in the Image Gallery can save time and money by reducing posting and fax costs. Members of the group can access pictures and photos wherever they are, at anytime of the day.

- Member information

Member Information provides information for all members including name, address, pone number, and date of birth. Users can view the information provided by this section but cannot modified the information. As a result, every member of the group can be known each other among themselves through this section easily.

- Discussion Groups

The Discussion Groups facility at Online Community Information System allows for quick and effective communication within a group. Users can use it for keeping in touch with friends and family, for holding discussions and debates, for sharing ideas and for asking questions. 'Discussion' as a group of messages that are of the same topic of conversation. Therefore when you reply to a particular group message, it will form part of a discussion when viewed in the message area.

- Vote center

Online Community Information system has a Vote Center allocated to it where users can post their issue with a brief description of the issue to let others member to vote. The vote results will help group members to make the final decision about the issue.

- **Message Board**

In the Message Board module, users can post message to other member in the group by using the function that provide in the module (send message, edit message, and delete message). User can view the message when it had been send at anytime of the day.

3.3.2 Non-functional Requirements

In order to ensure the quality of system produced, certain quality factors must be conformed. Non-functional requirements are those constraints on the services or functions offered by the system. The following non-functional requirements have been considered for Online Community Information System.

- Flexibility

- Flexibility refers to the system expandability to adopt new technologies and resources as well as implementation in changing environment. As the project's implementation is based on web technologies, it is foreseeable that newer web technologies that can work with existing web technologies will have no problem integrating into the web sites.

-Usability

- The system should be developed in such a way that it is easy to use. It will enhance and support rather than limit or restrict the office process. Interfaces must be self-explanatory and consistent with other application in the environment.

- Reliability

- Reliability is referred to the expectation of a system to perform its intended function accurately. Thus, the system should be reliable in performing its functions and operations. For example, whenever a button is clicked, the system should be able to execute that particular function or generate some message to inform the user what is happening.

- Modularity

- Modularity is a necessary factor in order to produce a good program. The system is broken into sections or modules so that functions of objects could be distinct from one another. This characteristic eases the testing and maintenance. In the system design, modularity of program sections is applied from the very beginning because this will lead to easy modification and enhancements in the future.

- User Friendliness

- The system should be able to build a flow of navigation that helps users in navigating procedure steps. User interface should be user friendly to enhance the interaction between the users and the system.

- Efficiency

- The system will ensure efficiencies system execution and storage. The simplicity of the system will enable the new user familiar with the system in the short time. This system will also enable the user handle their job efficiently by reduce time and other resources.

-Manageability

- The sections within the system should be easy to handle to ensure the maintenance can be done regularly. Besides, evolutionary of the system will easy to be done.

3.4 Hardware and Software Requirements

The table 3.1 shows the summary of hardware and software requirements that have been considered for this project.

	Server Requirement	Client Requirement
Hardware Requirements	• Pentium or AMD with 400Mhz and above computer • At least 64 MB RAM • Minimum 1 GB Hard Disk (depend on number of users) • Network connection with recommended bandwidth at 10 Mbps or more • Standard input and output devices	• Pentium or AMD with 133Mhz and above computer. • At least 16MB RAM and above. • Standard input and output devices.
Software Requirements	• Windows 2000 Server • IIS 5.0 • Ms SQL Server 7.0	• Any platform with Graphical user interface. • IE 4.0, Netscape Navigator 4.0 and above or any browser support JavaScript.

Table 3.2 Hardware and Software Requirements

3.5 Conclusion

This requirement specification and analysis part give more precise description of the functionality and the constraints on the system after feasibility studies on the overall available technologies. It is an important phase to ensure that the project will meets the real requirement of the project and to reduce the misunderstanding and misinterpretation of the whole system.

CHAPTER 4
SYSTEM DESIGN

4.0 Introduction

System Design is a plan to build a system that meets the requirements needed to deliver the problem solution and helps to achieve the system's goal and objective. Good design is the key to successful project. This is a stage in the system development process where the requirements for the system are translated into the system characteristics. In Online Community Information System, the stage in the design process is as follow:

- Architecture Design
  The subsystem marking up the system and their relationships is identified and documented.

- Database Design
  The data structures used in the system and implementation are designed in detail and specified.

- User Interface Design
  Facilities are allocated to different modules of the system and the interfaces of these modules are designed. These enable users interact with the system.

4.1 Architecture Design

Online Community Information System is designed to leverage the client/server architecture and extends it to the web. This large system is decomposed into subsystems that provide some related set of facilities. Thus, architecture design is the

initial design process of identifying these subsystems and establishing a framework for the subsystem control and communications. As part of the architectural design process, some of the activities such as system structuring are usually necessary.

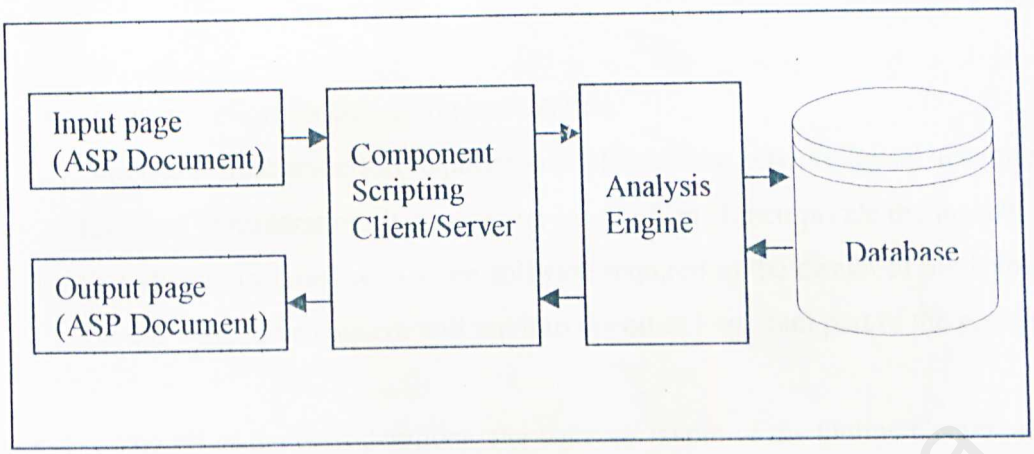


Figure 4.1 System Architecture of Online Community Information System

4.1.1 Network Setup Design

For the network setup designing, there are a few consideration have to take into account.

- The ability of the network setup to suit or conform to the overall environment architecture that is going to be used

- The availability of hardware resource and current network layout
  The issue of the capability of each available machine must be brought into consideration. It is include the machine's processing power, storage space, and working memory. Besides, it also needs to concern about the number of the physical machines that are available for development.

- The available technologies that can be leverage
  All of the technologies that can be used to implement the overall system in the network also must be considered while designing the layout. By this way, we may concern about the dependencies among all the technologies. For example,

some of the involved technologies will depend upon other technologies and will not run in their absence. Furthermore, the installation of the technologies into the available machine also may require for difference version or platform type.

- Time and effort for design implementation

  Amount of time and effort required to implement the network layout also must take into consideration. It may save a lot of effort if incorporate the machines that already installed with some software required in the design of the layout. By this way, more concern will put into the other important part in the system.

After keeping all of the considerations, the network layout of the Online Community Information System was design. This design encompasses the machines that will eventually be utilized as the server in the environment as well as what software they would be equipped with. The network layout is described in the figure below :

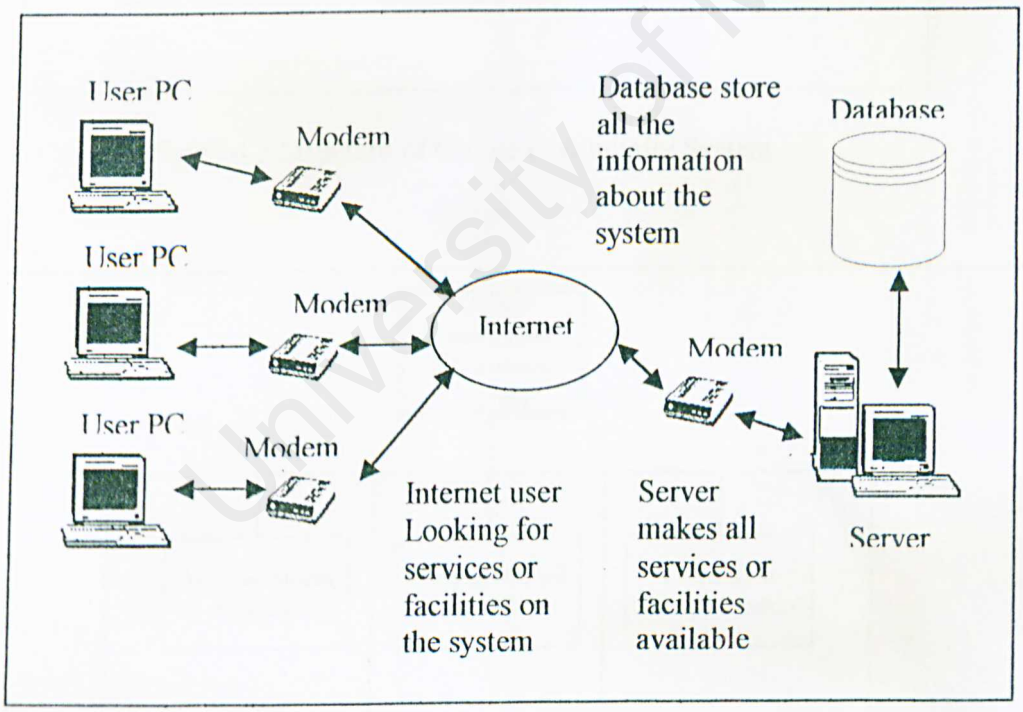


Figure 4.2 Network Design of Online Community Information System

4.1.2 System Structuring

This system is structured into a number of principal subsystems where a subsystem is an independent unit. Decomposing a system into a set of interacting subsystem is an important phase. Structure chart is used to depict the high level extraction of a specified system. The usage of structure chart is to describe the interaction between independent subsystems.

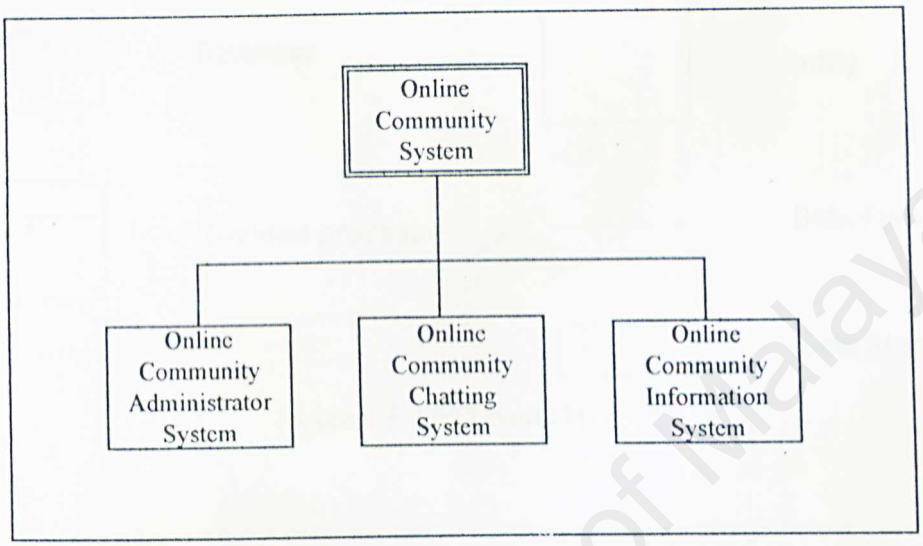


Figure 4.3 Structure of Online Community System

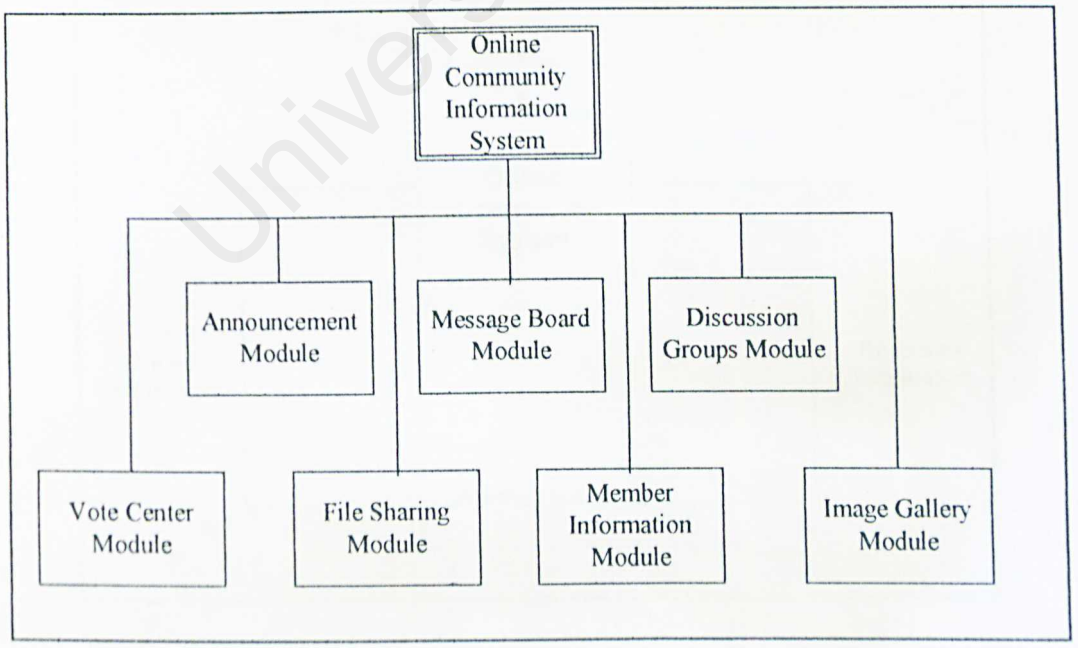


Figure 4.4 Structure Chart of Online Community Information System

4.1.3 Data Flow Diagram (DFD)

Data flow diagrams provide a general view of the processes provided by the system to both the end-user as well as system designer. System designer can identify the data flow in this system trough this diagram and this important for the system designer. Below shows the DFD symbols used:

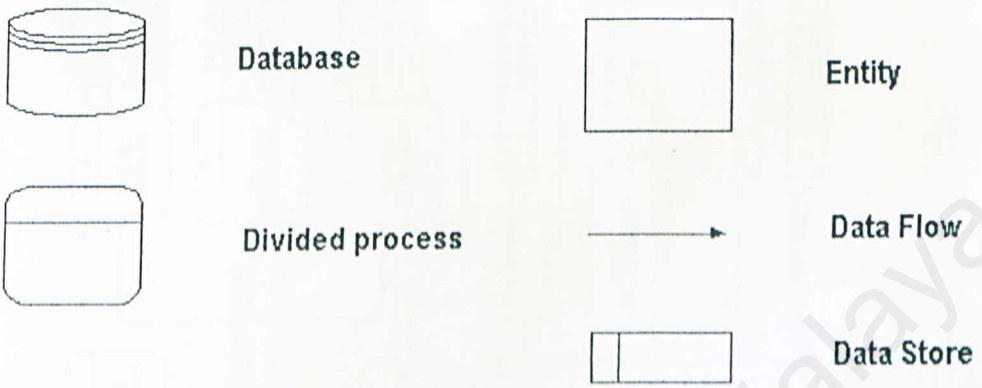


Figure 4.5 DFD symbols

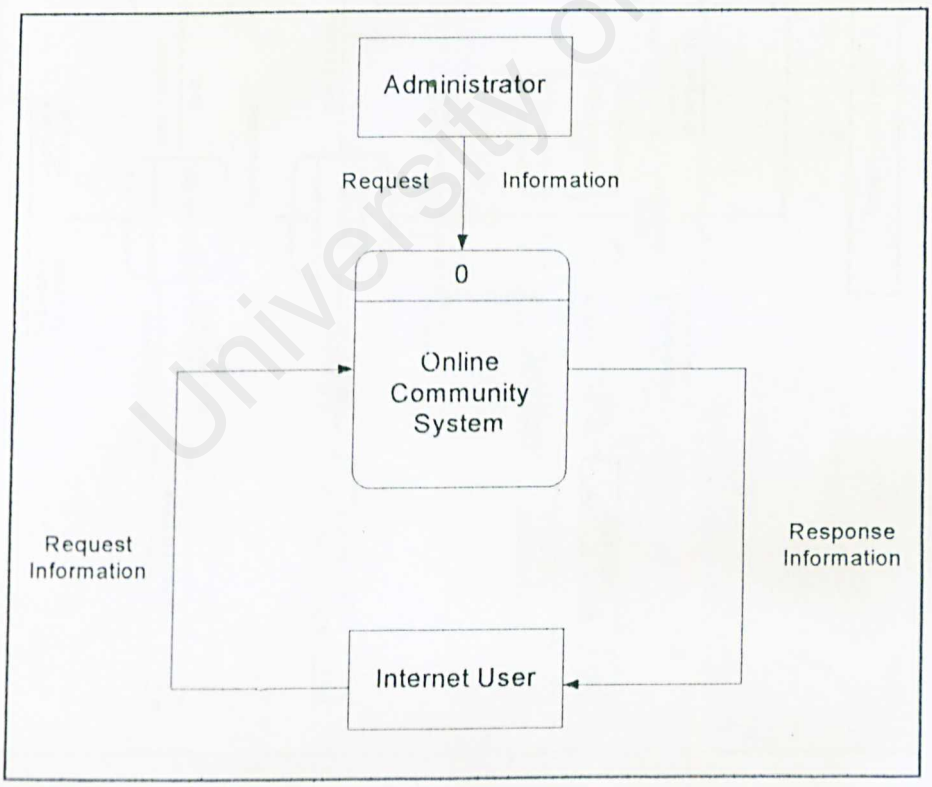


Figure 4.6 Context Diagram of Online Community System

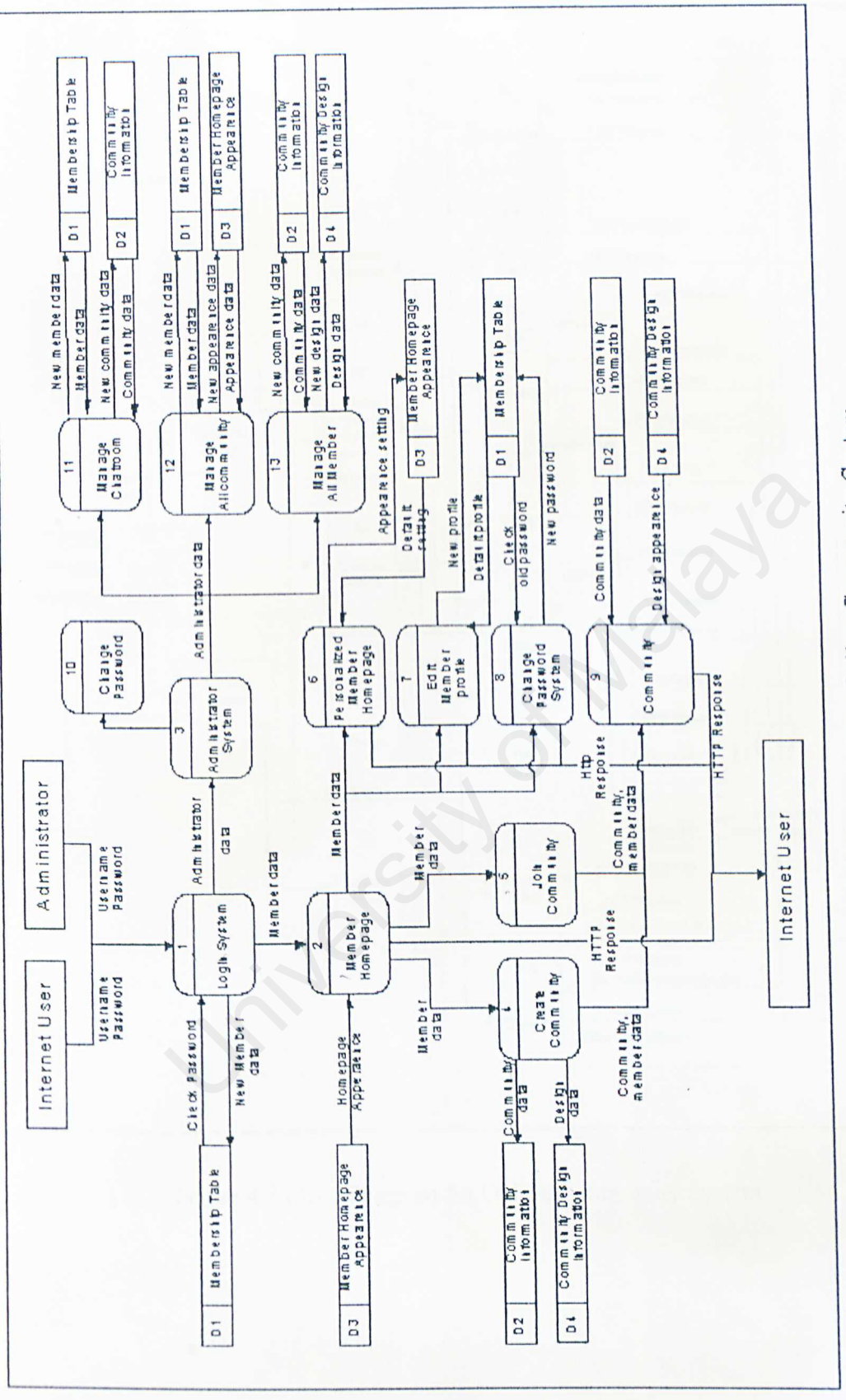


Figure 4.7 Diagram 0 for Online Community System

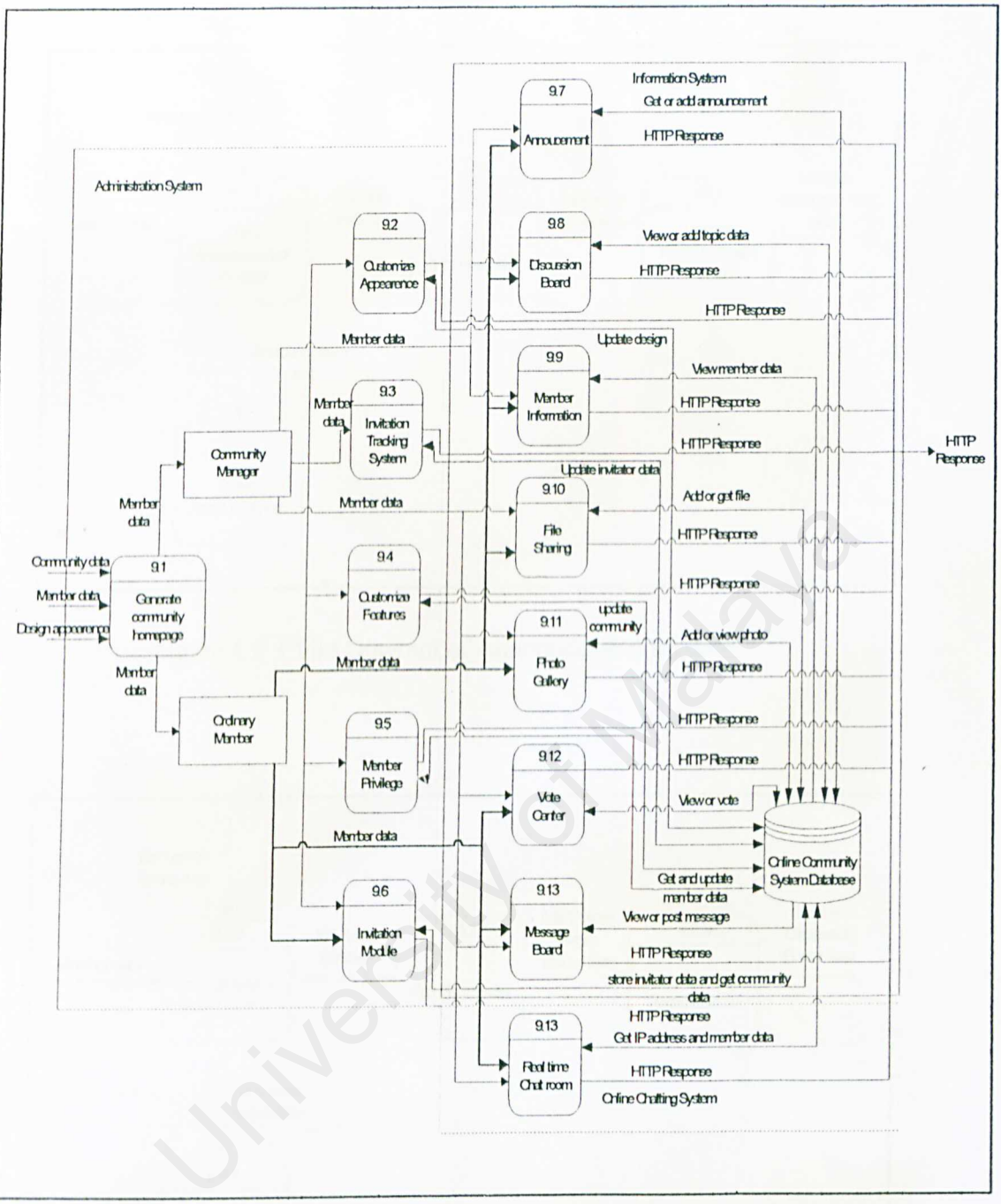


Figure 4.8 Child Diagram for Online Community System

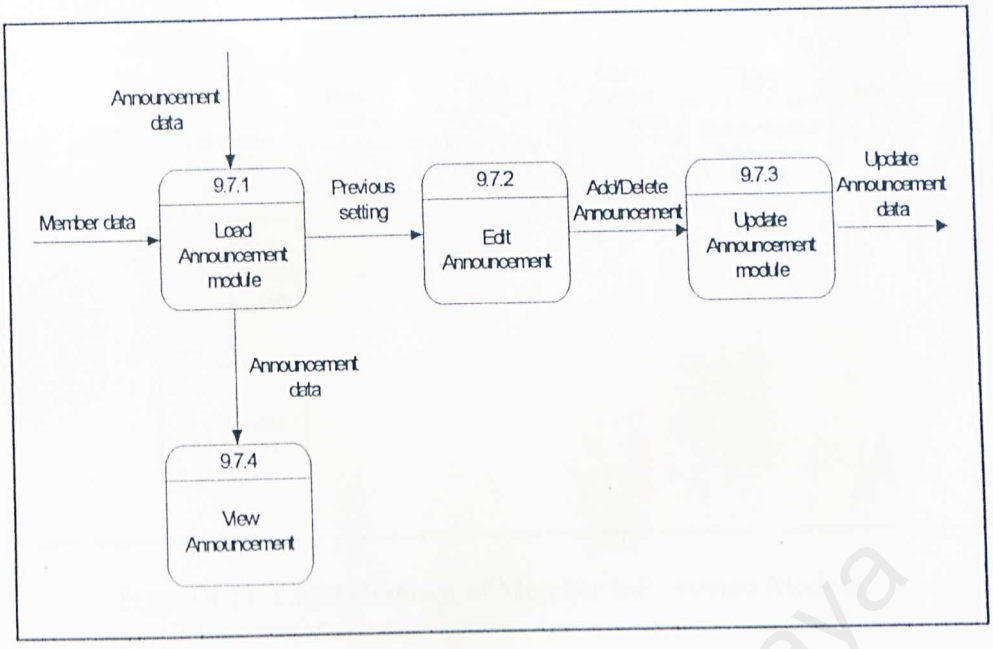


Figure 4.9 Child Diagram of Announcement Module

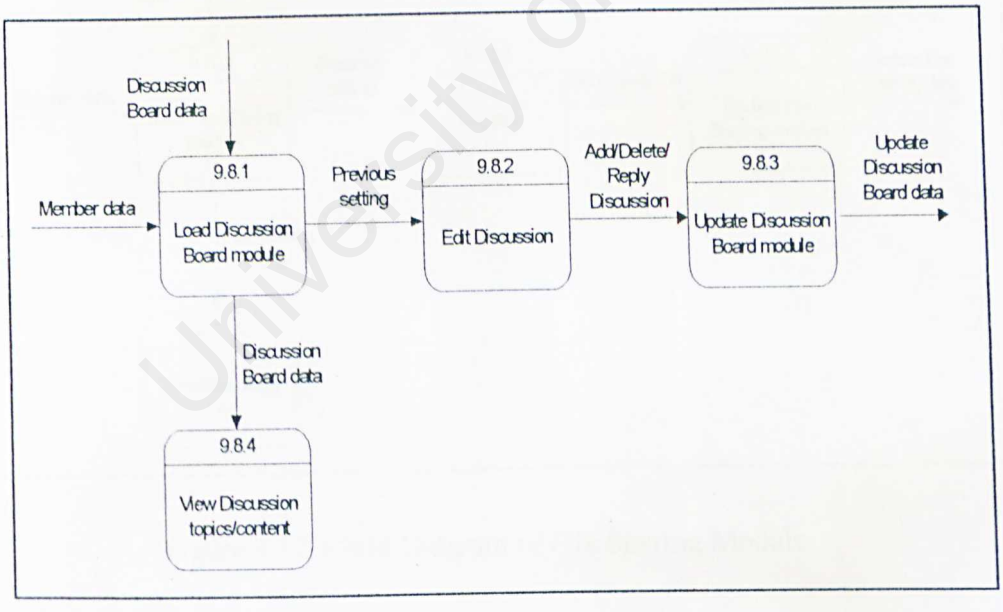


Figure 4.10 Child Diagram of Discussion Board Module

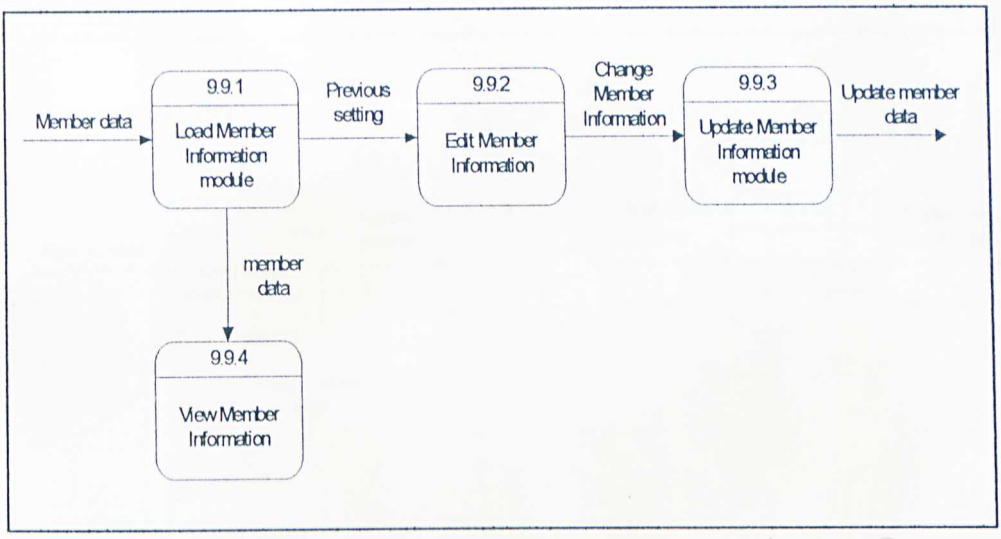


Figure 4.11 Child Diagram of Member Information Module

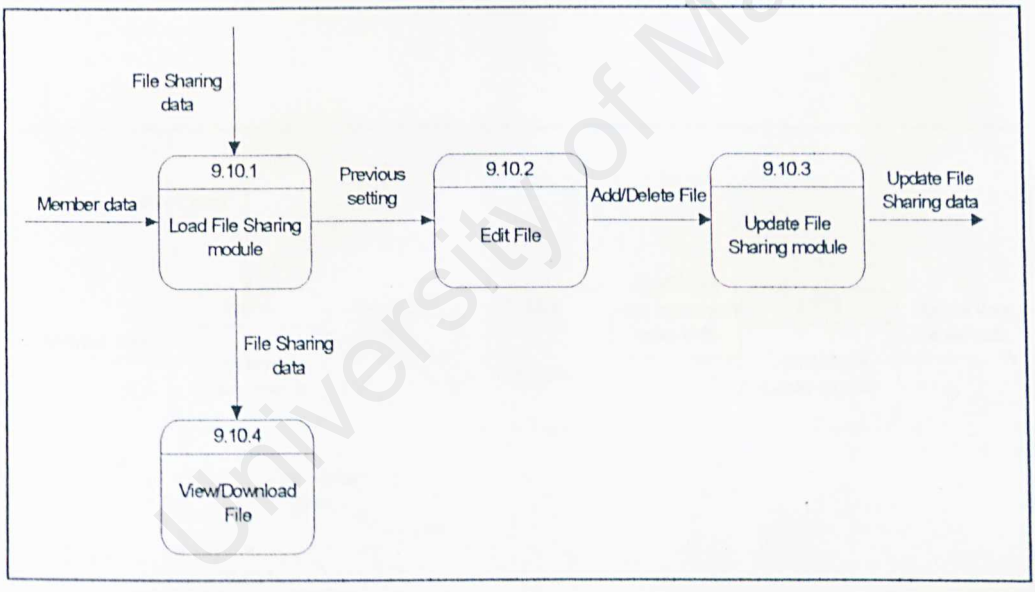


Figure 4.12 Child Diagram of File Sharing Module

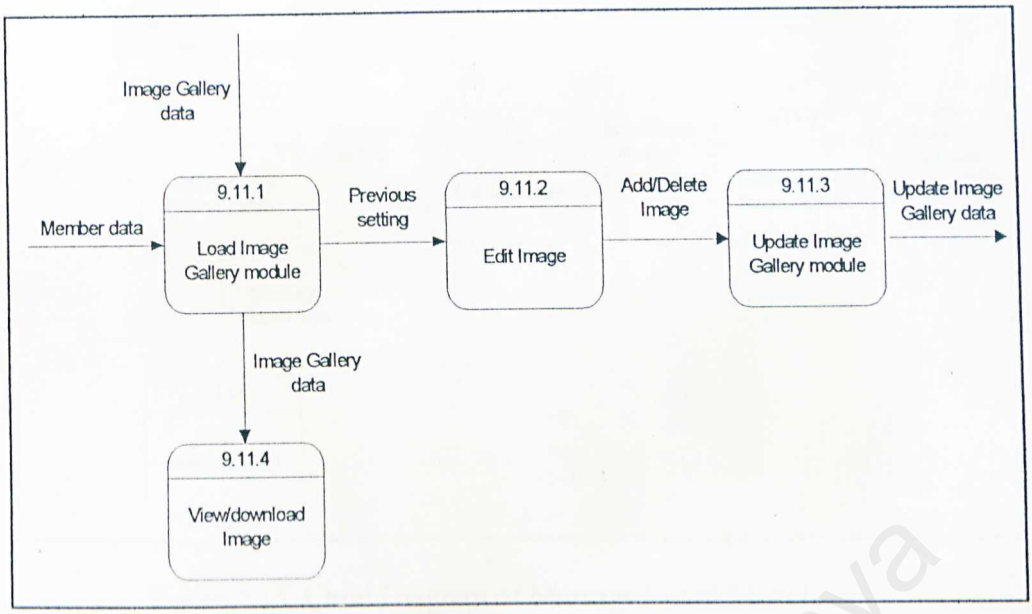


Figure 4.13 Child Diagram of Image Gallery Module

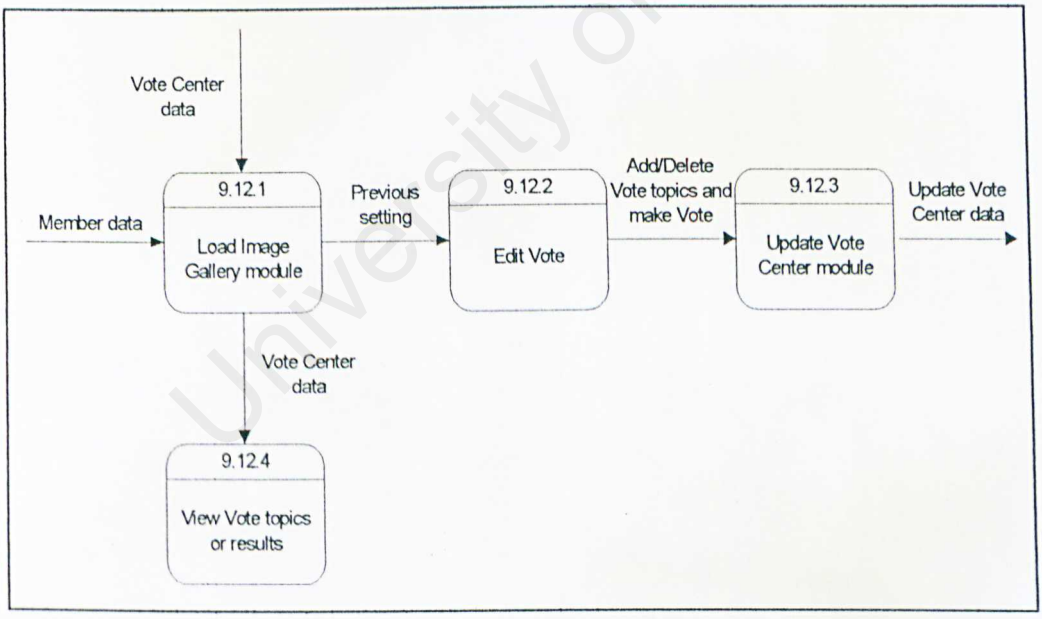


Figure 4.14 Child Diagram of Vote Center Module

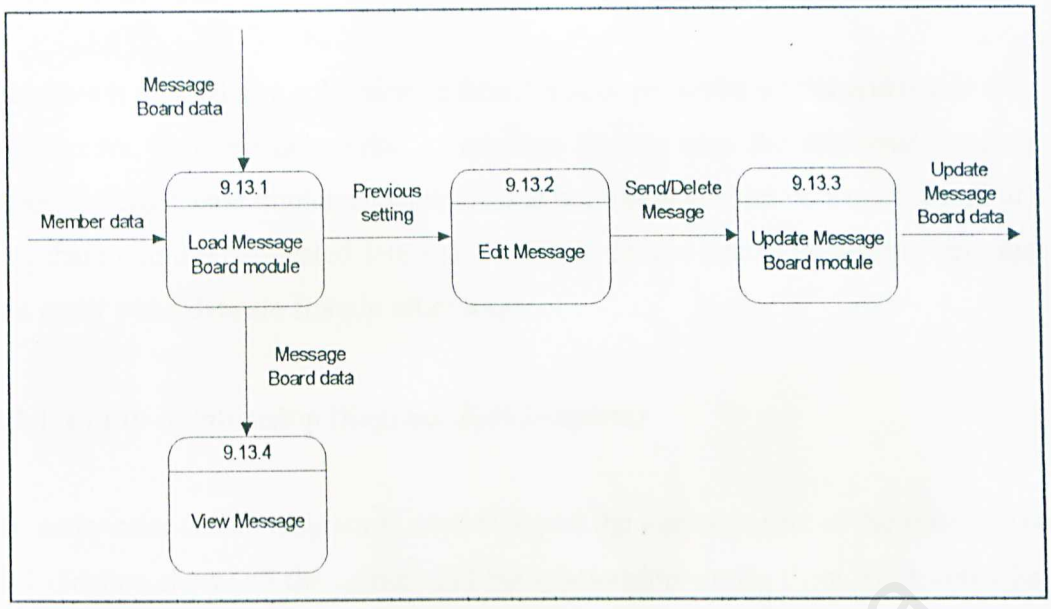


Figure 4.15 Child Diagram of Message Board Module

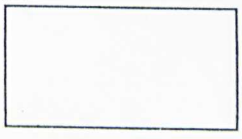
4.2 Database Design

Database is defined as a collection of data stored in particular format and reached via a computer. Online Community Information System uses the relational database model in its database implementation. This is because it enables data to be stored in a way that minimize duplicated data and eliminated certain type of processing error that can occur when data are store in other ways.

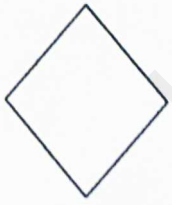
4.2.1 Entity-Relationship Diagram (E-R Diagram)

An entity-relationship diagram is used to model the logical aspect of the system. The E-R diagram shows all the entities and the relationship among them. Each entity has attributes. An attribute is a data item belonging to entity. An association between the two entities is called the relationship between two entities. An relationship can be one of three types, namely one-to-one (1:1), one-to-many (1:M), and many-to-many (N:M). A relationship may also have attributes.

Like DFD, there are symbols used in an E-R diagram.



Entity



Relationship

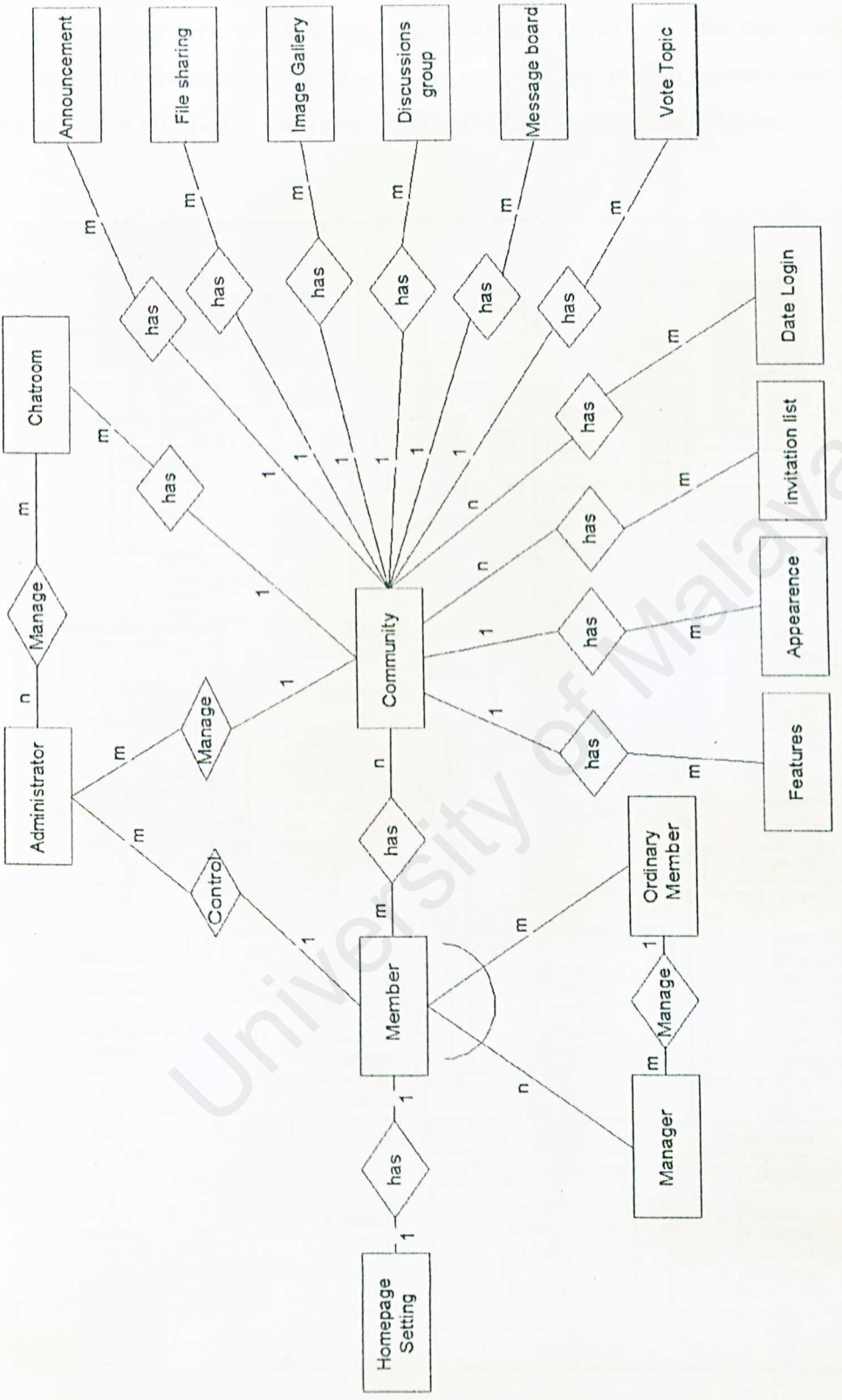


Figure 4.16 E- R Diagram of Online Community System

4.2.2 Data Structure Diagram (DSD)

DSD is another type of modeling data. DSD is a graphic tool for representing the structure of a database, showing all data stores and the logical pointers that connect them. Figure 4.17 below shows the DSD of the Online Community System.

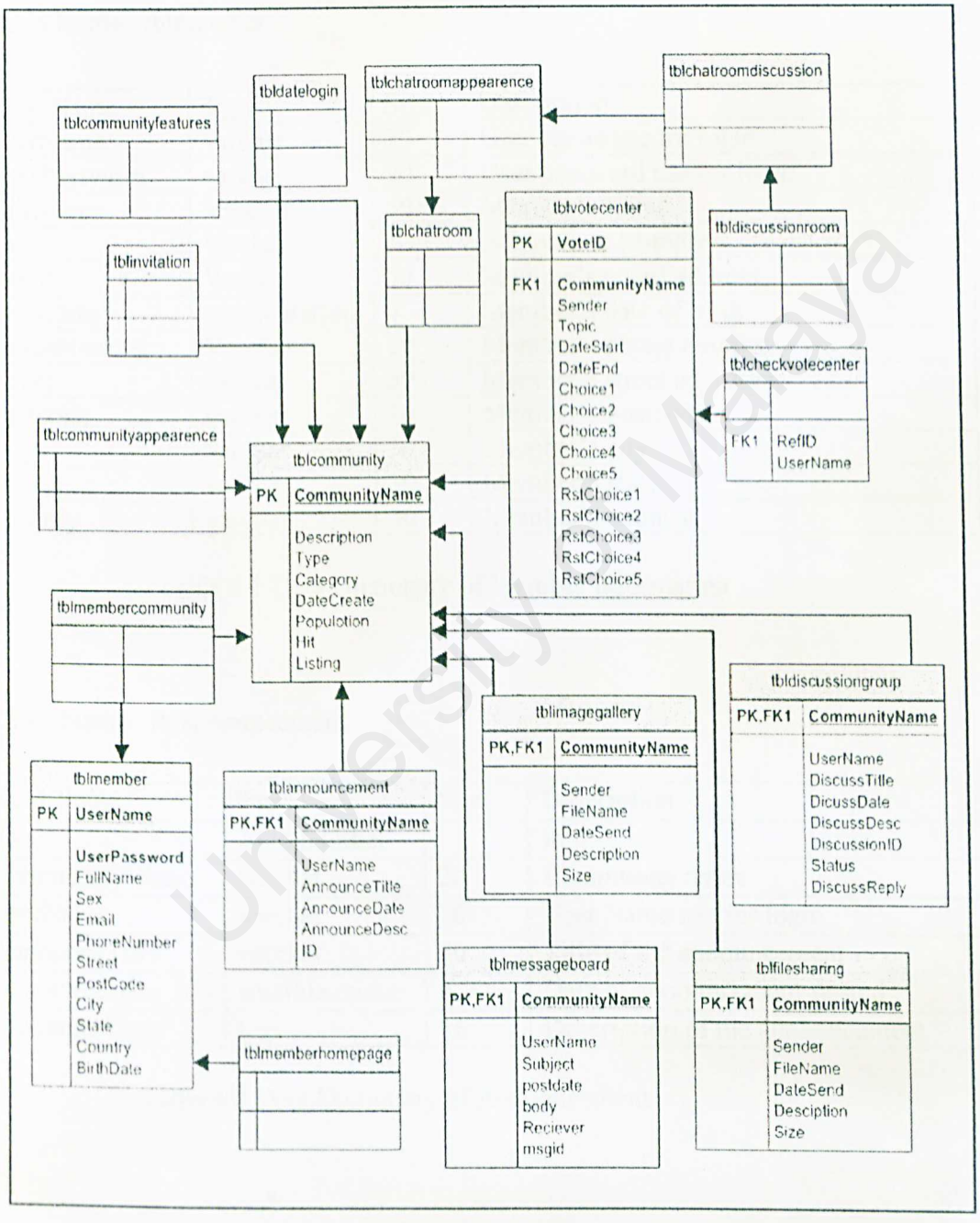


Figure 4.17 Data Structure Diagram of Online Community System

4.2.3 Data Dictionary

Data Dictionary is a storehouse of data. Just as a word dictionary contains words defining other words, the data dictionary contains data defining other data. The data dictionary Online Community Information System are listed below :

Table Name : tblmember

Field Name	Type	Size	Description
UserName	varchar	20	User Name use for login
UserPassword	varchar	20	User password use for login
FullName	Varchar	50	Member's Name
Sex	varchar	1	F-female or M-male
Email	Varchar	50	Member's email address
BirthDate	smalldatetime	4	Member's date of birth
PhoneNumber	Varchar	20	Member's phone number
Street	varchar	50	Member's street address
Postcode	varchar	10	Member's postcode
City	varchar	30	Member's city
State	varchar	30	Member's state
Country	varchar	30	Member's country

Table 4.1 Data Dictionary of Member Information

Table Name : tblannouncement

Field Name	Type	Size	Description
ID	Auto number		Id
CommunityName	varchar	20	Community name
UserName	varchar	20	User Name use for login
AnnounceTitle	varchar	50	Title of the announcement
AnnounceDate	smalldatetime	4	Date of announcement posted
AnnounceDesc	text	16	Description of the announcement

Table 4.2 Data Dictionary of Announcement

Table Name : tblfilesharing

Field Name	Type	Size	Description
CommunityName	varchar	20	Community name
Sender	varchar	20	User Name use for login
FileName	varchar	50	Title of the file
DateSend	smalldatetime	4	Date of the file uploaded
Description	text	16	Description of the file
Size	Int	4	Actual file size

Table 4.3 Data Dictionary of File Sharing

Table Name : tblimagegallery

Field Name	Type	Size	Description
CommunityName	varchar	20	Community name
Sender	varchar	20	User Name use for login
Filename	varchar	50	Title of the image
DateSend	smalldatetime	4	Date of the image uploaded
Description	text	16	Description of the image
Size	Int	4	Actual Image size

Table 4.4 Data Dictionary of Image Gallery

Table Name : tbldiscussiongroup

Field Name	Type	Size	Description
CommunityName	varchar	20	Community name
UserName	varchar	20	User Name use for login
DiscussTitle	varchar	50	Title of the discussion
DiscussReply	Int	4	Count the reply time
DiscussDate	smalldatetime	4	Date of the discussion posted
DiscussDisc	text	16	Description of the discussion
DiscussionID	int	4	ID
Status	int	4	Show new topic or reply message

Table 4.5 Data Dictionary of Discussion Group

Table Name : tblvotecenter

Field Name	Type	Size	Description
VoteID	int	4	Id
CommunityName	varchar	20	Community name
Sender	varchar	20	User Name use for login
Topic	varchar	50	Title of the vote
DateStart	smalldatetime	4	Date of the vote posted
DateEnd	smalldatetime	4	Expired date of the vote
Choice1	varchar	20	Choice
Choice2	varchar	20	Choice
Choice3	varchar	20	Choice
Choice4	varchar	20	Choice
Choice5	varchar	20	Choice
RstChoice	int	4	Choice result
RstChoice	int	4	Choice result
RstChoice	int	4	Choice result
RstChoice	int	4	Choice result
RstChoice	int	4	Choice result

Table 4.6 Data Dictionary of Vote Center

Table Name : tblchkvotecenter

Field Name	Type	Size	Description
RefID	varchar	20	ID
UserName	varchar	20	User Name use for login

Table 4.8 Data Dictionary of Vote Check

Table Name : tblmessageboard

Field Name	Type	Size	Description
CommunityName	varchar	20	Community name
UserName	varchar	20	User Name use for login
MessageTitle	varchar	50	Title of the message
MessageDate	smalldatetime	4	Date of the message posted
MessageDesc	text	16	Description of the message
RecieverName	varchar	20	Name of the message send to

Table 4.9 Data Dictionary of Message Board

4.3 User Interface Design

The goal of user interface design is to provide the best way for users to interact with components or what is commonly known as Human Computer Interaction (HCI). The HCI general principle are as below :

- Consistency
  Consistent format for command input, data display, menu selection and placing of control objects.

- Confirmation and Verification Message
  Ask for verification of non-trivial destructive action such as delete record.

- Reverse Action
  Allow user to return to the previous state.

- Functions Grouping
  Categorize activities by function and organize screen geography accordingly.

- Responsiveness
  How the user perceives the rate of communication with the system. For example, the mouse pointer changes to hourglass or displays a wait message when the system is processing data.

Online Community Information System is a web-based application, web pages design is also important to take into considerations. Some of the considerations need to be taken into while designing the user interface of the web page.

- Page layout and presentation, that is, does the page look like it is supposed to when rendered by the browser?

- Does the page appear as it is supposed to when rendered by different browsers? This is important when using non-standard HTML tags extensions) where different browsers may handle these non-standard tags differently.

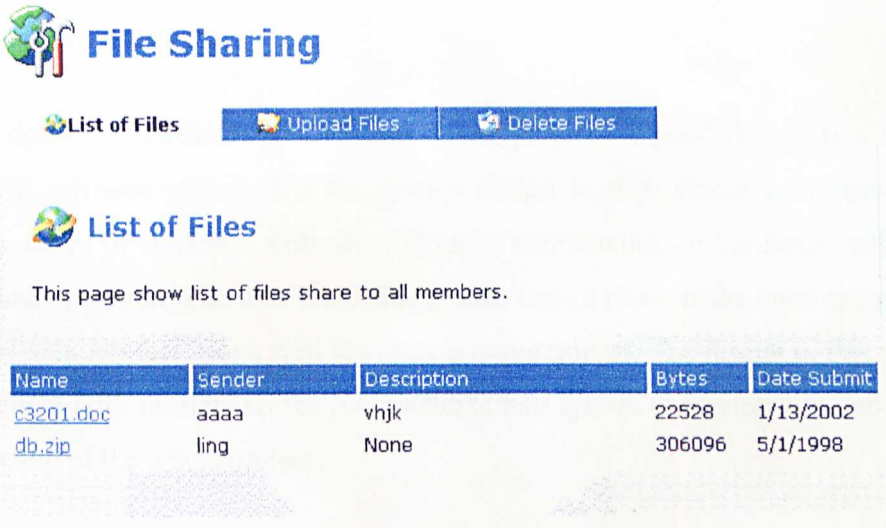


Figure 4.18 User Interface of File Sharing

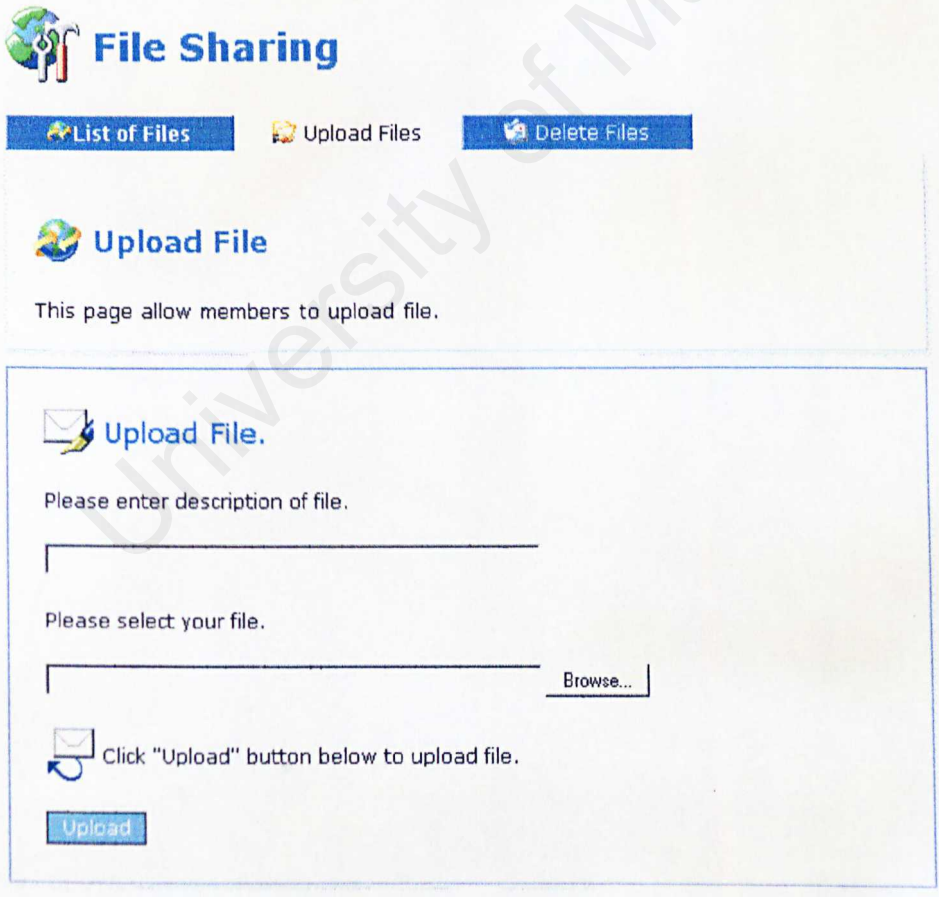


Figure 4.19 User Interface of Add File

4.4 Conclusion

System design is a critical part for the whole project. A good design is a key to successful software project. For the system design in this project development, it covers a range of solutions with the difference combination of hardware, software, and human operation. The solution in this system design phase is the most appropriate technical solution that meets well the system requirements. The design in this project development will translate all the requirements into system characteristics and give a clear picture of the whole project.

CHAPTER 5

SYSTEM IMPLEMENTATION

5.0 Introduction

System Implementation involved the translation of the software representation produced by the design into a computer readable form.

5.1 Development Environment

The development environment consists of hardware and software configurations. Using the suitable hardware and software is an important point that determine the successful of a project.

5.1.1 Hardware Configurations

The following hardware specification are used to develop this system:

- Intel Pentium (III) 500Mhz processor
- 256MB SD RAM
- 6.4 GB Hard Disk
- 15" 256-colour monitor capable of 800 x 600 resolution
- 1.44 MB Floppy Drive
- 52X CD-ROM Drive
- Speaker
- Other standard computer peripherals

5.1.2 Software Configurations

The following software specification are used in the development of the system. They also include the software tools for documenting the system.

Software	Usage	Description
Microsoft Windows 2000	System Development	Operating System
Microsoft SQL Server 7.0	System Development	Web Database
Internet Information Server 5.0 (IIS 5.0)	System Requirements	Microsoft web server
Microsoft Internet Explorer 5.0 and above	System Requirements	Web browser
Adobe Photoshop 6.0	System Development	Graphics Editor
Microsoft Visual Interdev 6.0	System Development	HTML editing
Microsoft Word	System Development	Documentation
Notepad	System Development	HTML editing

Table 5.1 Software Configurations

5.2 Database Connection

The database for Online Community Information System is created using Microsoft SQL server 7.0. By using Microsoft SQL, creating and modifying the tables, views and their relationship is made easy.

All communication with a database takes place through an open connection. Before any information can be inserted into or retrieved from the database, a connection with the database must be opened. Using the Open method to open the connection and close the connection using the Close method.

5.3 Coding

The design must be translated into the form that can be understood by the machine. The code generation step performs this task. If design is performed in a detailed manner, code generation can be accomplished mechanically.

5.3.1 Coding Format

This system is using ASP technology in the development process. Therefore all page are in the HTML and ASP format. Scripting languages can be included in the ASP files. JavaScript and VBScript are chosen to implement the processing task in this system. JavaScript is used to implement client-side input validation and VBScript is used to develop server-side process. The following is the general format for the ASP files used in the coding of this system.

```
<%@ Language=VBScript %>
<!-- #INCLUDE FILE="../../getuserinfo.inc" -->
<!-- #INCLUDE FILE="../../validuser.inc" -->
<!-- #INCLUDE FILE="../../dbconnect.inc" -->
<!-- #INCLUDE FILE="getcomuserprivilege.inc" -->
<!-- #INCLUDE FILE="getcommunityfeatures.inc" -->
<!-- #INCLUDE FILE="getcommunityappearence.inc" -->

.....
.....

<%
        else
%>
                <td align=center width=*> </td>
<%
        end if
%>
.....
.....
```

```
<!----------------------------------end content---------------------->
<!-- #INCLUDE FILE="comselectfooter.inc" -->
<!-- #INCLUDE FILE="../../closedb.inc" -->
<script language="javascript" src="validation.js"></script>
<script language="javascript">

                document.addannouncement.submit();


.....
</script>
```

5.3.2 Client-Side JavaScript

JavaScript is a completely separate language from Java. JavaScript is a simple scripting. The web page developer can create a dynamic web page easily. Besides, JavaScript makes the web page become dynamic when it responds to the event generated by the user or other object. With traditional HTML documents, server-side application has the responsibility of handling events. JavaScript transfer event management to the client-side. It makes web page design more flexible, dynamic and responsible.

5.3.3 Server-Side VBScript

VBScript bring active scripting to a wide variety of environments including web client scripting in Internet Explorer and web server scripting in Internet Information Server. VBScript is said to be a glue that holds web browser and web server component together. VBScript is much easier to learn than other programming language such as Java, C/C++ and other scripting language. Derived from the BASIC language, VBScript should not be difficult for anyone who has any computer program experience.

5.4 Coding Principles

Coding principles are applied during the development of this system to ensure that the quality and the proper structure in the code generation.

I. Readability

Codes should be easy to read and understandable. It is very important when it comes to the enhancement of the system in the future by other people. In addition, the meaningful variable names and statement labels will also be helpful in reading and understanding the code.

II. Maintainability

Codes should be easy to read, corrected and revised. Codes that perform functions for a module should be grouped together. Besides this, the codes should be tried as simple as possible with doing in separate module. It is called loose coupling.

III. Robustness

Robustness refers to the quality that causes a system to be able to handle unexpected error and echo back with proper responses. Errors handling should be done to increase the robustness of the system. Appropriate errors message should be displayed response to user's input. System failure should be minimized or avoid it to be happened.

5.5 Methodology

Online Community Information System is developed using a modular approach where each module is developed separately and are integrated later into a fully functional system. For each module, it is further refined into functions and procedures. By using a modular approach, future modifications and enhancements are made easy.

5.6 Conclusion

This chapter explains in detail the development of the project. The planning and research done in prior chapter proved to be useful as the development was smooth. The various phases of the development were according to schedule and there were least problems during the installation of the software. The tools used to develop the system were adequate and coding could progress smoothly. The next chapter will discuss a bit on the testing methods used to ensure that the system functions accordingly to its specifications

CHAPTER 6
SYSTEM TESTING

6.0 Introduction

All of the systems newly written or modified application program must be tested thoroughly. Testing is accomplished on subsystem or program modules as work progresses. It is done on many different levels at various intervals. All programs must be desk-checked, checked with test data and checked to see if the section work together with one another as planned before the system is put into used. This chapter gives some description about the testing stage, which involves unit testing, integration testing and system testing.

6.1 Unit Testing

Unit testing technique has been used to ensure that sections fix the bug without side effects. It is also important in verifying that each section meets its specification that has been determined in system design phase. After a new section has been developed, it is normally tested independently in order in assure their accuracy and to detect error in the section. There are three types of testing strategy have been carried out for unit testing which are source code reviewing and test cases.

6.1.1 Source Code Reviewing

Source Code Reviewing is a basic method used for testing purpose. The codes are examined line by line in order to make sure that any concealed semantic errors during the implementation could be revealed. In reviewing the source code, the correctness

of coding was identified by comparing with the original design of the program flow. When the logic and flow of the program were identified, comments were inserted into the sections of the code tested to ensure it can be easily traced in the future.

The flow and logic of the code was also traced and debugged to detect any errors in the coding, The debugging and tracing of ASP code were done with a few methods such as following:

1. Use the oldest method of debugging that is print out command (Response.write) to display output when error is detected. For example:

```
<%
    If IsNull (testvalue) then
        Response.write "Error"
    End If
%>
```

2. The print out command is also used to display a counter especially for identifying error inside a loop. For example:

```
<%
    Do While Variable <10
        Response.write Variable
    Loop
%>
```

However, if the code is simple and written with full of confidence, using this technique to test the code is just a redundant work.

3. One of the possible errors can be found in source code related to database access is the presence of empty record set. Empty record set would generate error when it is processed. Therefore some checking statement must be entered to test the record set. For example:

   If (rs.EOF and rs.BOF) is true then the record set is empty.

6.1.2 Test cases

Besides reviewing the source codes, some test cases also have been used to test the system. This approach is used as some set of structural input is given and output is observed. This strategy is needed to identify the variance between the prototype and the requirement. In this testing, different test data is input into the program. For example, one of the sections tested is member section. All the input data required by the Add new member function were entered and submit. All the record in the database were checked and verified to ensure that they are same as the input data. The data is then output to the screen using the application function to make sure the data were displayed correctly. The input data were again entered into the application but deliberately left out some required field empty. As the result, the application was able to detect the empty field and generate the error message. Different field was selected in turn to test out. The system is able to detect this error for each required field. With this, the reaction of the program to the input data could be tested. However, the JavaScript has been used in the client side to make sure the user enters all the required fields before send to the database.

6.2 Integration Testing

After all the sections were tested and met their specification and requirement, they were integrated into Online Community Information System section by section. Integration testing was carried out in order to identify any fault and failure caused by the integration as well as to review and rectify the correct path of the system flow. It also aims to ensure the components of the system would support each other.

During the integration, all the section prototypes were combined and tested section by section in a testing environment. The testing environment was consistent for all the sections in terms of interface, data field, and system functions. The program flow and the testing needs for each of the sections were reviewed and tested. After that, the entire system was tested with some test cases. Finally, the system is published to let the other users to test it. The development of the Online Community Information System is divided into sections and then all the sections are integrated as one main system. Therefore the bottom up approach has been used as the integration testing method.

6.3 System Testing

Last but not least, the system as a working whole must also be tested. This includes testing the interfaces between subsystems, the correctness of the output, and usefulness and understandability of system documentation and output. The system testing is performed to ensure that the entire application, of which the modified program was a part, still works. It is used to test the integrated system and verify whether it meets the specified requirements.

As a conclusion, the system testing process can be illustrated as figure below:

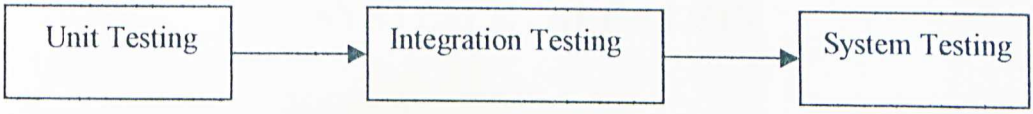


Figure 6.1 System Testing Process

6.4 Conclusion

Testing is done throughout systems development, not just at the end. Although testing is tedious, it is essential series if steps that helps assure the quality of the eventual system. The following chapter will discuss about the project evaluation and some problems encountered throughout the project development.

CHAPTER 7

SYSTEM EVALUATION

7.0 Introduction

The end product of the project is brought up for evaluation after the system implementation of the Online Community Information System. Several evaluation techniques have been used for evaluating the final system such as user evaluation that emphasizes implementation problems and user involvement. Furthermore, evaluation following implementation allows the users to acquire ideas about how to proceed with future systems projects. From the user's result, most users are satisfied with the function provided by this system. The following section explains in detail about the system strength and its constraints and problems encountered throughout the development of Online Community Information System.

7.1 Project Evaluation and Problem encountered

Throughout the system life cycle, users have been evaluating the evolving information systems and networks in order to give feedback for their eventual improvement. This chapter will discuss some evaluation technique, system strength, system constraint, and problem encountered throughout the project development.

7.1.1 System Problems

- Changes of User Requirement

  It is very difficult to develop and implement the system as the user requirement changes frequently. Sometimes it is easy to change the requirement. However, the coding needs to be changed in order to adapt the new requirement will require a lot of task.

- Set up and Configuration

  Setting up a server is critical for the operation of the application developed. However, the setup process takes a lot of time due to the lack of experience. Beside that, repeated failure of the server does require re-installation of the server consumed a lot of time and effort.

7.1.2 Sections Problems

- Picture and File upload function

  It's very hard and difficult to write the ASP source code for upload the picture and file to the server because the complexity of the coding.

  Solution: Therefore, a simple of upload function coding has been downloaded from the web site. Some modification was added to the downloaded source code, so that it can compatible with the Online Community Information System.

7.2 System Strength

- Online update function

  Online Community Information System does on-line content update function for users to enter up-to-date information for the web site. Thus it is a dynamic web site which can provides later information for the group member.

- Web Enabled

  Online Community Information System is a web-based application. Therefore, it can be accessed easily using the web browser. Beside, It also using the client server approach that allows processing load to be shared between the client and the server, thus reducing the burden on the server and better service could be provided.

- Simplicity and user Friendliness of User Interface

  The graphic interface design of the system is quite similar to the GUI of the window environment, this it ensures user friendliness of the system. As a result, the system will be easy to use and convenient for the users.

- Validation of the Input Field

  This system posse's comprehensive error detection feature to ensure that only valid input is being passed to the server and it is done through client-side scripting.

- Relatively Fast Response Time

  The web pages are designed in such a manner that they are loaded in reasonable amount of time to ensure users need not wait too long to view the pages.

- System Transparency

  System transparency refers to the condition where the users do not need to know where the database resides, how is the system structure, its database management system and anything related to the system built. Users are just required to know how to communicate with the user interface.

- Ease To Use

  This system is very easy to use. The commands and the layouts are simple, logical, tidy and well organized. Therefore, it is easy to learn up, use and understandable.

7.3 System Constraints

This system is limited to certain platform in terms of openness. It support Windows 95/98/NT/2000/XP and Internet Explorer 5.0 or above. Thus, it may not display correctly by other browsers such as Netscape.

7.4 Future Enhancement

Some functionality of the system can be enhanced in order to improve the quality of the system. The following are the functionality that can be enhanced for this system.

- Maintenance of User Interface

  The web page design for Online Community Information System could be changed to give the user a fresh and better look.

- Enhancement for functionality of sections

  For example, the upload picture and file section could be enhanced by considering the user can post their comment for each picture and file.

- Add new sections

  More new sections could be added into the Online Community Information System to make it more completely and more powerful. New section such as committee meeting schedule, etc could be added.

- Support Other Browser

  As stated, this system requires Microsoft Internet Explorer 5.0 and above for execution. In future, it can be turned to fulfill other browser requirement such as Netscape Communicator for execution. This is because Netscape has a sizeable share in the browser besides Internet Explorer.

- Language Support

  Future enhancement for Online Community Information System will include language support. This will enable information to be displayed in different languages like Malay, Chinese, or others.

7.5 Knowledge Gained

A lot of knowledge had been gained through the entire development of the Online Community Information System. The following are some of the knowledge that has been gained throughout this project.

7.5.1 Setting up different kind of server

An opportunity for setting up the Windows 2000 and IIS 5.0 could be experienced through the development of Online Community Information System. Besides that, a better understanding on how to manipulate the Microsoft SQL server 7.0 also has been achieved. Several discussions have been held in solving the difficulties.

7.5.2 Additional knowledge of Using Software Tools

Throughout this project, knowledge had gained on how to write two new languages, which are JavaScript and ASP using VBScript. Beside, the knowledge of using the powerful graphic software Adobe Photoshop also had been learnt.

7.6 Conclusion

This chapter evaluates the project. This chapter described in detail the problems encountered during the implementation of the project. The system strengths and future enhancements were discussed in this chapter too.

Finally, some of the experiences and valuable knowledge gained was mentioned in the final section of this chapter. Good teamwork was of essence in the success of this project.

CHAPTER 8
REPORT CONCLUSION

8.0 Conclusion

The Online Community Information System is indeed a very interesting and challenging project as it introduces a new realm into the new age of information technology.

This report has addressed important issues with regards to definition, planned implementation method, development manner which includes software, hardware and the design of the system. Prior research conducted had revealed that the web technology implemented was viable and prove to be both challenging and interesting for the developers. It is expected that the system would substantially benefit the users of the system and will be enjoyed by all in the near future.

This project had also increased my knowledge tremendously. I can now better understand some of the theories learnt from the various courses attended. This deeper understanding of theories has also enabled me to further develop my practical skills in design and teamwork. As a whole, it has been a very satisfying and enchanting experience for me to be part of the team that develop this project.

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APPENDIX A

SETUP MANUAL

EC Community Setup Manual

1 Description

Online Community System (EC Community) is a Web Based Application that provides any group of people with the ability to establish their own private, interactive online community and communicate, exchange information over the Internet. Each community is essentially a website that acts as a private meeting place or home for the group. Within each area, called an online community, participants are provided access to a suite of powerful tools that enable a group to effectively get organized, share knowledge and communicate. On the other hand, online community is the gathering of people, in an online "space" where they come, communicate, connect, and get to know each other better over time. For further information, please refer to the User Manual.

2 Server Hardware Requirements

Personal computer with

- At least 128 MB of RAM
- At least 10MB of free space in Hard disk. (Depends on number of users)
- 256-color monitor capable of resolution 800 X 600 pixels

3 Server Software Requirements

- Windows 2000 or XP professional Edition with IIS and SMTP server installed
- Java Compiler JDK 1.3 or above installed
- MS SQL Server 7.0

4 Setting Up EC Community System

4.1 Install IIS and SMTP Server instructions

- Click on *Start* > *Setting* > *Control Panel* > *Add/Remove Programs.*
- *Add/Remove Programs windows will appear*, click on *Add/Remove Windows Component* button.
- Check on *Internet Information Services* and press *Next* button. A message will prompt to ask user to put in the windows 2000 or XP installation CD.
- Follow the instruction provided to complete the IIS and SMTP server installation

4.2 Install **Java™ 2 SDK** instructions

- Browse the CD and click on the Java JDK folder. Click on j2sdk-1_3_1-win.exe installation file to start the set up of Java JDK into users' PC. Follow the instructions provided to complete the installation. Users also can download *Java™ 2 SDK, Standard Edition, v 1.3.1* installer from http://java.sun.com/j2se/1.3/.
- For further information regarding the installation processes, please refer to http://java.sun.com/j2se/1.3/download-windows.html.
- After the set up process is complete, make sure set PATH includes the JDK bin directory.
- On Windows NT/2000 user set the PATH by going to the Start menu, selecting Settings, choosing System, and then choosing Environment.
- User need to have java plug-in installed before using the Online Chat Room Tools. Browse the CD and click on the Java plug-in folder. Click on j2re-1_3_1_01a-win.exe installation file to start the set up of Java Plug-in into users' PC. Follow the instructions provided to complete the installation.

4.3 Install and configure MS SQL Server 7.0 instructions

- Insert MS SQL Server 7.0 CD, a setup menu will pop up. Click on *Install SQL Server 7.0 Component*. Then, click on *Database Server - Desktop Edition* to start the set up of MS SQL Server into your PC. Follow the instructions provided to complete the installation.
- After the set up process is complete, click on *Start > Programs > Ms SQL Server 7.0 > Enterprises manager.*
- Created a blank database with the name "*ocs*". If user change the database name, user have to update database name variables (*dbname*) in "*dbconnect.inc*" in "*ocs*"(EC Community root) folder.
- After the database created, click *Start > Programs > Ms SQL Server 7.0 > Query Analyzer.*
- In then *Query Analyzer,* open "*GenerateDB.sql"* from the "*Database*" folder in the CD and select DB to "*ocs*". Run the Query to created table into the new database created
- Users can add user name and password to the database created in *Enterprises manager* under *Security > Logins.*
- The default login name used is "*sa*". If user create a new login name, the "*dbconnect.inc*" file in "*ocs*" folder have to update the database login name (*dblogin*) and database password variables (*dbpassword*)
- As an example, if new database name is "*ecc*", database login name is "*newocs*", password is "*123456*", user should update as below in "*dbconnect.inc*" file:

  dbname="ecc"

  dblogin="newocs"

  dbpassword="123456"

4.4 Configure Data source (ODBC) for Chat Room Server

- Users need to create a data source name "ocs" and map the data source with the database created in section 4.3
- Click on *Start* > *Setting* > *Control Panel* > *Administrative Tools* > *Data Source (ODBC)*
- Click add button to add new data source, follow instructions provide to complete the process.

4.5 Install EC Community instructions

- After configure the Ms SQL Server and Java JDK, user has to copy the folder named "*ocs*" in the CD into the folder named "*wwwroot*" under the "*Inetpud*" folder. This folder includes all the ASP files, HTML and java class files which is used in the system.

  Warning: The same folder name "ocs" has to be appearing in the "*docroot*" in file named "dbconnect.inc". If you change the folder name, you also have to change the value assigned for "*docroot*" as well.
- Next, user has to change the "*ec*", "*upfiles*" and "*upimages*" folder's permission. Right click on the folders and click properties. Click on the security tab. Add in user "everyone" with full permissions.

5 Starting EC Community

- Before start EC Community, please make sure IIS server and MS SQL Server is running.
- Click or execute "R*unIndicatorServer.bat*" to start the indicator server and "R*unChatRoomServer.bat*" to run the chat room server under "***docroot***" folder ("ocs" is default folder).
- Now, the EC Community System is ready to use.
- Open IE browser and enter **http://http_host/docroot/index.html**, "***http_host***" is web server host name and "***docroot***" is EC Community root folder
- Example: **http://localhost/ocs/index.html**
- The super administrator username is ***administrator*** with a default empty password. Administrator is required to change password after login.

APPENDIX B

USER MANUAL

Table of Contents

USER MANUAL

1.0 Introduction

Online Community Information System is a web application that allow internet user to effectively share knowledge and information online in secure environment. This system is easy to learn and use. All the function provided in this system can be easily executed by a simple click on the link and button. This user manual will provide instruction on how to use this system.

1.1 Hardware Requirements

- A computer with at least Pentium 100 MHZ or above
- At least 16 MB of RAM
- At least 100 MB free space in hard disk
- Network connection through existing network configuration or modem (recommended at least 14.4 Kbps)
- Other standard computer peripherals

1.2 Software Requirements

- Windows 95/98/me/2000
- Web browser that support VBScript (e.g. Internet Explorer 5.0 or above)

2.0 Getting Start

2.1 Image Gallery

Image gallery - allows users to upload image to share with other group member. Only the GIF or BMP files can be upload.

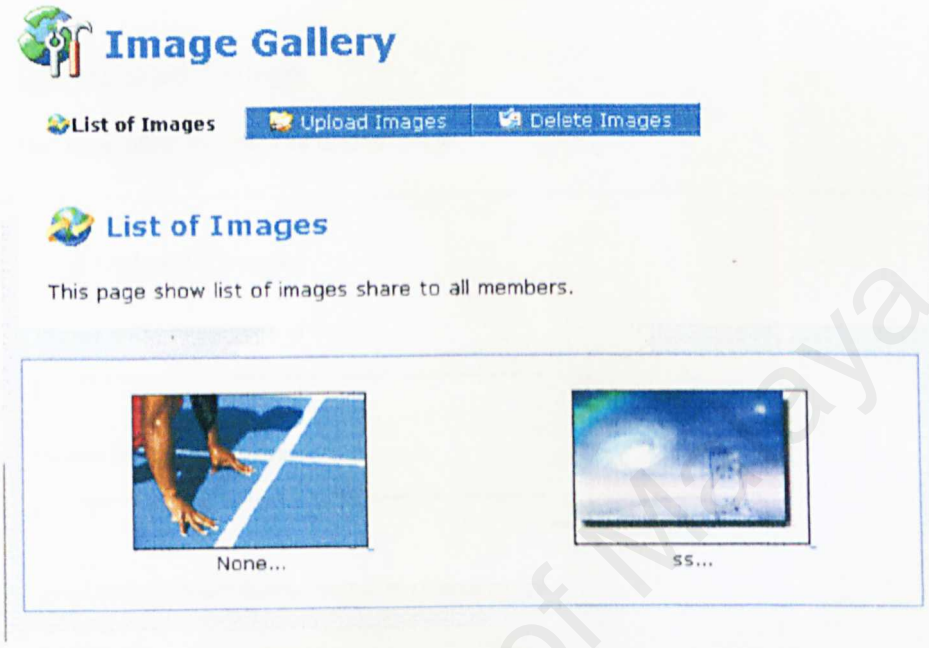

Figure 2.1.1 List of Images

List of Images will show users any computer graphics that has been uploaded by the group members. Users can click at the images to see more details of that image as figure below.

Figure 2.1.2 Description of Image

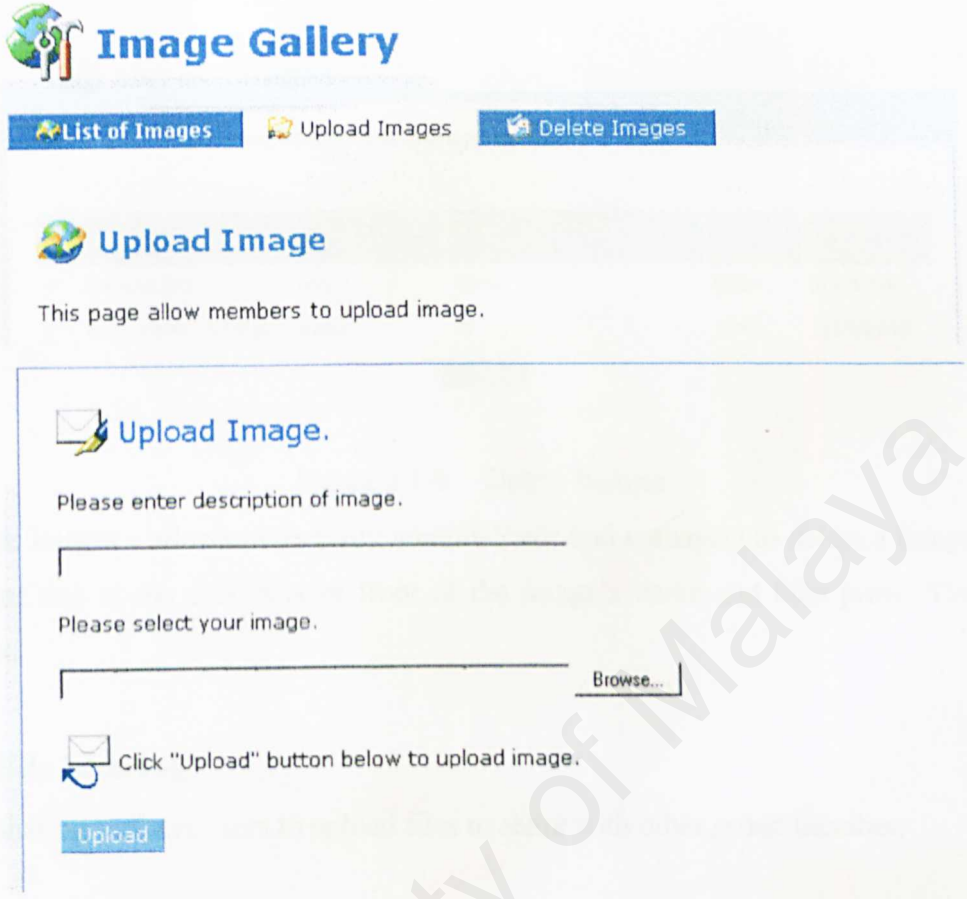

Figure 2.1.3 Upload Images

Upload Images - allows users to add an image by finding the image file on your computer (press "Browse" button) and then press "upload" button. Users can also add their own description for the image by adding text to the text field.

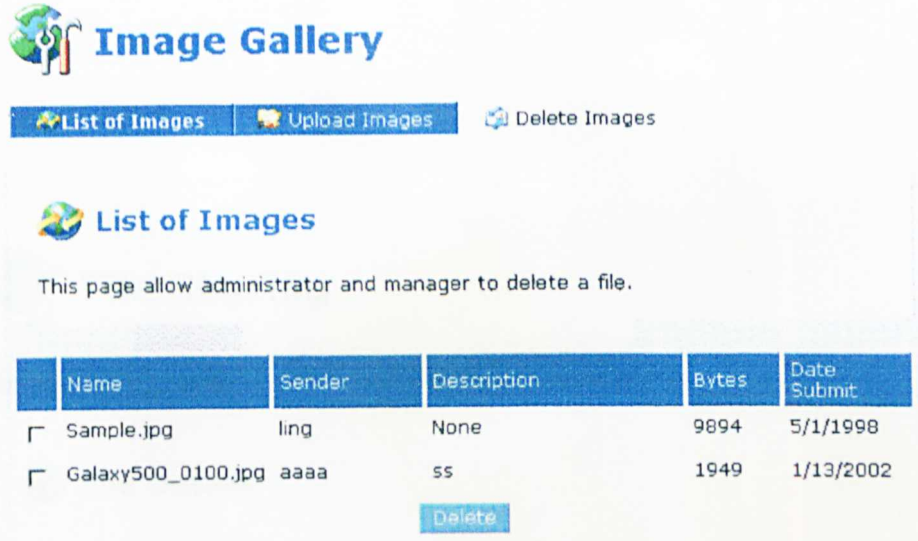

Figure 2.1.4 Delete Images

Delete Images - allows users (only administrator and manager) to delete a image file by just tick at the checkbox in front of the image's name and then press "Delete" button.

2.2 File Sharing

File sharing - allows users to upload files to share with other group member.

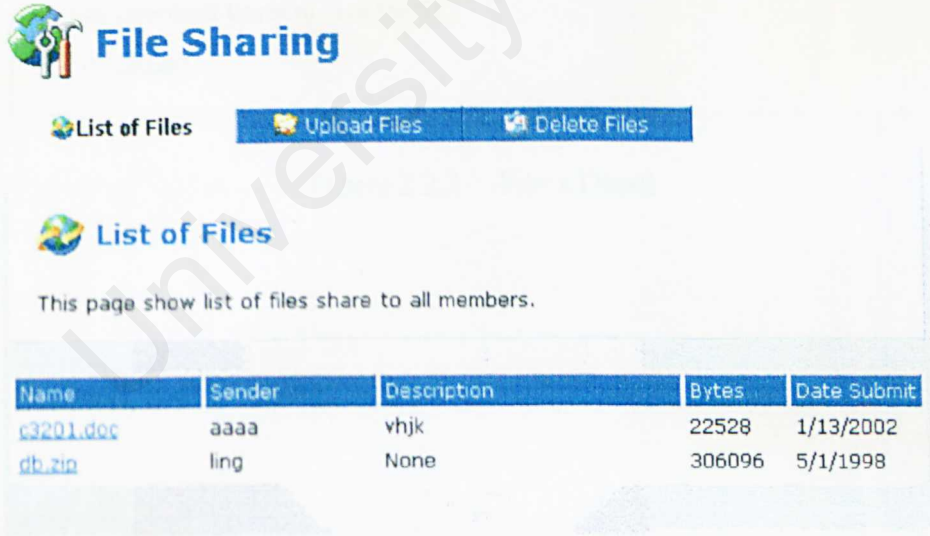

Figure 2.2.1 List of Files

List of Files will show users any computer file that has been uploaded by the group members. Users can click at the name of the file to see more details of that file as listed below and press "Download" for download the file as shows in figure 3.2.

Figure 2.2.2 File's Detail

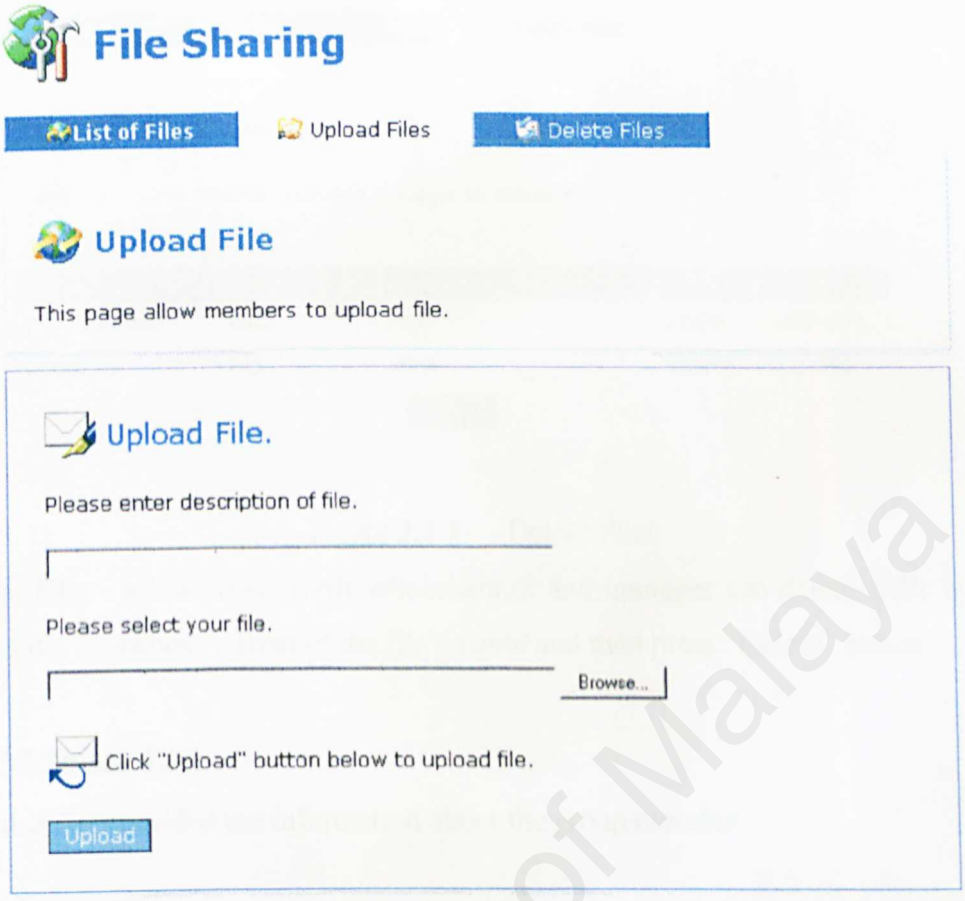

Figure 2.2.3 Upload Files

Upload Files - allows users to add a file by finding the file on your computer (press "Browse" button) and then press "upload" button. Users can also add their own description to the file by adding text to the text field.

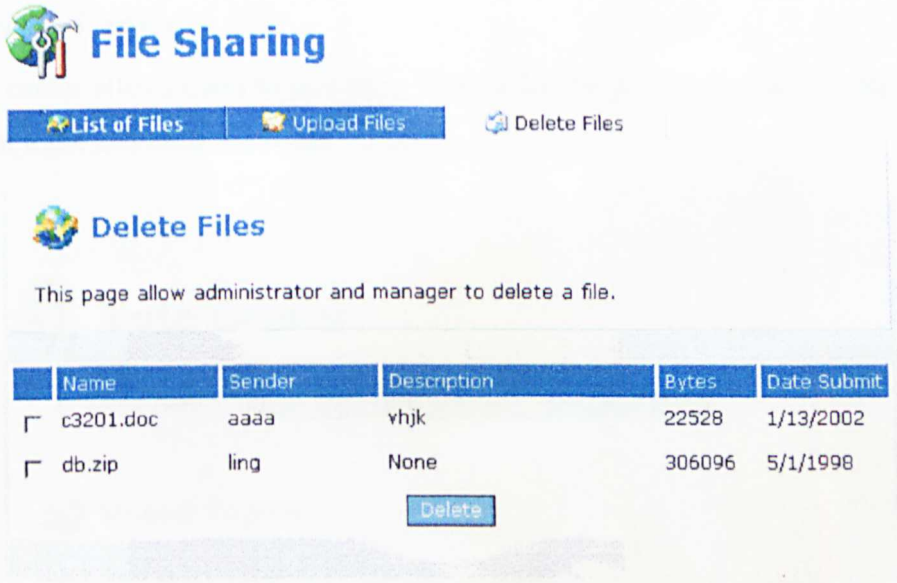

Figure 2.2.4 Delete Files

Delete Files - allows users (only administrator and manager) to delete a file by just tick at the checkbox in front of the file's name and then press "Delete" button.

2.3 Member List

Member list provided the information about the group member.

Figure 2.3.1 Member List

As user join a community, an automatic member list is created. This list contains information about the users that has joined the community.

2.4 Vote Center

Vote center allows users to post their topic to let the group member to vote regarding to that topic and view the result.

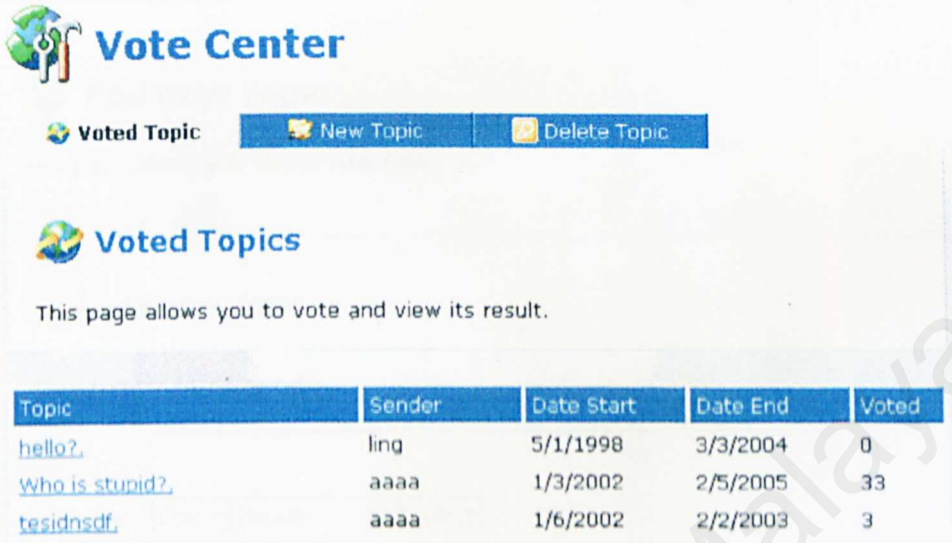

Figure 2.4.1 Vote Topic

Vote Topics - show users the topics that have been uploaded by the group members. Users can click at the name of the topic to vote to that topic.

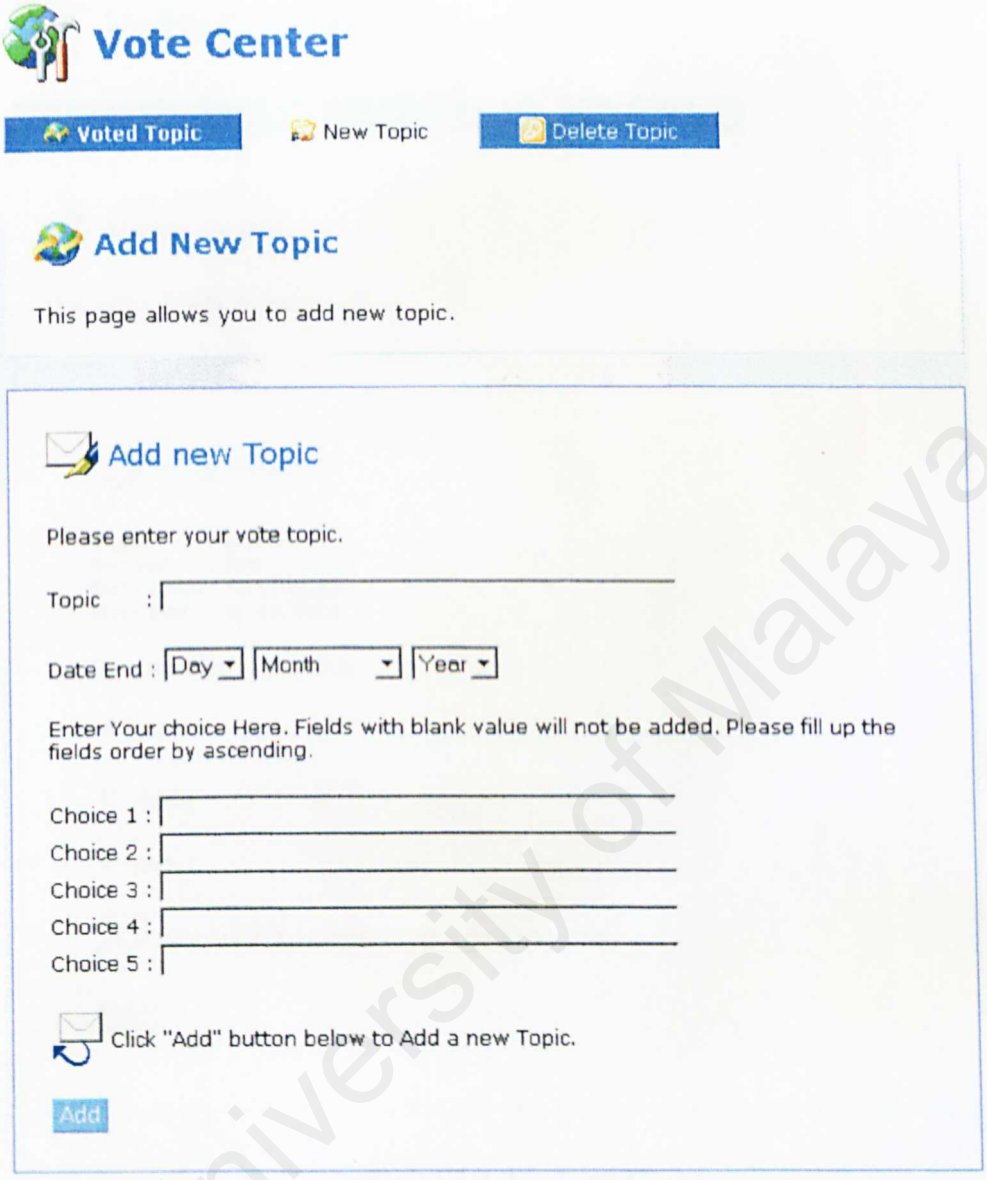

Figure 2.4.2 New topic

New Topic page - allows users to add a new topic to the vote center by adding text to the topic text field, decided the dateline by select dropdown list, and having choices by adding text to the choice text field and then press "Add" button.

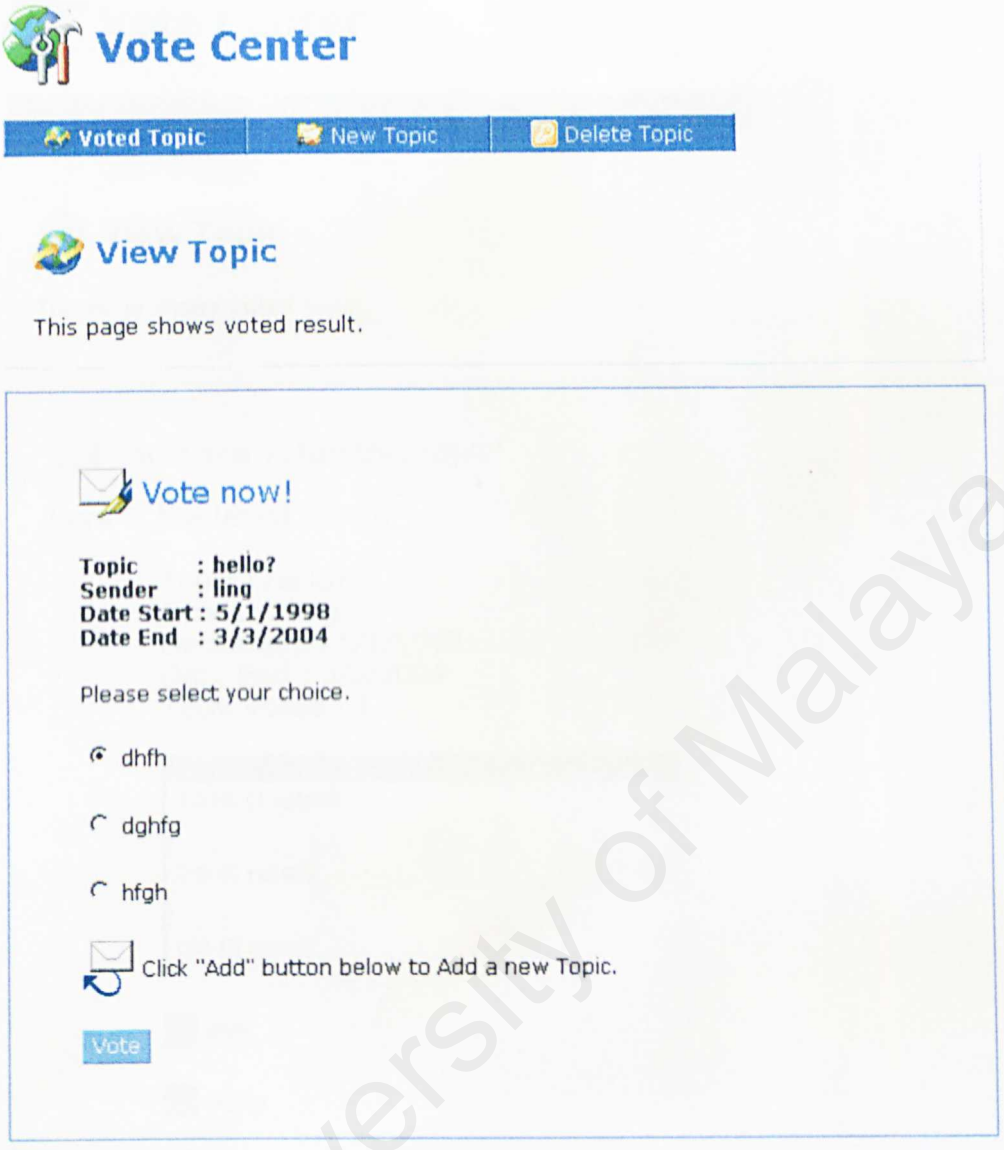

Figure 2.4.3 Vote Now

This page allows user to select the choice about the vote topic by tick the choice at the radio button and then press the "Vote" button.

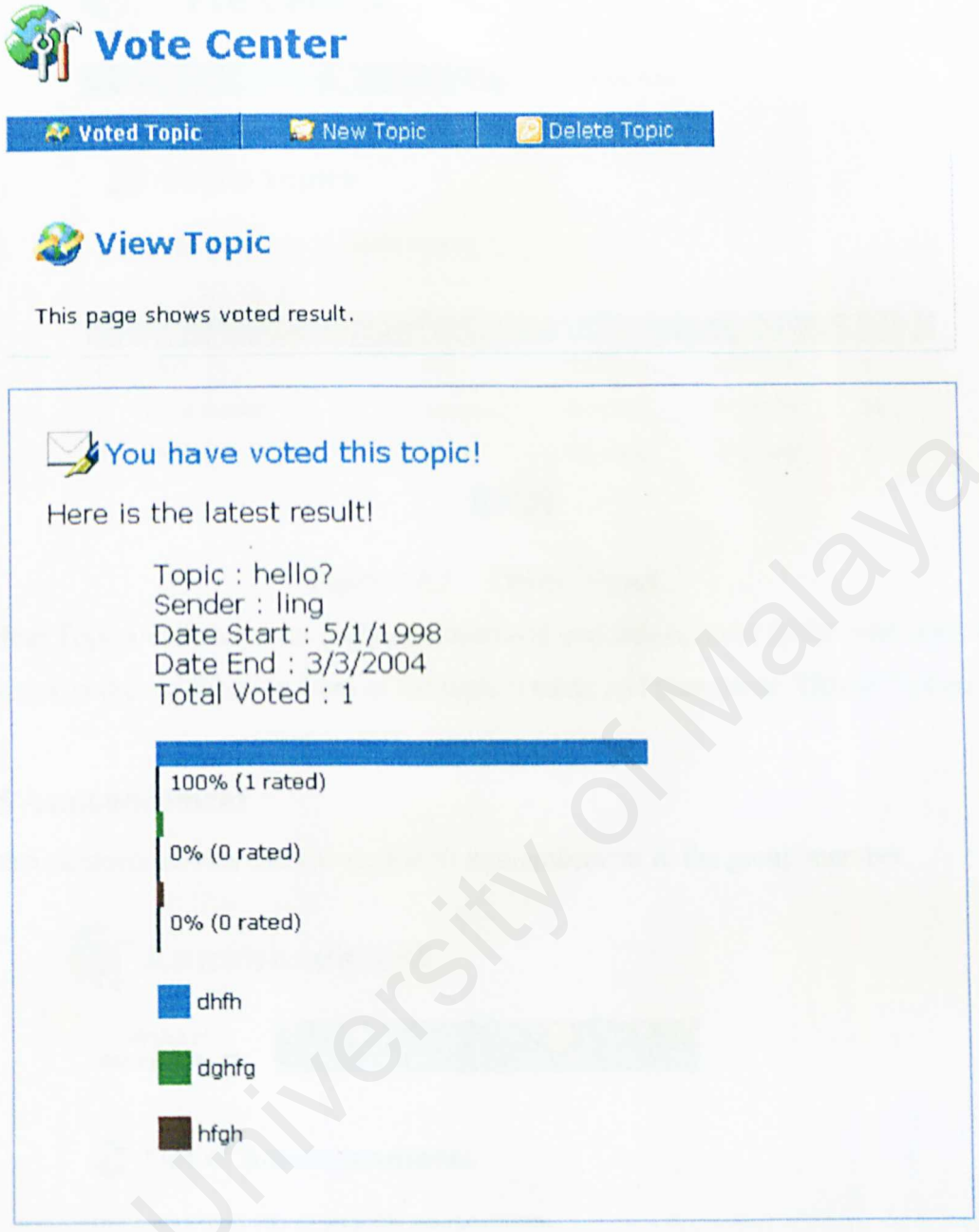

Figure 2.4.4 Vote Result

This page shows the vote result of the topic after user has been vote to that topic.

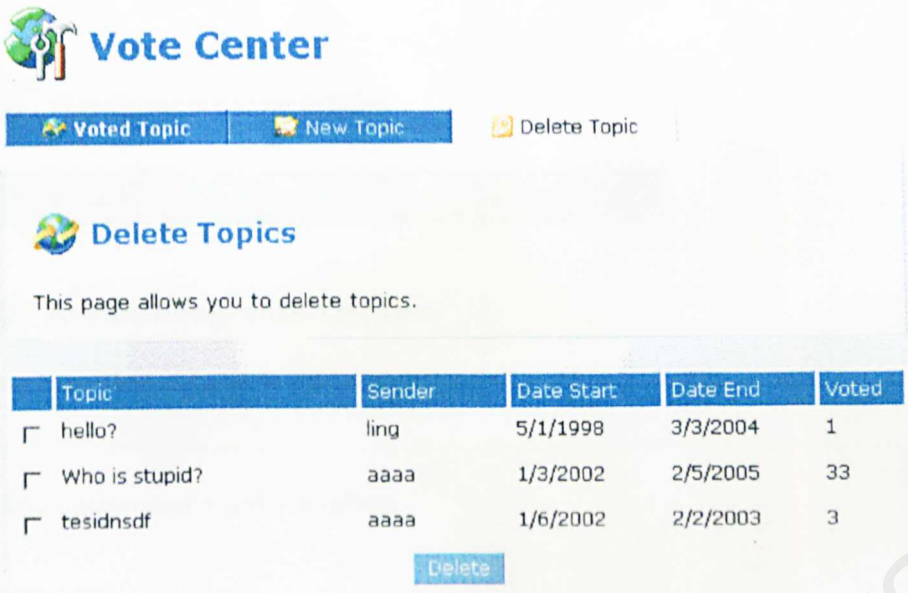

Figure 2.4.5 Delete Topics

Delete Topics - allows users (only administrator and manager) to delete vote topic by just tick at the checkbox in front of the topic's name and then press "Delete" button.

2.5 Announcement

Announcement allows users to post their announcement to the group member.

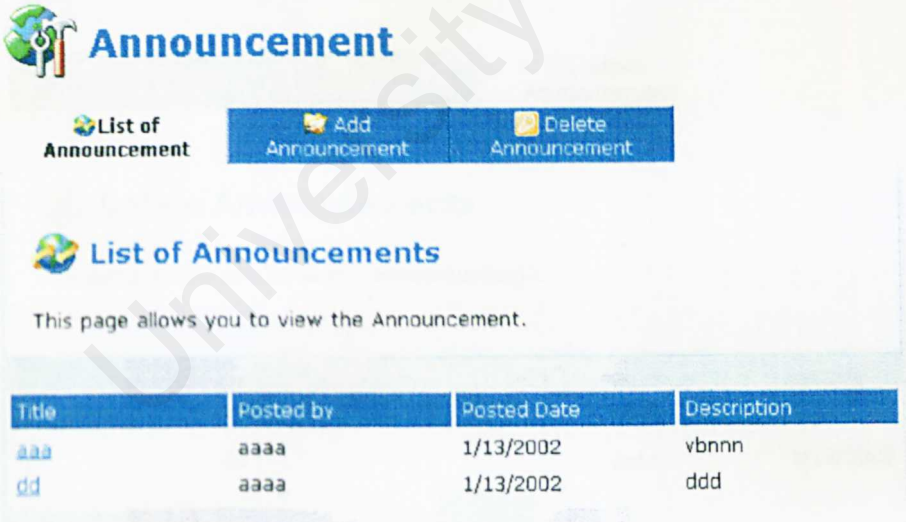

Figure 2.5.1 List of Announcements

List of Announcements - show users any of announcement that has been posted by the group members. Users can click at the name of the title to see more details of that announcement as figure below.

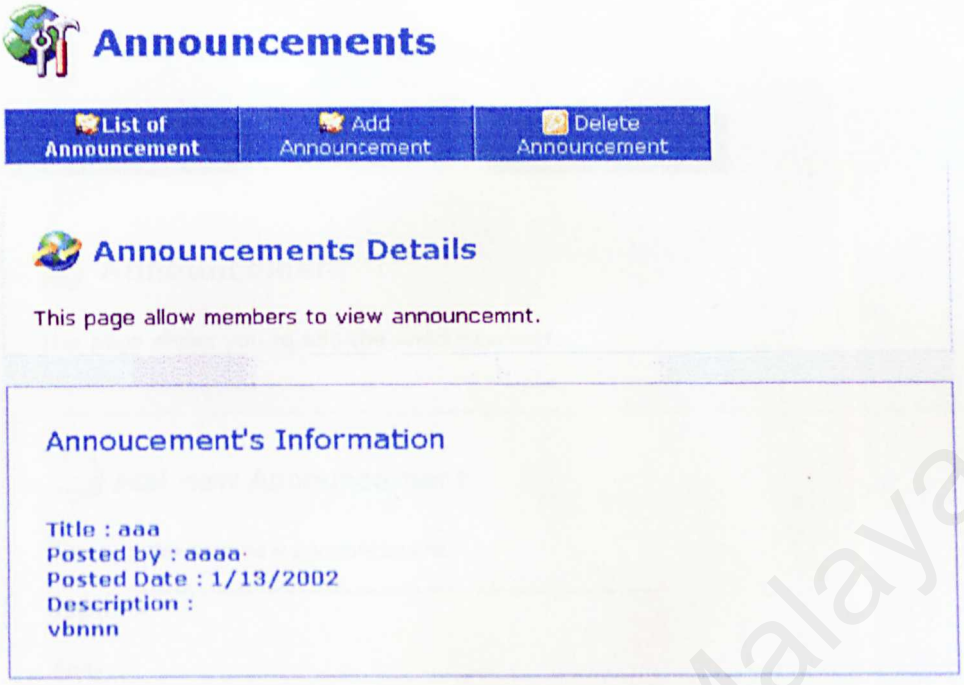

Figure 2.5.2 Announcement's Detail

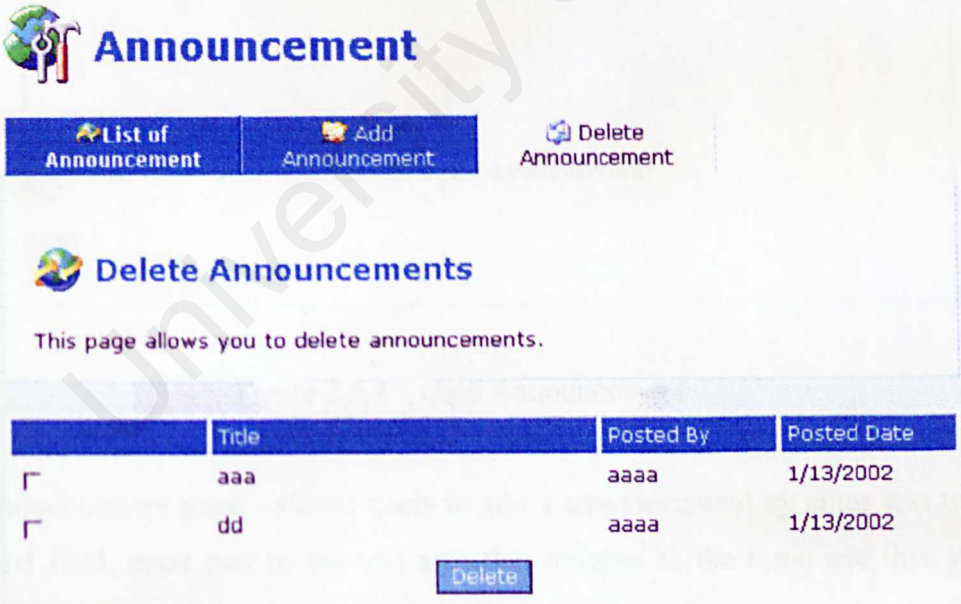

Figure 2.5.3 Delete Announcements

Delete Announcement - allows users (only administrator and manager) to delete announcement topic by just tick at the checkbox in front of the title's name and then press "Delete" button.

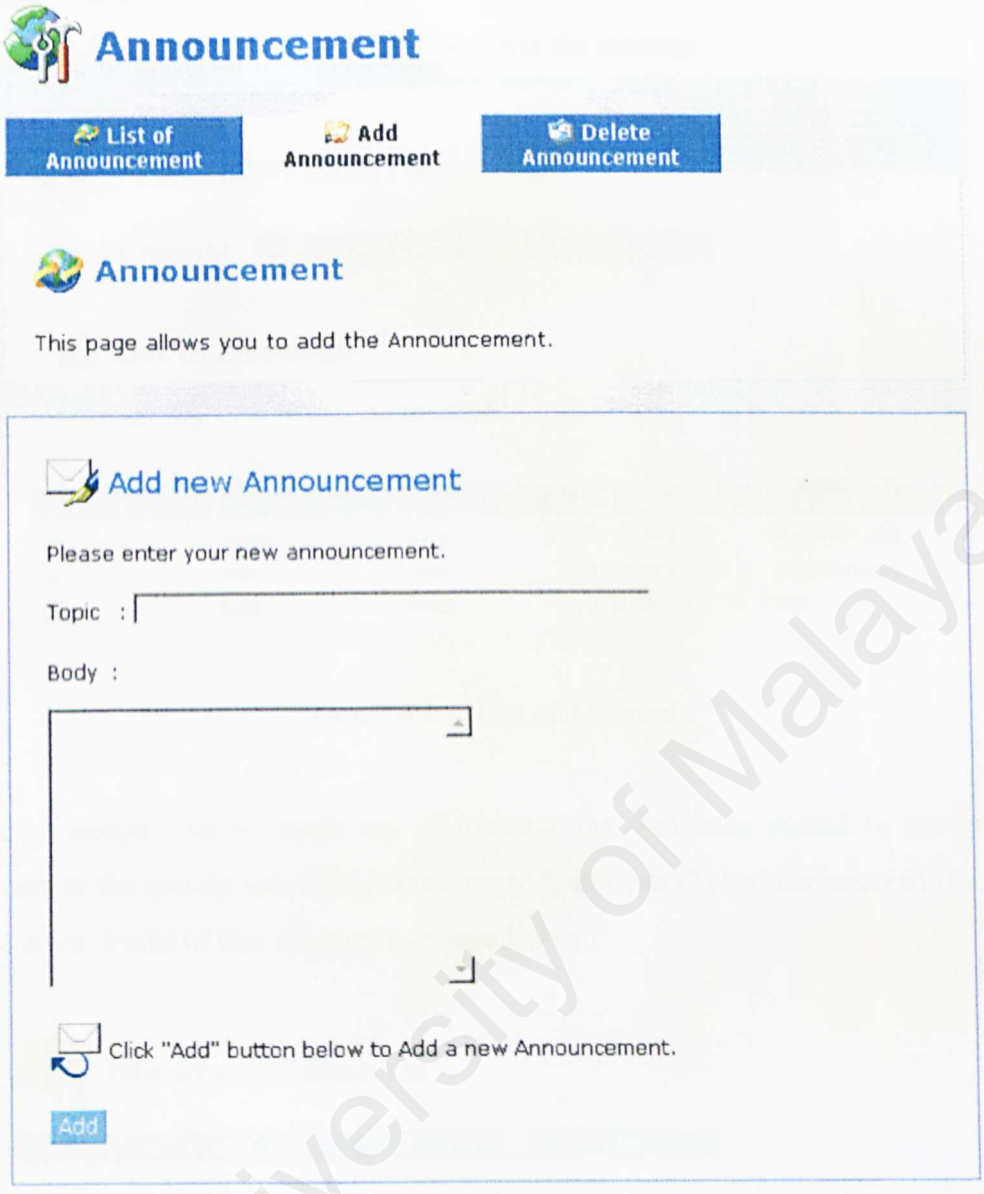

Figure 2.5.4 Add Announcement

Add Announcement page - allows users to add a announcement by enter text to the topic text field, enter text to the text area that descript to the topic and then press "Add" button.

2.6 Message Board

Message Board allows users to post their message to the specify member in the community. Only the receiver can view or delete the message.

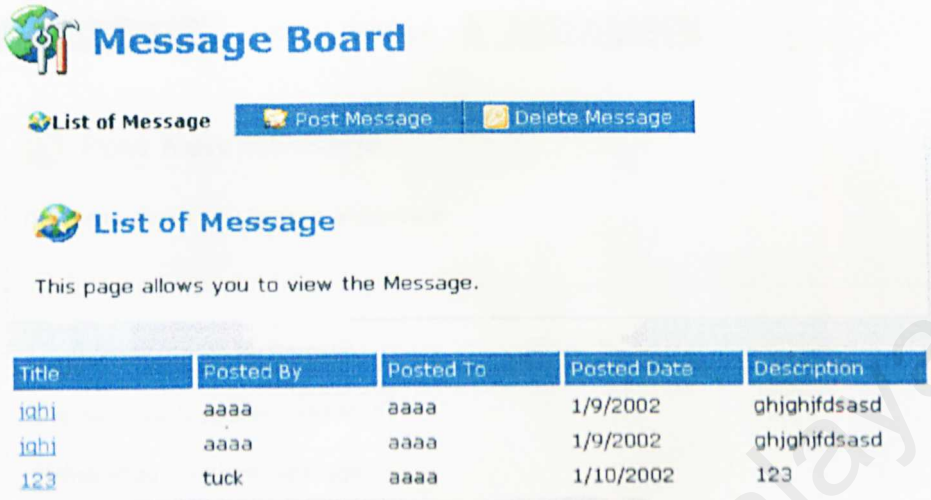

Figure 2.6.1 List of Message

List of Message - shows users any of message that has been posted by the group members to the specify user of the community. Users can click at the name of the title to see more details of that message as figure below.

Figure 2.6.2 Message Details

Figure 2.6.3 Post New Message

Post Message page - allows users to add a message by enter text to the topic text field, enter text to the text area that descript to the topic, specify the user that you want to post by select in the dropdown list and then press "Add" button.

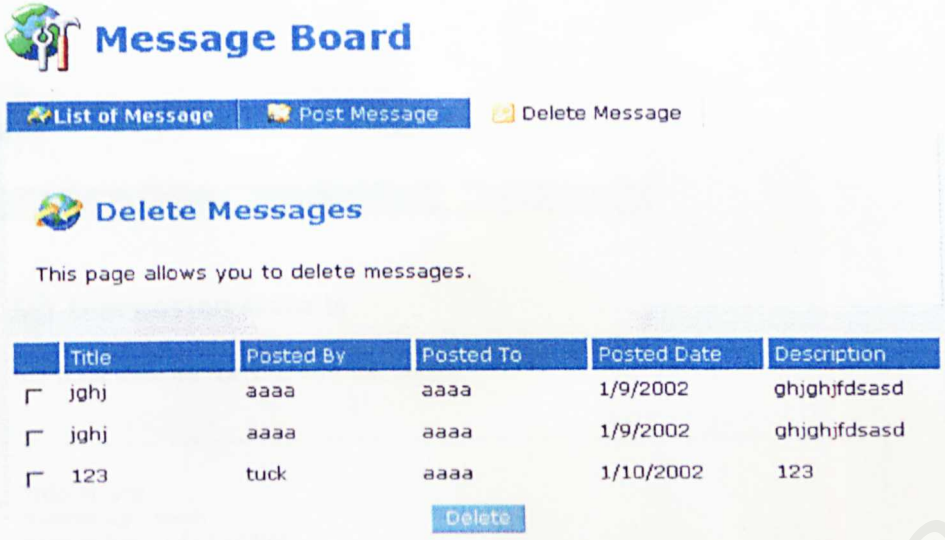

Figure 2.6.4 Delete Messages

Delete message - allows users (receiver) to delete message by just tick at the checkbox in front of the title's name and then press "Delete" button.

2.7 Discussion Group

Discussion group is an interactive forum that allows user to take part in the conversation.

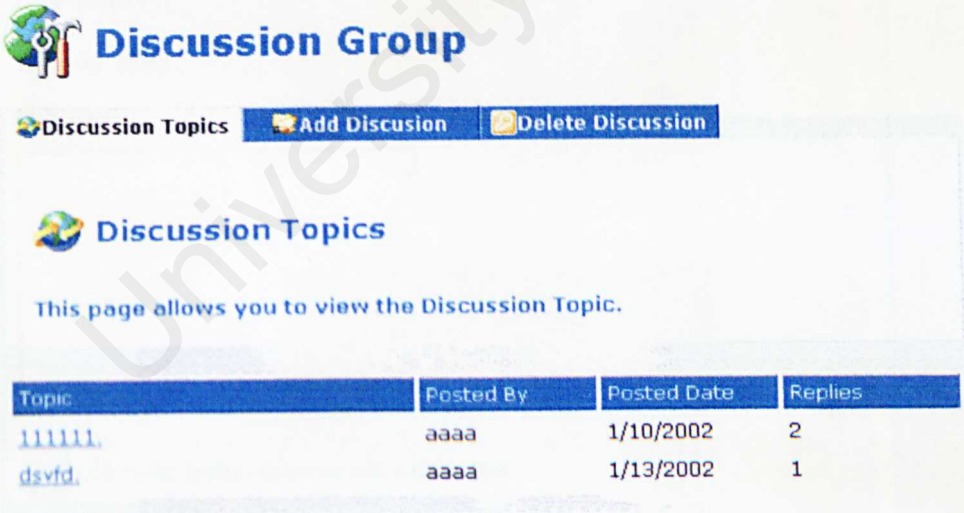

Figure 2.7.1 Discussion topics

List of Discussion Topics - shows users any of discussion topic that has been posted by the group members. Users can click at the name of the title to see more details of that discussion topic and the reply to that topic by enter text at the text area and press "Add" button as figure below.

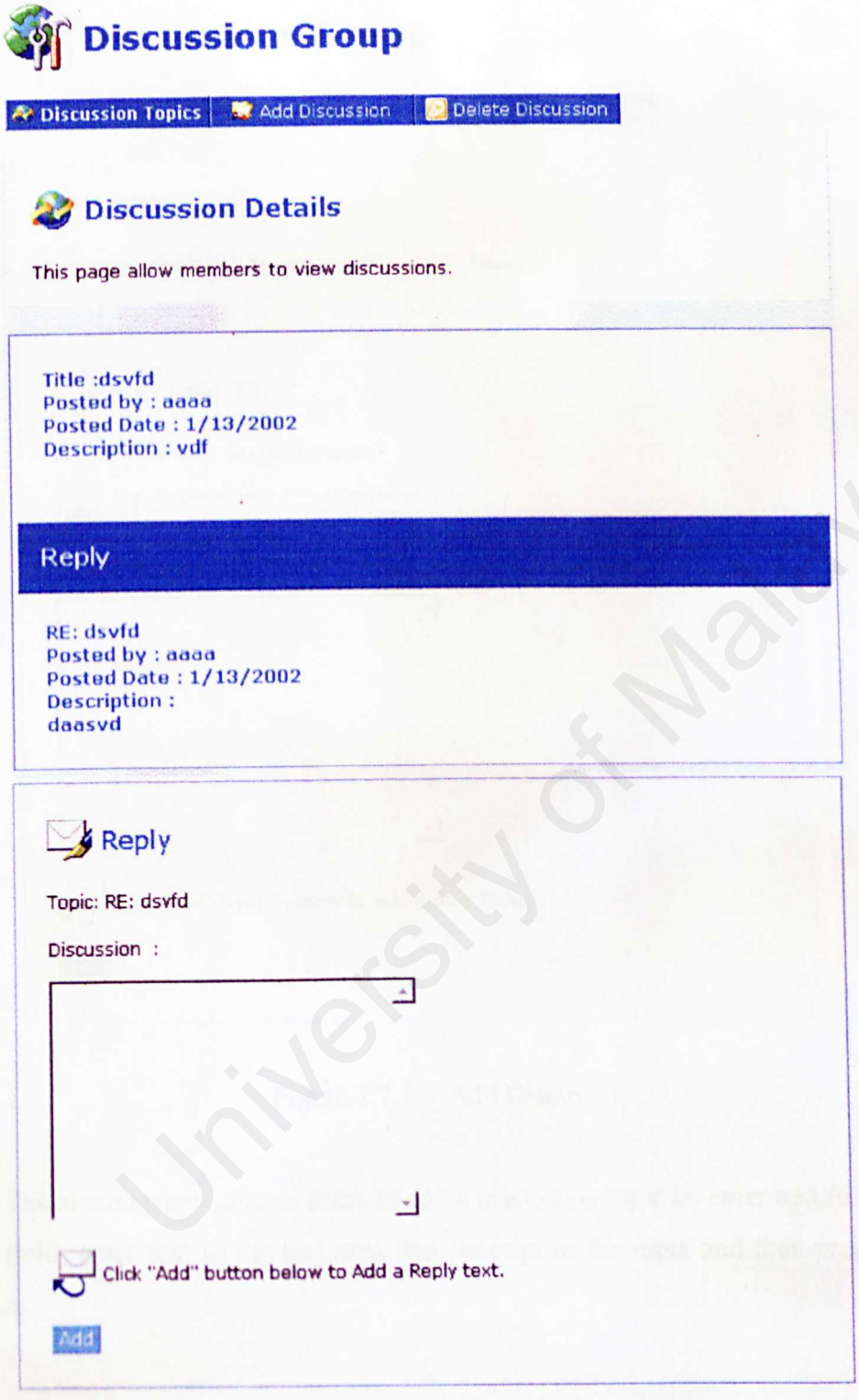

Figure 2.7.2 Discussion's Detail

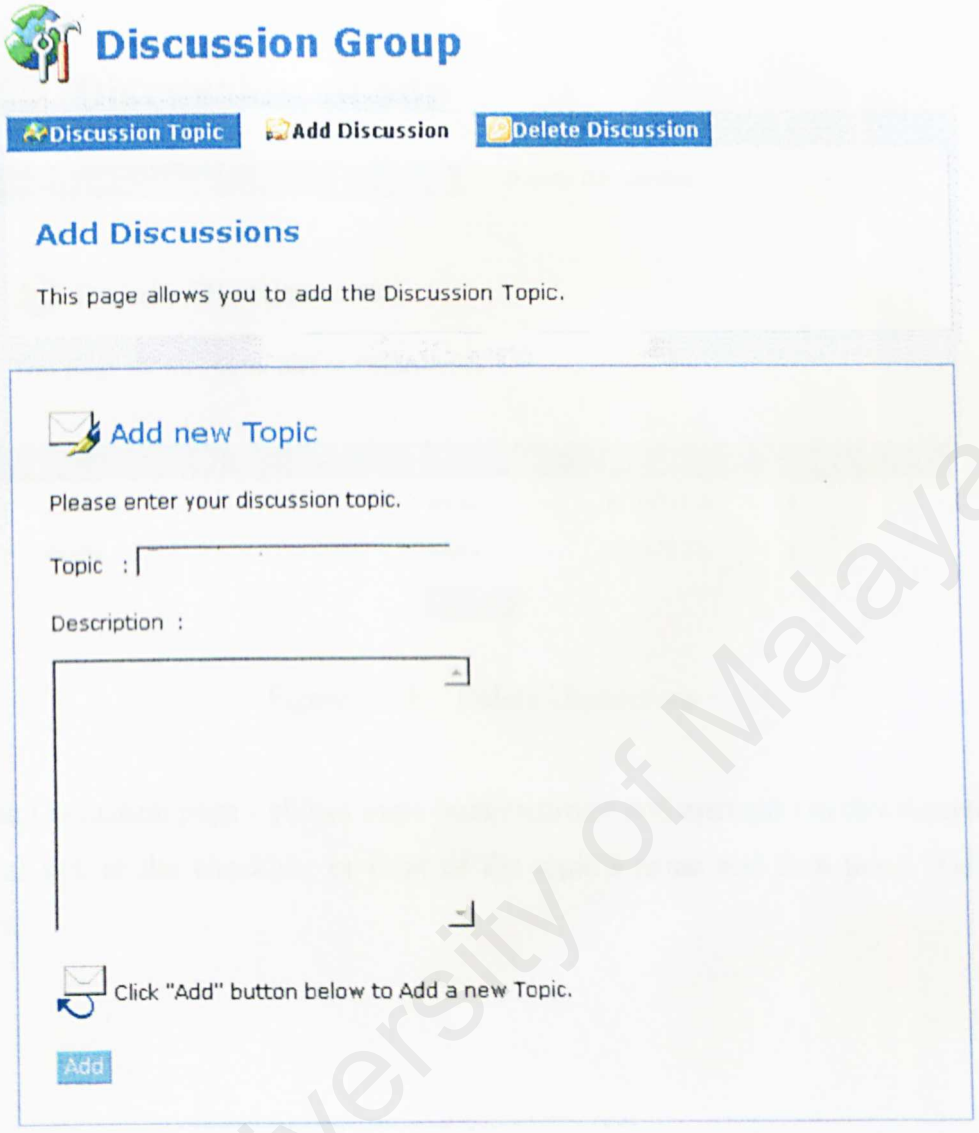

Figure 2.7.3 Add Discussion

Add Discussion page - allows users to add a discussion topic by enter text to the topic text field, enter text to the text area that descript to the topic and then press "Add" button.

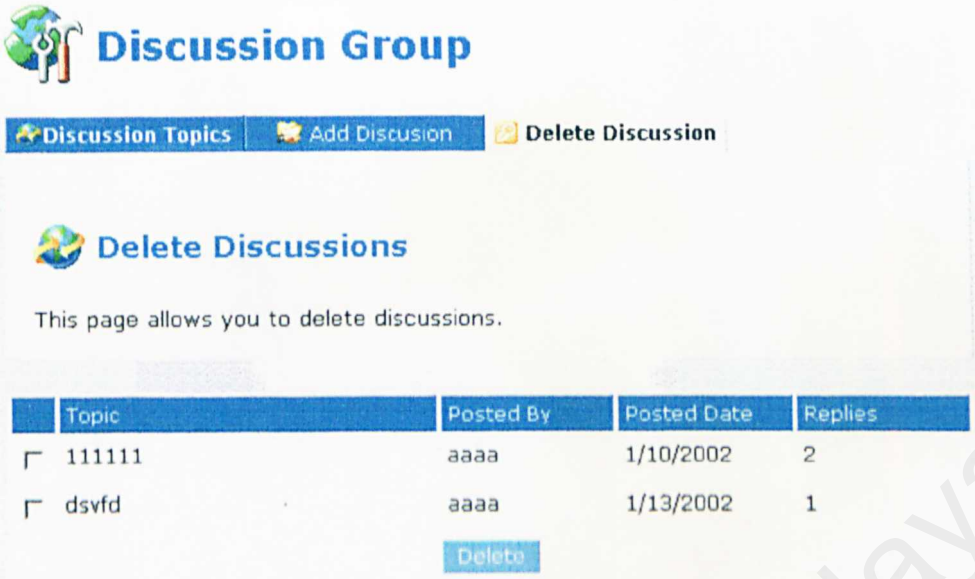

Figure 2.7.4 Delete Discussions

Delete Discussion page - allows users (administrator and manager) to delete message by just tick at the checkbox in front of the topic's name and then press "Delete" button.