

Perpustakaan SKTM

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Abstract

This project, Generic Electronic Community System has been proposed for facilitate the real life community environment in more effective way which comprised of some modules such as forum, message board, file sharing, photo gallery, testimonial, announcement and etc. People are able to gather in a “cyber space” to conduct discussion or interaction via Internet.

A complete literature review and analysis on existing e-community system have been done to gain more valuable information and knowledge about this project. Methodology and techniques used in the researches and developing system has discussed with emphasis on the chosen Waterfall model with Prototyping.

Microsoft Internet Information Services, SQL Server, ASP.NET and Microsoft Visual Studio.Net have been chosen as development tools and software tools. Functional and non-functional requirement, hardware and software requirements of the project have been listed down in the project.

Much consideration have also been taken on the system design of the proposed system which include architecture design, network design, process design database design and user interface design

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Chapter 1

Introduction

University of Malaya

1.1 Introduction

The traditional community refers to a location or place where people with common interests meet together to share experiences, to communicate, to exchange knowledge, or collaboration. As people are present in the same location, they can meet easily to communicate and share experience. Conversely, how about people who are live in difference location or country where far away from each other? How do they communicate and exchange knowledge?

In the era of globalization, the concept of “virtual” is becoming a reality. Internet allows people to exchange information or messages with each others. Nowadays, the internet has increasingly become a learning arena to all the learners or students because it is not restricted by time nor location.

Electronic-community is just like the physical community in real life, but the medium is “cyber space”. People with common interest gather in this “cyber space” to share experiences, communicate, exchange knowledge, or collaboration virtually.

1.2 Project Overview

The purpose of this project is proposing a new architecture of e-community after analyze the conventional e-community system. It aims to facilitate the real life community environments in more effective way.

E-community is a web-based communication tool that allows participants to exchange experience, knowledge and information; share interest and obtains emotional support and furthermore is to get to know each other better. E-community has the potential to provide an effective communication while overcoming the barriers of location and time.

Since the beginning of Internet, people have been using online space to communicate. They interact and collaborate to each other in this online world as well as learning and enhance their knowledge. We can find a lot's of forum service in online world as it is so popular. Increasing of forums give an opportunity to all learners and students a better way to gain knowledge and engage in learning activities.

People have enjoyed with many of activities through the online connection. First is socializing. People meet together, sharing joke, stories and build relationship. Second is working together. People distributed work groups within company by using e-community to build their team, keep in touch and investigate the problems together. Third is conducting discussion. People come and share information in issues and causes. Patients of a serious disease who wish to get useful information, safer, cheaper, comfortable and effective treatment is may be referred to community in this sense.

Besides e-community, telephone also known as a communication channel that can augment your life. No matter e-community or telephone, it is opined that both of those trends will continue to integrate people in their life. Thus, the outcome of this project will be an application of e-community with the purpose integrating people with common interest.

1.3 Statement of Problems

There are many problems exist in current community in real world. The people of a community who are living in difference place, they meet only occasionally at periodic events like conferences and seminars. They do not have more time and chance to share experience, exchange knowledge and ideas, as well as relationship development. They can only interact or communicate occasionally during that conferences and seminars.

Even people who are living in same location, they know each other, but they seldom communicate to each other. They meet every morning and evening however their conversations only normal greeting of good morning and hello. They do not have common conversation topic so they never interact and communicate in depth.

In a community, any announcements or events take a long time to reach the members. Announcement, notice and events can only inform to members through words of mouth. This communicate vehicle is much wasting times and human resource. Moreover, any message which sends to member is take longer times if it is post manually. With electronic community, all these problems can be solved.

1.4 Project Objectives

A clear purpose and objective of this e-community system development must identify to give the author a head start in planning, designing, running and implement a successful e-community, an online interaction space.

The e-community system is suitable for use in variety of occasions. The main purpose of developing this e-community is integrating people with common interest and with some shared element. They can exchange knowledge and information, share interest and get to know each other better. Members no longer need to arrange for face-to-face discussions. All basic discussions can be done online via the e-community system. The proposed e-community system enables the members to build relationship to the effect that they can learn from one another from time to time. To fulfill the requirement, below are the initial plans to implement in this e-community.

i. To develop a Forum

Online Forum takes place in a web-based community where participants post message to an electronic forum board. With this approach, the Forum operates asynchronously whereby messages are posted on a system, upon enter Forum feature, users are enable to respond to the new postings.

ii. To develop a Message Board

Online Message Board provides a place for user to post their messages and share the expertise, experiences and anecdotes. This feature allows a large group of people to take part in the same conversation. This is an informal discussion, anyone with the relevant expertise, experience and anecdotes can provide to other users.

iii. To develop a place to share files

Files sharing take place in a web-based community where participants post electronic files to share with other members. It gives changes to future learners and students a better way to enhance their knowledge.

1.5 Project Scope

The major goal of the e-community is to provide an effective communicate, interact and collective system to everyone. The targeted users will be the internet users who are interested to join this e-community. Every member need to register a username and password in order to access the system. They can change their password anytime after they have register to the system. A simple and an attractive user interface will be adopted whenever users need to post or retrieve message, add file, upload photos to this e-community. The e-community will cover the following areas:

i. Forum

Users can talk about anything and everything under the sky as they are not limit to the categories of discussion topic.

ii. Message Board

A large group of users can take part in the same conversation. It is an informal discussion; users may talk anything and everything in this area.

iii. Mail Box

Administrator may send mail to member. This useful function let users keep up to date on events of community. Users also may send private message to another.

iv. File Sharing

Users can upload any computer file to this e-community and share with other members. User can leave any comment to the computer file.

v. Photo Gallery

Users can store image file and share it with other members. User can leave any comment to the image file.

vi. Announcement

Users can view announcements in announcement area to get what is happening in the e-community.

vii. Testimonial

Users can share their experiences and understand about someone, and tell everyone what they think of someone.

viii. Member List

Users can view all member lists. They can view member profile at any time by clicking on their name which is underlined (as a link).

ix. Invite Friend

Users are enabling to e-mail automated invitation to their friends to join e-community.

1.6 Project Limitations

There are several limitations in this e-community system and those limitations are listed as below:

- a) Only those invited members can join e-community.
- b) Can only be used through network.
- c) Users need to sign up as a member before join e-community.
- d) Users need to log in as an authorized user before they can apply the features.

1.7 Expected Outcome

E-community system should achieve the following outcome:

- a) A system that provides users to post messages and share interest, knowledge, expertise, experiences or anecdotes with other users.
- b) A system that provides users to upload computer file and photos to share with other members.
- c) A system that provides the administrator access to the system for managing the whole community. They can manage the database with access all the records for maintenance purpose.
- d) A system that allows future enhancement and additional modules to extend the system functionality.

- e) System able to ensure only authorized user can access to the system.
- f) A system provides a user friendly interface for the users who are not so familiar with computer.
- g) All information and data of system user will be stored in database with secure.

1.8 Project Schedule

A schedule is essential in order to develop a system in smoothly where the development works are based on the time frame. In this section, Gantt chart is used for project planning and schedule based on the list of activities involved. Gantt chart is a schedule consists of start and finish times for each phase. These proportions of time need to be allocated to ensure the deadlines for each phase. Below is a Gantt chart for the proposed e-community system.

ID	Task Name	Start	Finish	Duration	Q2 04		Q3 04		Q4 04			Q1 05	
					Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1	Project Planning	6/21/2004	7/8/2004	14d									
2	Research	7/9/2004	7/28/2004	14d									
3	Requirement Analysis	7/19/2004	8/16/2004	21d									
4	System Analysis	8/2/2004	8/30/2004	21d									
5	System design	8/16/2004	9/22/2004	28d									
6	Implementation	9/16/2004	12/31/2004	77d									
7	Integration Testing	9/24/2004	1/28/2005	91d									
8	System Testing	12/1/2004	2/25/2005	63d									
9	Documentation	6/23/2004	2/25/2005	178d									

Figure 1.1 Gantt chart for Project Schedule

1.9 Report Layout

This report consists of 9 chapters. A summary of all chapters in this report is listed as below.

Chapter 1 Introduction

This chapter presents the introduction of e-community system which includes the project overview, project scope, project objective, project limitation and project schedule.

Chapter 2 Literature Review and Existing System Analysis

This chapter reviews literatures researched in developing the project. Among the discussion topics are Definition of Community, History of Community, The Internet, World Wide Web and Benefit of E-community. Besides, this chapter also includes researches and analysis on existing system.

Chapter 3 Methodology

This chapter describes briefly about the process model of system. It emphasizes on the advantage of chosen project methodology as well as the reason of chosen this model. It also discusses the flow of model and explanation of each phase.

Chapter 4 System Analysis

This chapter describes the system analysis including functional requirements, non-functional requirements, hardware and software requirements of the project. Moreover it also discusses the chosen software tools and development tools.

Chapter 5 System Design

This chapter discusses the design of the system which includes architecture design, network design, process design, database design and user interface design.

Chapter 6 System Implementation

This chapter consists of the detail explanation of the implementation phase. Besides, system coding, coding approach and coding style will be discussed here.

Chapter 7 System Testing

This chapter will discuss about the testing phase. This is very important stage because testing is essential to assure quality of the system. It also assures system run smoothly. The objective of testing is to find system errors and bugs.

Chapter 2

Literature Review and Existing System Analysis

2.1 Introduction

E-community is an application that provides a fun and easy way to communicate, exchange information, ideas and opinions with different groups of people. It allows different people on the internet to leave messages for each other and then reply. Users can work across companies, within a company, within a school, within an organization, or within a small work team.

A careful planning is essential in order to ensure the success of a system development. Before developing this system, research has been done in several related areas to get useful information. The research is done through net surfing and reading the books. Besides, analysis on existing e-community system is important because can gain a better understanding of the strengths and weaknesses, features and function of existing system.

2.2 Definition of Community

Community is a set of people living in a particular local area with some shared elements. (WordIQ, 2002) The shared elements varies and widely such as experience, stories, interest and values to lives. These shared elements enable the members of community to build relationship to the effect that they can learn from one another from time to time.

According to WordIQ encyclopedia, the origin of the word community comes from the Latin *munus*, which means the gift, and *cum*, which means together, among each other.

Community literally means to give among each other. Community could be defined as a group of people who share gifts which they provide to all. (WordIQ, 2002)

When there is a set of people who shared interest together, no matter economic, business or whatever, the people collectively might be called a community. Patients of a serious disease who wish to get useful information, safer, cheaper, comfortable and effective treatment is may be referred to community in this sense.

In other word, community is a group of people who interact with each other. The simple way to interact is by talking. However, a virtual community is a group of people exchanging messages or other types of information by mobile phone or internet.

People living in a small local area, such as a dormitory, neighborhood, district, region, settlement, town, city, is often called community. This is usually a mixture of shared-interest and actual interaction.

According to WordIQ encyclopedia again, an even narrower definition of community has to do with the nature of interaction. In community, interaction is informal and spontaneous rather than procedurally formalized, an end it itself rather than goal-oriented. It is relatively popular among social theorists, such as Max Weber, Emile Durkheim, George Simmel, to conceptualize the community in this way especially in contrast to modernity. (WordIQ, 2002)

Social theorist, Emile Durkheim (1964) who argued that if the State were the only organized structure, the individual would become detached and society would disintegrate. Durkheim said this: A nation can be maintained only if, between the State and the individual, there is intercalated a whole series of secondary groups near enough to the individuals to attract them strongly in their sphere of action and drag in this way, into the general social life. (Durkheim, 1964)

In Malaysia, the examples of communities in society are Chinese Association, Indian Association, MCA, MIC and UMNO and so on. The synonyms of community are colony, district, society, group, gang, party, band, faction, cluster, gather, fellowship and organization sodality.

2.3 History of Community

Long times ago, the communities in society have always been supported by whatever tools are available to their members. Before writing, the community range is very small, because the enabling communication vehicle was limited to the member's voice. They can only communicate by talking and chatting. Sometimes, body language also consider is a communication vehicle. Members shared their issues and concerns, triumphs and storied in person because that's all they had.

Once writing was developed, people continued to meet each other anywhere. By the way, they were able to extend their communities by writing down their stories,

experience, interest and sharing them with people. It is beyond the sound of their voice and pattern of their body language.

According to Socrates, writing would lead to the end of civilization because people didn't have to be amongst one another any more. With Gutenberg's printing press, more people were able to contribute to the community and share their messages. Paul Revere's postal service became another tool, extending some communities wider and then there was the telephone, the car, the airplane, and the Internet. None of these tools has replaced the community. They have simply extended community's reach, its depth, and it's potential impact. (Gutenberg, Paul Revere, 2002)

2.4 Humanistic Psychology as a Knowledge Community

Humanistic psychology is a knowledge community that the author seeing about. Since the first generation of humanistic psychology in the 1960s and 70s was influenced by cultural, there are also many knowledge communities working with those ideas that do not identify themselves with the label "humanistic".

People have justified themselves professionally as psychologists and justified themselves academically as research scientists to fulfill the requirement of knowledge community of humanistic psychology.

According to Arthur Warmoth, looking at much of the literature of humanistic, existential, and transpersonal psychology in recent decades convinces him that our

calling, our vocation, is really nothing less than social-cultural change. (Arthur Warmoth, 2002)

Malaysia is a democracy country, thus, people's core values should be recognized as the values of democracy such as respect, compassion and empowerment. These values are needed to be built by humans. Knowledge community of humanistic psychology is going to be important in the future. In the face of future, people need to become leaders in organizing the social activities such as dialogue, discussion and debate that can promote democratic values in the community.

2.5 Learning Community

Humans are unable to live alone. Nowadays, people living in a dormitory, neighborhood, district, town, city, is called community. People have to learn community in order to live with harmonization.

Learning communities for the next century are more about harmony than unity. In simply word, it is collectively of individuals who are bound together by natural will and a set of shared ideas. According to Aristotle, in his work titled *Nicomachean Ethics*, he explains that community is not so much about unity as it is about harmony (Aristotle, trans, 1980). Harmonious groups of people are frequently described by social, religious, political, scientific and moral philosophers and scientists.

In the learning community, the learners, including teachers and administrator should have a will to do what is “right” and “good” in a group. For example, such as “do not harm” to each others.

2.6 The Internet

Anyone knows the internet, even students from primary school learn to access internet in their school. Internet is a technology or a network to let people exchange information or messages with each others. In fact, the word Internet comes from the term inter-network, which means “to communicate between networks” (Lee, S.P, Mohammad, Z.R, 2002). Internet, may visualize as a large cloud of networks. One computer can find out its message recipient easily from this cloud of networks. This cloud of network is constantly changing and growing as new networks are added and existing networks are changed.

The major communication protocol for this huge communication network is the Transmission Control Protocol/Internet Protocol (TCP/IP). To contact another party in the network, we must know their computer name. The Internet’s naming convention is stated in the Domain Name Service (DNS). A DNS name has the following format:

[subdomain].[subdomain].[...].domain

When computers communicate by using TCP/IP, they use the numeric IP address. DNS is simply a device that helps human to have a readable/rememberable host name. (Lee, S.P, Mohammad, Z.R, 2002)

2.7 World Wide Web

The World Wide Web is the universe of network-accessible information, the embodiment of human knowledge. (Lee, S.P, Mohammad, Z.R, 2002). The Web physically consists of personal computer, web browser software, a connection to an Internet service provider, computers called servers that host digital data, routers and switches to direct the flow of information.

The Web is known as client-server system. Personal computer is client however remote computers are servers which store the electronic data. For example, if people want to read news from The Star Newspaper through internet, people may enter the address or URL of the website, the browser will request that web page from web server that hosts the site. Then the server sends the data over the internet to people's computer and that website will display on computer screen.

Hyperlink and hypertext play a role as “glue” to hold the Web together. This feature allows the electronic files on the Web to be linked so that people can easily jump between them. On the Web, people navigate through pages of information, this commonly known as browsing or surfing. (Goh, W.O, 2003)

The protocol used for the Web is the hypertext transfer protocol (HTTP) and its language is based on hypertext markup language (HTML). To access the Web, a web browser is needed. The two most well-known web browsers are Netscape Navigator and Microsoft Internet Explorer, which are used by the vast majority. Other browsers are available as well. The browser works as display the data and information which written in the tagged HTML.

2.8 E-community

E-community is the gathering of people, in an online “space” where they come to communicate, exchange pleasantries and argue, exchange knowledge and information, share emotional support, make plans, brainstorm, gossip, get to know each other better and fall in love.

In other word, e-community is defined as a group of people with common interest and they are using communication technologies in their daily interactions and transactions. This can improve their quality of lives in significant ways.

The members of e-community just do everything like people do in real life, but leave the body behind. The embodiment of human knowledge today provides people such an attractive, even addictive technology that is internet. The richness and vitality of computer-linked allow people to enjoy and meet another ecosystem in cyberspace.

According to John Hagel, virtual communities are groups of people who share common interests and needs who come together online. Most are drawn by the opportunity to share a sense of community with like-minded strangers-regardless of where they live. (John Hagel, 2002).

E-community let people build social relationship in their home. When people join online discussion forum or online discussion groups, they interact each other; indirectly they build a virtual social relationship. The hobbyists who interconnect personal computers

via telephone lines to make computer discussion forum systems, by the way may change experience to another party on the network. The discussion forums turn the bits and bytes into human readable text. Other peoples use their computers to send and retrieve messages, organizing and planning events stored in their personal computer. Everyone is encouraged to have an e-community growing in their life.

2.9 Benefits of E-community

E-community was bringing communities closer. In the neighborhood, people who know each other and living next door or across the street are always communicate where the conversations seldom go further than the occasional greeting of hellos, good morning and goodbyes. Maybe they are too busy in daily work, rush in time, or lazy to make conversation.

Thanks to the Internet, communication has become more effective. People are preferred to communicate at home or in the room rather than walk down street to recognize friends or meet each other. E-community has provided people with a creative avenue to convey information and interest. This is a chance let human being to build social relationship and lasting friendships.

E-community has no location limit. Anyone from anywhere may join the e-community no matter people are in foreign country or in homeland. E-community has no race color line. Anyone may join the e-community no matter people are Malay, Chinese, Indian,

aboriginal, or foreigner. E-community also has no age limit. Anyone may join the e-community no matter people are child, adult, young or wrinkly.

Time is saved by using e-community. It is taking a long time to send a letter to a friend because the postman needs time to collect the letters and distinguish them. Some letter is to abroad, it needs more time for traveling. However, in the e-community, letter may be sent the by e-mail, it only spend a few minutes.

Moreover, money is saved by using e-community. People communicate with each other through telephone. Try to imagine the telephone fee if people is calling to their friend who is in foreign country. By e-community, people can leave and retrieve message or chat there. That is the way to save telephone fee.

2.10 Analysis on existing e-community system

The following section is the analysis and review done by the author for 15 existing e-community systems on the World Wide Web. These analysis and reviews done for gain a better understanding of the strengths and weaknesses, features and function of existing system.

2.10.1 Analysis on CommunityZero

URL Address: <http://www.communityzero.com>

CommunityZero is an interactive website that allows a group 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.



Table 2.1 Features of CommunityZero

My communities	This feature allows you to start a community. You may invite your friends to your community. Here you also can view or edit you profile and change password.
Start One	This feature gives you a guideline how to create your own private area on the web to connect a group of people. There are 3 steps to setup: 1. name and describe the community 2. Choose a privacy setting. 3. Send invitations by email.
Discussions	Discussion boards allow you to make conversations and decisions with your friends. You are able to gain knowledge and experience

	from discussion boards.
Calendars	Ideal location to store information including meetings, reminders and project milestones.
Note board	Note board is made available for announcements and informal discussion.
Images Gallery	This feature provides a point-and-click interface for adding images to virtual online album. Each image is provided its own comment board to collect feedback.
Files Sharing	The file sharing area enables you to store and share any type of computer file. Word documents, Adobe Acrobat PDF files, software programs, video and audio files can all be stored securely.
Chat	This feature allows any number of members to have a group meeting in real-time. The chat room is accessible to community members and does not require any software download or installation.
Invite	This feature gives you the ability to e-mail automated invitation to your friends. All invitations sent are tracked and can be resent if necessary.
Feedback	Feedback area provides an opportunity for community founders to receive any comment or suggestion from their members.
Preferences	The preferences section allows you to specify how much of your personal information will be disclosed in you profile as well as the quantity of e-mail you wish to receive from the community.

Contributions	This is for text document. Ideal for storing news, articles, stories, HTML pages and more.
Administration	This feature allows administrator (normally is founder) to make changing setting of community. You may set name and description, community password, custom colors or graphics, calendar customization and so on.

Strengths:

- It is free of charge
- Powerful tools for collaboration and interaction
- The user capacity and text storage are unlimited
- Easy to use
- Flexible toolset
- Secure and private
- Only a browser is required
- Immediate interaction by all members
- No programming knowledge or downloading of software is required

Weaknesses:

- Cookies are required when you want to be a member
- No forum is provided
- Only invited members can join the group

2.10.2 Analysis on Friendster

URL Address: <http://www.friendster.com>

Friendster is an online community that connects people through networks of friends for dating or making new friends. You can use Friendster to meet new people to date, through your friends and their friends. You also can create your own personal and private community, where you can interact with people who are connected to you through networks of mutual friends.

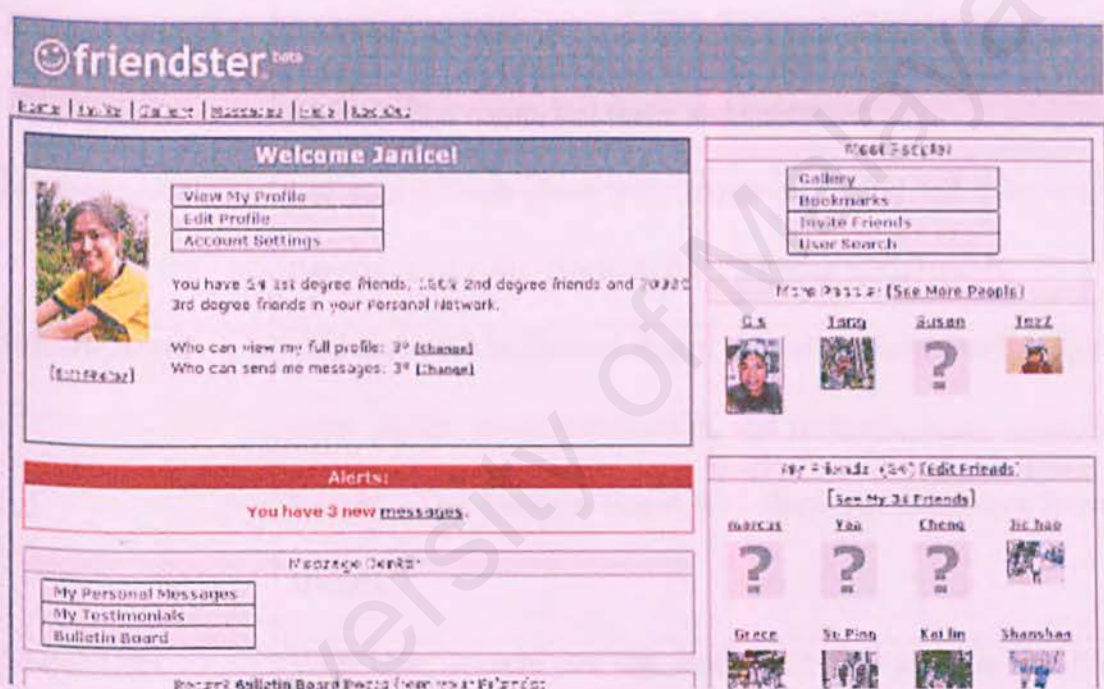


Table 2.2 Features of Friendster

Home	This is main page of Friendster. Here give you alerts when somebody sends you message or testimonial.
Invite	This feature gives you the ability to e-mail automated invitation to your friends. You are limited to 100 invitations per day.
Gallery	This feature allows you to search friends by selects the type such as interest, favorite music, favorite book or favorite movie, selects

	the country, status, age and so on. The system will search for friends to match with your selection.
Messages	This feature allows you to send and receive message.
View My Profile	This feature allows you to view your profile. You may edit your profile, edit photos, edit friends, edit testimonials and see all of you friends.
Edit Profile	This feature allows you to edit your profile.
Account settings	Account settings let you to edit your account such as e-mail address, first name, last name and password.
My testimonials	Let your friends share their experiences and tell everyone what they think of you. You also can edit your testimonials.
Bulletin board	You may use the Bulletin Board to post messages such as question, party invites, event information, and romance issues to all of your friends. The Bulletin Board will show you messages from your friends.
Search User	With User Search, you can enter an e-mail address, last name or full name to find matching profiles across all of Friendster.
Bookmarks	You may use your bookmarks to remember people who are within your personal network. You can access them with one click from the list, instead of searching your network manually to find them.

Strengths:

- It is free of charge
- Interface is simply and nice

- Meet new friends through our friends

Weaknesses:

- Take long time to loading picture
- No chat room is provided
- No forum is provided

2.10.3 Analysis on hi5

URL Address: <http://www.hi5.com>

Hi5 is a casual social environment. It's like a private party with your friends. Hi5 is the place for meeting new people, connecting with friends, and sharing ideas!

You can use hi5 to meet new people through your friends, reunite and stay connected with your old friends. You also can find local people who share your interest and browse photos.

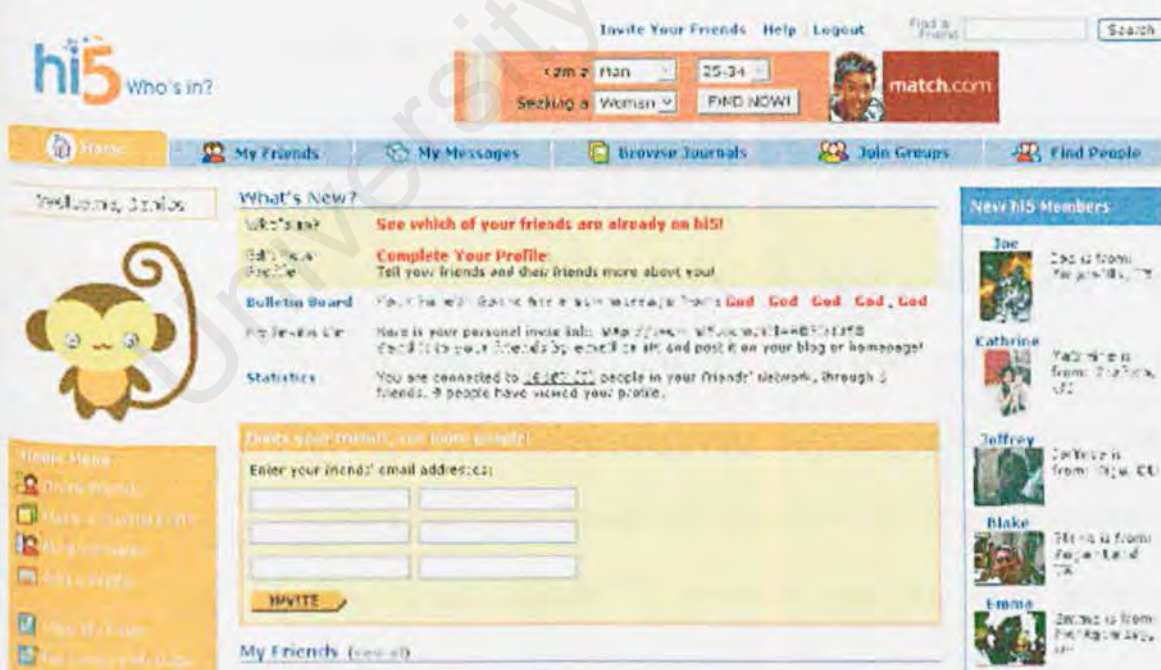


Table 2.3 Features of hi5

Home	This is the main page of hi5. You may see a lot of features here.
My Friends	This feature let you to view all of your friends. You may view personal profile of your friend by clicks on your friend's name.
My Messages	This feature allows you to send and receive message.
Browse Journals	This feature allows you to browse journal entries from hi5 members. You may post pictures of your recent trip, share that funny story that you heard from a friend, or express you thoughts.
Join groups	This feature provides an easy way to meet new friends and shared common experience by join groups. The group categories are music, sports, travel, science, pets, books and so on.
Find people	This feature allows you to search friends by selects the country, status, age and so on. The system will search for friend to match with your selection.
Invite friends	This feature gives you the ability to e-mail automated invitation to your friends.
My bookmarks	You may use your bookmarks to remember people who are within your personal network. You can access them with one click from the list, instead of searching your network manually to find them.
Add a Photo	To make sure your friends will recognize you, you may upload you photo by this feature. It can make your page more lively and attractive.
View My Page	This feature allows you to view you personal profile.

Personalize My Page	This feature allows you to edit Profile, edit Gallery, edit Friends, edit Journal and edit Testimonials.
Testimonials	Let your friends share their experiences and tell everyone what they think of you. You may edit your testimonials.
Bulletin Board	You may use the Bulletin Board to post messages such as question, party invites, event information, and romance issues to all of your friends. The Bulletin Board will show you messages from your friends.

Strengths:

- It is free of charge
- Meet new friends through our friends
- Can easily view who are new hi5 members
- Easy to use

Weaknesses:

- User interface is not user friendly because the layout is too complex
- No chat room is provide
- No forum is provided
- Only can invite 3 friends in one time

2.10.4 Analysis on Circles99

URL Address: <http://www.circle99.com>

Circles99 is a free online community solution that allows you to bring together family, friends and associates through an interactive website. It provides mobile dedication, picture messages, operator logos and e-card. You can locate a circle by browsing the circle directory or search using the powerful search engine to locate a group that interests you. You also can utilize the user-friendly search engine to look for new friends based on your preferences.



Table 2.4 Features of Circle99

Friends Home	This is the main page of Circle99. You may see a lot of features here.
My circles	Here you can establish your own online community to stay

	connects to a group of people.
Search Circles	If you want to join other circles, you may search circle by enter the key words or browse circles according the categories such as Fans, Friends, Committee, Club, Student, Team and so on.
Gossip	A place for you to chat with your friends. If you are founder, you may delete the gossip unwanted.
Announcement	A place for you to post notice and announcements. If you are founder, you may delete the announcement unwanted.
Message Board	This feature allows a large group of people to take part in the same conversation.
File Sharing	The file sharing area enables you to store and share any type of computer file. Word documents, Adobe Acrobat PDF files, software programs, video and audio files can all be stored securely.
Photos Album	An online photo album for you to store your image files and share it with you friends. Here allows you friends to leave comment about your images.
Opinion Poll	This is a place for you to collect public opinion.
Customize Layout	You may change your circle details, customize your circle layout and colors setting, change your member's role to administrator or ban a member.
Member List	This is a list to display all members in your circle.
Invite Friends	This feature gives you the ability to e-mail automated invitation to your friends.

Preferences	The preferences section allows you to specify how often you want to receive the activity report via email either daily, weekly or monthly.
Administration	Here displays member's role in your circle. Founder and administrator can change a member's role or ban a member here.
Edit Profile	This feature allows you to view your profile. You may edit your profile here.
Forum	You may select the forum topic and join the discussion forum as well as post a topic.

Strengths:

- It is free of charge
- Pictures are attractive
- Simple step to create a group
- Can customize layout ourselves
- Users can easily share files with their friends over internet.

Weaknesses:

- Too many pictures, loading time quite long
- No chat room is provided
- Anyone can join your group make it no secure
- Too many advertisement in main page

2.10.5 Analysis on Zorpia

URL Address: <http://www.zorpia.com>

Zorpia is a place to meet friends, talk about favorite interest, share information and learn new things. You can store unlimited photos, post journals online and make new friends.

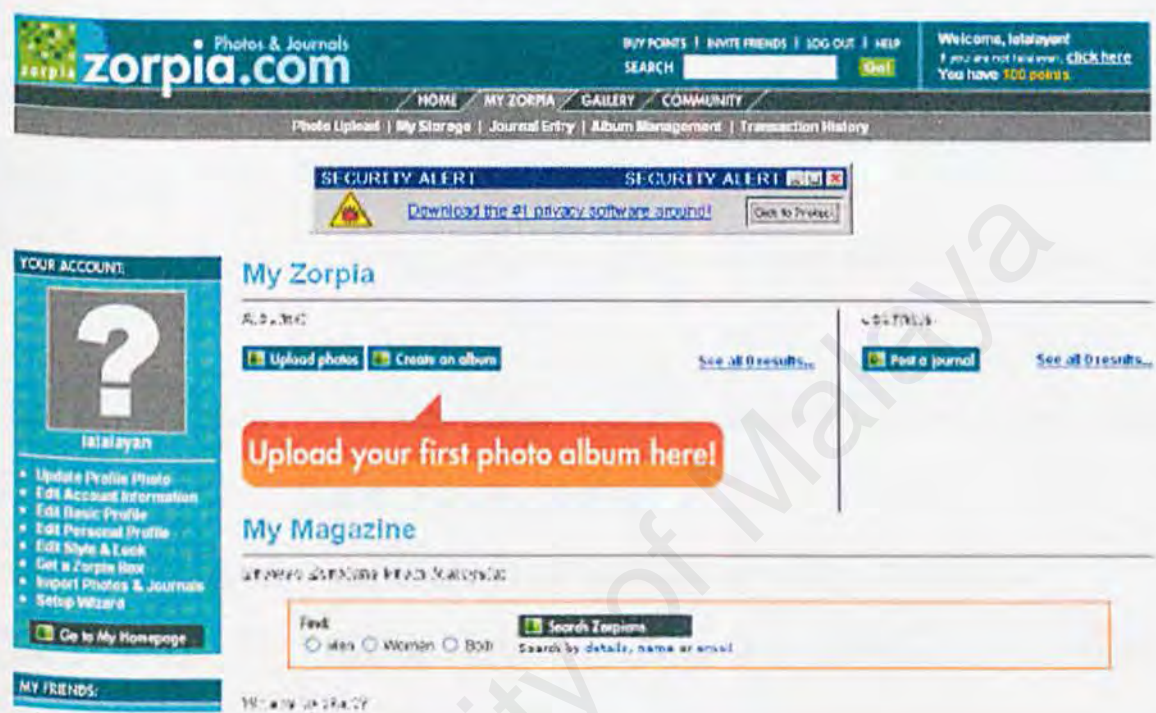


Table 2.5 Features of Zorpia

My Zorpia	This is the main page of Zorpia. You may see a lot of features here.
Photo upload	This feature allows you to upload your photo. It let your friends recognize you.
My storage	This feature let you know the storage space you've already used and storage space still available.
Journal entry	You may post your journals, share funny story that you heard from a friend, or express you thoughts.

Album Management	An online photo album for you to store your image files and share it with you friends. Here allows you to edit you album.
Transaction History	This feature lets you to know when and what have you done in your Zorpia such as when you create your album and what is the name.
Edit Account Information	You may edit your account information such as first name, last name and password.
Edit Personal Profile	This feature allows you to view your personal profile and edit your profile.
Edit Style and Look	You may change your Zorpia details, customize your Zorpia layout and colors setting.
Update profile photo	This feature allows you to update your profile photo.
See all Friends	This feature allows you to see all of your friends in you Zorpia.
Testimonial	Let your friends share their experiences and tell everyone what they think of you. You may edit your testimonials.
Search Zorpians	You may search Zorpians by select their gender, age and country. The system will search for Zorpians to match with your selection.
Invite Friends	This feature gives you the ability to e-mail automated invitation to your friends.

Strengths:

- It is free of charge
- Simple design and mostly text-oriented make it fast to load
- Allow users to check storage space

Weaknesses:

- Layout is not so attractive
- No chat room is provided
- No forum is provided

2.10.6 Analysis on SmartGroups

URL Address: <http://www.smartgroups.com>

SmartGroups 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 keeps you in touch, helps you to share information, manage events and even make Group decisions. All SmartGroups members can control where, when and how they use the service to ensure it exactly fits their lifestyle and different Group interest.



Table 2.6 Features of Smart Groups

Join a Group	If you want to join other groups, you may select group categories such as Business, Science, Music, Sport, Shopping and so on.
Start Your Own Group	You may create your own Group here. It provides you with your own Group mailing list, photo albums, calendar, voting, messages and files area.
Share Pictures	This feature allows you to create your own albums, then upload and share pictures and photos with Group members.
Add Event	You may add events, share funny story that you heard from a friend, or express you thoughts with your Group members.
Share Links	You may share some interesting links with your Group members.
Share Information	You may share some information with your Group members.
Database	This feature allows you to create database to store the Group's data.

Create Vote	This feature allows you to hold a vote with Group voting. You may create a questionnaire to find out opinions.
Invite Members	This feature gives you the ability to e-mail automated invitation to your friends.
Calendar	This feature keeps all of your Group members up to date with meetings, activities, social events and birthdays of members.
Message Area	Messages can be sent to the whole Group by using a simple email address. You may reply and interact with the current discussions.

Strengths:

- It is free of charge
- The layout is attractive and the tools are easy to use
- Simple step to create a group
- Having policy to prevent you from receiving unsolicited commercial email
- Private and secure online community. Only people that users invite will be able to participate in this group.
- Users can easily share files with their friends over internet.

Weaknesses:

- Need time to customize the features in the community
- Too many features make it complexity
- Cookies are required when you want to be a member

2.10.7 Analysis on MSN Groups

URL Address: <http://groups.msn.com>

MSN groups let you to meet people that share your passions. MSN Groups are free websites that are created and managed by other people just like you. You can use MSN Groups to browse groups and create your own group



Table 2.7 Features of MSN Groups

Message Board	Messages can be sent to the whole Group by using a simple email address. You may reply and interact with the current discussions.
Pictures	This feature allows you to create albums, then upload and share pictures and photos with Group members.
Calendar	This feature keeps all of your Group members up to date with meetings, activities, social events.
Documents	You may share files or documents with your Group members.

Chat	You may download the MSN Chat software, to enter a chat room and start chatting with your Group members.
Links	This feature allows you to add links to share with other members. You also may view links which add by others.
Member tools	This feature allows you to view the member list, check your e-mail setting, view the group setting and manage you storage space.
Recommend This Group	You may send out e-mail encouraging your friends and colleagues to visit and join this group.
My Member Profile	This feature allows you to view your profile, change you nickname, check you storage space and even cancel your membership.
Member List	This feature allows you to see who has joined this group, and find out who manages the group.
My Storage Info	This feature let you know the storage space you've already used and storage space still available.

Strengths:

- It is free of charge
- Simple design and mostly text-oriented make it fast to load
- Simple step to create a group
- Private and secure online community. Only people that users invite will be able to participate in this group.
- Users can easily share files with their friends over internet.

- Easy to use

Weaknesses:

- Layout is not so attractive
- No forum is provided
- The storage space is limited
- Need to download the MSN Chat software, to enter a chat room

2.10.8 Analysis on Yahoo Groups

URL Address: <http://groups.yahoo.com>

Yahoo Groups is an easiest way for groups of people to communicate on the Internet.

You can use Yahoo Groups to discuss sports, health, current events and more. It let you to share photos and files, plan events, send a newsletter and stay in touch with friends and family.

Yahoo! Groups

Welcome, yjs520

Search (144 hits) Search

LAUNCH Groups

Start a Group - My Groups

Create a New Group | Edit My Membership

Messages Help

to buy posters!

Expand Messages

1908-1937 of 1937 | Previous | Next | First | Last

From	Subject	Replied to	Date
1908	Just give it a try... what the heck	jeremysummers	Sat 7/3/2004
1909	Re: Just give it a try... what the heck	jeremysummers	Sat 7/3/2004
1910	Re: Just give it a try... what the heck	jeremysummers	Sat 7/3/2004
1911	Re: Just give it a try... what the heck	jeremysummers	Sat 7/3/2004
1912	Re: Just give it a try... what the heck	jeremysummers	Sat 7/3/2004
1913	Re: Just give it a try... what the heck	jeremysummers	Sat 7/3/2004
1914	Re: Just give it a try... what the heck	jeremysummers	Sat 7/3/2004
1915	Re: Just give it a try... what the heck	jeremysummers	Sat 7/3/2004

Table 2.8 Features of Yahoo Groups

Home	This is the main page of Yahoo Groups. You may see a lot of features here.
Messages	Messages can be sent to the whole Group by using a simple email address. You may reply and interact with the current discussions.
Chat	If your friends are currently online, you may chat with them here. You no need download any software for chatting.
Files	This area enables you to store and share any type of computer file with you Group member.
Photos	This feature allows you to create albums, then upload and share pictures and photos with Group members.
Links	This feature allows you to add links to share with other members. You also may view links which add by others.
Database	This feature allows you to create database to store the Group's data.
Members	This feature allows you to see who has joined this group, and view member's profile by clicking their name.
Calendar	This feature keeps all of your Group members up to date with meetings, activities, social events.
Edit My Membership	You may edit your membership information such as change your e-mail address, or change you personal profile.
Leave Group	This feature allows you to leave the group.

Strengths:

- It is free of charge
- Simple step to create a group
- Simple design and mostly text-oriented make it fast to load
- Users can easily share files with their friends over internet.
- Easy to use

Weaknesses:

- Layout is not so attractive
- Anyone can access the group make it no secure
- No forum is provided

2.10.9 Analysis on FIFA Football

URL Address: <http://footballcommunity.ca.com>

FIFA Football is an interactive website to allow a group of peoples who love the football to communicate and share information. FIFA Football often runs special football event around the country. It offering players a new way to take their love of sports online

#	Username	Email	Location	Joined	Posts	Website
1	Protagonist			15 Jul 2003	434	
2	Sentience			17 Jul 2003	268	
3	Nova			18 Jul 2003	24	
4	Stuff			23 Jul 2003	2	
5	Robster		Scotland	23 Jul 2003	896	
6	Ninja Pile			24 Jul 2003	0	

Table 2.9 Features of FIFA Football

Events	Activities often run in FIFA Football around the country. Here is a look at some of the things that have gone on.
Match Reports	This feature allows you to view reports of your greatest matches, tactics, star players and where to play.
Meet & Greet	This feature allows you to get to know the other members of the FIFA Football community.
Message Boards	Messages can be sent to the whole Group by using a simple email address. You may reply and interact with the current discussions.
FAQs	If you have any question about FIFA Football, you may ask the question here and will get the answer.
News Archive	This feature allows you to view news and archive of FIFA Football.

Online Gaming	This is online gaming destination, offering players a new way to take their love of sports online anytime and anywhere.
Interviews	This feature brings you the best interviews with the team behind FIFA Football to give you a better insight into what to expect, and how the team are moving the game forward.
Previews	Here is a collection of previews of FIFA Football 2004 so you can find out what the various gaming sites are saying about the upcoming game.
Member List	This feature allows you to see who has joined this group and view member's profile.

Strengths:

- It is free of charge
- Pictures are attractive
- Layout is simple and easy to use
- Online gaming is provided
- FAQs is provided

Weaknesses:

- Need time to customize the feature in the community
- Too many feature make it complexity
- Member is limited for football lover only
- No forum is provided

2.10.10 Analysis on FilAmBasketball

URL Address:<http://www.filambasketball.com>

FilAmBasketball is Filipino American Basketball. This community has grown tremendously in past few months. It allows the peoples who love basket ball to communicate and sharing ideas. From FilAmBasketball, you can download high quality photos directly from the site. You also can buy strength training and fitness equipment through this website.



Table 2.10 Features of FilAmBasketball

Home	This is the main page of FilAmBasketball. You may see a lot of features here.
Forums	You may select the forum topic and join the discussion forum as well as post a topic.
Photo Galleries	This feature allows you to create albums, then upload and share pictures and photos with your friends.

Calendar	This feature keeps all of your friends up to date with activities, social events.
Chat	If your friends are currently online, you may chat with them here. You no need download any software for chatting.
Shop	You may online shopping here. Clothing, Accessories, Toys, Games, DVD, Books and Magazines are available here.
Search	You may search the forum topic by enter key words.
Who's online	This feature allows you to know who is online, then you may chat with them.
FAQ	If you have any question about FilAmBasketball, you may ask the question here and will get the answer.
Hot topic	This feature presents the hot topic of FilAmBasketball. You may discussion the topic with other members.
Member	This feature allows you to see who has joined this group and view member's profile.
Announcements	A place for you to post notice and announcements.
Shout box	This shout box allows you to type your shout. You may type anything here.
Top 10 posters	This feature presents the top 10 posters. You may view the posters by clicking the poster name.
Humor and fun	You may post any humor and fun story to share with other members.

Strengths:

- Pictures are attractive
- Layout is simple and easy to use
- Allow you to buy things through this website
- Forum is provided

Weaknesses:

- Too many advertisement in this website
- Need time to customize the features in the community
- Too many features make it complexity
- Member is limited for basketball lover only

2.10.11 Analysis on Unisys

URL Address: <http://ecomunity.unisys.com>

Unisys is a place that one stop destination for information, browser based access to live events, direct line to people that can help. That is a place for exchanging ideas and finding solution.



Table 2.11 Features of Unisys

Information Library	You may search information from this feature, such as Financial, Commercial, Government, and Business Information.
Discussion	Discussion boards allow you to make conversations and decisions with your friends. You are able to gain knowledge and experience from discussion boards.
Ask Our Experts	If you have any question about Unisys System and Operating System, you may ask the question here and will get the answer.
My Profile	This feature allows you to view your personal profile and you may change your personal detail here.
My Interest	You may select your interest by click the check box. Any information about your selected interest will send to your mail box.

E-community Events	This feature allows you to view events by click the event's name. You also may search passed archived event easily here.
My Favorite Document	You may post you favorite document in e-community and share it with other members. You also may view document posted by other members.

Strengths:

- It is free of charge
- Pictures are attractive
- Layout is simple and nice
- Users can easily share documents with their friends over internet.

Weaknesses:

- No chat room is provided
- No forum is provided
- Only a few of features

2.10.12 Analysis on TamilChat

URL Address: <http://www.tamilchat.dk/index.php>

TamilChat is a place to communicate with friends, join live chats, join dating service, post something in web forum, send messages. You also can download mp3 songs and movies. TamilChat also provide weather service all around the world.



Table 2.12 Features of TamilChat

Members	This feature allows you to see who has joined this group and view member's profile.
News	This feature allows you to view the news of community. It always keeps you up to date of the events.
Information	Any information you would like to share or inform other members, you may post it here.
Feedback	If you have any enquiries, suggestions for improvement, or general information, you may fill up the feedback form and submit to TamilChat.
Forums	You may select the forum topic and join the discussion forum as well as post a topic.
Gallery	This feature allows you to post any interesting computer file, and share it with other members.

Newsletter	This feature allows you to know when are the meeting, agenda and what is the plan for the coming months.
Live chat	If your friends are currently online, you may chat with them here.

Strengths:

- It is free of charge
- Live chat is provided
- Forum is provided
- Enable to download song and movie

Weaknesses:

- Member is limited for Tamil race only
- News board make the page complexity
- Interface is not user friendly

2.10.13 Analysis on usj.com.my

URL Address: <http://www.usj.com.my>

usj.com.my is a electronic community to encourage USJ-Subang Jaya resident to be more innovative in using and adapting existing ICT and multimedia technologies. From this e-community, problems are listened and solutions are suggested.

United Subang Jaya Web Forum

www.usj.com.my/forum

Welcome to The United Subang Jaya Web Forum

If there is a link that you do not wish to click, please [click here](#) to view the link. If you are having trouble viewing the link, please [click here](#) to view the link. If you are having trouble viewing the link, please [click here](#) to view the link.

Forum / About Us / Site Map / Forum / E-News / E-Service

Home / About Us / Site Map / Forum / E-News / E-Service

Forum	Posts	Threads	Last Post	Moderator
Subang Jaya e-Community Our DNA: Of the People, By the People, For the People Our Thinking: Independent, Neutral, Responsible				
From the E-Forum This is a forum where you can post your own comments.	2	1	17 Dec 2004 02:01 AM by yellow	yellow
Kantun This is a forum where you can post your own comments.	11	1	17 Dec 2004 04:40 AM by Nurhafizah	yellow
Abandoned Housing Projects This is a forum where you can post your own comments.	25	11	17 Dec 2004 03:00 AM by yslawrence88	yellow
Our e-Space This is a forum where you can post your own comments.				
The Web Forum This is a forum where you can post your own comments.	10324	10310	17 Dec 2004 05:50 AM by yslawrence88	yellow
Opinion This is a forum where you can post your own comments.	27	11	17 Dec 2004 01:55 PM by yellow	yellow

Table 2.13 Features of usj.com.my

Home	This is the main page of usj.com. You may see a lot of features here.
About Us	This feature let you know a group of people in usj volunteer their time to promote a knowledge-based community.
Site Map	From this feature, you are provided some useful link to navigate E-news, Residents' Website, communities, Business Directory and E-service and Student Net.
Web Forum	From this feature, you may select the forum that you want to visit and discuss the forum with another party.
Fastmail	This Fastmail allow you to send or receive mail through network just like the popular hotmail or yahoo mail.
E-News	This feature provides you a lot of latest news.

Strengths:

- It is free of charge
- Powerful tools for collaboration and interaction
- Easy to use
- Flexible toolset
- Secure and private
- Forum is provided

Weaknesses:

- Layout is not so attractive
- No chat room is provided
- Member is limited for people living in USJ

2.10.14 Analysis on SJ2005

URL Address: <http://www.sj2005.net.my/index.cfm>

SJ2005 is a right equation of a smart partnership for community development. You may join SJ2005 to find for information about Subang Jaya neighborhood or people in you neighborhood.



Table 2.14 Features of SJ2005

About SJ2005	This feature tells you about SJ2005, it is transforming Subang Jaya into a smart and knowledge-based community.
SJ Info Zone	It gives you an overview of the Subang Jaya neighborhood, including USJ, Sunway, Puchong. You will find information regarding the neighborhood, place to stay, where to eat and also where to shop.
E-community	This feature is about sharing interest and experience, collective participation in exchanging information.
E-business	The section offers you the useful information and provides you a place that links you with the business community in SJ2005.
E-learning	This feature brings you the latest education news, online learning links and a directory listing the various levels of education institution.

E-public services	This feature provides you the ease of getting the important emergency (hospital, police station, fire department) and public transportation (taxi, KTM, LRT, airlines services) contact numbers and address.
Forum	From this feature, you may select the forum that you want to visit and discuss the forum with another party.
Archive	This feature allows you to view past articles and search the archive.
Feedback Form	If you have any enquiries, suggestions for improvement, or general information, you may fill up the feedback form and submit to SJ2005.
Contact Us	If you have any upcoming activities, want to make it public, or you want to participate in one of the community projects, you may correspond through email at sj2005@mimos.my .
Private Section	This is a sample article abstract. You will get an idea of what the article is about and may proceed to click on the link to read the full article.

Strengths:

- It is free of charge
- Easy to use
- Secure and private
- Only a browser is required
- Forum is provided

Weaknesses:

- Layout is not so attractive
- No chat room is provided
- Member is limited for people living in Subang Jaya

2.10.15 Analysis on Washabuck

URL Address: <http://www.centralcapebreton.com/washabuck/index.html>

Washabuck Community Center Provite Youth Recreation Program to run throughout the summer. The activities you may join include sport games, nature walks, bike tours, day trips swimming lessons and more!



Table 2.15 Features of Washabuck

Home	This is the main page of Washabuck. You may see a lot of features here.
Events	This feature allows you to view the events of this e-community

	such as Annual Dinner, Trip, activities and games.
Newsletters	This feature allows you to know when are the meeting, agenda and what is the plan for the coming months.
Board of Directors	This is a board to let you know who is the director, president, vice president, secretary, treasurer and so on.

Strengths:

- It is free of charge
- Private and secure online community.
- Only a browser is required
- User interface simple and nice
- Easy to use

Weaknesses:

- No chat room is provided
- No forum is provided
- Only a few of features

2.11 Conclusion of Analysis on Existing System

Analysis and comparison on existing e-community systems was carried out in terms of features, strengths and weaknesses. The purpose of doing this is to gain a better understanding of the strengths and weaknesses of the existing system. Besides, it also let the author to understand their features which make e-community work with smoothly.

This analysis help the author in generating new ideas on how to come about developing the proposed system and what features or functions it should provide.

A successful e-community system is free of charge and easy to use. It should have facilities of flexible toolset and powerful tools for collaboration and interaction. To make more advantages to users, the capacity, image and text storage should be unlimited. Besides, security should take into consideration in order to make user using e-community system with privately. Only a browser is required for e-community system and it is immediate interaction by all members.

The purpose of this e-community is allows a group of people to communicate and exchange information over the Internet in their own private and secure area. This proposed e-community keeps people in touch, helps people to share information, manage events and even make Group decisions. Participants are able to meet new people to date, through your friends and their friends. They also can create their own personal and private community, where they can interact with people who are connected to them through networks.

The proposed e-community system allows participants to:

- Discuss sports, health, current events and more
- Send and receive message
- Share photos and files, plan events, send a message and newsletter
- Stay in touch with friends and family

Table 2.16 Features of proposed system, Integrated e-Community Solution (ICS)

Forum	From this feature, you may select the forum that you want to visit and discuss the forum with another party.
Message Board	This feature allows a large group of people to take part in the same conversation.
Mail Box	This feature allows you to send and receive message.
File Sharing	The file sharing area enables you to store and share any type of computer file. Word documents, Adobe Acrobat PDF files can all be stored securely.
Photo Gallery	An online photo album for you to store your image files and share it with you friends. Here allows you friends to leave comment about your images.
Announcement	A place for you to post notice and announcements.
Testimonial	Let your friends share their experiences and tell everyone what they think of you. You also can edit your testimonials.
Member List	This is a list to display all members in your group.
Invite Friend	This feature gives you the ability to e-mail automated invitation to your friends.

2.12 Summary for Distinguish 15 Existing System and Proposed System.

The following section is a summary table for distinguish 15 existing system and proposed system. This model can be use for other purposes or by someone in order to develop their proposed e-community system.

Table 2.17 Summary for distinguish 15 existing system and proposed system

Features	Forum	Calendar	Announcement	Message Board	Photo Gallery	File Sharing	Chat Room	Invite Friend	Feedback	Testimonial	Bookmarks	Mail Box	Journal	Member List
CommunityZero	√	√		√	√	√	√	√	√					√
Friendster					√			√		√	√	√		
Hi5					√			√		√	√	√	√	
Circles99	√		√	√	√	√								√
Zorpia					√			√		√			√	
Smart Groups		√			√	√		√				√		√
MSN Groups		√		√	√		√	√				√		√
Yahoo Groups		√			√	√	√	√				√		√
FIFA Football			√	√										√
FilAmBasketball	√	√	√		√		√							√
Unisys			√	√		√			√					
TamilChat	√		√			√	√		√					√
ujs.com.my	√		√									√		√
SJ2005	√		√			√			√					√
Washabuck		√	√											
ICS	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	*		*	*	*	*		*		*		*		*

From the summary table, it shows that proposed system, Integrated e-Community Solution (ICS) will cover 14 features. However, because of time limitation, only 9 features will be developing which are plot with asterisk and another 5 features are for future enhancement.

2.13 Chapter Summary

In this chapter, a complete literature review has been carried out. A research on all the related topics to the system is done. Among related topics include Definition of Community, History of Community, Humanistic Psychology as a Knowledge Community and so on. It let me gain more valuable information and knowledge about this project. Besides, reviews on existing e-community system also done and all the features, strengths and weaknesses in those systems were studied.

Chapter 3

Methodology

3.1 Introduction

A building can not be built without a set of planning. In the same way, a system can not be developed without a set of planning. That is why a specific methodology is needed to deal with the process of developing e-community system. A methodology is a collection of procedures, techniques and tools which helps in implementation the system. A system should be developed follows the phase of methodology, step by step, to ensure minimal faults, errors and bugs while developing the system, because it can save the times to debugs. If the system development follows the methodology from the beginning, so the system should be able to fulfill user requirement in the end.

3.2 Analysis on methodologies

There are many methodologies available currently. Each of the methodology has their own characteristic and specification. None of those methodologies is most frequently used because each proposed system may require a different methodology to develop it. Below is a brief description of the methodologies:

3.2.1 Waterfall Model

The Waterfall Model takes the fundamental process activities of specification, development, validation and evolution. The process phases include requirements specification, software design, implementation, testing and so on. The stages of development are from one phase to another. A critical point regarding the waterfall model is that no phase is complete until the documentation for that phase has been

completed (Schach, 2002). Testing is proceeding continuously throughout the process and the developer may go back to the previous stage to correct any errors.

3.2.2 Waterfall Model with Prototyping

This model similar with Waterfall Model in (a) but has an additional feature that is Prototyping. Prototyping is used with Waterfall Model because it can help the developers to enhance their understanding about the system. It also enable user to review all aspect and features of the user interface before code is generated. In comparison to the Waterfall Model, the development effort is higher because the additional development of prototypes.

3.2.3 V-Shaped Model

This model similar with Waterfall Model in (a) but a bit difference that each test phase matches each development phase: requirements with system testing, high-level design with integration testing and detailed design with unit testing.

3.2.4 Spiral Model

A simplified way of looking at this methodology is as a waterfall model with each phase preceded by risk analysis via the use of prototypes (Schach, 2002). This model uses iterative prototypes and for each portion of the system, a risk analysis is performed. Although risk is minimizing, however the Spiral Model is suitable only for large-scale, in-house development.

3.3 Benefit of using methodology

A successful and effective system development is depends on a good methodology. With a good methodology, system should be complete development within estimated time with lowest cost and highest quality. Besides, future maintenance to the system is easier and faster. Below are some of the benefits offers by a good methodology:

- a) Provides a standard system development framework.
- b) Review procedures are available to identify any errors, bugs and inconsistencies during development.
- c) Increase the system quality by the way decrease the cost.
- d) Provides a better understanding of user needs and validation of user needs.
- e) Provides a management with tools to review project progress and a checklist of project progress.
- f) Improves communication among analyst, programmers, users and other stakeholders of the project.
- g) Easier to make any enhancement of features and functionality in future.

3.4 Chosen Methodology

3.4.1 Waterfall Model with Prototyping

The **Waterfall Model with Prototyping** has been chosen for development of e-community system. The diagram below shows the process of Waterfall Model with Prototyping.

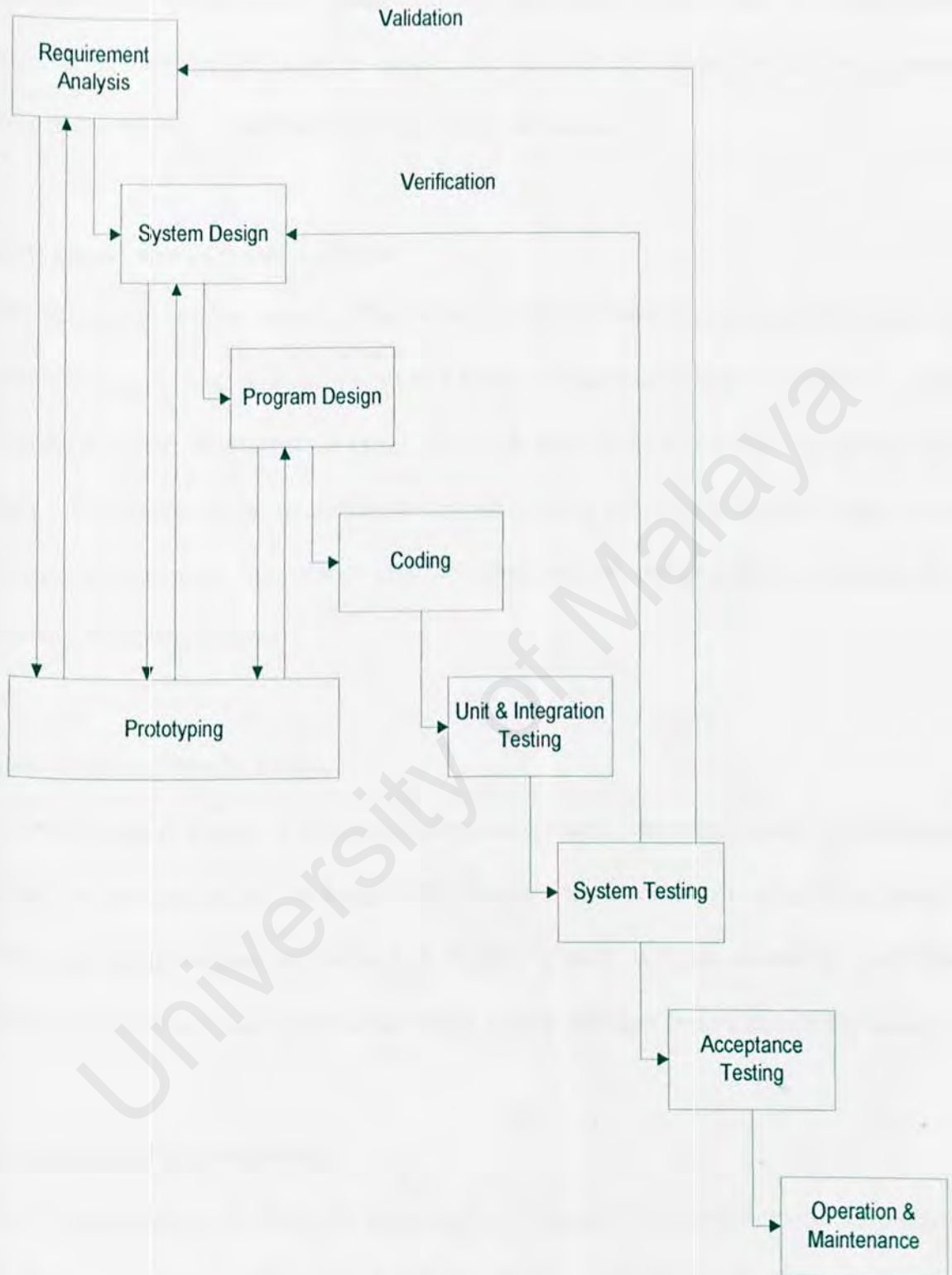


Figure 3.1 Waterfall Model with Prototyping.

The Waterfall Model with Prototyping contains 8 phases which are the requirement analysis, system design, program design, coding, unit and integration testing, system testing, acceptance testing and operation and maintenance.

First phase: Requirement Analysis

The first phase of this model is Requirement Analysis, which requires client needs or information gathering. A requirement is a feature of the system that is capable of doing in order to fulfill the system's purpose. In this phase, all the researches and surveys are done. The results of the requirement analysis process are two documents: one for the customers to capture their needs and the other one for the designers to explain the problem in technical terms.

Second phase: System Design

System Design is a stage in system development process where the requirements for the system are translated into a solution. The description of solution is also called design. When the requirements are defined, a System Design will be created to meet the requirements. It also will describe the whole system features, functions and interactions.

Third phase: Program Design

Once System Design is done, we are going to Program Design which is the third phase in the methodology. The overall system design is involved all of the individual programs. However Program Design is to generate the designs of the system modules or individual program one by one without any integration.

Fourth phase: Coding

The phase after the Program Design phase is the Coding. Coding also consider as implementation stage which is core stage of system development. This phase will build up all programs which meet the requirement by using selected programming languages and application development tools.

Fifth phase: Unit and Integration Testing

The phase after the Coding phase is the Unit and Integration Testing phase. The unit testing is important to make sure that each individual program and module behaves according to the specification defined in design phase. It tests the bugs errors for each module codes.

Sixth phase: System Testing

The sixth phase, System Testing, involves a test of the whole system which includes all individual program and module. System Testing works to make sure that the functions and interfaces specified initially have been implemented properly.

Seventh phase: Acceptance Testing

The phase after System Testing is the Acceptance Testing phase. This phase is to make sure that the system built meets the requirement and the project objectives.

Eighth phase: Operation and Maintenance

The last phase of this model is the Operation and Maintenance phase. After the system is developed, accepted, and delivered, maintenance will be provided if client needs and

requirements have changed.

3.4.2 Prototyping

Prototyping is used with Waterfall Model because it can help the developers to enhance their understanding about the system (Pfleeger, Shari, L, 2001). Prototype plays a role that enabled customers and developers to examine some aspect of the proposed system. It also enable user to review all aspect and features of the user interface before code is generated. Developer can generates some key requirements to ensure that the requirements are consistent, feasible, and practical.

The prototyping approach is used when the system development life cycle fails to meet the user's requirement. Thus the system had to be reworked requiring additional effort, expense and time. The system is not delivered on time and it exceeds the budget. (Isensee, S, 1996)

There are two approaches to prototyping: throwaway and evolutionary. From the name implies, a throwaway prototype is not intended to be use in actual delivered software. A throwaway prototype is developed for purpose to learn more about a problem or explore the feasibility or desirability of possible solutions. On the other hand, an evolutionary prototype is developed for purpose to learn more about a problem and form the basis for some or all of the delivered software. The prototype is adapted to satisfy the better understood needs after the requisite knowledge is gained,

There are also two important activities in figure, **Validation** and **verification**. Validation ensures that the system has implemented all of the requirements. So that each system function can be traced back to a particular requirement in the specification. Verification ensures that each function works correctly. In another words, validation makes sure that the developer is building the right product (according to the specification) while verification checks the quality of the implementation.

The Waterfall Model with Prototyping is chosen because Waterfall Model enables developer to realize the sequence of events that they should encounter. Prototyping help the developers in designing static interface. This model can be very useful in helping developers lay out what they need to do and estimating time of completion of project. This model also enables developer to make necessary preparation for the coming phase.

Below are the reasons why the prototype methodology is important (David, 1993):

- a) Requirements are often poorly understood.
- b) Requirements usually change during the development process
- c) Current requirements remain only partially understood until after users have had an actual opportunity to use a system.

3.5 Advantages for Proposed Methodology

There are some advantages using Waterfall Model with Prototyping. Below are the advantages gained in using this methodology.

- a) It presents a very high-level view of what is going on during development, and it suggests the sequence of events a developer should expect to encounter.
- b) It is very useful in helping developers lay out what need to be done.
- c) Its simplicity makes it easy to explain to others who are not familiar with software development.
- d) It makes explicitly which intermediate products are necessary in order to begin the next stage of development.
- e) The sub process, prototyping, can help to examine some aspects of the proposed system and decide if it is suitable.
- f) Prototyping helps to reduce cost by discovering the problems of consistency and feasibility of the system at the earlier stage rather at the most costly stage.

3.6 Information gathering method

In order to have a better understanding of system development and requirement on the system, some methods have been used for gathering the relevant information to provide guideline in system designing. Below are the lists of information gathering method that used for this project.

i. Books and references

Some useful information that needed in system analysis and system development has been collected from many books and references. Those books and references include information system references, software engineering references and

programming references. FSKTM's thesis room has store a lot of senior's thesis that also give a guideline for writing report.

ii. Internet Surfing

Some ideas from analyzing the similar system have been collected via internet to get to know better their features and functionality. Besides, some attractive web design also been researched. Through the Internet, research was done to get useful information which relevant to this project. The result from this research has been elaborated in detail in Chapter 2.

iii. Observation

Observation is an informal gathering information method. By this method, many of the existing system have been searched and observed. The features, functionality, policies and procedures or operation can be understood in the rough.

iv. Informal Interview

Informal Interview conducted for some of friends who are internet users. They have provided useful and important information about the requirement and functionality of the project.

v. Discussion with Supervisor

A discussion with supervisor is important to get supervise for developing system.

Discussions have been made from time to time in order to get helps, advices, and opinions during development of the project.

3.7 Chapter Summary

In order to develop a better quality, efficient and effective system, Waterfall Model with Prototyping is chosen for this project to develop through several phases. The Waterfall Model with Prototyping is selected for the development because it is useful in helping developers lay out what need to be done. The sub process, prototyping, can help to examine some aspects of the proposed system. Therefore, under carefully planning and the adoption of the well structure of Waterfall Model with Prototyping approach, hoped that my project will completed in time.

Chapter 4

System Analysis

4.1 Introduction

System analysis is one of the most important phases and it is known as the heart of a system development. The system will be developed based on the requirements that defined in early stage. A requirement, which is defined as abstract statement of a service, in the same way; it comes out the description of what the system should be doing.

All functionalities should be performing in the final system. The functionalities has depicted in the system requirement. To avoid any uncertainty, system requirements should identify clearly before starting development. The consequences of wrongly identified requirements will make the effect that the system's quality low, and may be delivered later than promised. If the system may not meet the user's need and expectations, the user will feel dissatisfaction and might cause them not to use it.

Throughout this chapter, a system analysis is documented which the requirements include functional, non-functional, hardware and software requirements. A description on the selected technology and development tools also defined here and the reasons for making the choice explained.

4.2 Functional Requirements

The functional requirements for a system are statements of services the system should provide. It also describes how the system should behave in particular situations and how the system should react to particular inputs. Functional requirements describe functionality or system services that depend on the type or software, expected users and the type of system where the software is used. In short, the functional requirements of the e-community system are as specified below:

Table 4.1 Forum Module for e-community system

4.2.1 Forum Module	
Description	This module is the main core of the system as it provides the facilities to have a forum.
General Requirements	The user shall be provided with facilities to utilize the discussion forum.
Specific Requirements	<ul style="list-style-type: none">a) The user shall be able to select interested forum.b) The user shall be able to join the forum.c) The user shall be able to initiate a request to join a selected forum.d) The user shall be able to start a new forum by entering and submitting necessary details.e) The user that initiated the forum shall be provided with the right to terminate the forum.

	f) The administrator shall be able to terminate any forum which deemed undesirable.
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Table 4.2 Message Board Module for e-community system

4.2.2 Message Board Module	
Description	This module provides the facilities to have an informal discussion. A large group of users can take part in the same conversation.
General Requirements	The user shall be provided with facilities to utilize the message board.
Specific Requirements	<ul style="list-style-type: none"> a) The user shall be able to leave or retrieve message in message board. b) The user shall be able to initiate a topic to post in message board. c) The user shall be able to give respond to message board. d) The user shall be able to view all the messages in the message board. e) The user shall be able to delete the message which wrote by him/her. f) The administrator shall be able to delete any messages which deemed undesirable.

Table 4.3 Mail Box Module for e-community system

4.2.3 Mail Box Module	
Description	This module serves the purpose of enabling administrator and users to send and receive message in their mail box.
General Requirements	The user shall be provided with facilities to utilize the message. Administrator may send notification to all members.
Specific Requirements	<ul style="list-style-type: none"> a) The user shall be able to send and receive message in their mail box. b) The user shall be able to delete any messages which deemed undesirable from their mail box. c) Administrator shall be able to send notification to members.

Table 4.4 File Sharing Module for e-community system

4.2.4 File Sharing Module	
Description	This module provides the facilities to enables users to upload meaningful computer file in file sharing area.
General Requirements	The system shall provide users the facilities of sharing the meaningful and interesting computer file.
Specific Requirements	<ul style="list-style-type: none"> a) The system shall provide users the means of uploading a computer file in an ideal location. b) The user shall be able to view the computer files that uploaded by others.

	<p>c) The user shall be able to delete the computer file which uploaded by him/her.</p> <p>d) The administrator shall be able to delete any computer file which deemed undesirable.</p>
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Table 4.5 Photo Gallery Module for e-community system

4.2.5 Photo Gallery Module	
Description	This module provides the facilities to enables users to upload images or photos to photo album.
General Requirements	The system shall provide users the facilities of sharing the images or photos.
Specific Requirements	<p>a) The user shall be able to upload images or photos to share with others.</p> <p>b) The user shall be able to view all the images or photos that uploaded by others.</p> <p>c) The user shall be able to delete the images or photos which uploaded by him/her.</p> <p>d) The administrator shall be able to delete any images or photos which deemed undesirable.</p>

Table 4.6 Announcement Module for e-community system

4.2.6 Announcement Module	
Description	This module provides the facilities to enable users to post and view announcements.
General Requirements	The user shall be provided with facilities to utilize the announcement board to get what is happening in the e-community.
Specific Requirements	<ul style="list-style-type: none"> a) The administrator shall be able to post announcement in an announcement board. b) The user shall be able to view all the announcements in the announcement board. c) The administrator shall be able to edit the announcement. d) The administrator shall be able to delete any announcement which deemed undesirable.

Table 4.7 Testimonial Module for e-community system

4.2.7 Testimonial Module	
Description	This module serves the purpose of enabling users to share their experiences and understand about someone, and tell everyone what they think of someone.
General Requirements	The user shall be provided with facilities to utilize the testimonials.

Specific Requirements	<p>a) The user shall be able write testimonial about someone and share it with everyone.</p> <p>b) The user shall be able to view all the testimonials of all the members.</p> <p>c) The user shall be able to delete any testimonial which deemed undesirable from their testimonial area.</p>
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Table 4.8 Member List Module for e-community system

4.2.8 Member List Module	
Description	This module serves the purpose of enabling users to view member list and get to know who has joined the group.
General Requirements	The user shall be provided with facilities to utilize the member list and view member profile at any time.
Specific Requirements	<p>a) The user shall be able to view the member list and get to know who has joined the group.</p> <p>b) The user shall be able to view the member profile of all the members.</p> <p>c) The user shall be able to edit or change the detail in personal profile.</p>

Table 4.9 Invite Friend Module for e-community system

4.2.9 Invite Friend Module	
Description	This module serves the purpose of enabling users to invite their friend to join e-community.
General Requirements	The user shall be provided with facilities to utilize invite friend module to e-mail automated invitation to their friends.
Specific Requirements	<ul style="list-style-type: none"> a) The user shall be able to invite their friend to join e-community by send automated invitation. b) The system shall provide a notification about new comer. c) The administrator shall ban any unwelcome members.

4.3 Non-Functional Requirement

Non-Functional requirements are not directly concerned with the specific functions of the system. They defined as constraints on the services or functions offered by the system such as timing constraints, constraints on the development process and so on. In the other words, non-functional requirements define the system properties and constraints such as reliability, response time and storage requirements. Non-functional requirements are important to system development because failure to meet it may make the whole system unstable. Below is a description of the non-functional requirements for e-community system:

i. User friendliness

The system should be able to build a flow of navigation that helps users in navigating to related Uniform Resource Locator (URL) with little efforts through hyperlinks and procedure steps. User interfaces should be user friendly to enhance the interaction between the users and the system.

ii. Flexibility

The system should have the capability to take advantage of new technology and resources. The system should be able to implement in the changing environment.

iii. Response time

In order to provide an efficient e-community system, it should provide a fast response times to users. Thus, the processing in the server is reduced by having some of the input validation done in the client side by using the client side scripting language.

iv. Reliability

Reliability is referred to the expectation of a system to perform its intended function accurately. A reliable system should be consistent while functioning. Thus, the system should be reliable in performing its functions and operations.

v. 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 e-community activities.

Interfaces must be self-explanatory and consistent with other application by designing a user-friendly interface.

vi. Security

The security features prevent unauthorized access, alteration or destruction into the system. Each access by user should be authenticated by the system. Valid username and password needed to ensure confidentiality and security of user's data. The authorize users shall be allowed to change their password anytime.

vii. Modularity

Modularity is a key factor in producing 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.

viii. Robustness

Robustness is referring to the ability of the e-community system to continue operation in spite of unexpected problems. For instance, system is able to process unanticipated errors in the input by having a validation for the input field in the client side.

4.4 Software Requirements

4.4.1 Server-side Environment

Either one of below with IIS server and MS SQL 2000:

- a) Microsoft Windows XP Professional Server family
- b) Microsoft Windows .NET 2003 Server family
- c) Microsoft Windows NT Workstation v4.0
- d) Microsoft Windows NT Server Operating System v4.0; Service Pack 6a or higher
- e) Microsoft Windows 2000 Professional
- f) Microsoft Windows 2000 Server

4.4.2 Client-side Environment

- a) Any operating system
- b) Microsoft Internet Explorer
- c) Netscape Navigator
- d) Or any other equivalent third party web browsers.

4.5 Hardware Requirements

4.5.1 Server-side Environment

- a) Pentium III and above
- b) At least 40 GB hard disk storage space

- c) 1 Ethernet NIC Connection

4.5.2 Client-side Environment:

- a) Pentium II 233 Hz (intel processors)
- b) 32 MB RAM
- c) 36.6 kbps connection to Internet

4.6 Chosen Tools and Technology

4.6.1 Chosen Application Platform

Windows XP

Windows XP has been chosen as proposed system platform, as it is the most suitable operating system that is able to support all the development tools that chosen to develop this project. Besides, Windows XP provide graphical user interface for user friendliness whereby user just interacts with icons instead of typing command which is common in DOS and UNIX based operating system.

The reasons why Windows XP has been chosen (Goh, W.O, 2003):

- a) It improves management or administration. Features such as system restore and remote assistance has the potential to significantly reduce administrative costs by eliminating the need for costly desktop support visits or manual system restoration. In addition, Windows XP includes a series of new group policy elements to provide higher levels of manageability.

- b) It has compatibility or usability Features. Users or administrators can specify an application to run in any Windows's mode, depending upon which environment is most suitable for the application. Another interesting feature that promises to improve the usability of Windows XP is the remote desktop feature.
- c) It improves deployment. The User State Migration Tool is now a fully supported utility. This tool enables administrators to migrate users' data and application settings from their existing desktops to their new Windows XP desktops.
- d) Native Support for .Net Framework. Windows XP will be the first client OS from Microsoft that will contain basic native support for the .Net framework.

4.6.2 Chosen Web Server

Microsoft Internet Information Server (IIS)

Microsoft Internet Information Server (IIS) has been chosen as the system web-server, because it provides powerful security, administration and development functionality. It is also one of the best web servers on the market and it is a high-end enterprise-level server.

The reasons why Microsoft Internet Information Server (IIS) has been chosen (Goh, W.O, 2003):

- a) It is easy to install and uninstall
- b) Accessible since all kinds of browsers can work with it.
- c) Allows for hosting multiple sites.

- d) Provides capabilities for secure transactions with the SSL (Secure Sockets Layer) support and for authentication.
- e) Windows-based Web authoring and development tools are supported.
- f) Integration with existing industry-standard database and other ODBC-compliant databases.

4.6.2.1 Protecting IIS

The effective way to protecting IIS is to install Operating System Upgrades and Patches. The best way to upgrade is by using Windows Update from the IE Tools menu. Be prepared for some long downloads and to reboot often. The following are sequence of upgrades (Novick Software, 2003):

- a) The latest OS service Pack
- b) Critical Updates (Patches since the Service Pack)
- c) The latest version of browser.
- d) With IIS Updates, see the security bulletin MS01-044 and install the patches associated with OS.
- e) Outlook shouldn't be on a IIS server.
- f) Install the Resource Kit for OS. Some of it's tool will be used later when securing the system.

4.6.3 Chosen Database Management System

Microsoft SQL Server 2000

Microsoft SQL Server 2000 works well with databases of any size. It contains all the user-friendly features, works more efficiently and has the ability of handling hundreds of transactions simultaneously without affecting performance.

The reasons why Microsoft SQL Server 2000 has been chosen (Goh, W.O, 2003):

- a) It has rich XML support. It simplifies the integration of your back-end systems and data transfer across firewalls using XML. Most viable solution to accommodate the vast storage requirements.
- b) It is high available system. It can maximize the availability of your business applications with log shipping, online backups, and failover clusters.
- c) As its scalability, you are able to scale your applications up to 32 CPUs and 64 gigabytes (GB) of RAM. SQL Server 2000 has demonstrated record-breaking performance that you can leverage.
- d) SQL Server 2000, in conjunction with other Microsoft Windows Server System™ integrated server software, provides even more power for your e-business, such as BizTalk Server and Commerce Server.
- e) It has simplified Database Administration. Automatic tuning and maintenance features enable administrators to focus on other critical tasks.

4.6.4 Chosen Programming Language

ASP.NET

With ASP.NET the pages are compiled common language code executing on the server.

This allows for advantages and forces some changes in the traditional ASP programming.

The reasons why ASP.NET has been chosen (Goh, W.O, 2003):

- a) ASP.NET enhanced performance as it is compiled common language runtime code running on the server. Unlike its interpreted predecessors, ASP.NET can take advantage of early binding, just-in-time compilation, native optimization, and caching services right out of the box. This amounts to dramatically better performance before you ever write a line of code.
- b) It has world-class tool support. The ASP.NET framework is complemented by a rich toolbox and designer in the Visual Studio integrated development environment. WYSIWYG editing, drag-and-drop server controls, and automatic deployment are just a few of the features this powerful tool provides.
- c) ASP.NET is based on the common language runtime, the power and flexibility of that entire platform is available to Web application developers. The .NET Framework class library, Messaging, and Data Access solutions are all seamlessly accessible from the Web. ASP.NET is also language-independent, so you can choose the language that best applies to your application or partition your application across many languages.
- d) ASP.NET makes it easy to perform common tasks, from simple form submission and client authentication to deployment and site configuration. For example, the ASP.NET page framework allows you to build user interfaces that cleanly

separate application logic from presentation code and to handle events in a simple, Visual Basic - like forms processing model. Additionally, the common language runtime simplifies development, with managed code services such as automatic reference counting and garbage collection.

- e) ASP.NET provides manageability system. ASP.NET employs a text-based, hierarchical configuration system, which simplifies applying settings to your server environment and Web applications. Because configuration information is stored as plain text, new settings may be applied without the aid of local administration tools. An ASP.NET Framework application is deployed to a server simply by copying the necessary files to the server. No server restart is required, even to deploy or replace running compiled code.
- f) ASP.NET has been designed with scalability in mind, with features specifically tailored to improve performance in clustered and multiprocessor environments. Further, processes are closely monitored and managed by the ASP.NET runtime, so that if one misbehaves (leaks, deadlocks), a new process can be created in its place, which helps keep your application constantly available to handle requests.
- g) Because it's customizability and extensibility, ASP.NET delivers a well-factored architecture that allows developers to "plug-in" their code at the appropriate level. In fact, it is possible to extend or replace any subcomponent of the ASP.NET runtime with your own custom-written component. Implementing custom authentication or state services has never been easier.

4.6.5 Chosen Development Tools

Microsoft Visual Studio.NET 2003

The Microsoft Visual Studio.NET 2003 provides the programming model for building, deploying, and running Web-based applications, smart client applications, and XML Web services. The Microsoft Visual Studio.NET 2003 delivers business value with faster time to market, improved systems flexibility, and reduced costs.

The reasons why Microsoft Visual Studio.NET 2003 has been chosen (Goh, W.O, 2003):

- a) It is Rapid Development for the server and data tiers. The Component Designer and Server Explorer work in concert to enable visual composition of middle-tier business logic components. Built-in ADO.NET and Visual Database Tools provide Support for creation of professional data-driven software.
- b) It is Reliability and Security. Built on the proven foundation of the .NET Framework, Visual Studio .NET 2003 employs a fine-grained security policy for user-based, role-based, and code access security models.
- c) Unmatched support for XML Web Services. Improved Add Web Reference dialog box, the Web Services Development Kit (WSDK), and support for SOAP 1.1 combine with the Web Service project template, built-in UDDI support, and intuitive designers to provide unparalleled capabilities for building and consuming XML Web services.
- d) Mobile Web Application Development. Wireless device support enables you to easily extend your new or existing Web applications to over 200 mobile devices.
- e) It is professional software for windows, the web, and devices. Visual Forms Designers expedite the creation of rich desktop applications for Windows,

dynamic, broad-reach Web applications, and applications for a wide range of devices.

4.6.6 Chosen Data Access Technology

ADO.NET

ADO.NET is an expansion of ADL with some of the key concepts retained. It provides access to structured data from diverse sources, which are all accommodated in a consistent, standardized programming model.

The reasons why ADO.NET has been chosen (Goh, W.O, 2003):

- a) ADO.NET performs much faster at the same tasks than its predecessor, ADO.
- b) ADO.NET includes a SQL Server Data Provider that is highly optimized for interaction with SQL Server.
- c) Everything in ADO.NET at some point will boil down to the use of XML.
- d) The core ADO.NET class, the DataSet, operates in an entirely disconnected fashion. It is a remarkably efficient and scalable architecture.
- e) ADO.NET architecture is built on a hierarchy of class inheritance and interface implementation makes the entire system extremely easy to use and very customizable to suit individual needs.

Table 4.10 Summary on Selected Tools and Technology

Category	Description
Application Platform	Windows XP
Web Server	Microsoft Internet Information Services
Database Management System	SQL Server
Programming Language	ASP.NET
Development Tools	Microsoft Visual Studio.NET 2003
Data Access Technology	ADO.NET

4.7 Chapter Summary

In this chapter, system analysis has been done, that include functional and non-functional requirements, also hardware and software requirements for e-community system. Besides, development tools and technology also has been finalized. The requirement specification and analysis phase give more precise description of the functionality on the system. System analysis is an important phase to ensure that the project meet the requirement and reduce the misunderstanding and misinterpretation of the whole system.

Chapter 5

System Design

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Figure 5.1: System Architecture

5.1 Introduction

A good system design is needed to successful project. System design should make in order to develop system with smoothly. System design is a plan to build a system that meets the requirements. It also aims to achieve the system's goals and objective. This is a stage in the system development process where the requirements for the system are translated into the system application.

5.2 Architecture Design

System architecture is the structure of the components of a program or system. It describes the system program according to a set of architecture units. It also describes how the units are inter-related with each other. It is important for developing a successful system in order to come out with a high quality system.

5.2.1 Three Tier Client/Server Architecture

E-community system is designed based on the three tier client/server architecture.



Figure 5.1 Three-tier client/server architecture

The first tier is client tier which is the web browser that runs on the user computer. The browser like Internet Explorer and Netscape Navigator are the application in the client tiers. It is used to display the user interface of the system to the user.

Middle tier is web server of the e-community system. The web server for the system is Internet Information Server that provide functional module to process data. It processes the users request from the client tier and then returns the result to the user.

The third tier is the database server which is responsible for data storage. Database server is located on a different system from web server, this is because the data often used by more than one application or process.

5.3 Network Setup Design

Network setup design is necessary for successful system development. For the network setup design, some statements need to be taken into consideration:

- a) The ability of the network setup to suit to the overall environment architecture that is going to be used.
- b) The availability of hardware resource and current network layout. The capability of each available machine must be brought into consideration; it includes the machine's processing power, storage space and working memory.
- c) The available technologies that can be leveraged. All of the technologies must be considered while in designing. The dependencies on the technologies are very much in concern.

- d) Time and effort for design implementation. Amount of time and effort required implement the network layout also must be taken into consideration.

5.3.1 Firewall

A firewall is commonly used as a barrier between the secure corporate intranet, or other internal networks, and the Internet. (Lee, S.P, Mohammad, Z.R, 2002). The purpose of a firewall is to keep “bad” things outside a protected environment. To accomplish that, firewalls implement a security policy that is specifically designed to address what bad things might happen. (Pfleeger, Shari, L, 2003). A firewall used in proposed e-community system as a barrier between database and server to provide reasonable protection to all of the data.

The network layout of e-community system is described in the figure below:

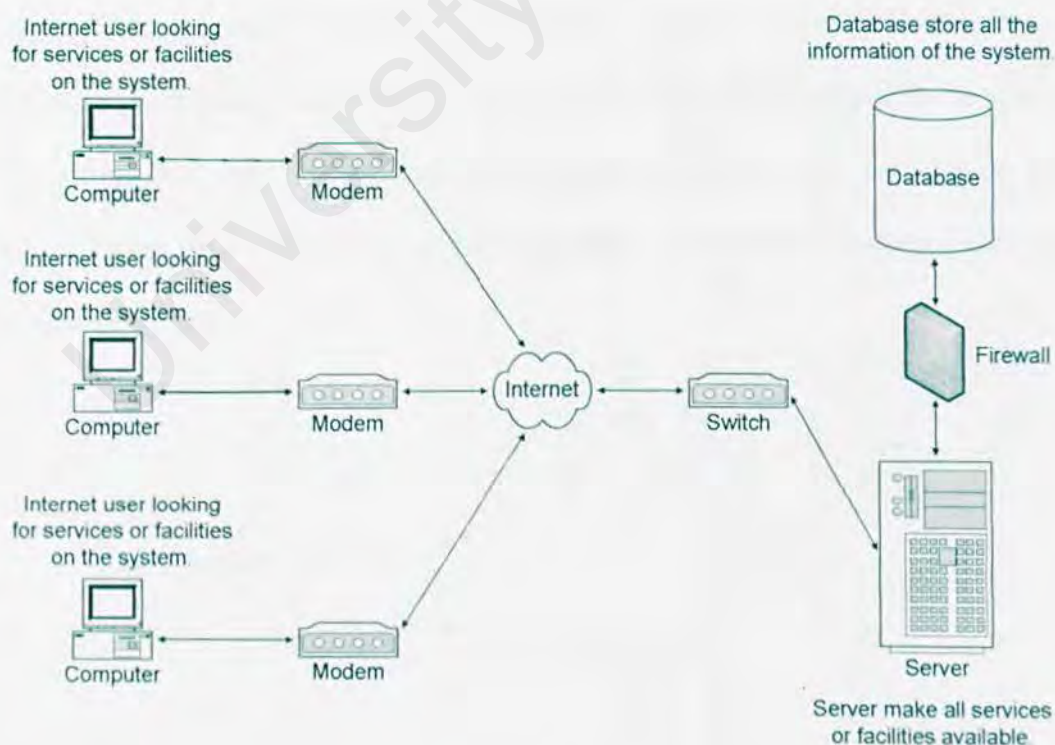


Figure 5.2 Network Design of E-community system.

5.4 Process Design

5.4.1 Unified Modeling Language (UML)

The UML has been designed to help the participants in software development to build model. It also enable participants to visualize the system. UML is a simply another graphical representation of common semantic model. It provides a comprehensive notation to cover new aspects of system development. (Goh, W.O, 2003).

UML defines nine different types of diagram: class diagrams, sequence diagrams, collaboration diagrams, object diagrams, statechart diagrams, activity diagrams, use case diagrams, component diagrams and deployment diagrams.

5.4.1.1 Use Case Actor

A use case is a sequence of actions that an actor performs within a system to archive a particular goals (Kendall, 2001). A use case is represented by an ellipse. An actor represents a role that user can play with regard to a system. An Actor also represents an entity, such as another system or database which needs to interact with the system for inform exchange purpose. An actor is represented by a stick man figure. The figure below show an example of an actor called administrator interacting with use case called login.



Figure 5.3 Use Case Example.

5.4.1.2 Actor Listing

Actor is a person that interacts with a system, so all actors should identify first. The following table shows the actors of e-community system.

Table 5.1 Actors in the e-community system

Actor	Description
Administrator	Administrator is a person who can manage all the content in the e-community system.
Member	Member is a person who can just do certain task in e-community system.
Visitor	Visitor is a person who are not yet register to become a member.

5.4.2 Structure Chart of E-community System

A system is structured into a number of principal subsystems where a subsystem is an independent unit. Structure chart is used to depict high level extraction of the specified system. The usage of structured chart is to describe the interaction between independent subsystems. Figure below shows the 9 important modules in e-community system.

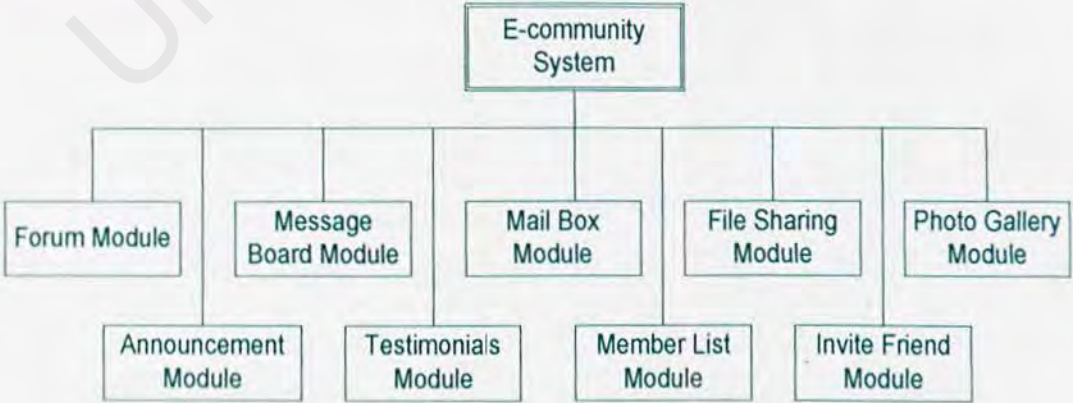


Figure 5.4 E-community system Structure Chart

5.4.3 Use Case Diagram

A use case diagram is a graph of actors, a set of use cases enclosed by a system boundary. Communication associations conducted between the actors and the use cases. Figure below shows the e-community system use case diagram.

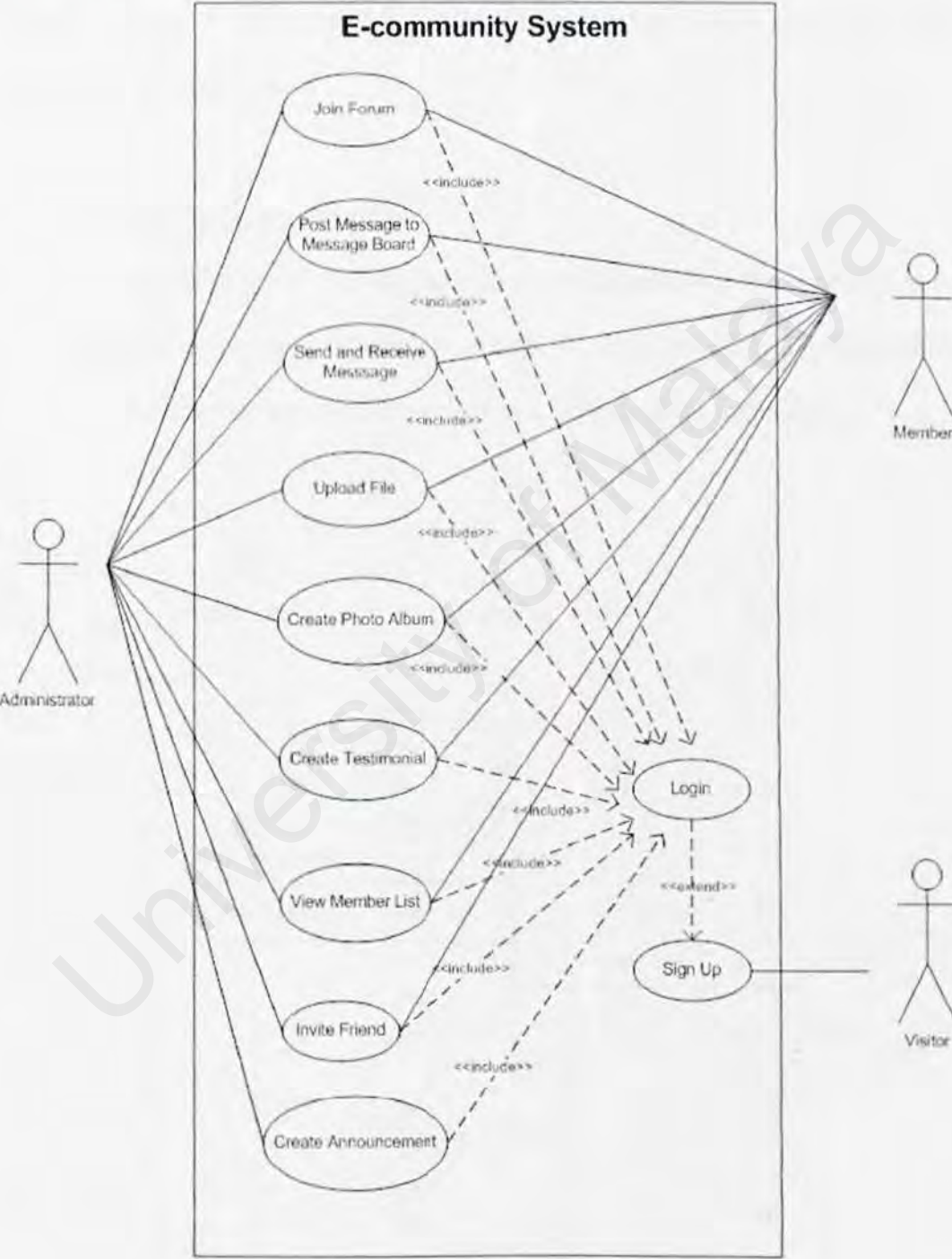


Figure 5.5 E-community System Use Case Diagram

5.4.4 Sequence Diagram

In UML, sequence diagram is an interaction diagram with focuses on the time ordering of the messages that go back and forth between objects. Sequence diagram is used to describe the behavior of a system by viewing the interaction between the system and its environment.

i. Sign up Sequence Diagram

Figure below shows the sign up sequence diagram when someone wishes to sign up to join the e-community system. User has to fill in the information required before they sign up to become a member of e-community.

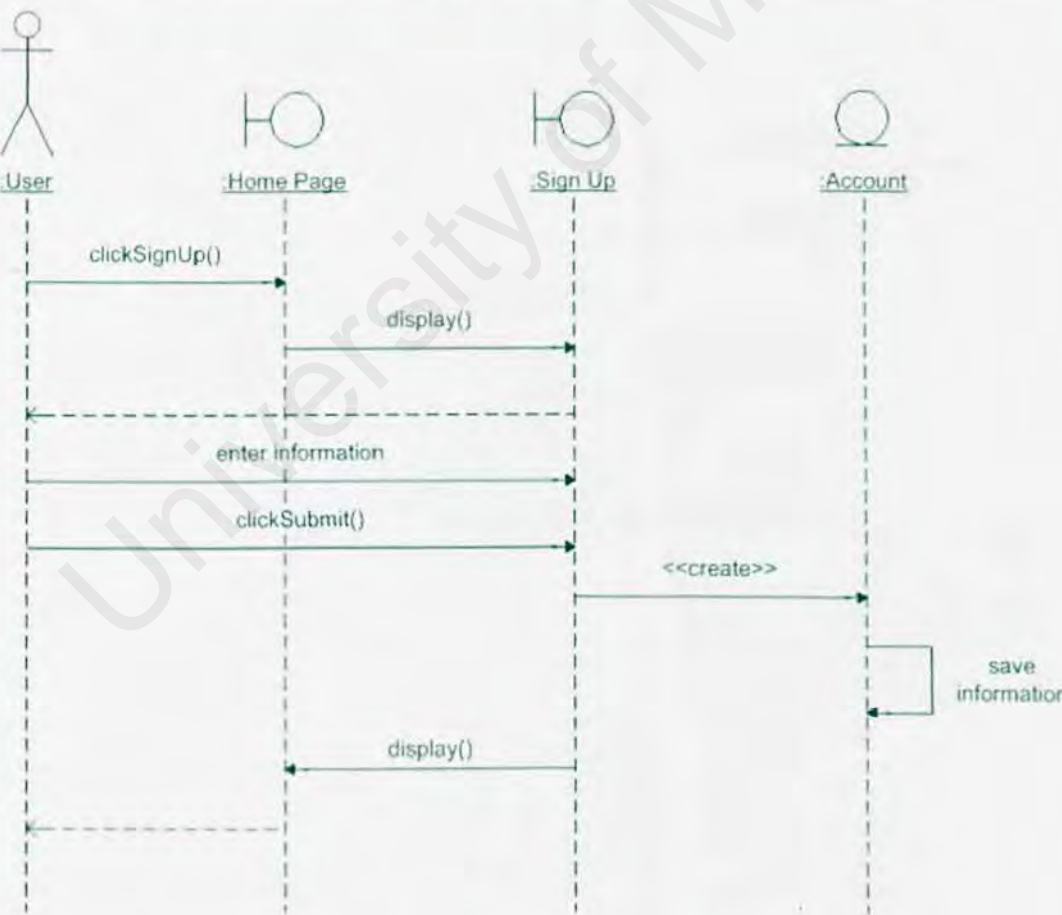


Figure 5.6 Sign up Sequence Diagram

ii. Login Sequence Diagram

Figure below shows the login sequence diagram when a user wishes to login to the e-community system. The user has to enter username and password for validation before they can enter to join the e-community.

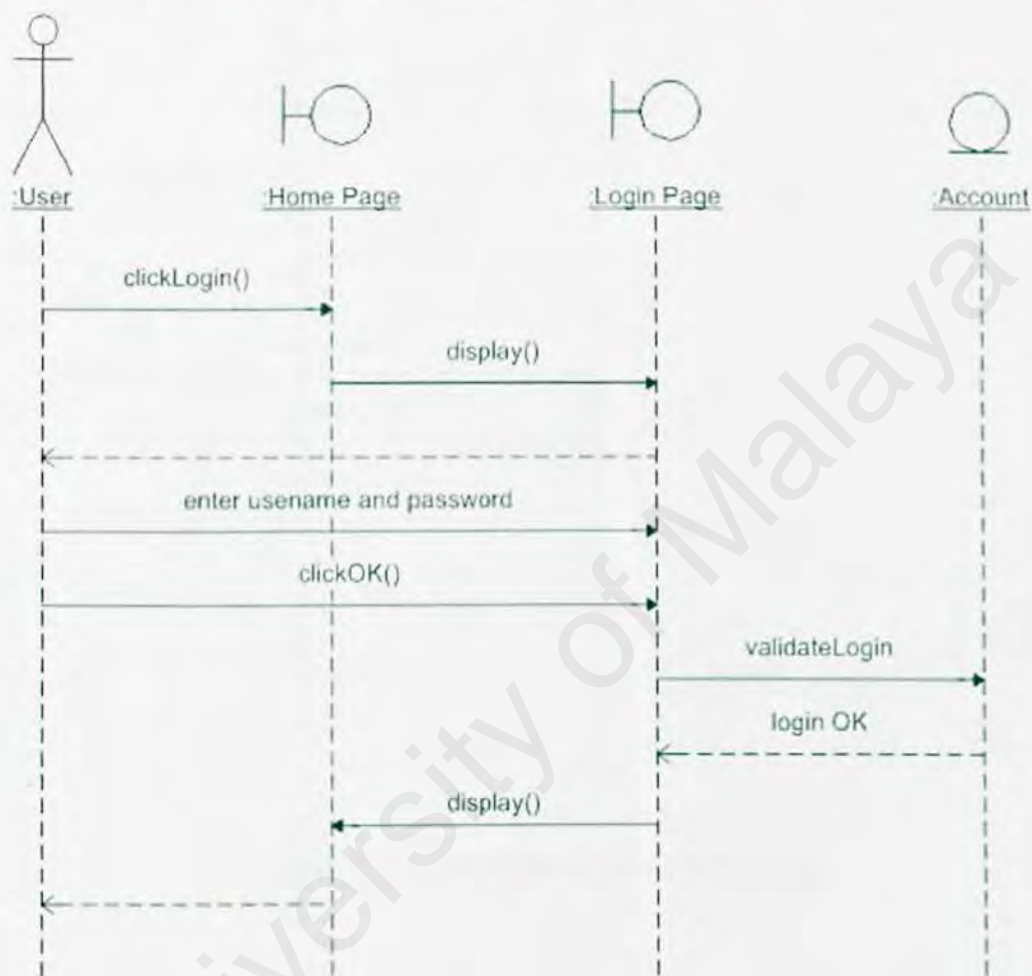


Figure 5.7 Login Sequence Diagram

iii. Join Forum Sequence Diagram

Figure below shows the join forum sequence diagram when a user wishes to join a forum. User has to select the particular before start a forum.

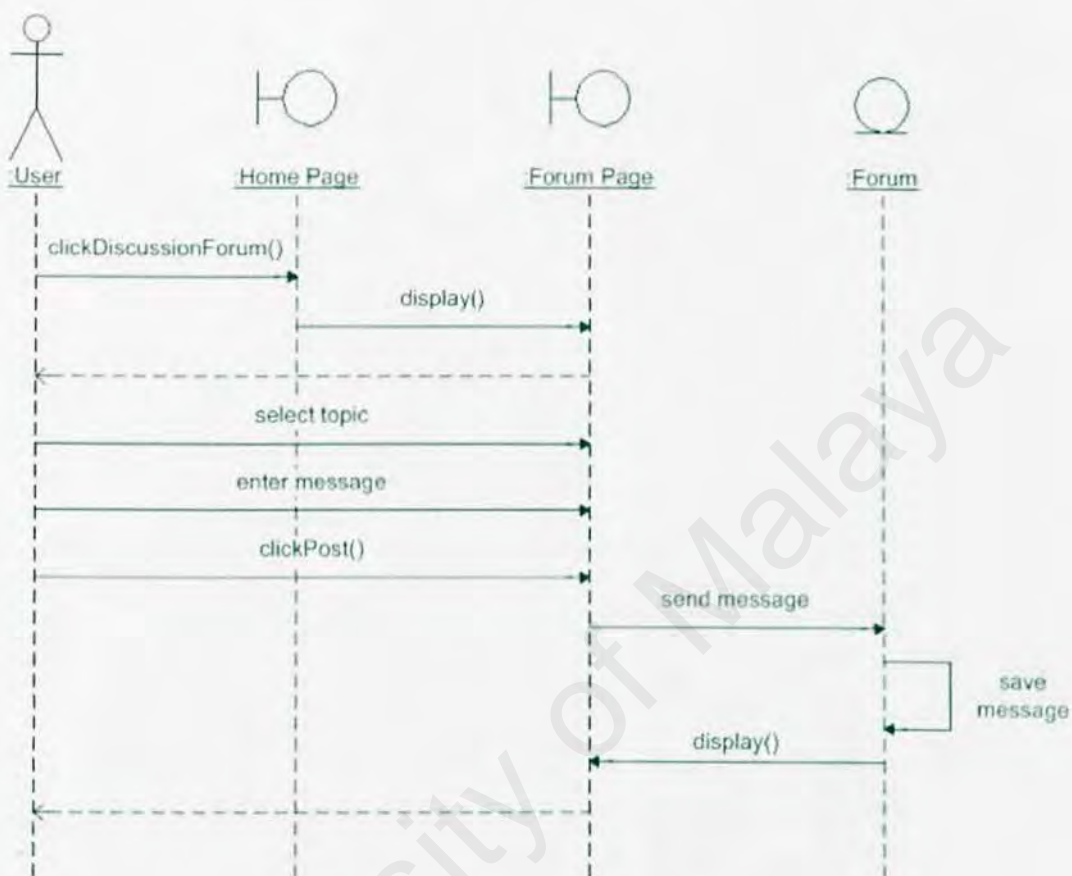


Figure 5.8 Join Forum Sequence Diagram

iv. **Post Message Sequence Diagram**

Figure below shows the post message sequence diagram when a user wishes to post message to the message board.

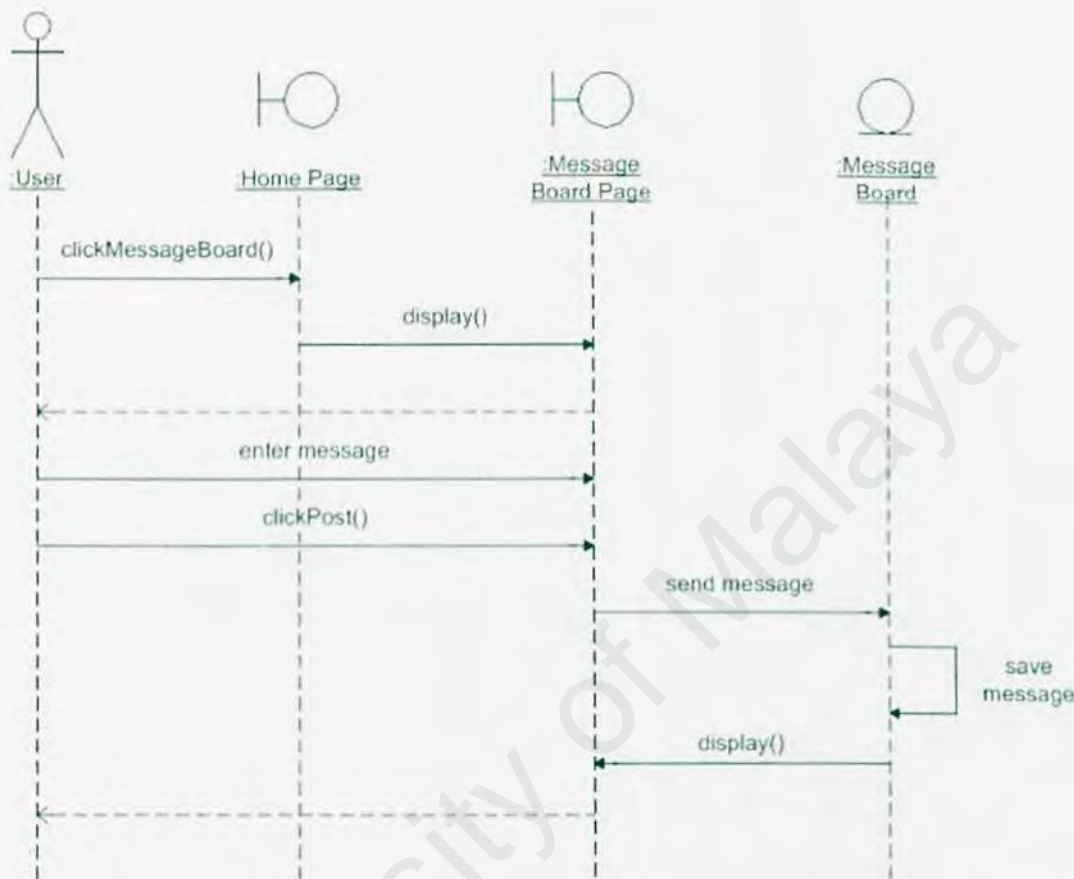


Figure 5.9 Post Message Sequence Diagram

v. Send Mail Sequence Diagram

Figure below shows the send mail sequence diagram when a user wishes to send mail to a friend. User has to select a friend to send mail.

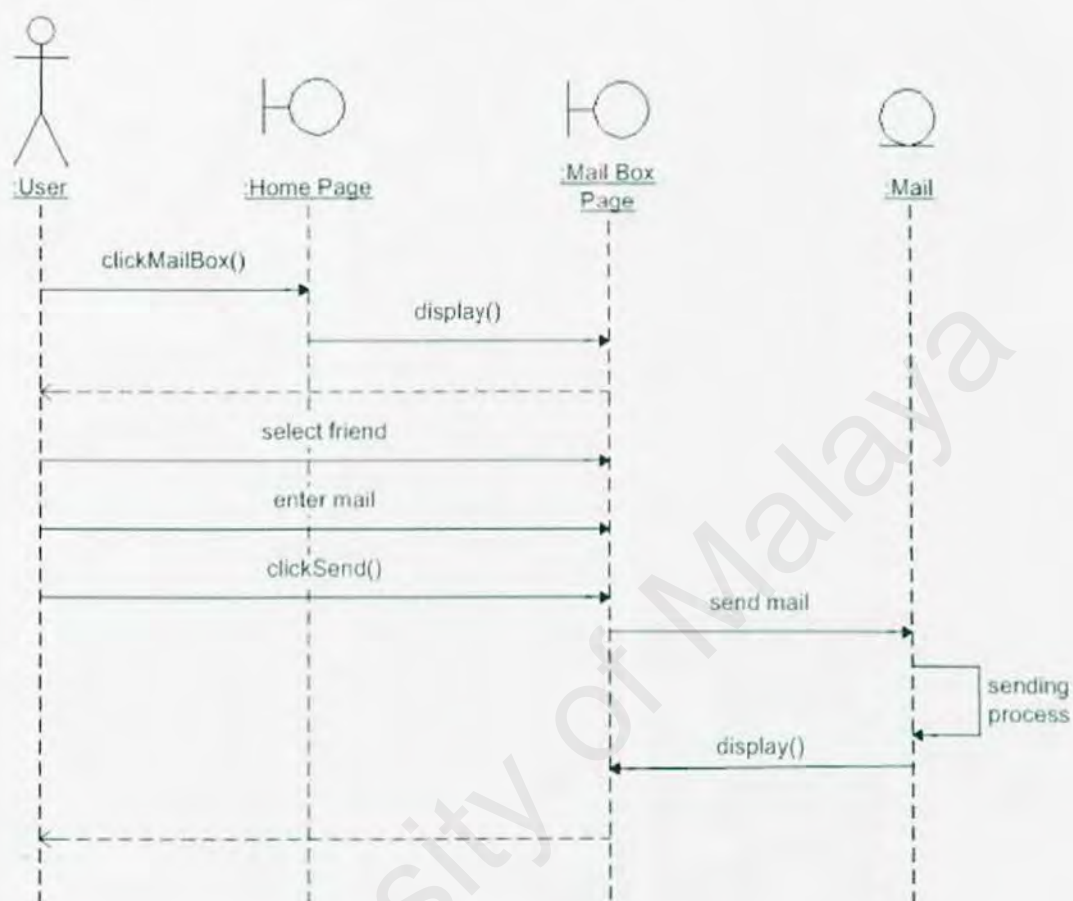


Figure 5.10 Send Mail Sequence Diagram

vi. Upload File Sequence Diagram

Figure below shows the upload file sequence diagram when a user wishes to upload file to share with other members.

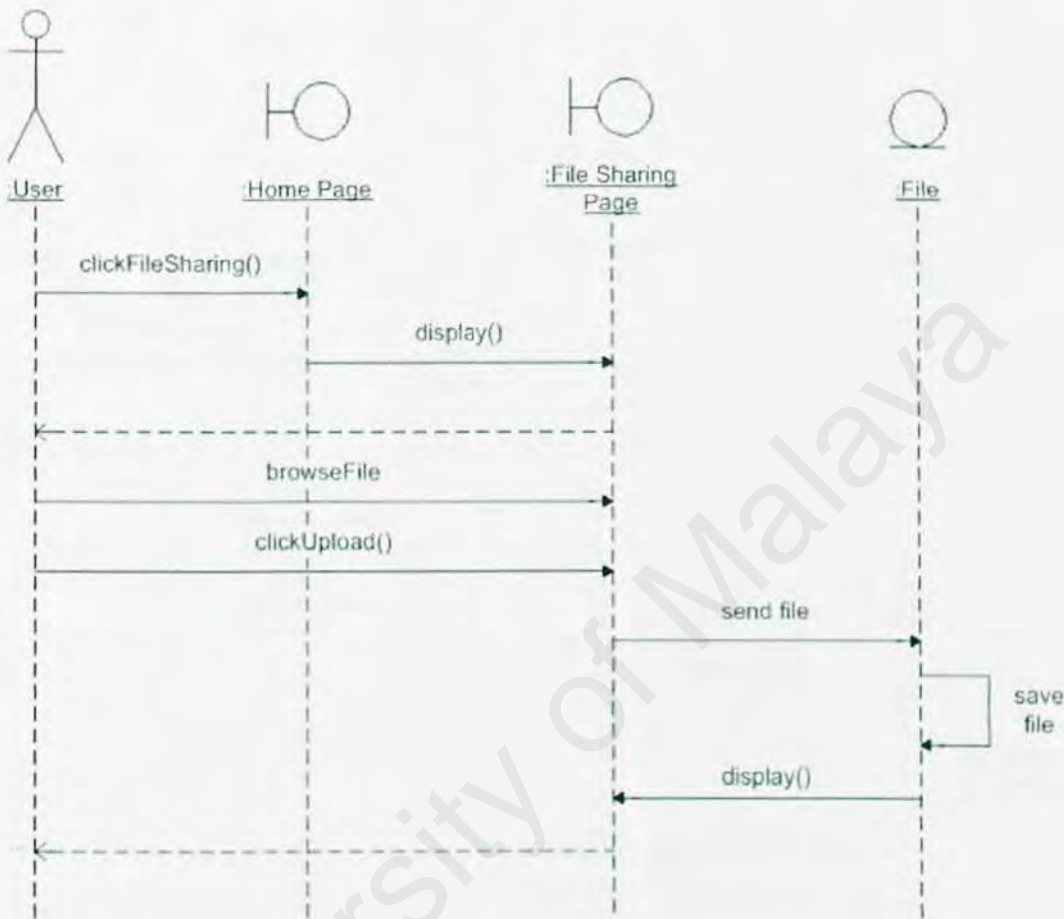


Figure 5.11 Upload File Sequence Diagram

vii. Upload Photo Sequence Diagram.

Figure below shows the upload photo sequence diagram when a user wishes to share photo with other members.

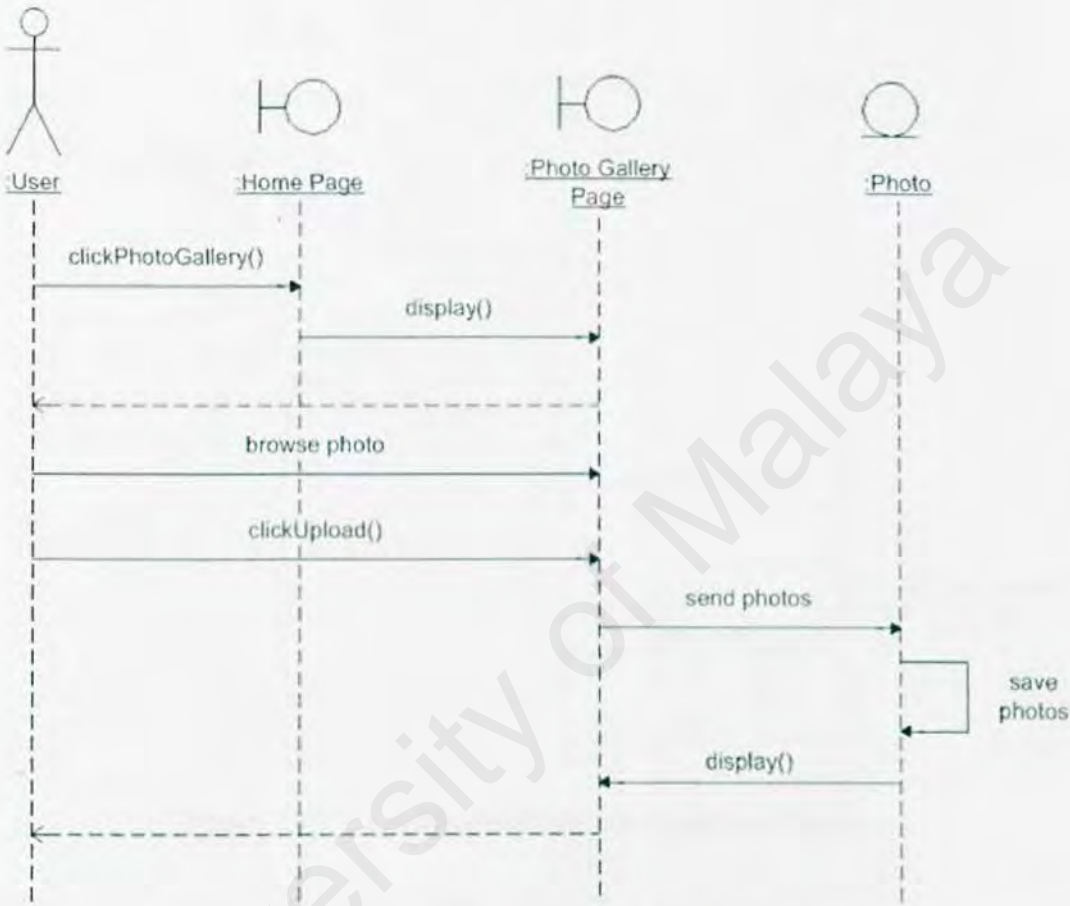


Figure 5.12 Upload Photo Sequence Diagram

viii. **Create Announcement Sequence Diagram**

Figure below shows the create announcement sequence diagram when an administrator wishes to create announcement to announcement board.

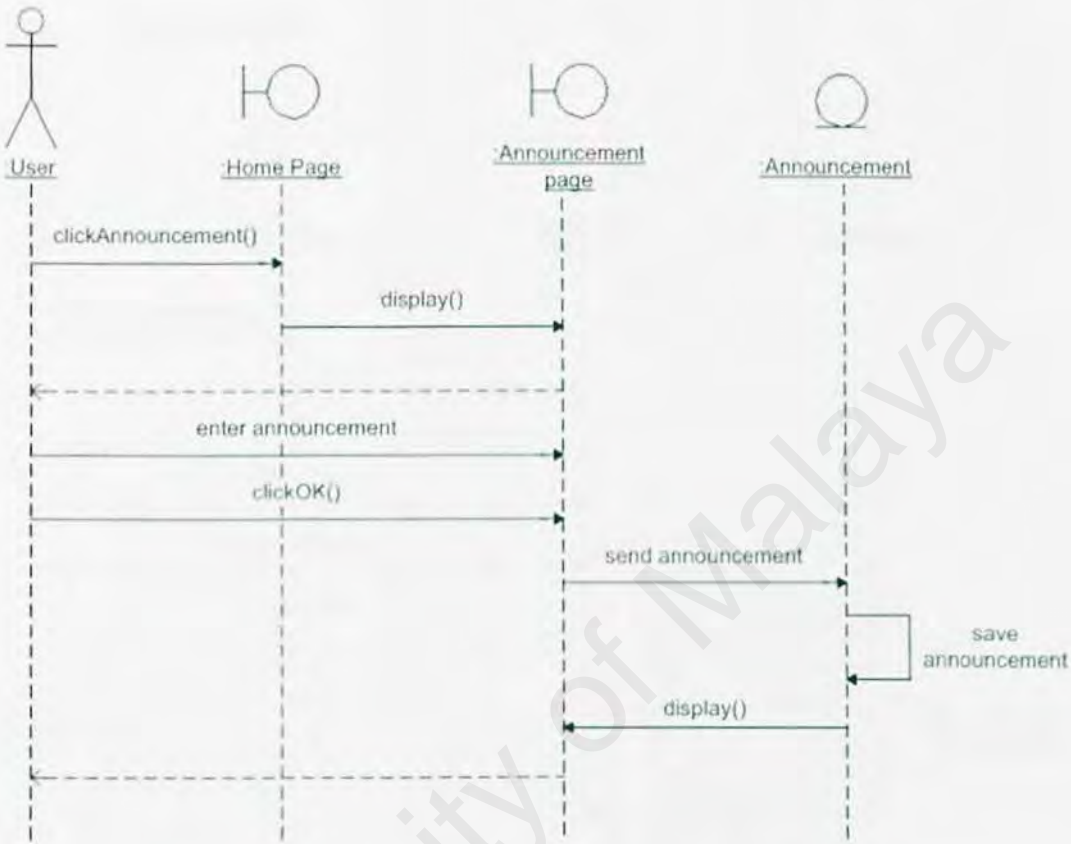


Figure 5.13 Create Announcement Sequence Diagram

ix. Create Testimonials Sequence Diagram

Figure below shows the create testimonials sequence diagram when a user wishes to make description about a friend. User has to select a friend to create testimonial.

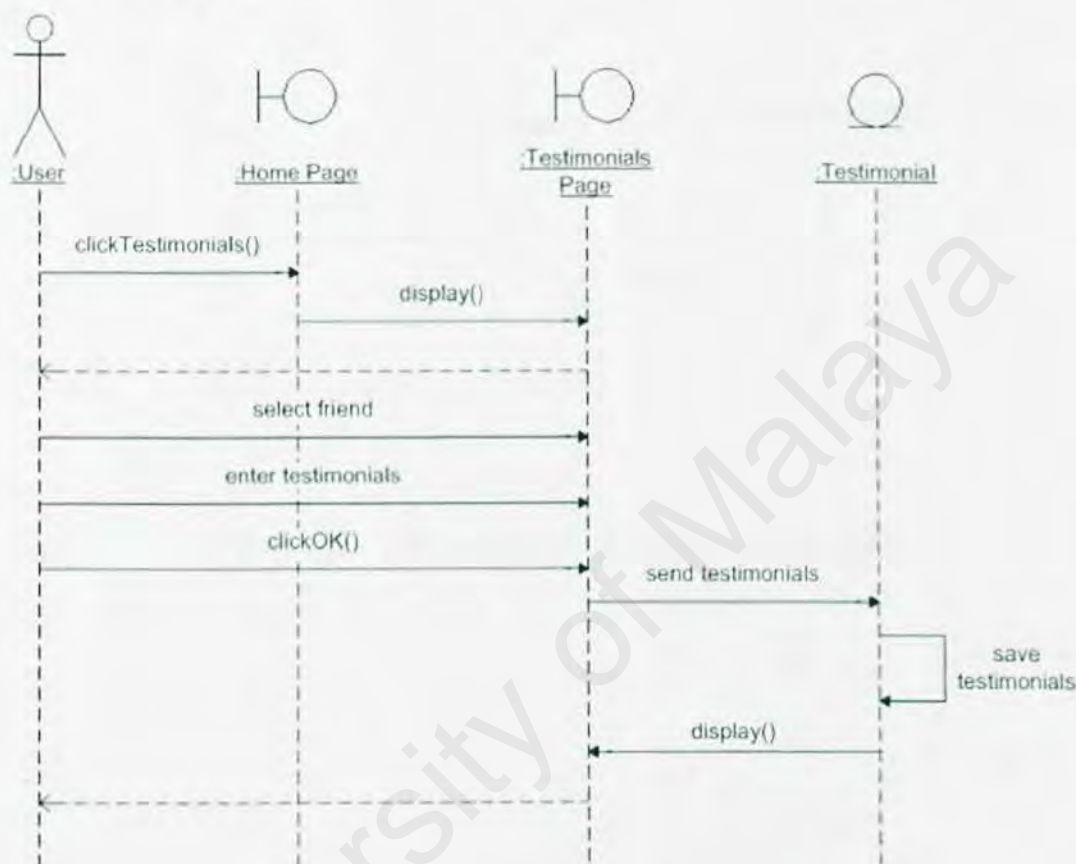


Figure 5.14 Create Testimonials Sequence Diagram

x. **View Member List Sequence Diagram**

Figure below shows the view member list sequence diagram when a user wishes to view who has join the e-community.

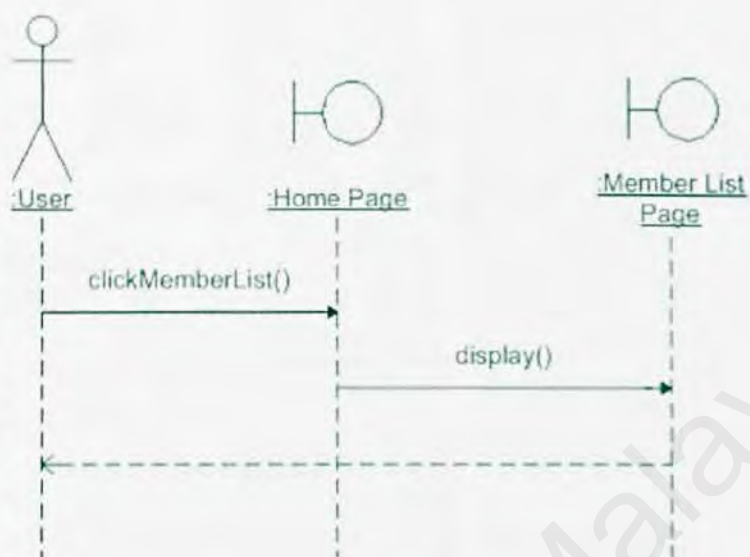


Figure 5.15 View Member List Sequence Diagram

xi. Invite Friend Sequence Diagram

Figure below shows the invite friend sequence diagram when a user wishes to invite his or her friend to join e-community.

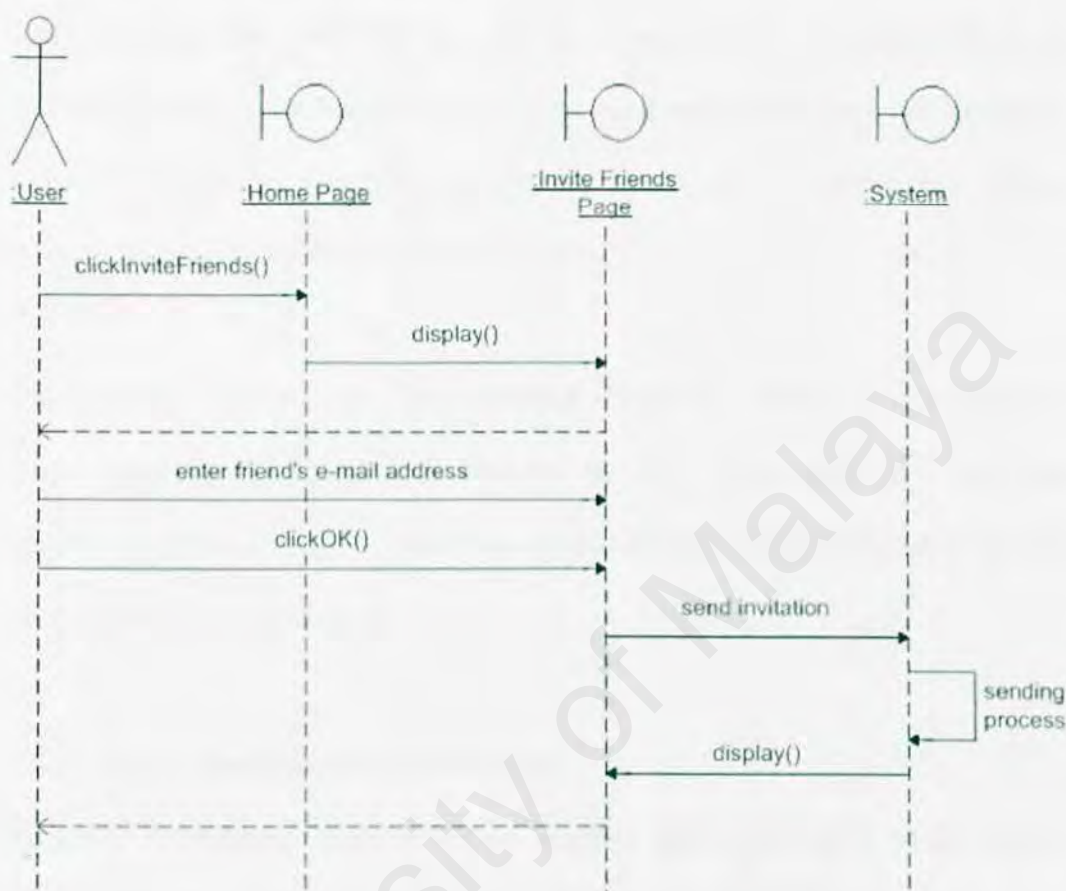


Figure 5.16 Invite Friend Sequence Diagram

5.5 Database Design

Database is defined as a collection of data stored in particular format in a computer. Many users can share the data for a variety of application. The objective of the database is maintaining data that are accurate and future applications will be readily available. Users are enables to construct their personal view of the data without concern for the way the data is physically stored.

E-community system uses the relational databases model in its database implementation. The purpose is ensuring the data to be stored in a way that minimize duplicated data. It also eliminates certain type of processing error that can occur when data is stored in other ways.

5.5.1 Entity-Relationship (ER) 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 2 entities. A relationship can be one of the three types, namely one-to-one (1:1), one-to-many (1:M) and many-to-many (N:M). Figures below show the symbol of E-R Diagram and an E-R Diagram of e-community system.

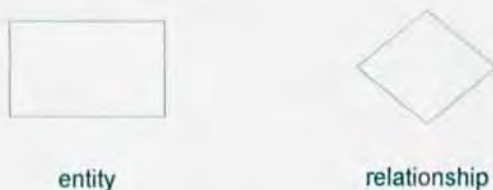


Figure 5.17 Symbols of E-R Diagram

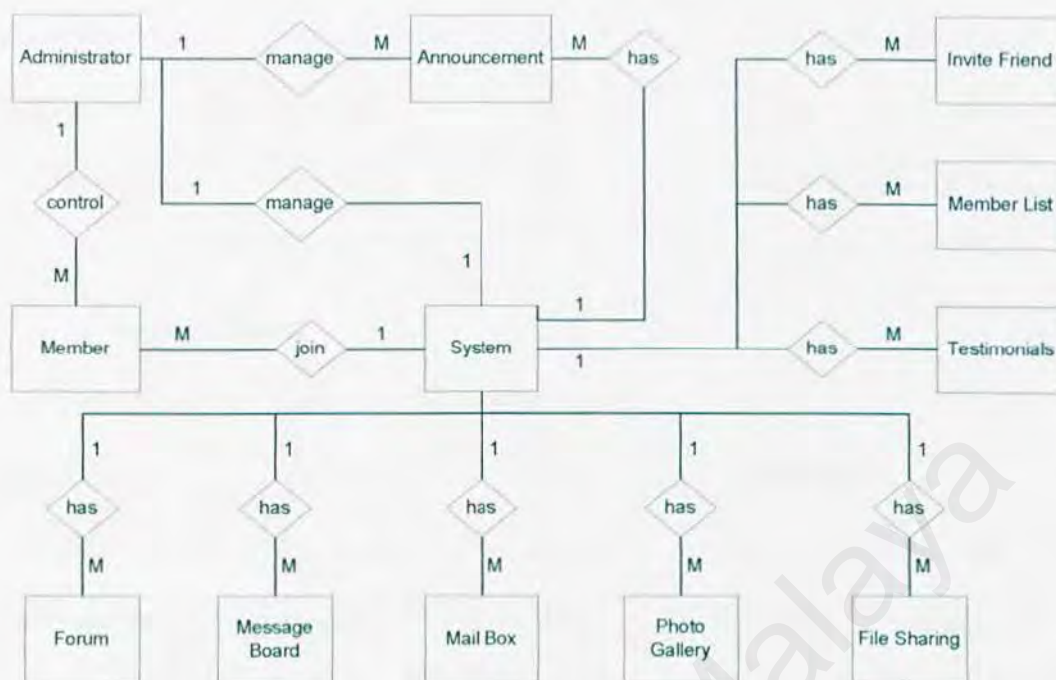


Figure 5.18 Entity-Relationship Diagram of E-community System

5.5.2 Data Dictionary

Data dictionary is a storehouse of data. The data dictionary contains data defining other data. The data dictionary of E-community system is as specified below in several tables. Each table will keep data of different records. The asterisk (*) symbol indicate the primary key for table.

i. Forum

Table 5.2 Data Dictionary of Forum

Field Name	Type	Size	Description
*forumID	int	4	ID of forum
forumSubject	varchar	300	Subject of Forum

forumDesc	varchar	3000	Description of Forum
forumStarted	varchar	50	Person who start Forum
forumDate	varchar	50	Date of start Forum
forumReply	varchar	50	Reply number of Forum

ii. Message Board

Table 5.3 Data Dictionary of Message Board

Field Name	Type	Size	Description
*msgID	int	4	ID of message board
msgContent	varchar	300	Content of message
msgCreator	varchar	50	Creator of message
msgDate	varchar	50	Message posted date

iii. Mail Box

Table 5.4 Data Dictionary of Mail Box

Field Name	Type	Size	Description
*mailID	int	4	ID of mail
mailSender	varchar	50	Sender of mail
mailReceiver	varchar	50	Receiver of mail
mailTitle	varchar	50	Title of mail
mailDesc	varchar	5000	Mail content
mailDate	varchar	50	Mail posted date

iv. File Sharing

Table 5.5 Data Dictionary of File Sharing

Field Name	Type	Size	Description
*fileID	int	4	ID of file
FileSharing	binary	16	file
fileName	varchar	100	Name of file
fileBy	varchar	50	Person who upload file
fileSize	varchar	50	Size of file
fileDate	varchar	50	Upload file date
fileType	varchar	50	Type of file

v. Photo Gallery

Table 5.6 Data Dictionary of Photo Gallery

Field Name	Type	Size	Description
*photoID	int	4	ID of album
photo	image	16	Photo
photoType	varchar	50	Type of photo
photoDesc	varchar	100	Description of photo
photoSize	int	4	Size of photo
photoBy	varchar	50	Person who upload photo
photoDate	varchar	50	Upload photo date

vi. Testimonial

Table 5.7 Data Dictionary of Testimonials

Field Name	Type	Size	Description
*tesID	int	4	ID of testimonial
tesDesc	varchar	5000	Description of testimonial
tesCreator	varchar	50	Creator of testimonial
tesTo	varchar	50	Receptor of testimonial

vii. Member List

Table 5.8 Data Dictionary of Member List

Field Name	Type	Size	Description
*userID	int	4	ID of user
userFirstn	varchar	50	First name of user
userLastn	varchar	50	Last name of user
userUsername	varchar	50	Login username
userPwd	varchar	50	Login password
userCPwd	varchar	50	Login confirm password
userEmail	varchar	50	User's email address
userType	varchar	50	User Type
userSecQue	varchar	500	User Security Question
userSecAns	varchar	500	User Security Answer
userDate	varchar	50	User joined date
userGender	varchar	50	User gender
userHp	varchar	50	User hand phone number

viii. Announcement

Table 5.9 Data Dictionary of Announcement

Field Name	Type	Size	Description
*annID	int	4	ID of announcement
annTitle	varchar	50	Title of announcement
annDesc	varchar	3000	Announcement description
annDate	varchar	50	Announcement date
annCreator	Varchar	50	Creator of announcement

ix. Community Name

Table 5.10 Data Dictionary of Community Name

Field Name	Type	Size	Description
*comID	int	4	ID of invitation
comName	varchar	100	Community name

5.6 User Interface Design

The last part should consider into system design is user interface design. User interface allows users to access the system in an easy way. It should be integrating into the overall system design in order to make the system more attractive. Consistency is important for a good interface design to make the high quality system. Such as consistent format for command input, data display, menu selection, colors, placing and positioning. Figures below are interface design of e-community system.



Figure 5.19 Interface of ICS

5.7 Chapter Summary

System design should not be ignore when developing the system. System design is an important phase as it is a key to successful software project. There are five stages in the system design process which are architecture design, network design, process design, database design and user interface design. These designs in the project development will translate all the requirements into system application and gives a clearer picture of the whole project.

Chapter 6

System Implementation

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6.1 Introduction

The subsequent phase following the system design stage in the system development life cycle is system implementation. Even though careful planning during the system design phase will bring easier implementation of the system, this phase should still be carried out cautiously.

System implementation is the construction phase which the phase integrates the designed modules or functions to develop a system based on the given requirements. System implementation includes building and testing its contained modules and sub modules which design into program codes. In order to achieve that, appropriate tools and languages are needed to code the programs.

In this chapter, a thorough description will be given on the entire implementation process and the approaches used to implement the system.

6.2 Development Environment

Development environment consists of hardware and software configurations which are important factors in development of system because it may have effect on the speed and effectiveness of the system's implementation. The hardware and software configurations for entire implementation phase are as described below.

Table 6.1 Hardware Configuration

Category	Description
Processor	Intel Pentium 4 CPU 1.70GHz
Motherboard	ACPI Uniprocessor PC
Hard Disk Size	40 GB
RAM Size	256MB
CD-ROM Drive	52x CD-ROM Drive

Table 6.2 Software Configuration

Category	Description
Operating System	Windows Server 2000
Development Tools	Microsoft Visual Studio.NET 2003
Web Server	Microsoft Internet Information Services
Database	SQL Server 2000 Database Server
Special Requirements	Microsoft .NET Framework 1.1

6.3 Coding Methodology

Basically, there are two types of methodology use to develop a system, one of them is Top-down Approach, and the other one is Bottom-up Approach.

i. Top-down Coding Methodology

Top-down Coding refers to a style of programming where an application is constructed starting with a high-level modules to be coded first before the lower-level modules. This approach will ensure that most of the important modules will be developed and tested first.

ii. Bottom-up Coding Methodology

Bottom-up Coding refers to a style of programming where an application is constructed starting from lower-level or with existing primitives of the programming language, and constructing gradually more and more to high-level until all of the application has been written.

iii. Chosen Coding Methodology

For this proposed system, coding is done with the Bottom-up Coding Methodology. The advantages of this approach are testing can be carried out when certain function has been done, and critical functions can be coded first to test their efficiency.

6.4 Coding Implementation

Before start coding process, some important rules should be determined which described in the following sections.

6.4.1 Coding Convention

Coding Convention is important to determine the intelligibility of a program. Several programming conventions have been employed in the coding process in order to ensure system consistency, maintainability and readability. Below are some programming conventions (Goh, W.O, 2003):

- a) Use meaningful variable names, constant names, procedures names and parameter variable names to self document a program without excessive use of comments.
- b) Plan the layout of the program source code to improve its readability. Each sentence is started on a new line; statements following control structures are indented. These may help reduce the time needed to understand the program flow when other programmers refer the code.
- c) All variables are declared at the beginning of procedures and declarations are separated from executables statements with a blank line to improve program readability.
- d) Insert comments to document the program and improve program understandability.

6.4.2 Classifications of Program Code

Basically, program code is divided into a few sections for this system:

i. Database Operations

This includes insert data to database, retrieve data from database and basic data operations such as creating, updating and deleting records.

ii. Initialization of ASP.NET server controls

Server Controls need to be initialized with attributes such as color, border, lines, size and etc.

6.4.2.1 Database Operation

i. Importing the required Class

This system utilized the ADO.NET data access technology for all operations related to database. Therefore the following statement is using:

```
Imports System.Data.SqlClient
```

ii. Connecting to the Database

The database connection string is stored in the Web.Config file.

```
<add key="ConnectionString" value="server=localhost;  
database=dbICS; uid=sa; pwd=sa;"/>
```

Therefore, any reference to the connection string as the following statement:

```
Dim myConnection As New SqlConnection  
(ConfigurationSettings.AppSettings("ConnectionString"))  
  
myConnection.Open()  
myConnection.Close()
```

Connection string is stored in Web.Config file in order to ensure that any future changes to the database connection will only need to make changes in Web.Config file but not in all different modules.

iii. Database Operation

ADO.NET components including Data Set, Data Adapter, Data Table, Data View, Data Column and Data Row. A standard database operation can utilize any of these ADO.NET components. Below is a basic operation of

populating a DataGrid with data from the database using DataSet and SqlDataAdapter.

```
Dim da As New SqlDataAdapter("select * from tbAnnouncement order  
by annID desc", myConnection)  
Dim ds As New DataSet  
  
da.Fill(ds, "tbAnnouncement")  
dgdAnnouncement.DataSource =  
ds.Tables("tbAnnouncement").DefaultView  
dgdAnnouncement.DataBind()
```

Below is a basic operation with retrieve data from the database using SqlDataReader.

```
Dim myCommand As New SqlCommand("SELECT * FROM tbAnnouncement,  
myConnection)  
Dim dr As SqlDataReader  
  
myConnection.Open()  
dr = myCommand.ExecuteReader(CommandBehavior.CloseConnection)  
dr.Read()  
txtTitle.Text = dr.GetValue(1)  
txtDesc.Text = dr.GetValue(2)  
dr.Close()
```

6.4.2.2 Initialization of ASP.NET Server Controls

Server Controls are declared similarly to the HTML Controls. The difference of them is Server Controls contain more powerful features. Below is an example of the initialization of a ASP.NET Server Control called DataGrid which using in the system.

```

<asp:datagrid id="dgdAnnouncement" runat="server" GridLines="Vertical"
CellPadding="4" BorderWidth="1px"
BorderStyle="None" BorderColor="#DEDFDE" BackColor="White"
Height="88px" Width="737px" AutoGenerateColumns="False"
AllowPaging="True" OnPageIndexChanged="doPaging" PageSize="5" style="Z-
INDEX: 104; LEFT: 216px; POSITION: absolute; TOP: 248px"
ForeColor="Black" CssClass="cssDgd">
<SelectedItemStyle Font-Bold="True" ForeColor="White"
BackColor="#CE5D5A"></SelectedItemStyle>
<AlternatingItemStyle BackColor="White"></AlternatingItemStyle>
<ItemStyle BackColor="#F7F7DE"></ItemStyle>
<HeaderStyle Font-Bold="True" ForeColor="White"
BackColor="#6B696B"></HeaderStyle>
<FooterStyle BackColor="#CCCC99"></FooterStyle>
<Columns>
<asp:BoundColumn Visible="False" DataField="annID"
HeaderText="annID"></asp:BoundColumn>
<asp:BoundColumn DataField="annTitle"
HeaderText="Title"></asp:BoundColumn>
<asp:BoundColumn DataField="annDesc"
HeaderText="Details"></asp:BoundColumn>
<asp:BoundColumn DataField="annDate" HeaderText="Posted
Date"></asp:BoundColumn>
</Columns>
<PagerStyle HorizontalAlign="Right" ForeColor="Black"
BackColor="#F7F7DE" Mode="NumericPages"></PagerStyle>
</asp:datagrid>

```

6.5 Coding Principle

There are several principles were applied during the development of this system to ensure good quality and the proper structure in the code generation (Parkavi, K, 2003).

i. Readability

Readability is important during the system-coding phase. Codes should be easy to read and understandable because 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. Reusability

Reuse has been the most focusing principle during the coding phase for the system. Reuse can improve product quality throughout the software development process. Productivity can be increased not only by reducing testing and documentation times.

iii. Robustness

Robustness refers to the quality that causes a system to be able to handle unexpected error and echo back with proper responses. Error handling should be done to increase the robustness of the system. Appropriate errors message were displayed response to user's input.

6.6 Chapter Summary

This chapter discusses the System Implementation of the proposed system. It is no less important compared to the other stages in the software development life cycle. System implementation involves the translation of the software representation produced by the design phase into a computer-readable form. An effective system coding style and coding approach has been used in order to implement the system design into a full-integrated system,

Chapter 7

System Testing

University of Malaya

7.1 Introduction

System testing is an important phase during the system development life cycle. The purpose of system testing is to evaluate the effectiveness of a system in executing its functions. System testing includes testing of performance, security, configuration sensitivity, startup and recovery from failure modes (Goh, W.O, 2003). System testing also involved the process of validation which to ensure the quality of the system and has meet the specific requirement.

In order to ensure the reliability of the system, errors and bugs should be removed to make sure that the finished product will meet the requirement. The functionality, specification, design and program will be reevaluated to ensure that the system is error free through out the testing process.

Generally, the purposes of system testing are as follow (Parkavi, K, 2003):

- To detect and verify errors and bugs that exists during the implementation phase
- To make sure that the application can be operated smoothly.
- To correct all the errors and bugs

7.2 Objectives of System Testing

Before implement the testing process, the testing objective must decided. The objectives of the testing process have been determined as below (Goh, W.O, 2003):

i. Software Reliability

Making sure that the system performs critical tasks or core functions as pre-determined in the system design phase. Furthermore, specific user requests and business rules must be fulfilled.

ii. Software Quality

Software quality is characterized by the correctness of program logic and implementation. It begins with testing the software during development. Each module must be tested to make sure that is functions correctly at the time it is written or modified. Test values and boundary conditions must both be verified. Next, the module should undergo interface testing to check for functional errors.

iii. System Assurance

The main purpose of system assurance is to deliver a quality product. Conformance to requirements increases the organization's confidence in the system.

iv. Optimum Performance and Capacity Utilization

Another purpose of testing is to ensure optimum performance and capacity utilization of system components. The purpose of stress or capacity testing/planning is to make sure that the system is able to perform acceptably at peak usage.

7.3 Testing Process

Generally, there are three types of test that can be carried out (Parkavi, K, 2003):

- i. Unit Testing
- ii. Module Testing
- iii. Integration Testing

7.3.1 Unit Testing

The purpose of unit testing is to identify every component in the module that are functional and countercheck the output produced. During testing, the data that is not support to be input are entered in order to examine the system's capability to handle error. All the input are updated according to the current system requirement and are make sure to entered into the correct data area

7.3.2 Module Testing

System module is the combination of a few functional units. Tests can be carried out on every module that is defined in the design phase. The main purpose of the test is to verify the correctness of the flows of events. Therefore, with the system development process being carried out module by module, the module testing will

also be carried out once a module has been completed. Each and every one of the modules is tested to ensure it can execute the functional as expected. These tests are for the detection of any error in data entry, output produced and the effectiveness of the program. Lastly, these tests are for reducing the error when the entire module are combined and run together.

7.3.3 Integration Tests

In this phase, the test is conducted on the interface of two interactive components in a single unit. This involves the examination process of two interface components in the system and it continue until the entire system is developed. In general, integration testing is carrying out to ensure the interface between modules can function properly. The following are the approach for integration testing (Parkavi, K, 2003):

i. Top-Down Approach

In this approach, the main module that controls other modules will be tested first. The rest of the modules are the combined and tested as a single unit. All components are combined and tested as a large unit. This approach is reapplied until all components are incorporated.

ii. Bottom-Up Approach

In this approach, the lower level modules such as routines that are frequently called by other modules will be tested individually. Subsequently, the next modules that will be tested are those modules that have called the tested modules. This approach is followed repeatedly until all components are included in the testing.

iii. Object Oriented Testing

When testing object classes, all of the operations associated with a class, assign and evaluate all object attributes and test the object in all possible states should be designed tested. The testing levels for Object Oriented Testing are:

- a. Testing operations associated with objects
- b. Testing object classes
- c. Testing clusters of cooperation objects
- d. Testing the complete Object Oriented system

7.4 Integration Test Case

The system modules were tested to detect the system error and mistake. Comprehensive analyses on the test result have been conducted in making sure that the system has fulfilled the specification as required and completely with bug free. All the tests are done carefully and documented in the table below.

Table 7.1 General Test Case

7.4.1 General		
Test Description	Expected Output	Actual Output
Login with valid username and password	Successfully Login. Home page of system displayed.	As Expected
Login with invalid username and password	Error Message appeared. Require to login again.	As Expected
Save, Post or Send Button without enter Data	Required Field Validator Message appeared. Data not insert to Database	As Expected
Forgot Password Link	Enter Email Address and answer Security Question. Create New Password. New Password is inserted into Database.	As Expected
Delete Button	Confirm Delete Message appeared before records deleted from Database.	As Expected
Reset Button	All Data in textbox clear.	As Expected
Member List Button	Member List of online community displayed.	As Expected
Email Address link	Microsoft Office Outlook appeared with selected Email Address.	As Expected
Contact Us Button	Microsoft Office Outlook appeared with Administrator's Email Address.	As Expected
Logout Button	User is logged out. Main page of system is displayed.	As Expected

Table 7.2 Forum Test Case

7.4.2 Forum		
Test Description	Expected Output	Actual Output
Create New Discussion	A new record is inserted into the Database. A New Discussion Subject is displayed.	As Expected
Subject Link	Discussion content is displayed.	As Expected
Reply Discussion	A new message is inserted into the Database. New message is displayed.	As Expected
Edit Discussion	Selected Discussion is edited and updated to Database.	As Expected
Delete Discussion	Selected Discussion is deleted from Database.	As Expected
Delete Reply Message	Selected reply message is deleted from Database.	As Expected

Table 7.3 Message Board Test Case

7.4.3 Message Board		
Test Description	Expected Output	Actual Output
Post Message	A new record is inserted into the Database. A new message is displayed on Message Board.	As Expected
Edit Message	Selected Message is edited and updated to Database. Updated Message displayed on the Message Board.	As Expected
Delete Message	Selected Message is deleted from Database.	As Expected

Table 7.4 Announcement Test Case

7.4.4 Announcement		
Test Description	Expected Output	Actual Output
Add New Announcement	A New Announcement is inserted into the Database. A New Announcement is displayed on Announcement page. Latest Announcement displayed on Home Page.	As Expected
Edit Announcement	Selected Announcement is edited and updated to Database. Updated Announcement is displayed.	As Expected
Delete Announcement	Selected Announcement is deleted from Database.	As Expected

Table 7.5 Photo Gallery Test Case

7.4.5 Photo Gallery		
Test Description	Expected Output	Actual Output
Upload New Photo	A New Photo is inserted into the Database. A New Photo is displayed.	As Expected
Photo Name Link	Selected Photo displayed	As Expected
Delete Photo	Selected Photo is deleted from Database.	As Expected

Table 7.6 File Sharing Test Case

7.4.6 File Sharing		
Test Description	Expected Output	Actual Output
Upload New File	A New File is inserted into the Database. A New File is displayed.	As Expected
File Name Link	Selected File displayed	As Expected
Delete File	Selected File is deleted from Database.	As Expected

Table 7.7 Testimonial Test Case

7.4.7 Testimonial		
Test Description	Expected Output	Actual Output
Write Testimonial to a Friend	A New Testimonial is inserted into the Database. A New Testimonial is displayed.	As Expected
Edit Testimonial	Selected Testimonial is edited and updated to Database. Updated Testimonial is displayed.	As Expected
Delete Testimonial	Selected Testimonial is deleted from Database.	As Expected

Table 7.8 Mail Box Test Case

7.4.8 Mail Box		
Test Description	Expected Output	Actual Output
Compose Mail to a Friend	A New Mail is inserted into the Database. A New Mail is displayed when Receiver open his/her Mail Box.	As Expected

Mail Title Link	The Mail content displayed.	As Expected
Reply Mail	The Mail content is inserted into the Database. The Mail is displayed when Receiver open his/her Mail Box.	As Expected
Delete Mail	Selected Mail is deleted from Database.	As Expected

Table 7.9 Invite Friend Test Case

7.4.9 Invite Friend		
Test Description	Expected Output	Actual Output
Invite Friend by enter friend Email Address	An Invitation Message sent to friend by Server through SMTP.	As Expected

7.5 Chapter Summary

System Testing is an important phase in analyzing logical errors in the system and to test system's liabilities. System Testing should carry out by every developer to determine whether system is working correctly or not. Besides unit, integration, module and validation, there also other types of testing that could be carried out by anyone to determine the effectiveness of the developed system and the acceptance level of the user. With the completion of the testing phase, basically the system is ready to be deployed. The next chapter ends this report by rounding up the system's limitations, strengths, weaknesses and suggestions on further enhancements.

Chapter 8

System Evaluation

University of Malaya

8.1 Introduction

At the end of the System Development Life Cycle, after goes through the implementation and testing phase, the final phase of developing proposed system is the evaluation. System evaluation is a process where system developer evaluates the system after the system has been fully developed. Best practices which have been applied must be remember and use it again in the future. However the less than perfect events that happened should also take note and must not repeat again the same mistake.

System Evaluation gives the benefits for system developer by through experience that system developers can learn and enhance their skills. Throughout this chapter, the system will be evaluated to reveal its strengths, limitations and possible future enhancements. Besides that, a brief explanation of the personal problems encountered during the development of the system will be described.

8.2 System Strengths

The following are the strengths of proposed system:

i. **Reduced Interactions with the Database**

Interactions with the database are reduced by using the newly introduced features of the ADO.NET data access technology. With the Data Set object where records are only retrieved once and loaded into the Data Set object for subsequent data operations. The records in the Data Set object can be updated back to the database after the data operations are no longer needed.

ii. Simple and User Friendly Interfaces

The system interfaces uses soft color as its main color. The Graphical User Interfaces (GUI) designs for this system are user friendly so the users will familiar with this system in a very short time. Even a novice user will have no problem navigating through the web application.

iii. Effective User Login and User Identification System

User must login and be authenticated at the login page. When authentication succeeds at the login page, user will have subsequent access to the rest of the application. For example, an unauthenticated user tries to upload photo, it will be redirected to the login page.

iv. Information Messages

Information message will be pop up when user attempt to perform illegal actions such as entering invalid email address or never enter data in the required field. These messages are needed in order to make user friendly system. Even a novice user will have no problem when using the system.

v. Effective Forum Feature

The system provides effective forum feature. From this feature, user may select the interested topic that he/she want to visit and discuss the forum with another party. Any user may create a new topic with the easy procedures.

8.3 System Limitation

Below are some limitations of system due to time constraint and limitation of skill.

i. No Chat Room Provided

User can not chatting in real-time. They are unable go through live-chat in the system. They can only leave message and wait the other party to reply.

ii. Limited Size for File Sharing

Users can upload word document, Power Point file and PDF file, however the size of file must less than 4 MB.

8.4 Future Enhancement

There are some of the future enhancements suggested for e-community system:

i. Chat Room

The system should provide a chat room to allow any number of members to have a group discussion, meeting or chatting in real-time. The chat room is accessible to community members and does not require any software download of installation.

ii. Calendars

The system should provide an ideal location to store information including meetings, reminders and project milestones. This feature keeps all of the members up to date with meeting, gathering, activities, social events and birthdays of members.

iii. Unlimited Storage of File Sharing

The system should have the capability to provide users the facilities of uploading any size of file.

iv. Journal

The system should provide an ideal location to let user post their journal. It also allows user to browse journal from related site.

8.5 Problems Encountered and Solutions

During the development process of the system, problems are definitely met. Due to the time constraint, it is important to overcome problems as fast as possible. Below are the problems encountered from the beginning of the project through the end of the system development process:

i. Difficulty in Choosing Suitable Development Tools

There are a lot of good and potential development tools available for system development. However, it is difficult to choose the suitable development tools because every tool has its own strengths and weakness which must define before choosing it. The suitable development tools can make the system run smoothly and have the optimal performance. In order to choose the suitable development tools, several methods have been done such as survey and analysis from internet, and also advise from lecturer and senior. Finally the Microsoft Visual Studio.NET and Microsoft SQL Server 2000 were chosen for developing system.

ii. Difficulty in Choosing the Suitable Programming Language

The problem was encountered after deciding on the .NET technology. Visual Studio.NET provides a variety of programming languages; among them are ASP.NET, VB.NET, C#.NET and J#. With limited knowledge on those programming language, the author was worried will end up with choosing wrong language for proposed system. Therefore, advices and opinions from seniors and course mates are given to choose suitable language.

iii. Lack of knowledge in the Chosen Programming Language

It is difficult to use chosen programming language because the author did not have any experience before in chosen programming language: ASP.NET. There was no sufficient time to learn everything entirely from the beginning about the ASP.NET. Therefore the system was start developing and ASP.NET was start learning at the same time. Due to lack of full understanding on the concept of the chosen programming language, many problems are encountered during the coding of the system. Finally the problems were solve by searching solution from the internet, as well as the help from seniors and course mates.

iv. Inadequate Experience in Database Design

Due to insufficient knowledge and experience in the chosen Database Management System, problems were encountered in creating a good database; therefore the database design had gone through a lot of changes.

8.6 Knowledge and Experienced Gained

Many valued knowledge and experience are gained during the whole period of the project from the first phase until the last phase in development system. Through the development system, the knowledge of system implementation had been gained such as web-based programming techniques, database design, and web interface design. These knowledge and experience are useful for future career life. Following are the knowledge and experienced that had been gained.

i. Mastery of ASP.NET and Related Software

After finish developing proposed system, the knowledge of the ASP.NET was gained due to the proposed system is pure ASP.NET application. Besides, the knowledge of Microsoft SQL Server also gained because all the data manipulation in this system is dealing with Microsoft SQL Server. SQL query statement is getting familiar after finish developing this system. Related software such as Macromedia Flash MX 2004 also has mastered due to the designs of interface are more on flash animation.

ii. Project Planning Skill

The project planning skill can be obtained by developing this system. A schedule has planned in order to develop a system in smoothly where the development works are based on the time frame. A planned schedule consists of start and finish times for each phase. A good project planning can minimize the risk of project failure.

iii. Searching Solution and Information from Internet

Internet is full of information and solutions regarding to the programming language that used in the proposed system. During the system development, the way to solve the problem was found by searching the solution from the internet.

8.7 Chapter Summary

The development of the system is finally finished. The System Evaluation is the final stage of the system development life cycle. The proposed system integrates all its modules to provide a highly effective online community system. Even though is has some limitation, however the future enhancement will make it a more effective, usable and capable online community system. The system is stable and provide user-friendly interface. During the development of this system, a lot of useful knowledge and experience have been gained. Knowledge on Development Tools, Database Management System, Programming Language and Designing skill were improved. It has been a wonderful and unforgettable experience.

Chapter 9

Conclusion

University of Malaya

9.1 Conclusion

E-community is the gathering of people, in an online space where they come to communicate, exchange pleasantries and argue exchange knowledge and information, share experience, make gossip and get to know each other better. The e-community system site brings the people here and let anyone discuss anything in the discussion forum. It is also a place for everyone to organize events and strengthen group relationships.

Throughout the system development, a lot of unvalued and useful knowledge have been gained. The technique on web-based programming, interface design, database manipulation and programming were learned.

After months of hard word, the proposed system has been successfully developed. The system objective stated in the earlier chapter is achieved and attained. The system integrates all the module and sub module to fulfill the functional and non-functional requirement. Unfortunately there are some limitations in current version. However future enhancement will make the system more effective, usable and capable online community system.

Hope that this report will serve the purpose of sharing author's experiences to everyone, which include a realistic idea of what is like to plan, analyze and design the e-community as well as challenges and problems were faced during the system development.

Appendix

User Manual

A. User Manual for Member

1. Registration and Login

1.1 Register to become a registered user

To register as a member, use should click “Sign up as a member” link (See figure below) and complete the form.

The screenshot shows the SilverCircle e-Community website. At the top, it says "Powered by Integrated ICS e-Community Solution" and "SilverCircle e-Community". There are navigation links: "Main", "Member List", "Contact Us", and "Logout". On the left, there is a sidebar with links: "Home", "Forum", "Message Board", "Announcement", "Photo Gallery", "File Sharing", "Testimonial", "Mail Box", and "Invite Friend". The main content area is titled "User Login" and contains the text "Please login by enter your username and password:". Below this are two input fields: "Username" and "Password". There are two buttons: "Login" and "Reset". Below the buttons, there are two links: "Sign up as a member" and "Forgot your password?". The "Sign up as a member" link is circled in red. On the right side of the login form, there is a clock and an image of two hands holding a glowing star. At the bottom right, there is a link for "Terms of Service".

The following figure shows the register form. It includes require user's username, password, first name, last name, hand phone number and others.

Register now!
Complete the following form to register.

Username	<input type="text"/>
Password	<input type="text"/>
Confirm Password	<input type="text"/>
Gender	<input type="radio"/> Male <input type="radio"/> Female
Hand Phone No	<input type="text"/>
Email Address	<input type="text"/>
First Name	<input type="text"/>
Last Name	<input type="text"/>

Recalling Password Information

Security Question	<input type="text"/>
Your Answer	<input type="text"/>

1.2 Forgot Password

If user forgot password, he/she may click "Forgot your password" link in main page, enter email address and answer the Security Question. If answer is correct, user may create new password and using new password to login. Figure below show that user may create new password after answering Security Question.

Welcome, Alice

Create Your New Password

Email	: alice@yahoo.com
Security Question	: My dog's name?
Your Answer	: Yoyo
New Password	<input type="text"/>
Confirm New Password	<input type="text"/>

1.3 Login with username and password

After successfully registering, user may login with correct username and password at login page. If user enters invalid username or password, error message will appear and required user try again.



User Login

Please login by enter your username and password:

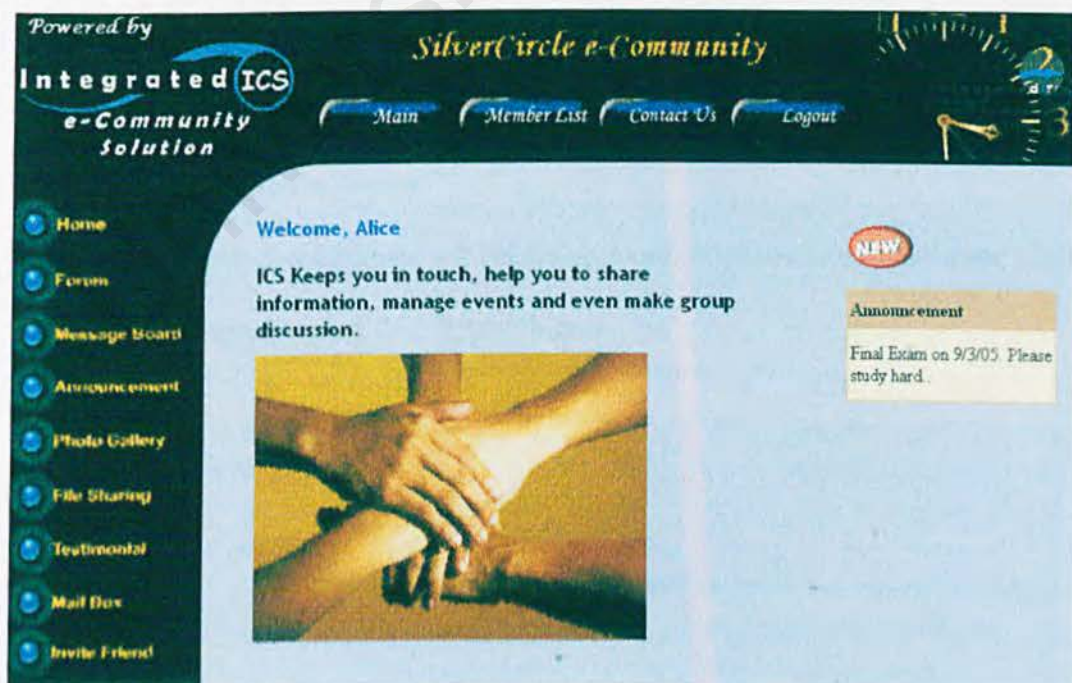
Username

Password

2. Home

2.1 Home Page

After user successfully login, Home Page will be displayed. User may see the latest Announcement at the Home Page.



Powered by **Integrated ICS** e-Community Solution


SilverCircle e-Community

[Main](#) [Member List](#) [Contact Us](#) [Logout](#)

[Home](#)
[Forum](#)
[Message Board](#)
[Announcement](#)
[Photo Gallery](#)
[File Sharing](#)
[Testimonial](#)
[Mail Box](#)
[Invite Friend](#)

Welcome, Alice

ICS Keeps you in touch, help you to share information, manage events and even make group discussion.



NEW

Announcement

Final Exam on 9/3/05. Please study hard.

3. Forum

3.1 Join Discussion Forum

Once user clicks "Forum" at Side Menu, user may see a list of discussion forum. Here user may see who start the discussion forum, Started Date and Reply Number. The Reply Number will increase while reply is posted however it will decrease while the administrator delete posted reply. User may start a new discussion by click "New Discussion" button or join existing Discussion Forum by click the Subject link (see figure below).

Subject	Started By	Started Date	Reply No
Global Environment	Alice	Feb 19 2005 4:04PM	3
Organizational Cultural	Alice	Feb 18 2005 3:58PM	2
Aluminum	Alice	Feb 17 2005 6:28PM	3
Flash course	Admin	Feb 4 2005 10:34PM	1
ASP.NET	Admin	Feb 4 2005 10:33PM	1

3.2 Reply Discussion Forum

Figure below show that user may see the detail about selected discussion forum; User may post their reply by click the "Reply" button.

Welcome, Alice

Forum

[Back](#)

Reply

Started by Subject & Description

Admin **Flash course**
Posted on Feb 4 2005 10:34PM
Flash course fee rm100 every month.

Reply:

Author Subject & Description

Susan **Flash course**
Posted on Feb 20 2005 3:02PM
How long the duration for the flash course?

Reply

4. Message Board

4.1 Post Message

Once user clicks "Message Board" at Side Menu, user may see the messages posted by other members. User may post their message by enter message in the text box and click "Post" button.

Welcome, Alice

Message Board

[Post](#)

[Edit/Delete My Message](#)

Message	Posted By	Posted Date
Everybody please come my house watch movie	Susan	Feb 20 2005 3:08PM
Let's go Kuala Selangor	yy	Feb 16 2005 7:52PM
Customers services?	yy	Feb 16 2005 7:44PM
Bus or Train??	yy	Jan 31 2005 10:43PM
The weather is so hot	yy	Jan 31 2005 10:43PM

1 2 3

4.2 Edit/Delete Message

User may edit or delete message by click the “Edit/Delete My Message” button (see figure above). User can only edit or delete message which posted by him/her (see figure below). User may edit their message by click “Edit” link. User may delete their message by click the check box follow by click “Delete” button.

Welcome, Alice

Edit/Delete My Message [Back](#)

Delete

	Message	Posted By	Posted Date
<input type="checkbox"/> Edit	hi everybody, i m Alice. Nice to meet you here.	Alice	Jan 28 2005 1:39PM
<input type="checkbox"/> Edit	kayak on 29/01	Alice	Jan 26 2005 11:32AM
<input type="checkbox"/> Edit	who wanna join?	Alice	Jan 26 2005 12:00AM
<input type="checkbox"/> Edit	kayak lo yeah!!!	Alice	Jan 26 2005 12:00AM
<input type="checkbox"/> Edit	susan is new member	Alice	Jan 12 2005 12:00AM

1

5. Announcement

5.1 View Announcement

User may view all the announcement here which posted by Administrator.

Welcome, Alice

Announcement

Title	Details	Posted Date
Final Exam	Final Exam on 9/3/05. Please study hard..	Feb 16 2005 10:15PM
Meeting on 13/3/02	Meeting about the Promotion.	Feb 16 2005 9:56PM
Appointment	Appointment with group 1	Feb 16 2005 9:52PM
Birthday	Bryan's birthday on 19/02	Jan 26 2005 4:30PM
Cameran Highland Trip	Who are interested to join Cameran Highland trip please write to Bryan: bryan@hotmail.com.	Jan 26 2005 10:11AM

1 2

6. Photo Gallery

6.1 View Photo

Once user clicks “Photo Gallery” at Side Menu, user may see the Photo Name posted by other members. User may view the photo by click the Photo Name link.

Welcome, Alice

Photo Gallery [Upload New Photo](#) [Delete My Photo](#)

Photo Name	Posted By	Posted Date
Pulau Redang	Alice	Mar 2 2005 11:35PM
Zoe Tay	Vincent	Feb 27 2005 11:52PM
tweety	Alice	Feb 21 2005 11:55PM
yu heng concert	Susan	Feb 20 2005 3:11PM
coursemate	Jacky	2/7/2005 7:39:11 PM

1 2

When click the Photo Name, the photo will pop up in new window (see figure below)

Welcome, Alice

Photo Gallery

Photo Name

[Pulau Redang](#)

[Zoe Tay](#)

[tweety](#)

[yu heng concert](#)

[coursemate](#)

http://localhost/ICS/photoGallery/getPhoto.aspx?id=40 - Microsoft Internet Ex...

File Edit View Favorites Tools Help

Address http://localhost/ICS/photoGallery/getPhoto.aspx?id=40 Go Links



Done Local intranet

6.2 Upload New Photo

User may upload new photo by click the "Upload New Photo" button. Figure below will appear and user may browse the photo from any location of computer. User may choose JPEG or GIF photo to upload. User should enter Photo Name follow by click "Upload" button.

Welcome, Alice

Upload New Photo (JPEG, GIF)

Image to Upload Browse...

Image Name

Upload

6.3 Delete Photo

User may delete their photo by click the "Delete My Photo" button. User can only delete photo which posted by him/her (see figure below). User may delete their photo by click the check box follow by click "Delete" button.

Welcome, Alice

Delete My Photo

Delete

	Photo Name	Posted By	Posted Date
<input type="checkbox"/>	Pulau Redang	Alice	Mar 2 2005 11:35PM
<input type="checkbox"/>	tweety	Alice	Feb 21 2005 11:55PM
<input type="checkbox"/>	mal	Alice	2/7/2005 12:00:00 AM
<input type="checkbox"/>	holiday	Alice	2/7/2005 12:00:00 AM
<input type="checkbox"/>	perak	Alice	2/7/2005 12:00:00 AM

1

7. File Sharing

7.1 View File

Once user clicks "File Sharing" at Side Menu, user may see the File Name posted by other members. User may view the file by click the File Name link (see figure below).

Welcome, Alice

File Sharing **Upload New File** **Delete My File**

File Name	Posted By	Posted Date
Job Application	Alice	Mar 1 2005 4:19PM
Finance Assignment	Vincent	Feb 27 2005 11:54PM
Introduction to ASP.NET	Daniel	Feb 20 2005 3:21PM
UML chapter 1	Susan	Feb 20 2005 3:13PM
book to sell	Alice	Jan 28 2005 8:07PM

1

Once user click the File Name, the pop up window will appear asking you whether want Open File, Save File, Cancel operation or get More Info about operation (see figure below).

Welcome, Alice

File Sharing **Upload New File** **Delete My File**

File Name
Job Application
Finance Assignment
Introduction to ASP.NET
UML chapter 1
book to sell

1

File Download

Some files can harm your computer. If the file information below looks suspicious, or you do not fully trust the source, do not open or save this file.

File name: getFile.doc
File type: Microsoft Word Document
From: localhost

Would you like to open the file or save it to your computer?

☒ Always ask before opening this type of file

7.2 Upload New File

User may upload new photo by click the "Upload New Photo" button. Figure below will appear and user may browse the photo from any location of computer. User may choose either Microsoft Word, PDF or Power Point to upload. User should enter Photo Name follow by click "Upload" button (see figure below).

Welcome, Alice

Upload New File (Microsoft Word, PDF, Power Point) [Back](#)

File to Upload Browse...

File Name

Upload

7.3 Delete File

User may delete their file by click the "Delete My File" button. User can only delete file which posted by him/her (see figure below). User may delete their file by click the check box follow by click "Delete" button.

Welcome, Alice

Delete My File [Back](#)

Delete

	File Name	Posted By	Posted Date
<input type="checkbox"/>	Job Application	Alice	Mar 1 2005 4:19PM
<input type="checkbox"/>	book to sell	Alice	Jan 28 2005 8:07PM

1

8. Testimonial

8.1 View Testimonial

Once user clicks “Testimonial” at Side Menu, user may see the Testimonial posted by other members.

Welcome, Alice

Testimonial [Write Testimonial to a Friend](#) [Edit/Delete](#)

To	Testimonial	By
Bryan	good & nice guy	Vincent
Alice	hardworking girl	Bryan
Alice	We are good friend since primary school. she is friendly.	Susan
Alice	She is a talkative girl. Every time meet her, she can talk many things to me.	Simon
Simon	This is expert guy, he know everything about sports.	Susan

1 2

[Delete My Testimonial](#)

8.2 Write Testimonial

User may send Testimonial to a friend by click the “Write Testimonial to a Friend” button. Figure below will appear and user may choose the friend’s name from drop down list. User should enter Testimonial contains follow by click “Add” button.

Welcome, Alice

Write Testimonial to a Friend [Back](#)

To

Testimonial

[Add](#) [Reset](#)

8.3 Edit or Delete Testimonial

User may delete Testimonial by click the "Edit/Delete" button. User can only edit or delete testimonial which posted by him/her (see figure below). User may delete testimonial by click the check box follow by click "Delete" button.

Welcome, Alice

Edit/Delete Testimonial

Back

Delete

	To	Testimonial	By
<input type="checkbox"/> Edit	Amy	when we are standrad 6, we always go shopping together.	Alice
<input type="checkbox"/> Edit	Amy	She is my best friend, and also a helpful friend.	Alice
<input type="checkbox"/> Edit	Bryan	I don't know this guy so well, hope got chance to be closer.	Alice
<input type="checkbox"/> Edit	Jacky	A nice guy, but always ask me to treat him dinner.	Alice

1

8.4 Delete My Testimonial

User may delete undesirable testimonial which sent by their friends. User may delete undesired testimonial by click the check box follow by click "Delete" button.

Welcome, Alice

Delete My Testimonial

Back

Delete

	To	Testimonial	By
<input type="checkbox"/>	Alice	Hardworking girl	Bryan
<input type="checkbox"/>	Alice	We are good friend since primary school. she is friendly.	Susan
<input type="checkbox"/>	Alice	She is a talkative girl. Every time meet her, she can talk many things to me.	Simon

1

9. Mail Box

9.1 Read Mail

Once user clicks "Mail Box" at Side Menu, user may see their Mail Box. User may read the mail by click the Title link (see figure below).



9.2 Reply Mail

User may reply mail after read selected mail by click "Reply" button (see figure below).



10. Invite Friend

10.1 Invite Friend

User may invite friend to join e-community by enter email address for the friend follow by click "Send" button (see figure below).

The screenshot shows a web form titled "Welcome, Alice" in blue text. Below the title is the section "Enter Email Address" in bold. The instruction "Enter email address for the friends you want to invite to join e-Community :" is displayed. There are two columns of five text input fields each. Below these is a text area labeled "Optional Personal Message :". At the bottom left is a blue button labeled "Send". A large, faint watermark "University of Malaysia" is visible across the form.

11. Member List

11.1 Member List

Member may see who has joined e-community by click "Member List" button. User may see all members' username, hand phone number, gender, email address and joined date. User may send email to other members simply by click the email address (see figure below) and Microsoft Office Outlook will appear.

Welcome, Alice

Members of ICS

Edit My Profile

Change My Password

Username	Gender	HP NO	Email	Joined Date
Alice	Female	016-2112188	alice@yahoo.com	Jan 28 2005 4:42PM
Amy	Female	012-6625132	amy@yahoo.com	Jan 28 2005 4:42PM
Bryan	Male	013-5621342	bryan@hotmail.com	Jan 28 2005 4:42PM
Daniel	Male	019-2664891	daniel@yahoo.com	Feb 20 2005 1:59PM
Jacky	Male	019-2354412	jacky@hotmail.com	Jan 28 2005 4:42PM
Simon	Male	019-6642819	simon@yahoo.com	Feb 19 2005 11:08AM
Susan	Female	017-3625253	susan@yahoo.com	Jan 28 2005 4:42PM
Vincent	Female	012-5612444	vincent@walla.com	Feb 27 2005 11:45PM
yy	Female	017-6877895	yy@yahoo.com	Jan 28 2005 4:42PM

1

11.2 Edit Profile

User may edit profile by click "Edit My Profile" button. The following form will appear and allow user to change their profile. However user may not change their username, email address as well as gender.

Welcome, Alice

Edit My Profile

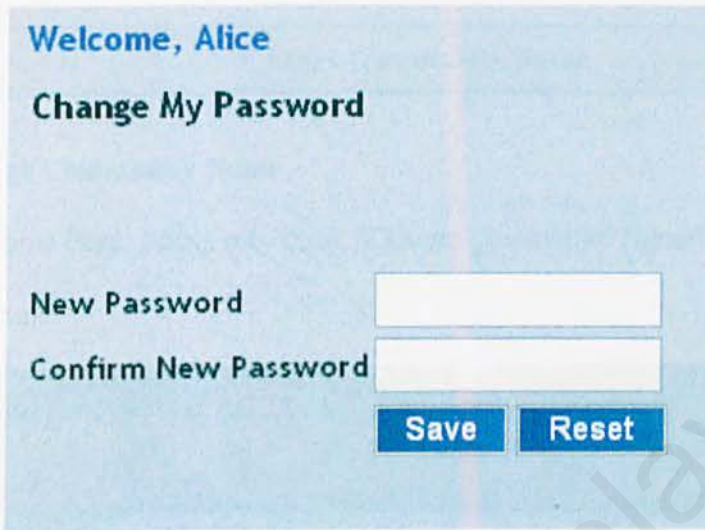
Username	<input type="text" value="Alice"/>
Email Address	<input type="text" value="alice@yahoo.com"/>
Gender	<input type="text" value="Female"/>
Hand Phone No	<input type="text" value="016-2112188"/>
First Name	<input type="text" value="Alice"/>
Last Name	<input type="text" value="Yap"/>

Recalling Password Information

Security Question	<input type="text" value="My dog's name?"/>
Your Answer	<input type="text" value="Yoyo"/>

11.3 Change Password

User may change their password by click “Change Password” button. Following figure appear and allow user enter new password and confirm new password.



A screenshot of a web form titled "Change My Password" with a blue background. At the top left, it says "Welcome, Alice" in blue text. Below this is the title "Change My Password" in bold black text. There are two input fields: "New Password" and "Confirm New Password". Below the "Confirm New Password" field are two buttons: "Save" and "Reset".

Welcome, Alice

Change My Password

New Password

Confirm New Password

B. User Manual for Administrator (Admin)

User Manual for admin almost same as member, but that is more advance for admin if compare to member.

1. Change Community Name

1.1 Change Community Name

In admin's Home Page, admin may click "Change Community Name" link to change community name.



2. Forum

2.1 Edit/Delete Forum

Admin may edit or delete forum include its posted reply. Admin may edit forum by click "Edit" link or delete forum by click the check box follow by click "Delete" button (see figure below).

Welcome, Admin

Forum

New Discussion

Delete

	Subject	Started By	Started Date	Reply No
<input type="checkbox"/> Edit	Global Environment	Alice	Feb 19 2005 4:04PM	3
<input type="checkbox"/> Edit	Organizational Cultural	Alice	Feb 18 2005 3:58PM	2
<input type="checkbox"/> Edit	Aluminum	Alice	Feb 17 2005 6:28PM	3
<input type="checkbox"/> Edit	Flash course	Admin	Feb 4 2005 10:34PM	1
<input type="checkbox"/> Edit	ASP.NET	Admin	Feb 4 2005 10:33PM	1

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2.1 Delete Posted Reply

Admin may delete posted reply by click the check box follow by click "Delete" button. The reply number of forum will decrease when admin delete posted reply (see figure below).

Welcome, Admin

Forum

Back

Delete Reply

Started by Subject & Description

Admin Flash course

Posted on Feb 4 2005 10:34PM

Flash course fee rm100 every month.

Reply:

Author Subject & Description

☐ Susan Flash course

Posted on Feb 20 2005 3:02PM

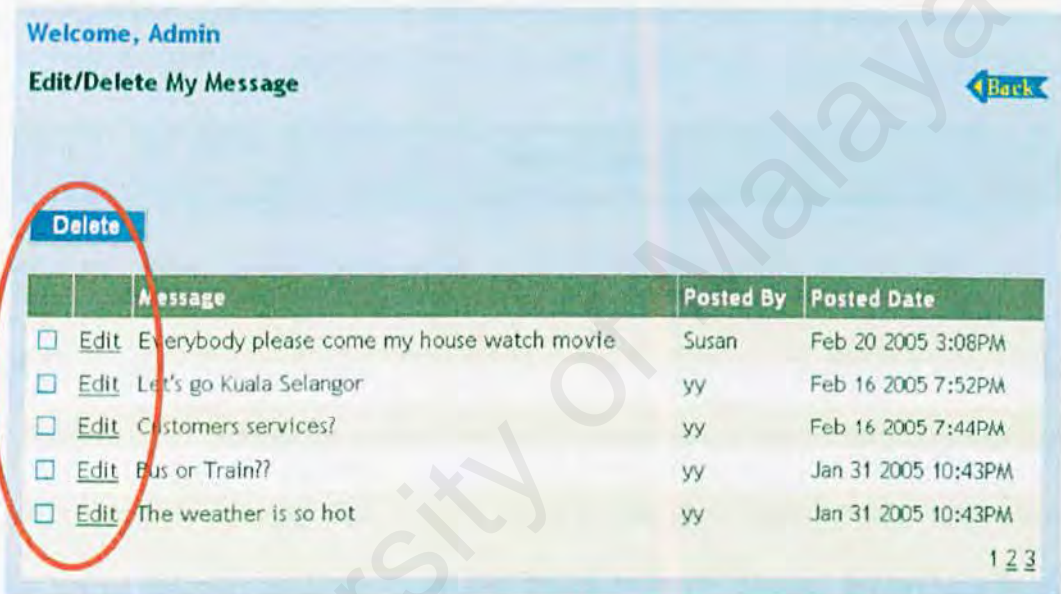
How long the duration for the flash course?

Delete Reply

3. Message Board

3.1 Edit/Delete Message

Admin may edit or delete undesired message by click the “Edit/Delete My Message” button at Message Board Page. Admin can edit or delete undesired message which posted by every member unlike member can only delete message which posted by him/her. Admin may edit message by click “Edit” link or delete undesired message by click the check box follow by click “Delete” button (see figure below).



Welcome, Admin

Edit/Delete My Message [Back](#)

Delete

	Message	Posted By	Posted Date
<input type="checkbox"/> Edit	Everybody please come my house watch movie	Susan	Feb 20 2005 3:08PM
<input type="checkbox"/> Edit	Let's go Kuala Selangor	yy	Feb 16 2005 7:52PM
<input type="checkbox"/> Edit	Customers services?	yy	Feb 16 2005 7:44PM
<input type="checkbox"/> Edit	Bus or Train??	yy	Jan 31 2005 10:43PM
<input type="checkbox"/> Edit	The weather is so hot	yy	Jan 31 2005 10:43PM

1 2 3

4. Announcement

4.1 Add, Edit, Delete Announcement

Admin may add new announcement by click “Add New Announcement” button and edit/delete announcement by click “Edit/Delete Announcement” button. This two buttons are invisible for member.

Welcome, Admin

Announcement

[Add New Announcement](#)

[Edit/Delete Announcement](#)

Title	Details	Posted Date
Final Exam	Final Exam on 9/3/05. Please study hard..	Feb 16 2005 10:15PM
Meeting on 13/3/02	Meeting about the Promotion.	Feb 16 2005 9:56PM
Appointment	Appointment with group 1	Feb 16 2005 9:52PM
Birthday	Bryan's birthday on 19/02	Jan 26 2005 4:30PM
Cameron Highland Trip	Who are Interested to join Cameron Highland trip please write to Bryan: bryan@hotmail.com.	Jan 26 2005 10:11AM

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5. Photo Gallery

5.1 Delete Photo

Admin may delete undesired photo by click the "Delete My Photo" button at Photo Gallery Page. Admin can delete undesired photo which posted by every member unlike member can only delete photo which posted by him/her. Admin may delete undesired photo by click the check box follow by click "Delete" button (see figure below).

Welcome, Admin

Delete My Photo

[Back](#)

[Delete](#)

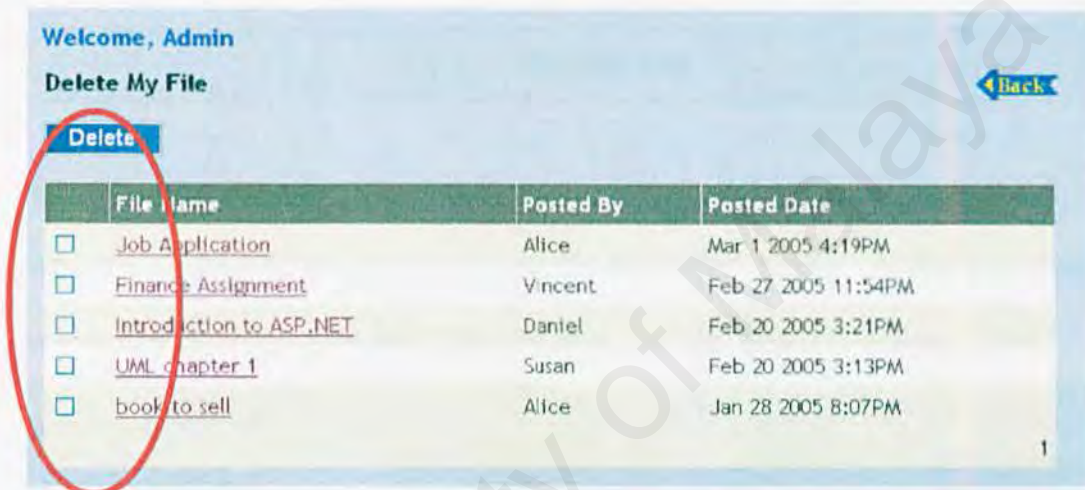
	Photo Name	Posted By	Posted Date
<input type="checkbox"/>	Pulau Redang	Alice	Mar 2 2005 11:35PM
<input type="checkbox"/>	Zoe Tay	Vincent	Feb 27 2005 11:52PM
<input type="checkbox"/>	tweet	Alice	Feb 21 2005 11:55PM
<input type="checkbox"/>	yu heng concert	Susan	Feb 20 2005 3:11PM
<input type="checkbox"/>	counemate	Jacky	2/7/2005 7:39:11 PM

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6. File Sharing

6.1 Delete File

Admin may delete undesired file by click the “Delete My File” button at File Sharing Page. Admin can delete undesired file which posted by every member unlike member can only delete file which posted by him/her. Admin may delete undesired photo by click the check box follow by click “Delete” button (see figure below).



7. Testimonial

7.1 Edit/Delete Testimonial

Admin may edit or delete undesired testimonial by click the “Edit/Delete Testimonial” button at Testimonial Page. Admin can edit or delete undesired testimonial which posted by every member unlike member can only delete testimonial which posted by him/her. Admin may edit testimonial by click “Edit” link or delete undesired testimonial by click the check box follow by click “Delete” button (see figure below).

Welcome, Admin

Edit/Delete Testimonial

[Back](#)

Delete

	To	Testimonial	By
<input type="checkbox"/> Edit	Bryan	good & nice guy	Vincent
<input type="checkbox"/> Edit	Alice	hardworking girl	Bryan
<input type="checkbox"/> Edit	Alice	We are good friend since primary school. she is friendly.	Susan
<input type="checkbox"/> Edit	Alice	She is a talkative girl. Every time meet her, she can talk many things to me.	Simon
<input type="checkbox"/> Edit	Simon	This is expert guy, he know everything about sports.	Susan

1 2

8. Member List

8.1 Delete Member

Admin may delete member by click the "Member List" button. Admin can delete member by click the check box follow by click "Delete" button (see figure below).

Welcome, Admin

Members of ICS

[Edit My Profile](#)

[Change My Password](#)

Delete

	Username	Gender	HP NO	Email	Joined Date
<input type="checkbox"/>	Alice	Female	016-2112188	alice@yahoo.com	Jan 28 2005 4:42PM
<input type="checkbox"/>	Amy	Female	012-6625132	amy@yahoo.com	Jan 28 2005 4:42PM
<input type="checkbox"/>	Bryan	Male	013-5621342	bryan@hotmail.com	Jan 28 2005 4:42PM
<input type="checkbox"/>	Daniel	Male	019-2664891	daniel@yahoo.com	Feb 20 2005 1:59PM
<input type="checkbox"/>	Jacky	Male	019-2354412	jacky@hotmail.com	Jan 28 2005 4:42PM
<input type="checkbox"/>	Simon	Male	019-6642819	simon@yahoo.com	Feb 19 2005 11:08AM
<input type="checkbox"/>	Susan	Female	017-3625253	susan@yahoo.com	Jan 28 2005 4:42PM
<input type="checkbox"/>	Vincent	Female	012-5612444	vincent@walla.com	Feb 27 2005 11:45PM
<input type="checkbox"/>	yy	Female	017-6877895	yy@yahoo.com	Jan 28 2005 4:42PM

1

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