FACULTY OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

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WEB-BASED INTERNET SECURITY

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Abstract

The proliferation in the use of Internet has led to the emergence of a series of security threats capable of compromising the integrity of the business data while impacting the availability of computers and business systems. So this Internet Security Web-Based will be developed to provide an easy and convenient for every user around the world to know better about Internet Security. This system will allow users to access information just by clicking the mouse to have the best and complete information just from this website.

This Internet Security web-based is a stand-alone system and will be developed with the objectives of utilizing the computer and information communication technology. There are two sections in this system where as user section and administrator section. The user section will be provided to any user to search their information about Internet Security and the administrator section is provided to any user that registered as an administrator and can have a lot of conveniences to upload data.

This system also provides information about the potential attacks, Internet Security Issues, proposed solution and much more. It will be developed on the Windows 2000 Professional platform and utilizes Microsoft SQL Server as the database to store the information. This system also will be used IIS web server and powerful tools for developing Internet contents, Visual InterDev 6.0 that offers more features of FrontPage.

In order to build a very user-friendly web page, this system will be developed using scripting language technologies such as HTML, XHTML, JavaScript and also Active Server Pages. It is believed that the system will be

created with proper environment to become the best web page that providing essential information about Internet Security.

Acknowledgement

Thanks for the Mighty of God because of Him; I had finished my WXES 3181 thesis report entitled Internet Security Web-Based. For doing this project, I gathered a lot of information and great supports from many personals such as my lecturers, friends and also my family. So here, I would like to thanks all of them that involved directly or indirectly in order to finish up my project.

First and foremost, I would like to express my greatest thanks to my supervisor, Encik Rosli Salleh for his useful advices and the guidelines for my whole project development during this semester. He also gave me great co-operation in doing this project.

Secondly, I wish to express my special appreciation to my moderator, Encik Yamani for his suggestions and comments during viva sessions. Without him, I think my system will not achieve the best way it can be.

Thirdly, I would like to thank my beloved family for supportive and encouragement during finishing my project. Without all of them, I could not give full attention in developing an attractive web page as required.

I would like to extend a special note of thanks to my network consultants, Encik Syamsul Maksud and Encik Ahmad Hakimi Abdul Rahman for their co-operation and ideas for the contents of this website.

Last but not least, I wish to express my thanks to all my friends and other lecturers who had been helping me throughout the whole project development.

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CHAPTER 1

INTRODUCTION

1.0 Introduction

1.1 PROJECT OVERVIEW

Internet Security in web gives users a good start and information to securing their network based on web page. Many organizations are keen to enhance the current levels of Internet Security to protect their network against external threats and to provide assurance to management, users and business partners towards managing security on several layers through its Internet connection. Internet Security in web is developed to help those small and medium-based business companies to securing their network.

To realization it, this project will be developed a dynamic, interactive, attractive and user-friendly website that will let people know that it is very important to have a secure Internet connection.

The system also gives a lot of essences information about Internet Security that is needed. It is also provided solution in how to secure the network, which can help the network administrator to choose the best way to protect their networks when today's world revolves around connectivity to the Internet.

The main benefit of this website is, user can download the running program of Linux Intrusion Detection System (LIDS) particularly for Linux platform. There are sample solutions and proposed network diagram for their consideration. Users also are provided a better view and updated information about the potential attacks that occur nowadays.

1.2 OBJECTIVES OF PROJECT

The objectives of this thesis project are to build an attractive website that can:

(i) **introduce to the users about the Internet Security and its importance to the business company particularly.**

There is a lot of information about the Internet Security and it can help users to better understand and realize how important it is to secure their network.

(ii) **give online service for users to get information about Internet Security.**

Help users to easy access information about the security issues and policy without going anywhere.

(iii) **provide samples of solution and proposed network diagram for company security.**

With sample, this will help the users to understand more about how to secure the network. This site also helps those users to develop their own secure network diagram.

(iv) **provide latest information about security attacks and hijacking that happen world wide.**

Latest information will be uploaded into the site for the users to know about the types of security attacks and how to defense it.

(v) **allows feed back from the users outside.**

Allow interaction between administration and the users. Administrator will give an online guide to the users to help them solve their computer security problem.

(vi) **save money and time of finding information.**

This website allows users to download the information needed for their personal use without need to hire a consultant or buy a book that cost a lot of money. With this website, user can download for free of service charge. Besides, users also no need to surf other sites to find information about this topic. This website is already complete and it will save more money and time in looking for information.

(vii) **allow consultants from worldwide.**

Consultants will be invited to help users to solve their problem in this topic. There is a lot of information that can be shared in this site.

1.3 SCOPE OF PROJECT

The target users for this system are the small and medium-based business company. This is because their business involved in electronic transactions so that they more expose of potential attacks, hijacking and unauthorized access. This system is believed can help the companies by provide the latest information and solution of having a secure Internet connection.

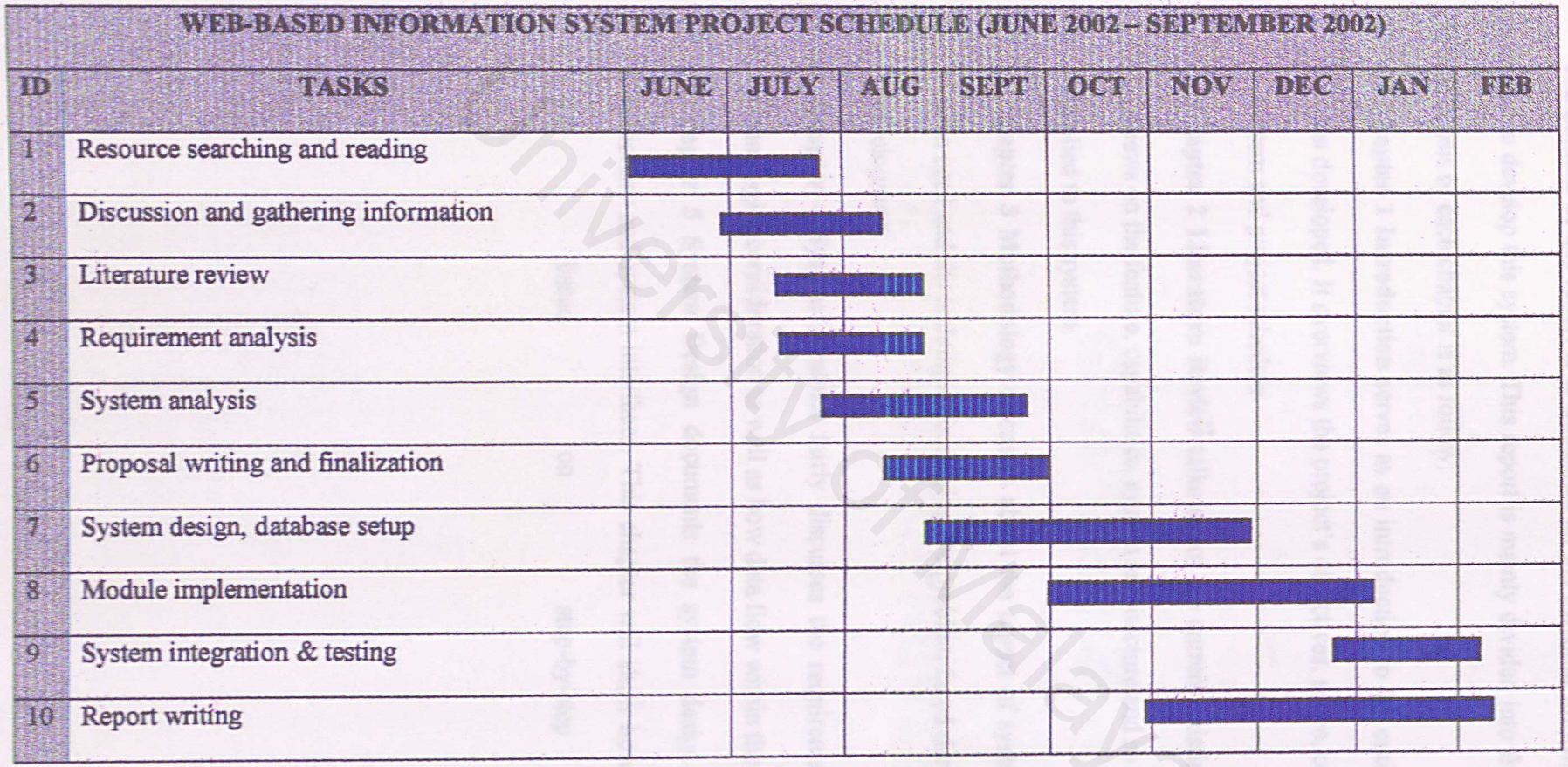
The scope of this web-based Internet Security will consists all of the following:

1. an informative website that contains a lot of information about the whole aspect of Internet Security.
2. a running program of Intrusion Detection System (IDS) for Linux platform that can be downloaded for personal use.
3. system that utilizing a database to keep track of all data and updated item to the system.
4. system that implement login system to log in to the web site to avoid unauthorized access by user.
5. provide samples of solution and proposed secure network diagram for consideration by business company.
6. consists of two modules which are user module and administrator module and each module have their own user-friendly interface.

1.4 PROJECT SHCEDULE

Project schedule is a schedule of the whole activities of the project development. It is planned out with carefully to make sure a systematic progress and on-time delivery of the product is achieved. Project schedule is very important in order to have a guide or time management to a developer. Besides, developer also can know whether in route of the direction of the project or not. The **Table 1.0** below shows the schedule of the activities has been undertaken in finishing this thesis project.

Table 1.0 : Web-based information system project schedule



1.5 CHAPTER ORGANIZATION

The purpose of this report is to document all the essential information gathered and used to develop this system. This report is mainly divided into five chapters. A brief synopsis of each chapter is as follow:

1. **Chapter 1 Introduction** serves as an introduction to the entire project that been developed. It overviews the project's objectives, scope, overview of the system and project schedule.
2. **Chapter 2 Literature Review** talks about the current existing system that reviews on the feature, capabilities, system architecture and so on that will be applied to this system.
3. **Chapter 3 Methodology** discusses about the aspect of system model that been used and the techniques in solving the problem faced during the project development.
4. **Chapter 4 System Analysis** fairly discusses the requirements, tools and technologies consideration as well as how data flow within the system.
5. **Chapter 5 System Design** documents the system design such as data dictionary and system interfaces. This chapter will show how design a web site based on step-by-step basis.

CHAPTER 2

LITERATURE REVIEW

2.0 Literature Review

2.1 PURPOSE

A literature review of a project is important as it places the project in the context of others, which might have similar characteristics:

(i) it offer the developer of using the best way to access and analysis information regarding their research topic.

(ii) There is no use of reinventing the wheel that has already been invented. The developer can rather focus on learning the existing system and modify or enhance it into a more powerful feature for project.

(iii) Another important purpose of a literature review is to sufficiently equip the developer with some knowledge of the strengths and limitations of several development tools. This can help the developer to choose the right tool to develop the system.

(iv) It also helps the developer to recognize the relevant information and synthesize and evaluate it according to the guiding concept.

(v) It helps users to develop their information seeking and critical appraisal skill.

2.2 TECHNIQUES

Information is essential to do a good research and analysis. For this project, several techniques have been taken to seek information. These techniques are as follow:

(i) **Refer to reference books**

A lot of references can be found from library. References book on Internet Security also can be found from library.

(ii) **Search information from the Internet**

Internet is the main source of information. Relevant information on web application, client-server and web programming tools are analyzed. From Internet, there is a lot of comparison can be done of the existing web site.

(iii) **Do analysis on the pass year thesis**

Past year thesis documentation has been studied in order to identify any potential mistakes and gain some skills or software development.

(iv) **Refer to magazines and articles**

Reference on the latest magazines such as PC World is one of the techniques to gain the latest technology for this project.

(v) **Have discussions with friends and lecturers**

Useful advises have been given for each section meeting conduct with my supervisor and other lecturers. It is a useful for error correctness and act as reminder when carried out the system development process.

(vi) **Having a discussion with network administrator**

Discussion with them will help to identify the needs of a web site about Internet Security. They know what aspects are important about Internet Security so they can give useful advises in this project.

(vii) Conducting interview and survey

Interview and survey have been conduct with administrators and users to find out the lacks of the current system and potential improvement on it.

2.3 DEFINITION OF INTERNET SECURITY WEB SITE

Web-Based Internet Security is an informative and attractive website that contains a lot of information about the whole aspect of Internet Security. It can help users to clearly understand about this topic to develop a very secure Internet connection for their company.

This web site allows users to download information they need for free of service charge. The information in this web site will be updated and the latest news about the topic will be uploaded. Administrator is the person who has full access to manage all data in the database.

So it can be concluded that the definition of Internet Security Web Site is a visual place where all the users from around the world can browse and access the information about Internet Security just for free.

2.4 CURRENT ONLINE INTERNET SECURITY SYSTEM

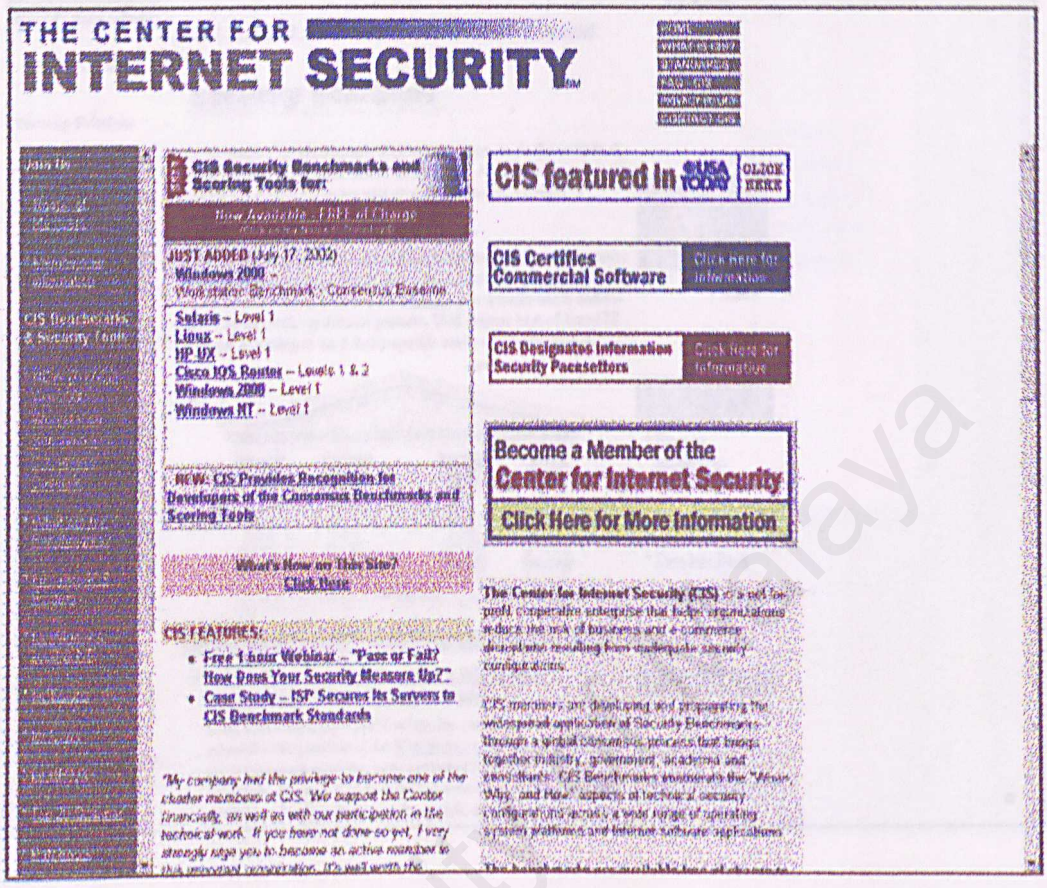
There is a lot of Internet Security web site inside the Internet today. Most of them have their own uniqueness and strong points in order for them to survive in the web. In order to build a web site which have a lot of flow of users, it is needs to build a more unique web site and using all the good combination of value inside the existing website today.

Comparison is very important in looking for the good value and bad value in a web site. There are a lot of things that we can compare with the existing web site such as the graphics, the background color, images, web site structure, fonts and many other things else.

After the comparison, then we can start to combine all the good value or a popular column in a web site to be used in our own web site.

2.5 THE EXISTING INTERNET SECURITY WEB SITE

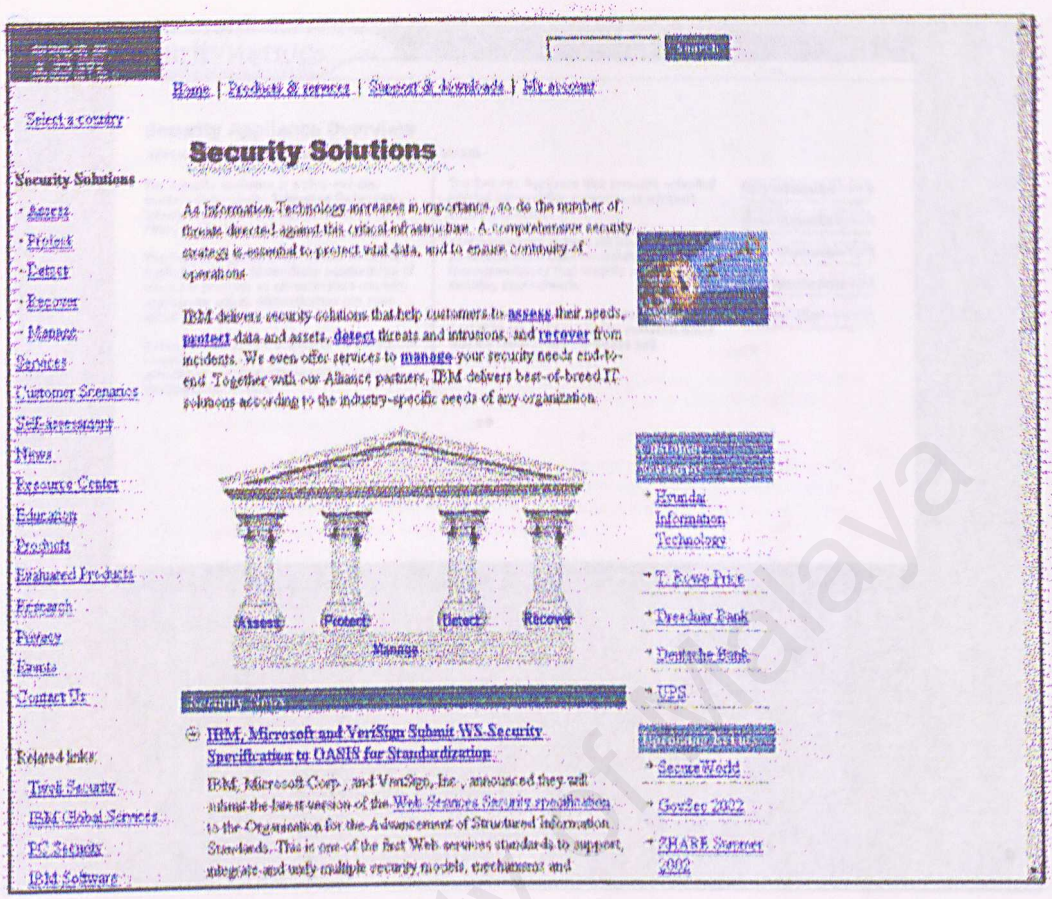
2.5.1 CIS.com Web Site



CIS.com is a web site that provides a lot of column for their users. Free software download is the most important feature that can attract their users. This is one of the good ways to promote their web site and their products.

Besides, CIS.com web site has a very simple background. They do not have many images in their web site. This web site also has lack of information about Internet Security.

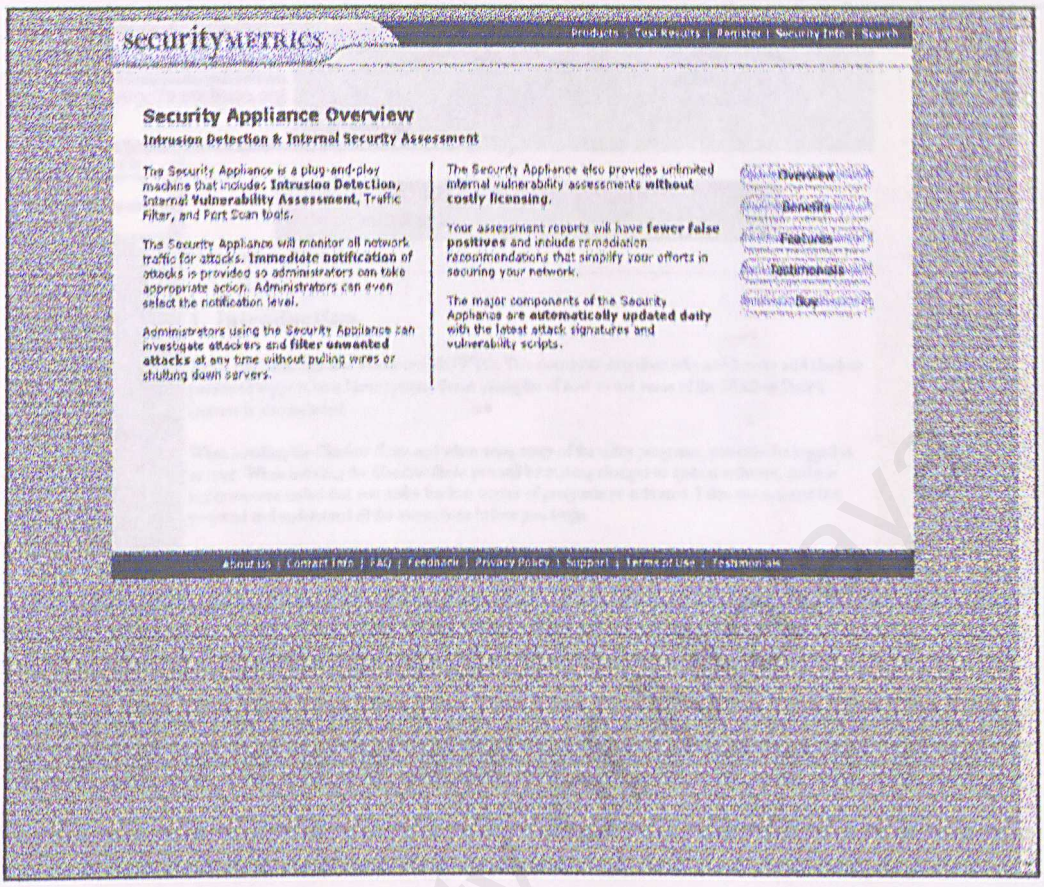
2.5.2 IBM.com Web Site



IBM.com provides a lot of information about this topic and has many images, graphics and attractive background. It provides a lot of information about security solutions and related links to other web site.

There is much latest news in this web site and user can download the software also. Although IBM.com is good site, but it still did not help the users to have a better understand about Internet Security.

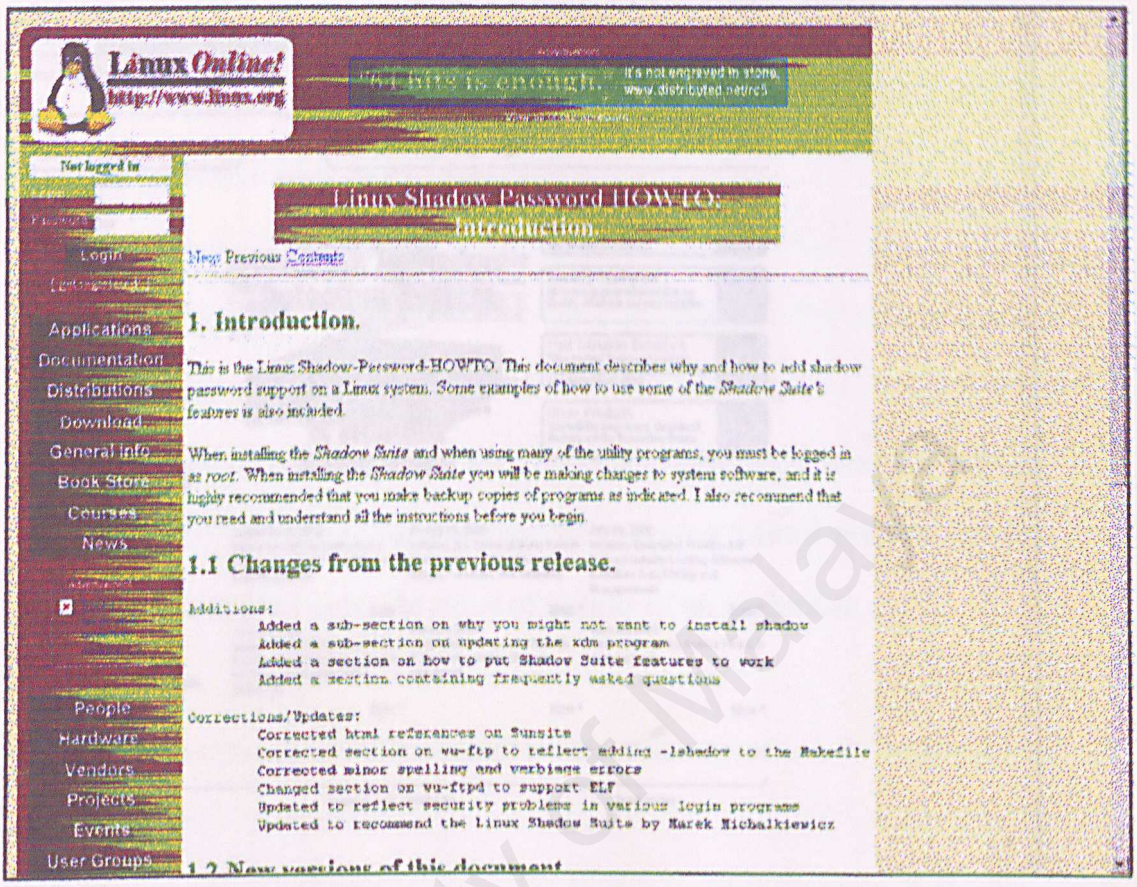
2.5.3 SecurityMetric.com Web Site



This web site is just giving the information limited to security using Intrusion Detection System (IDS). So user has to go to another web site to seek more information about Internet Security. This web site also does not provide the best link to another related web site that can be browsed by their users.

The lay out of this web site is not attractive and this boring characteristic will not happy to visit here. There is also no feed back form provided to give chance for user to send any comment or question.

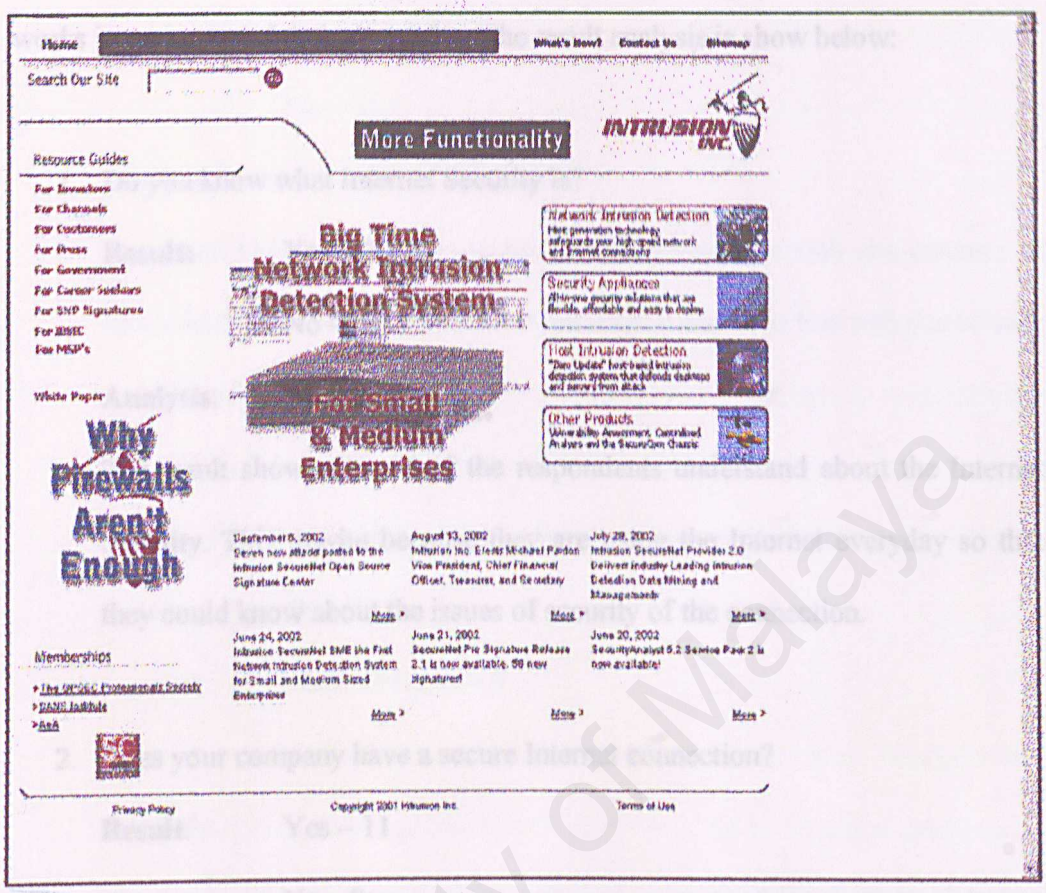
2.5.4 LINUX.org Web Site



LINUX.org is very attractive web site that provides the information about the security based on Linux platform only. Here, there is step-by-step instruction in configuring the system.

The color of the layout also can attract more users to visit this site. With the images in this site, I am sure that most users that seek for Linux security will visit this web site. Besides, this web site has very lack of information needed by users. There are many columns for their users such as events, people, vendors, projects and so on. These links will help their users to seek the information needed.

2.4.5 INTRUSION.com Web Site



INTRUSION.com provides plans for security using Intrusion Detection System method. It is good web site to find out more details about this IDS. Although the background color seem so dull, this web site also full of images, graphics and blinking objects.

2.6 QUESTIONNAIRES ANALYSIS

For this project, I had survey for 20 person of working people and students that works in computer related companies. The result analysis is show below:

1. Do you know what Internet Security is?

   Result: Yes – 20

   No – 0

   Analysis:

   The result shows that all of the respondents understand about the Internet Security. This maybe because they are using the Internet everyday so that they could know about the issues of security of the connection.

2. Does your company have a secure Internet connection?

   Result: Yes – 11

   No – 9

   Analysis:

   The result shows that many company already had the secure connection but there still half of it do not had yet. So this is important to them to get and develop a secure connection.

3. Do you think you need a web site that provides information and samples of Internet Security?

   Result: Yes – 9

   No – 11

   Analysis:

   The result shows that there are needs of developing a web site consists of information and samples of Internet Security. They need this web site to easy access the info about this topic.

4. How do you feel about the existing Internet Security Website?

   Result: Good – 7

   Need Changes – 8

   Bad – 5

   Analysis:

   The result shows that most of the web sites today need for changes. This may be because of the layout of background and the lack of information provided in the certain web site. Most of the web site also needs high cost for downloading their software and products.

5. What kind of column you need most in the web site?

Result: Information – 7

Sample plan – 5

Feed back – 4

News – 4

Analysis:

The result shows that most of the users need an informative web site to better understand about the topic. Free information is provided by web site but most of them still lack of information needed. Users need a web site that can provide all information about Internet Security so that they do not need to visit other web site.

Users also need sample plans to compare and implement it in their network. They also need news and feed back column to seek the latest news about Internet Security and can give comments or question to administrator.

2.7 BOOKS AND MAGAZINES ANALYSIS

There is a lot of reading materials in this market that talk about the lacking of awareness about security in Business Company. Because of this, many companies faced a lot of problems such as virus and hackers attacks. Many books have list out the issues and the defenses of attacks to help this kind of company to take alert of this security. It also suggested good solution and plan in their company.

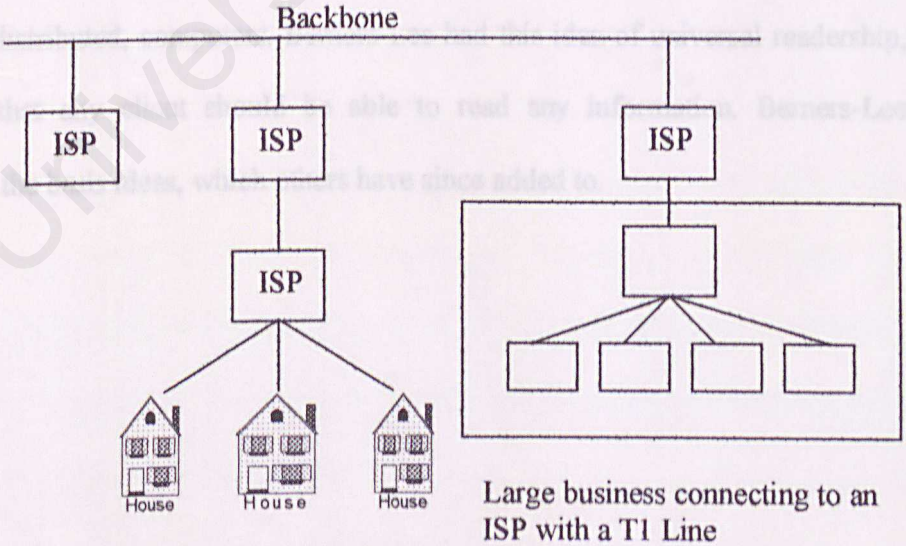
2.8 WEB-BASED COMPUTING ANALYSIS

2.8.1 INTERNET

The Internet is a gigantic collection of millions of computers that are all linked together on a computer network. The network allows all of the computers to communicate with each other. A home computer is usually linked to the Internet using a normal phone line and a modem that talks to an ISP (Internet Service Provider). A computer in a company or institution has an NIC (Network Interface Card) that directly connects it to a LAN (Local Area Network) inside the company. The entire company then connects its LAN to an ISP using a high-speed phone line like a T1 Line.

ISP connects to larger ISPs and the largest ISPs maintain fiber optic backbones for a nation or a region. Backbones around the world are connected through fiber optic lines undersea cables or satellite links refer to the **Figure 2.0** below). In this way, every computer on the Internet is connected to every other.

Figure 2.0 : Internet connections



Home users connecting to an ISP through phone lines

Large business connecting to an ISP with a T1 Line

2.8.2 WORLD WIDE WEB

The World Wide Web is a global, seamless environment in which all information (text, images, audio, video, computational services) that is accessible from the Internet can be accessed in a consistent and simple way by using a standard set of naming and access conventions. Already we can see some of the unique aspects of the Web that make it so popular:

1. it is easy to use
2. it is easy to move from place to place
3. it combines words, graphics....even sound and movies - any data type!
4. there are many tools (like this browser) that make the Web easy to use
5. it is easy to publish information
6. and there are millions of people using it now - and more every day!

Tim Berners-Lee and others initially conceived the Web at CERN. The scientists at CERN needed access to a wide variety of information on many different, distributed, computers. Berners-Lee had this idea of universal readership, which is that any client should be able to read any information. Berners-Lee developed the basis ideas, which others have since added to.

Then those involved agreed to work by a common set of principles:

- there would be no central control. The Web works because people work within the agreed-to guidelines. As part of this the Web ethic is that anyone can publish, and anyone (who is authorized) can read information.
- all Web servers would use the same protocols/mechanisms....
    - http, a fast, stateless, extensible transport mechanism would be used to communicate within the Web
    - httpd, or http daemons, would be the base Web server - receiving messages and providing data as requested
    - URLs (Universal Resource Locator) would be used for network-wide addressing
    - all Web browsers would use the same basic language - HyperText Markup Language HTML
- and built into the mechanisms is support for format negotiation. Web clients tell servers what formats they can handle, and Web viewers allow basic browsers to use different formats.

2.8.3 THE IMPORTANCE OF WEB

There has been a lot of talk about the Web and how it is importance. It can effect on business for these four reasons:

1. **The ability to easily deliver information in any format, to/from a wide range of computing platforms.**

On the Web user can access information from many diverse sources - the competitors, customers, technology providers, international universities, financial institutions, and many other places. This information is on many different computing platforms. The mechanisms of the Web insulate us from needing to know or deal with this - it takes care of getting, moving and presenting the information we need.

In addition to information from external companies, many companies are also using the Web as a mechanism to share information within the enterprise. Several large companies have hundreds of internal servers, and the number is growing rapidly.

The Web has become a standard method of providing distributed information to many different platforms. We are just beginning to appreciate the capability this provides us. We expect to see more applications integrated into the Web in the future, taking advantage of the ability to access and share information across a wide area.

2. Its' potential as a client-server environment.

Web browsers provide a tested client upon which more organizations are building (or converting) client-server applications. Testing time is greatly reduced, and the application will be available on many platforms with no extra effort.

3. Simplified access to the Internet.

The Internet provides access to mail, interactive conferences, network news, and is rich with information resources.... but the Internet can be difficult to use and understand. The World Wide Web makes it easier to use the Internet:

- it provides a graphical interface (on many platforms).
- it supports multimedia (sound, video, as well as graphics).
- it uses the same tools as the Internet, but hides the ugly details.
- it is based on standards/conventions, so sharing is much easier than before.
- all this makes it easier to access information.
- and makes it easier to provide information

4. The wide and rapidly growing amount of information available.

The volume of information available is huge, and growing rapidly. Many of the world's major companies, universities and research organizations are on the Web today, with many others joining daily. The Internet is growing at a phenomenal rate (no one knows exactly how big it is, but as of May 25, 1996 Internet Solutions estimated there were 59,628,024 people on the Internet, and an estimated 304,177 World Wide Web sites on the Internet.)

2.9 THE WEB AND INTERNET

The basis for the Web is the Internet. The Web is built on the Internet, and makes use of many of the mechanisms the Internet provides.

The Internet is the physical aspect - computers, networks, and services. It allows us to connect to thousands of other computers across the world. But it doesn't mean that those systems users' can look at, and understand, the information there.

The Web is an abstraction and common set of services on top of the Internet. It is the set of protocols and tools that let us share information with each other. The Web was developed with the concept of "universal readership" any participating system should be able to read the information on any connected system using a common set of tools:

- browsers
- servers/gateways
- addressing schemes
- common protocols
- format negotiation

3.0 UNIFORM RESOURCE LOCATOR (URL)

A URL is simply a "Web address" - the identifier for a specific place on the Web. URL stands for **Uniform Resource Locator**. A URL can be viewed as a networked extension of the standard *filename* concept:

- not only can you point to a file in a directory but that file and that directory can exist on any machine on the network can be served by any of several different methods and might not even be something as simple as a file.
- URLs can also point to queries, documents stored in databases, or the results of a system command.

It is possible to represent nearly any file or service on the Internet with a URL.

3.0.1 URL SYNTAX

A scheme can include:

- http : a file on a World Wide Web server
- file : a file on your local system, or a file on an anonymous FTP server
- ftp : a file on an FTP server
- gopher : a file on a Gopher server
- WAIS : a file on a WAIS server
- News : an Usenet newsgroup
- telnet : a connection to a Telnet-based service

CHAPTER 3

METHODOLOGY

3.0 Methodology

3.1 WATERFALL MODEL

For this project, I chose Waterfall Model as the methodology. Because of the cascade from one phase to another, this model is known as the 'Waterfall Model'.

Waterfall Model takes the fundamental process activities of specification, development, validation and evolution and represents them as separate process phases such as requirements specification, software design, implementation, testing and so on. This is illustrated in **Figure 3.0** below.

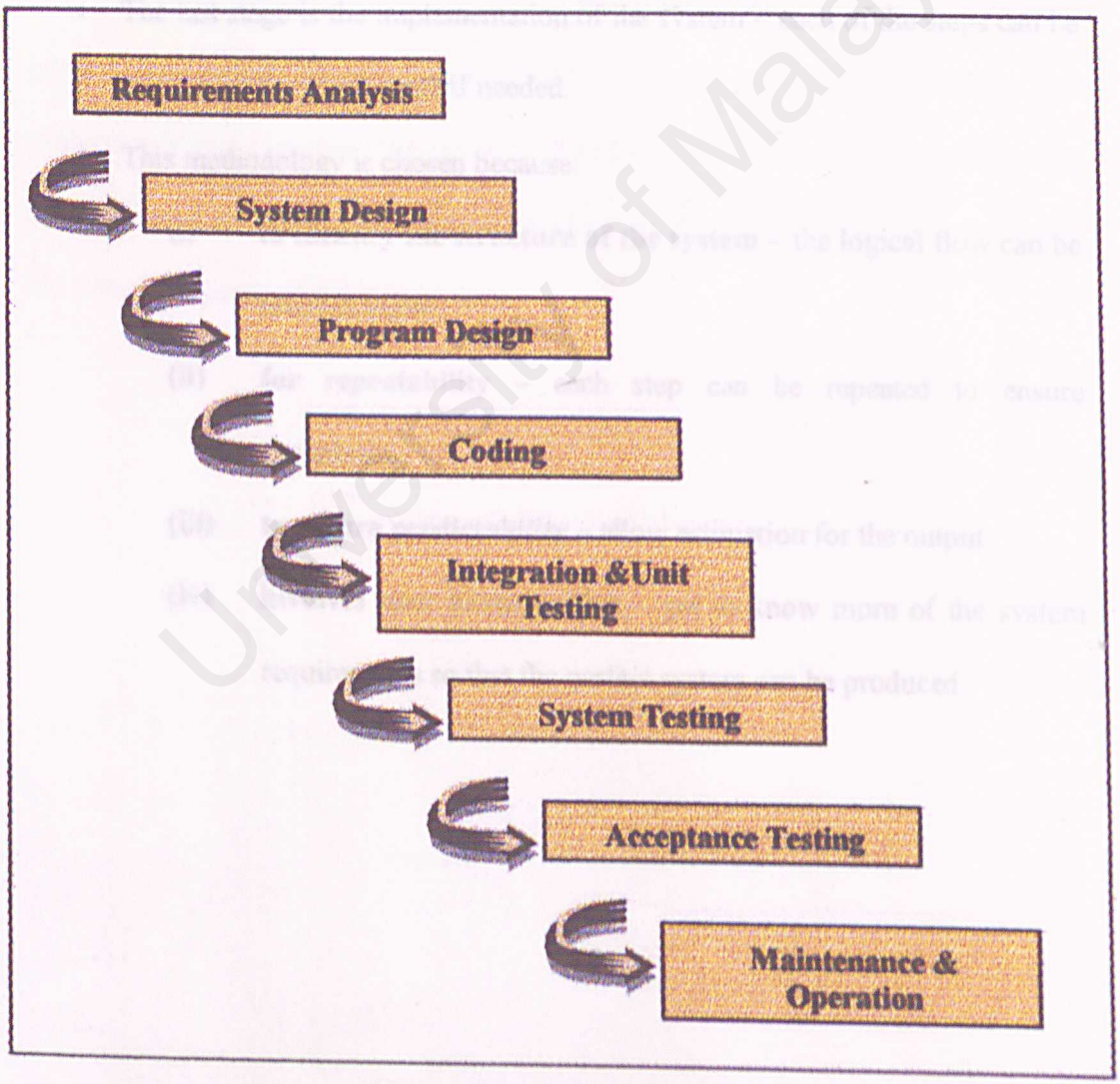


Figure 3.0 : Waterfall Model

- Entails the gathering of all sorts of information that is related to the title of the project.
- With the info that has been gathered, analysis is undertaken to identify important factors in order to develop the system.
- Information gathering step will be traced back if there is insufficient information.
- The steps before the current step can be traced back if needed.
- After designing the system, construction is the next step to be undertaken in order to test and debug the system.
- The last stage is the implementation of the system – each of the steps can be retraced during each stage if needed.
- This methodology is chosen because:
  - (i) **to identify the structure of the system** – the logical flow can be referred easily.
  - (ii) **for repeatability** – each step can be repeated to ensure excitability.
  - (iii) **to ensure predictability** – allow estimation for the output.
  - (iv) **involves user participation** – get to know more of the system requirements so that the perfect system can be produced.

3.2 OTHER SOFTWARE PROCESS MODELS

There are many other software process models such as Waterfall Model and Prototyping Model, V Model, Prototyping Model, Operation Specification Model, Transformation Model and Phased Development Model.

These entire models have their own advantages and disadvantages. The process of the model defines the activities of main process. Process also uses the resources that related with problems faced. All the processes have their own subprocess. Activities of process have the input and output characteristics and they are applied in sequence.

Process models are used to design the overall understanding of the whole project development. It can detect problems such as inconsistence, looping and omissions. Process models also can be used to get and assess the set of activities that are suitable in order to achieve processes target. It generates the common processes for certain situation where it been used.

CHAPTER 4

SYSTEM ANALYSIS

4.0 System Analysis

This section will discuss about the requirements that are required by the system such as the functional requirements, nonfunctional requirements, and software and hardware requirements.

4.1 REQUIREMENT ANALYSIS

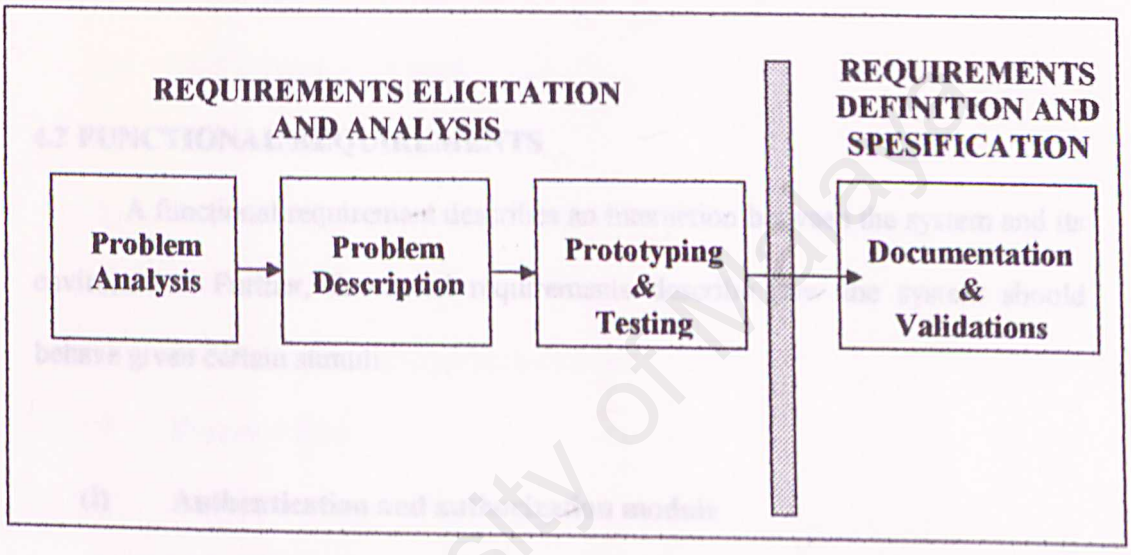


Figure 4.0 : The process of determining requirements

A requirement is a feature of the system or a description of something that the system is capable of doing in order to fulfill the system's purpose. It describes not only the flow of info to and from the system but also constraints on the system's performance.

Requirement elicitation is an especially critical part of the process. A variety of techniques must been used to determine what the users and customers really want. Requirements elicitation also enables to explain the requirements definition of the system. Requirements definition is a complete listing of everything the customer expects the proposed system to do. It represents an understanding between customer and developer of what the customer needs or wants and it usually written jointly with developer.

4.2 FUNCTIONAL REQUIREMENTS

A functional requirement describes an interaction between the system and its environment. Further, functional requirements describe how the system should behave given certain stimuli.

(i) Authentication and authorization module

This system will have an authentication and authorization access to protect the database.

(ii) Password encryption module

The password is implementing for security purpose.

(iii) Change password module

This module is for maintenance in a security environment.

4.3 NONFUNCTIONAL REQUIREMENTS

Nonfunctional requirement or constraint describes a restriction on the system that limits our choices for constructing a solution to the problem.

(i) Reliability

It is if the application system s/w and h/w do not cause failure while it's using.

(ii) Usability

Shall be easy to be used.

(iii) User-friendly

Easy of usage, apply better visual effect interface.

(iv) Security

Be able to prevent unauthorized users.

(v) Respond time

The shorter respond time is good.

4.4 SOFTWARE REQUIREMENTS

The software that will be used to develop the thesis project is as follows:

(i) **Microsoft Internet Information Service (IIS)**

(ii) **Personal Web Server (PWS)**

(iii) **Microsoft SQL Server 7.0**

(iv) **ColdFushion**

(v) **Hypertext Markup Language (HTML)**

(vi) **Dynamic Markup Language (DHTML)**

(vii) **VB Scripting**

(viii) **Java Scripting**

(ix) **Microsoft FrontPage 2000**

(x) **Microsoft Visual InterDev 6.0**

(xi) **Windows 2000 Professional**

4.5 TECHNOLOGIES ANALYSIS CONCLUSION

According to the comparison of the constraints and advantages of the web development tools and programming language, it is decided to choose ASP technology and Java Script as main server-side scripting language for this project. The approach choice is due to the fact that it is simple to implement and no extra addition software requirement needed besides Windows 2000 Professional and IIS 4.0. On client-side scripting, HTML and DHTML are used in order to support the web browser.

Microsoft Visual InterDev is selected as an ASP editing tool. This is because it is user friendly and easy to use. Also Visual Basic 6.0 is used to produce the Active X components and develop user interface.

Analysis was done on different web servers and this project will use MS IIS 4.0 as the web server. This is because this web server has its own scalability, robustness and support for ASP. Used also MS Windows 2000 Professional operating system and MS SQL Server 7.0 database management system.

MS SQL Server 7.0 is used because of the reason; it provides high performance in transaction processing. As for web testing, MS Internet Explorer 5.0 is used to test the web site, as it is the only browser that displays error messages when ASP scripting generated errors.

4.6 HARDWARE REQUIREMENTS

(i) MS SQL Server 7.0

- At least with a P 266 MHz processor
- 64 MB RAM
- 4 GB hard disk
- other standard computer peripherals

(ii) MS IIS Machine

- At least with a P 166 MHz processor
- 64 MB RAM
- Network Interface Card (NIC) with bandwidth of at least 10 Mbps or more
- 4 GB hard disk
- other standard computer peripherals

The following computer configuration was found to be the most suitable environments to deploy both MS IIS 4.0 and MS SQL Server 7.0. It is hard to run both servers on different machines due to the fact that MS SQL Server 7.0 is always hungry for CPU time and memory resource. This will prevent bottleneck from happening in the web server if both servers were run on the same machine. Both MS SQL Server 7.0 and IIS 4.0 are run on Windows 2000 Professional Service Pack 2 machine.

A different machine for workstation is essential, as this will separate development tasks from being done on the servers. Any crash or coding and testing on workstation will not bring down or affects the servers' state of running.

The recommended operating system for development work is Microsoft Windows 2000 Professional. Although Windows 95 will do also however it is not as stable as Windows 2000 platform and Windows 95 can easily crash due to invalid page fault or other minor causes.

CHAPTER 5

SYSTEM DESIGN

5.0 System Design

System design is the process of describing, organizing and structuring the components of a system at both the architectural level and a detailed that will allow the construction of the purposed system. The important idea is that design describes, organizes and structures with a focus toward the construction of a new system.

System design is one of the phases in the system development where requirements for the system are translated into the system characteristics. There are three stages in the design process, which are architecture design, user interface design and database design.

5.1 SYSTEM STRUCTURING DESIGN

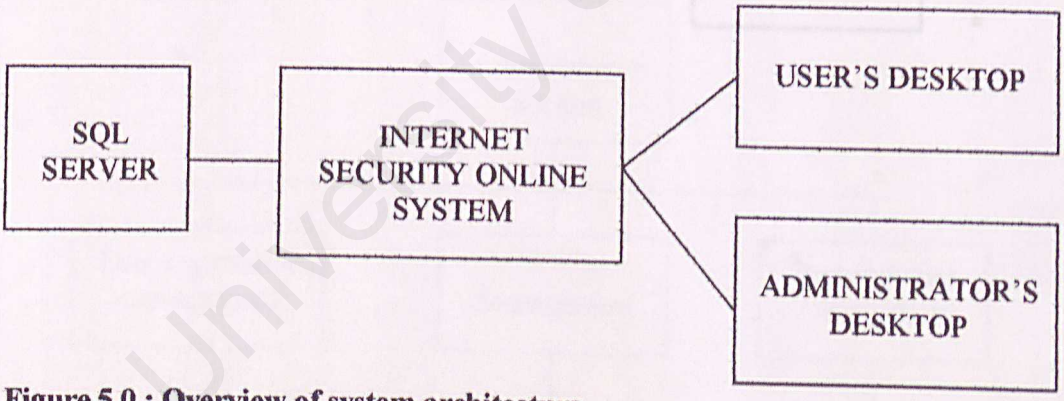


Figure 5.0 : Overview of system architecture

5.2 ARCHITECTURE DESIGN

Architecture design is important in identifies the subsystems that make up the system and their relationship. Each subsystem has its own function but it may relate with other sub-system to form a larger system that consists of two main sections, which are User Section, and Administrator Section.

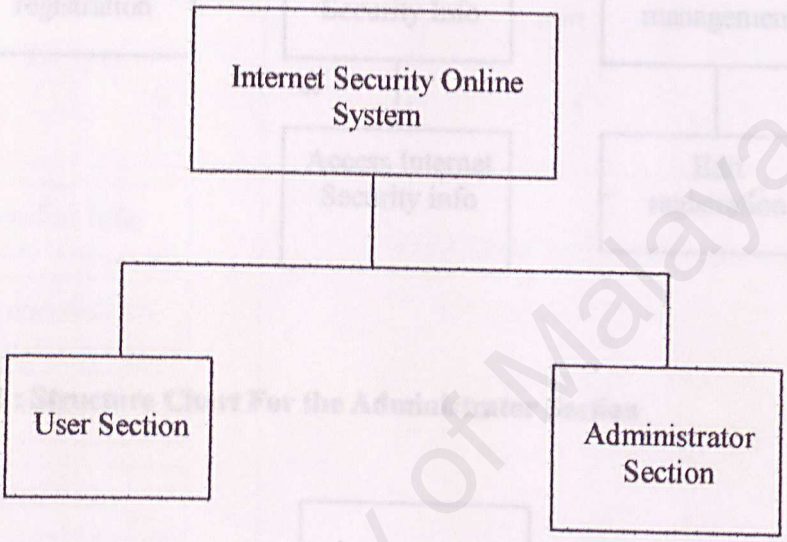


Figure 5.1 : Structure Chart For the User Section

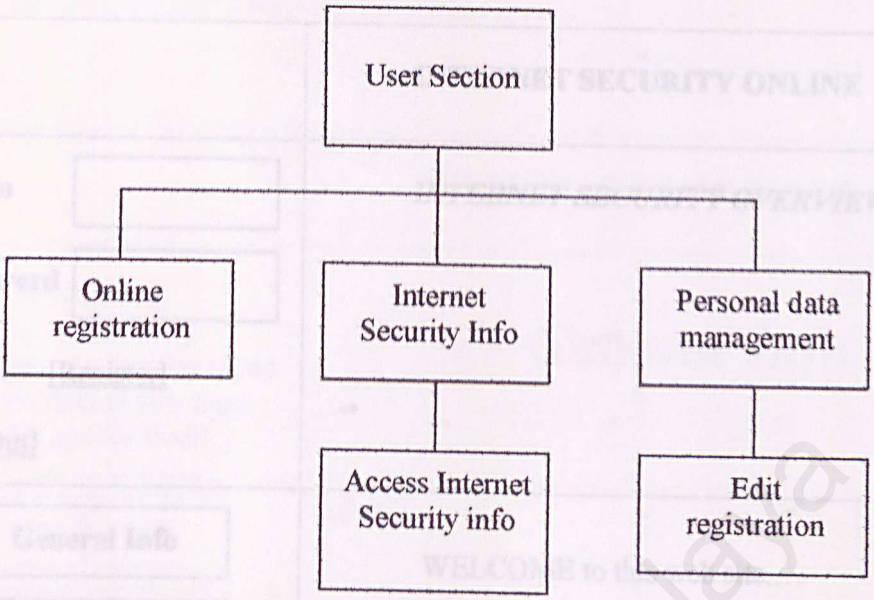
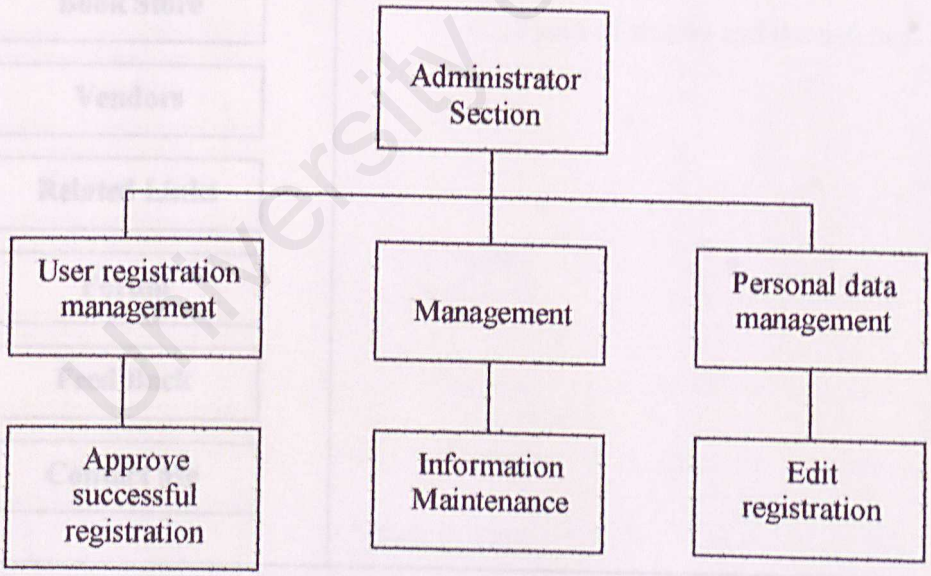
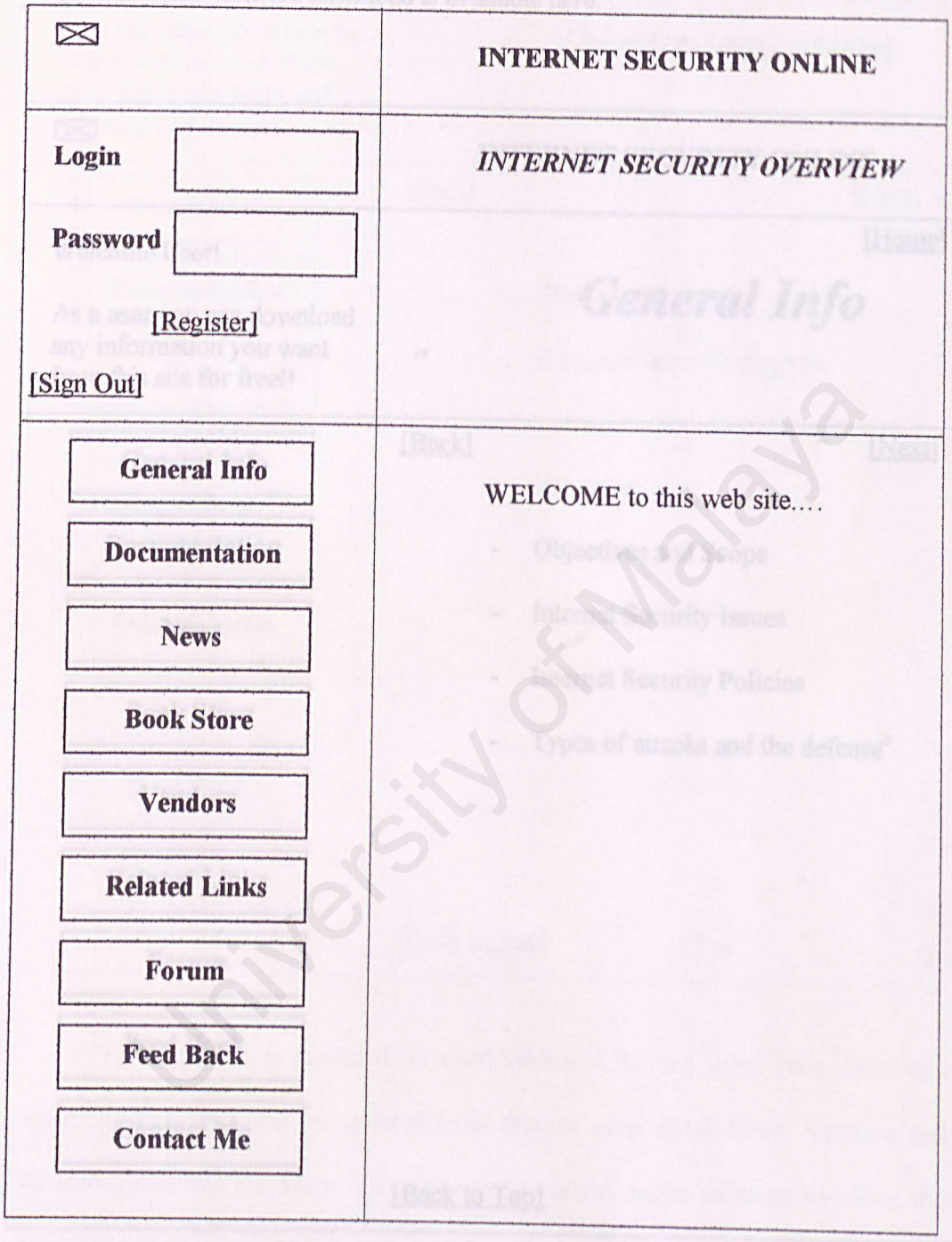


Figure 5.2 : Structure Chart For the Administrator Section



5.3 INTERFACE DESIGN

Follows are the sample of the interface that will be developed for this project.



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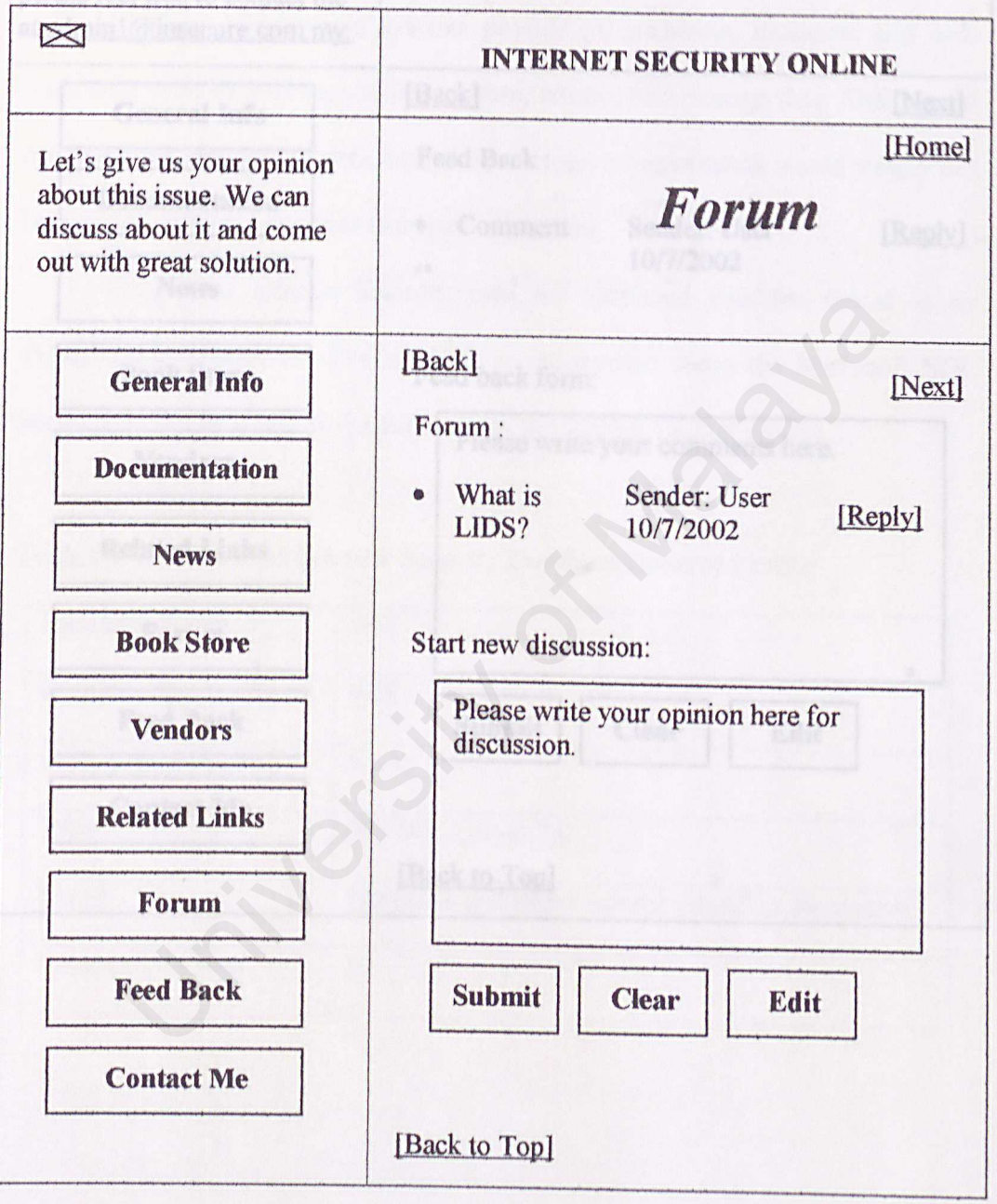

INTERNET SECURITY ONLINE

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5.4 DATABASE DESIGN

Database and database management systems are important components of a modern information system. Database provides a common repository for data so that it can be shared among many organizational units and locations.

Database management systems provide programmers, designers and end-users with sophisticated capabilities to store, retrieve and manage data. Sharing and managing the amounts of data needed by a modern organization would simply not be possible without a database management system.

Web-Based Internet Security uses the relational database model in its database implementation. The database is constructed using the Microsoft SQL Server 7.0. The table shows the attributes of the database of this project.

Table 5.0 : Web-Based Internet Security Database General Profile

Database Name	WIS
Database Device Name	WIS
Data Source Name	Nanie
Type	MS SQL Server 7.0
Usage	Maintains and keeps records related to the system
Number of tables	10

5.4.1 DATA DICTIONARY

The database structure for all relations in Web-Based Internet Security database are listed as follows:

(i) Persons

COLUMN NAME	COLUMN DESCRIPTION
LoginID	Administrator identification
Password	Password
VerifyPassword	VerifyPassword
Position	Admin Position
Company	Name

Table 5.1 : Data structure of persons

(ii) Documentation

COLUMN NAME	COLUMN DESCRIPTION
Article	Article
Description	Description

Table 5.2 : Data structure of documentation

(iii) News

COLUMN NAME	COLUMN DESCRIPTION
News	News
News Date	News Date

Table 5.3 : Data structure of news

(iv) Bookstore

COLUMN NAME	COLUMN DESCRIPTION
ID	User identification
Name	Name
Email	Electronic mail address
Date Entered	Date
URL	URL
IP Address	IP address

Table 5.4 : Data structure of bookstore

(v) Vendors

COLUMN NAME	COLUMN DESCRIPTION
ID	User identification
Name	Name
Email	Electronic mail address
Date Entered	Date
URL	URL
IP Address	IP address

Table 5.5 : Data structure of vendors

(vi) Related Links

COLUMN NAME	COLUMN DESCRIPTION
URL	URL
IP Address	IP address

Table 5.6 : Data structure of related links

(vii) Forum

COLUMN NAME	COLUMN DESCRIPTION
Forum ID	Forum ID
Forum	Forum
Description	Description
Posts	Posts
LastPosts	LastPosts

Table 5.7 : Data structure of forum

(viii) Feed Back

COLUMN NAME	COLUMN DESCRIPTION
Message ID	Message ID
Forum ID	Forum ID
InReplyTo	InReplyTo
PostedBy	PostedBy
Email	Email
Subject	Subject
Body	Body
Date	Date

Table 5.8 : Data structure of feed back

5.5 PROCESS DESIGN

There are several design methodologies for the process design. Web-Based Internet Security is designed based on the data flow oriented-design method or structured design. Data flow oriented-design has its origins in earlier design concepts that stressed on modularity, top-down design and structures programming.

5.5.1 DATA FLOW DIAGRAM

Data Flow Diagram (DFD) is a graphically characterization of data processes and flows in a system. DFD use a number of symbols to represent systems. DFD depicts the possible overview of system inputs, processes and outputs, which corresponded to data movement through the system. DFD consists of model system components, which are the system processes, the data that used by these processes, any external entities that interact with the system, and the information flows in the system.

A process model is depicted in the flow chart and data flow model. In the DFD, functional transformations process their input and produce outputs. As data flows from one numbered process to another, it is transformed as it moves. It uses only four symbols as follow:

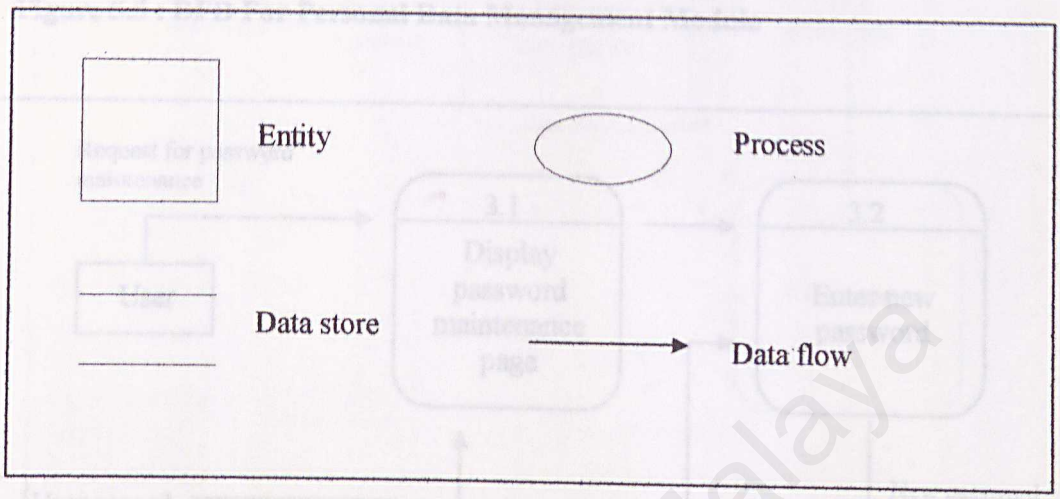


Figure 5.3 : Data Flow Diagram Model Symbols

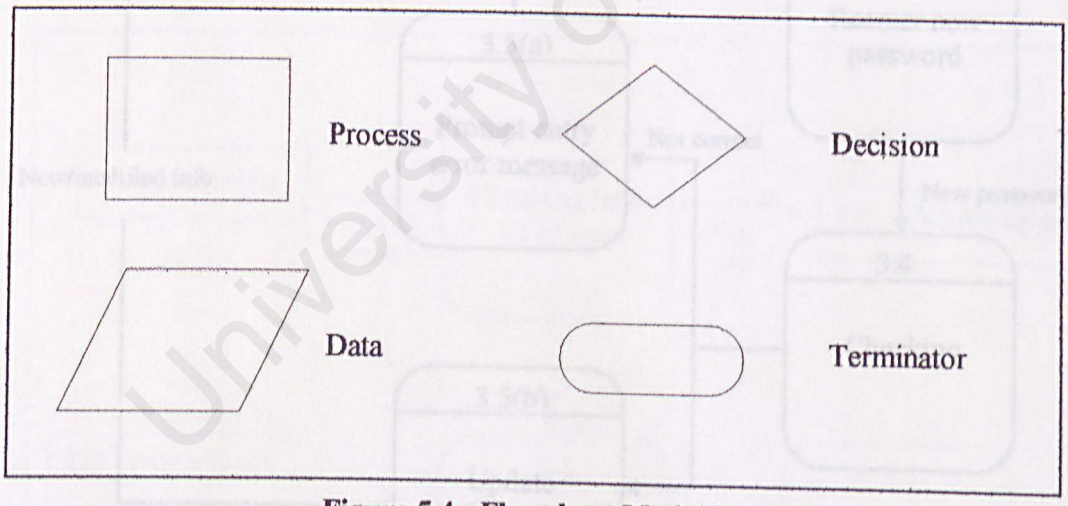


Figure 5.4 : Flowchart Model Symbols

Web-Based Internet Security consists of three main modules which are user module, administrator module and their respectively module. Below are the DFD for the system.

Figure 5.5 : DFD For Personal Data Management Module

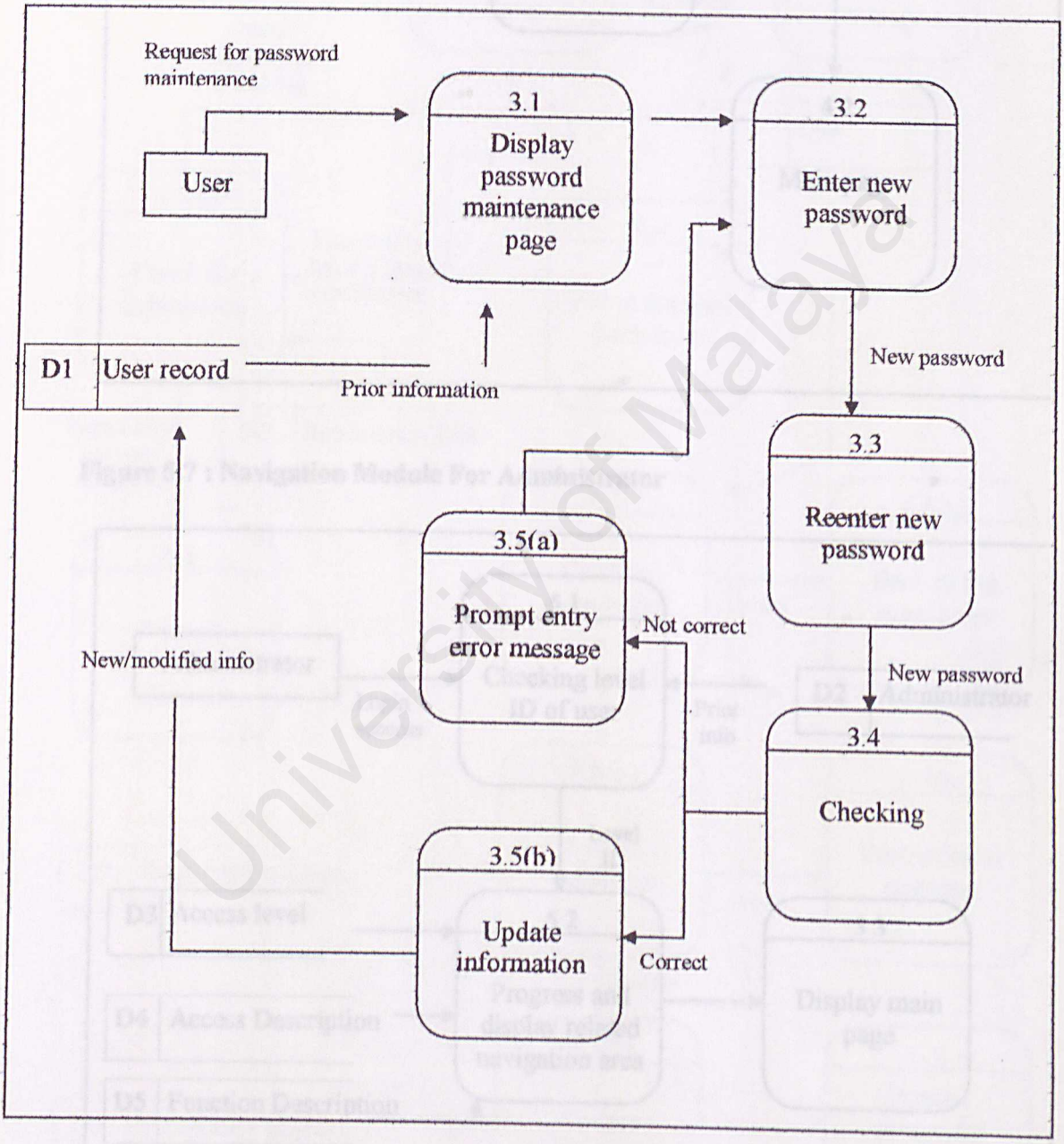


Figure 5.6 : Navigation Module For User

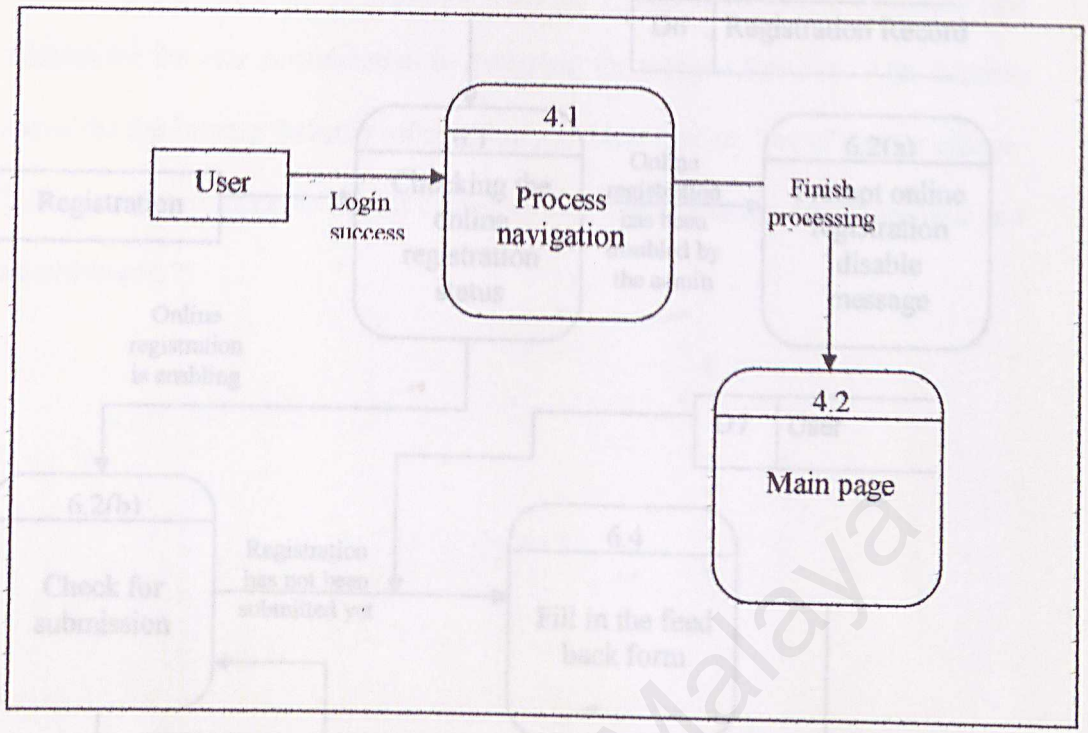


Figure 5.7 : Navigation Module For Administrator

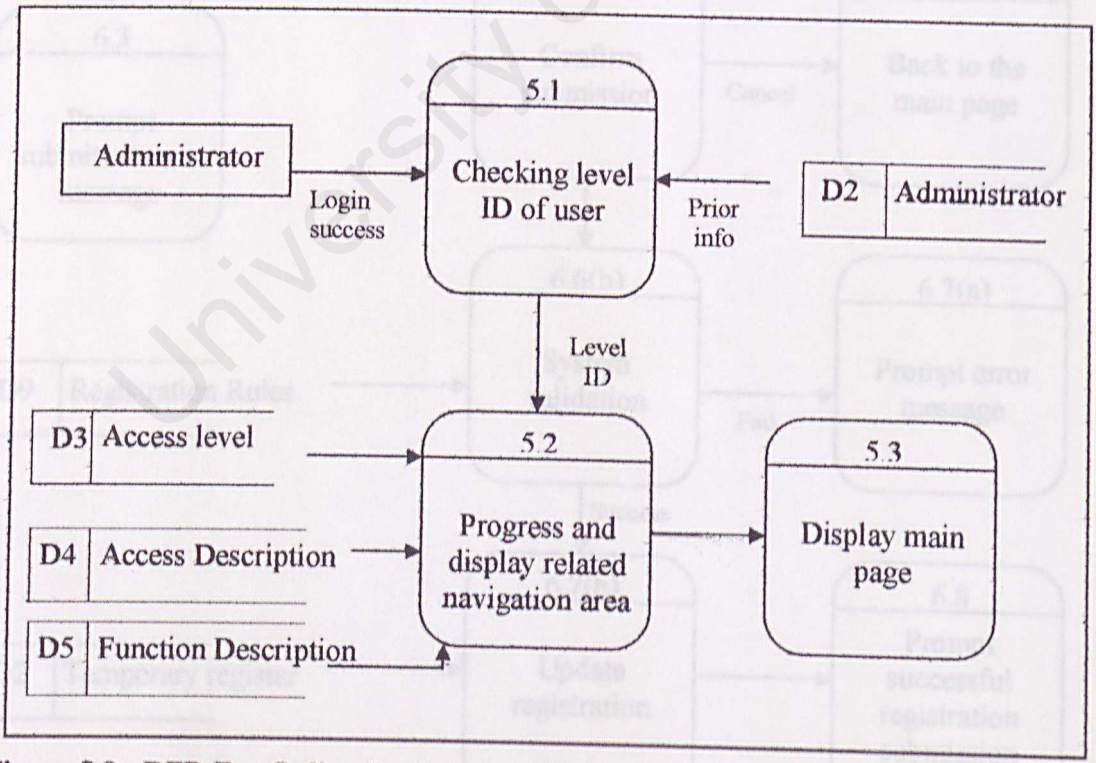
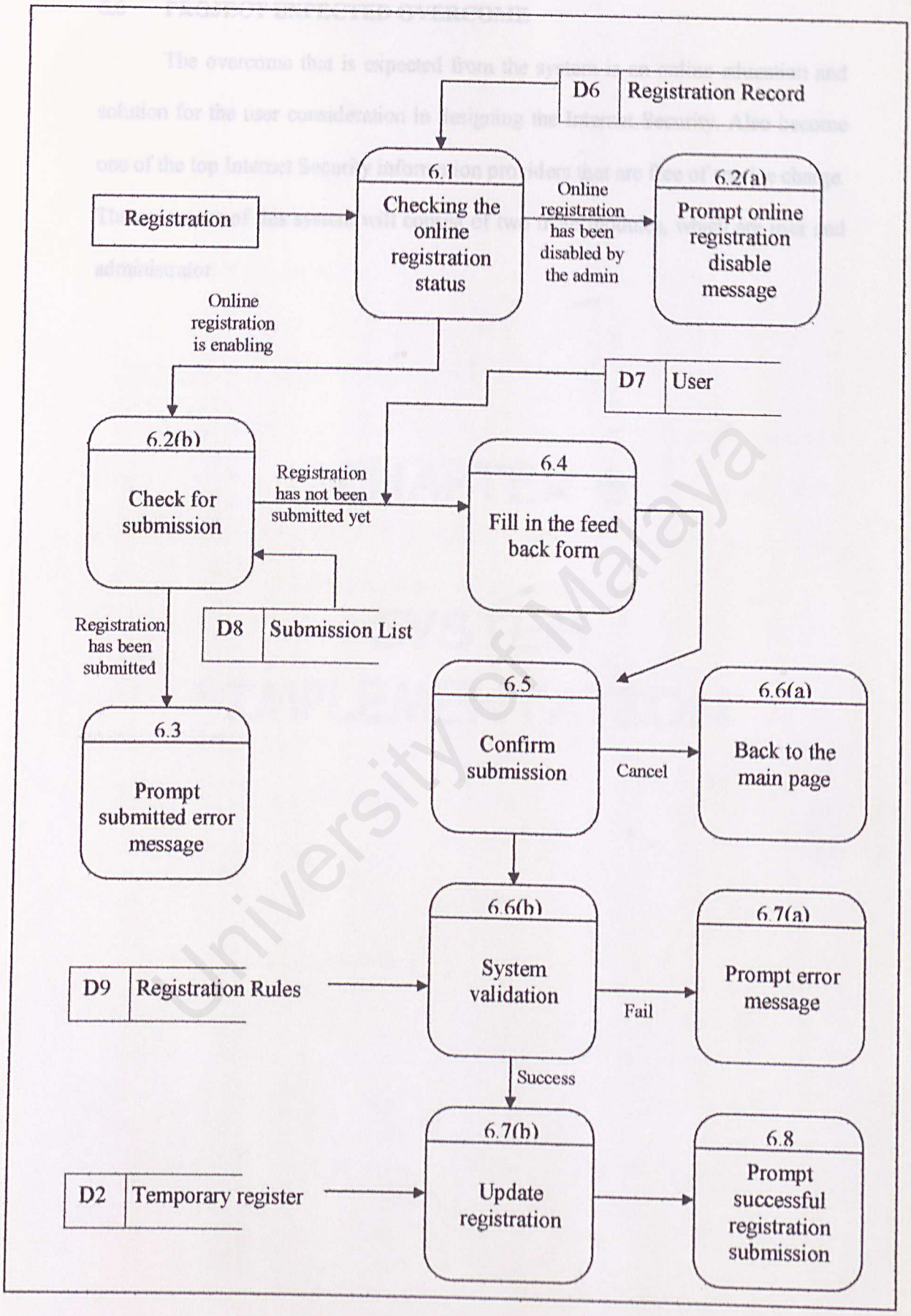


Figure 5.8 : DFD For Online Registration Module



5.6 PROJECT EXPECTED OVERCOME

The overcome that is expected from the system is an online education and solution for the user consideration in designing the Internet Security. Also become one of the top Internet Security information providers that are free of service charge. The overcome of this system will consist of two main modules, which are user and administrator.

CHAPTER 6

SYSTEM IMPLEMENTATION

6.0 System Implementation

The requirement analysis, system design and implementation phases do not have a clear boundary in a software project. Each phase tends to overlap one another. System implementation is a process that converts the system requirements and designs into program codes.

6.1 DEVELOPMENT ENVIIRONMENT

Development environment has certain impact on the development of a system. Using the suitable hardware and software will not only help to speed up the system development but also determine the success of the project. The hardware and software tools used to develop the entire system are as below:

Hardware Requirements

The hardware used to develop the system is as listed.

- 233 MHz Pentium Processor
- 64 MB SDRAM
- 3.2 GB Hard Disk
- Other standard PC components.

Software Requirements

Software/software tolls	Purpose	Description
Microsoft Windows 2000	System requirement	Operating System (OS) (final stage)
Internet Information Server (IIS) 4.0	System requirement	Web Server Host (final stage)
Microsoft Personal Web Server (PWS)	System requirement	Web Server Host (earlier stage)
Internet Explorer 6.0	System development	Web browser
Microsoft Notepad	System development	System file creation Example: *.inc
Microsoft FrontPage XP	System development	Coding web pages and image design
Macromedia Dreamweaver MX	System development	Web pages layout design
Microsoft PhotoEditor	System development	Image designing and creation
Microsoft Access 2000	System development	Database Server (build the database to store and manipulate the data)

Table 6.1 : Summary of software / software tools used.

6.2 SYSTEM DEVELOPMENT

Methodology

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

Web Pages Coding

An Active Server Pages (ASP) is primarily a scripting environment. Languages used to develop web pages using ASP technology are HTML, DHTML, VBScript, Jscript (by Microsoft) or JavaScript (by Sun). The challenges of coding in ASP are to determining and separating the HTML source code from the scripting counterpart.

There are two types of scripting which are client-side scripting and server-side scripting. For the client-server scripting, they must be delimited by the <SCRIPT> ... </SCRIPT> tags. On the other hand, server-side scripting required the RUNAT attribute set to server so that the script will be executed on the server rather than the client (browser). Another easiest way for server-side scripting is using the script delimiters <% and %>. Any text enclosed within these delimiters will be processed as a script.

The process to develop web pages involves modifications and testing of the ASP source code. It involves loading the file in the browser for viewing and validating and then going back to make further changes where necessary using any suitable web editor.

There are total ten modules in distributed in the site and all this eight modules have connected by one page called Mainpage.cfm. All the ten modules are:

1. General Info
2. Documentation
3. IDS
4. Forum
5. Tell A Friend
6. Chat
7. Chess
8. Guestbook
9. Login
10. Registration

Coding in Mainpage.cfm

```
<TR><!-- nav bar -->
  <TD vAlign=top bgColor=black colSpan=3 height=18 width="1130">
  <applet code="fphover.class" codebase="./" width="99" height="24">
   <param name="hovercolor" value="#0000FF">
   <param name="textcolor" value="#FFFFFF">
   <param name="effect" value="glow">
   <param name="color" value="#000000">
   <param name="text" value="Mainpage">
  </applet><applet code="fphover.class" codebase="./" width="121" height="24">
   <param name="hovercolor" value="#0000FF">
   <param name="textcolor" value="#FFFFFF">
   <param name="effect" value="glow">
   <param name="color" value="#000000">
   <param name="text" value="General Info">
   <param name="url" valuetype="ref" value="gen_info.asp">
  </applet><applet code="fphover.class" codebase="./" width="131" height="24">
   <param name="hovercolor" value="#0000FF">
   <param name="textcolor" value="#FFFFFF">
   <param name="effect" value="glow">
   <param name="text" value="Documentation">
   <param name="bgcolor" value="#000000">
   <param name="font" value="Dialog">
   <param name="fontstyle" value="bold">
   <param name="fontsize" value="14">
```

```
    <param name="color" value="#000000">
   </applet><applet code="fphover.class" codebase="./" width="108" height="24">
    <param name="hovercolor" value="#0000FF">
    <param name="textcolor" value="#FFFFFF">
    <param name="effect" value="glow">
    <param name="color" value="#000000">
    <param name="text" value="IDS">
    <param name="url" valuetype="ref" value="http://localhost/ids/overview.asp">
   </applet><applet code="fphover.class" codebase="./" width="108" height="24">
    <param name="hovercolor" value="#0000FF">
    <param name="textcolor" value="#FFFFFF">
    <param name="effect" value="glow">
    <param name="color" value="#000000">
    <param name="text" value="Forum">
    <param name="url" valuetype="ref" value="http://localhost/forum/index.asp">
   </applet><applet code="fphover.class" codebase="./" width="108" height="24">
    <param name="hovercolor" value="#0000FF">
    <param name="textcolor" value="#FFFFFF">
    <param name="effect" value="glow">
    <param name="color" value="#000000">
    <param name="text" value="Tell A Friend">
    <param name="url" valuetype="ref"
 value="http://localhost/tellfriend/tellfriend.asp">
   </applet><applet code="fphover.class" codebase="./" width="108" height="24">
    <param name="hovercolor" value="#0000FF">
    <param name="textcolor" value="#FFFFFF">
    <param name="effect" value="glow">
    <param name="color" value="#000000">
    <param name="text" value="Chat">
   </applet><applet code="fphover.class" codebase="./" width="108" height="24">
    <param name="hovercolor" value="#0000FF">
    <param name="textcolor" value="#FFFFFF">
    <param name="effect" value="glow">
    <param name="color" value="#000000">
    <param name="text" value="Chess">
   </applet><applet code="fphover.class" codebase="./" width="112" height="24">
    <param name="hovercolor" value="#0000FF">
    <param name="textcolor" value="#FFFFFF">
    <param name="effect" value="glow">
    <param name="color" value="#000000">
    <param name="text" value="Guest Book">
    <param name="url" valuetype="ref"
value="http://localhost/guestbook/default.asp">
   </applet></TD>
```

Coding in General_info.asp

```
<head>
<meta http-equiv="Content-Language" content="en-us">
<meta name="GENERATOR" content="Microsoft FrontPage 5.0">
<meta name="ProgId" content="FrontPage.Editor.Document">
<meta http-equiv="Content-Type" content="text/html; charset=windows-1252">
<link rel="File-List" href="gen_info_files/filelist.xml">
<title>internet security online</title>
</head>

<body topmargin="0" leftmargin="0">

      <TABLE cellSpacing=0 cellPadding=0 width="1007" border=0
      height="332" style="border-collapse: collapse" bordercolor="#111111">
            <TBODY>
            <TR>
            <TD vAlign=top align=left bgColor=#444d6f colSpan=2 height=1
            width="891">
      <MAP name=differentThreat_rev> <AREA shape=RECT
      coords=-11,-13,507,77 href="http://www.iss.net/"></MAP>
       <SCRIPT language=JavaScript>
       </SCRIPT>
      <div id="staticbuttons" style="position:absolute; left:0; top:791; width:24;
height:108">
<a href="javascript:" onmouseover="myspeed=-thespeed"
onmouseout="myspeed=0">
<img src="hand_up.gif" border="0" width="24" height="45"></a><br>
<a href="javascript:" onmouseover="myspeed=thespeed"
onmouseout="myspeed=0">
<img
src="hand_down.gif" border="0" width="24" height="49"></a>
</div>
```

Coding in Register.asp

```
<html>
<head>
<title>Internet Security Online Registration Page</title>
</head>
<h1 align="center">Member Registration</h1>
<p align="center"><font size="4" color="#800000">Please fill out the following
form to register as a member, and
 gain access to our members area.</font></p>
<%=strError%>
<form action="register.asp" method="POST">
<input type="hidden" name="action" value="register">
<table border="0" width="699">
<tr>
 <p align="right"><b>Username</b></td>
 <td width="294">
 <p align="left">
 <input type="text" maxlength=20 name="username"
value="<%=Server.HTMLEncode(Request.Form("username"))%>"
size="20"></td>
</tr>
<tr>
 <p align="right"><b>Password</b></td>
 <td width="294">
 <p align="left">
 <input type="password" maxlength=20 name="password"
value="<%=Server.HTMLEncode(Request.Form("password"))%>"
size="20"></td>
</tr>
<tr>
 <td width="395">
 <p align="right"><b>Password Confirm</b></td>
 <td width="294">
 <p align="left">
 <input type="password" maxlength=20 name="password_confirm"
value="<%=Server.HTMLEncode(Request.Form("password_confirm"))%>"
size="20"></td>
</tr>
<tr>
 <p align="center"> </td>
 <p align="left"><input type="submit" value="Complete Registration"></td>
</tr>
</table>
</form>
<p align="right"> </p>
</body>
</html>
```

Coding in Login.asp

```
<%
Option Explicit
Dim strError, strSQL, objRS
If Request.Form("action")="login" Then
  If Request.Form("username") = "" Then _
     strError = strError & "- Please enter a username<br>" & vbNewLine
  If Request.Form("password") = "" Then _
     strError = strError & "- Please enter a password<br>" & vbNewLine
  If strError = "" Then
    'continue
    %>
    <!--#include file="inc-dbconnection.cfm"-->
    <%
    strSQL = "SELECT id,password FROM members WHERE username='" & _
      fixQuotes(Request.Form("username")) & "'"
    Set objRS = objConn.Execute (strSQL)
    If objRS.EOF Then
       strError = "- Invalid username or password<br>" & vbNewLine
    Else
       If objRS("password")=Request.Form("password") Then
          Session("loggedin") = True
          Session("userid") = objRS("id")
          Response.Redirect ("default.asp")
          Response.End
       Else
          strError = "- Invalid username or password<br>" & vbNewLine
       End If
    End If
  End If
  If strError <> "" Then
    strError = "<p><font color=""#FF0000"">The following errors occured:" & _
      "</font><br>" & vbNewLine & strError
  End If
  If Request.QueryString("msg") <> "" And strError = "" Then
    strError = "<p>" & Request.QueryString("msg") & "</p>"
  End If
End If
Function fixQuotes(strData)
  fixQuotes = Replace(strData,"'","''")
End Function're-set session data (ie log out)Session("loggedin")=""
Session("userid")=""
%>
```

Coding in Gustbook/default.asp

```
<html>
<head>
<title>Guestbook</title>
</head>
<body background="file:///D:/folder%20nanie/website/nanie/wallpaper10.gif">
<% ACTION = Request.Form("ACTION") %>
<% If ACTION = "Save" Then %>
<!--#INCLUDE file="savemessage.cfm"-->
<% End If %>
<% If ACTION = "Save" Then %>
<b>
<% End If %>
<form method="POST" action="default.asp">
<input type="hidden" name="ACTION" value="Save">
<div align="center" style="width: 903; height: 86"><center>
<p><font face="Arial" size="4">Thank You For Your Comments</font></p>
<p align ="center">
```

5.3 DATABASE CONNECTION

The database for Internet Security Online is created using Microsoft Access 2000. By using Access, creating and modifying the tables, views and their relationship is easier.

ODBC is used to store and retrieve data from the database. Before ODBC can be used, a connection string has to be specified. It contains the driver name, data source, initial catalog, user id and password. All these information have to be specified in order to make a connection to the database.

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

CHAPTER 7

SYSTEM TESTING

7.0 System Testing

No matter how we write programs, it is obvious that from the variety of error, which are possible, we should check to ensure that our modules have functioned correctly. Testing is performed to ensure that the programs are executed correctly and to detect the existence of errors. It provides a method to correct logic error and for testing system reliability.

7.1 Testing Process

Testing process for the Internet Security Online consists of five stages as shown in figure below:

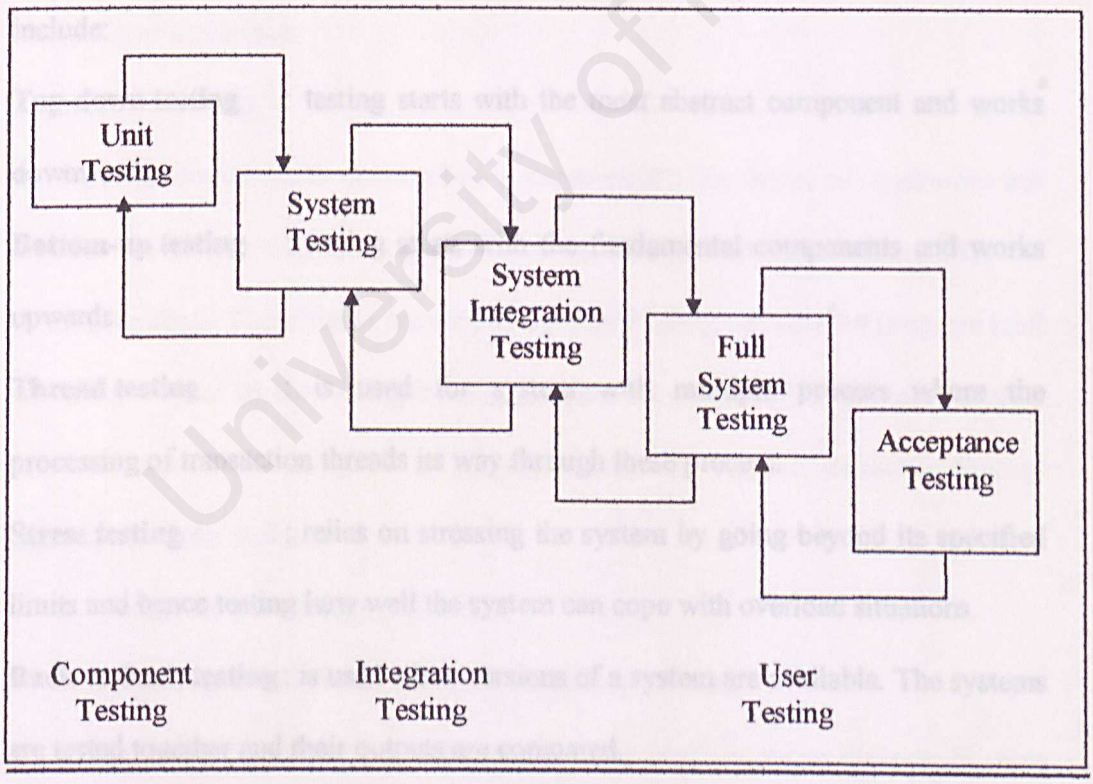


Figure 7.1 : The testing process

The sequence of testing activities is component testing, integration testing and user testing. As defects are discovered at any stage, program modifications are required to correct them and this may require other stages in the testing process to be repeated. The process is therefore an interactive one with information being fed back from later stages to earlier parts of the process.

In Figure 7.1, the arrows from the top of the boxes indicate the normal sequence of testing. The arrows returning to the previous box indicate that previous testing stages may have to be repeated.

7.2 Testing Strategies.

A testing strategy is a general approach to the testing process rather than a method of devising particular system or component tests. The testing strategies include:

Top-down testing : testing starts with the most abstract component and works downwards.

Bottom-up testing : testing starts with the fundamental components and works upwards.

Thread testing : is used for system with multiple process where the processing of transaction threads its way through these process.

Stress testing : relies on stressing the system by going beyond its specified limits and hence testing how well the system can cope with overload situations.

Back-to-back testing : is used when versions of a system are available. The systems are tested together and their outputs are compared.

7.3 Types of Faults

When no obvious fault exists, program is tested to isolate more faults by creating conditions where the code does not react as planned. Therefore, it is important to know kind of faults to seek. Fault can be categorized as below:

- Documentation Faults
- Algorithmic Faults

Documentation Fault

When the documentation does not match what the application does, the application has documentation faults. Usually, documentation is derived from system design and provides a clear description of what the programmer would like to program to do, but the implementation of these functions is faulty. Such faults can lead to other faults later.

Algorithmic Faults

Algorithmic faults occur when a component's algorithm or logic does not produce the proper output for given input because something is wrong with the processing steps. These faults are easy to spot by reading through the program (call desk checking) or by submitting input data from each of the different classes of data that we expect the program to receive during its regular working. Typical algorithmic faults include:

1. testing for the wrong condition
2. forgetting to initialized variables or set loop invariant
3. forgetting to test for a particular condition (such as when division by zero might occur).

7.4 Test Planning

The purpose of having test planning is to help in designing and organizing tests, so that testing is carried out appropriately and thoroughly. A test plan has the following steps:

1. Understand the objectives of the test
2. Cases test designing
3. Cases test writing
4. Cases test testing
5. Executing test
6. Evaluating test results.

7.5 Testing the System

Testing is a process of exercising or evaluating a system by manual or automatic means to verify that if satisfied requirements or to identify differences expected and actual results. Testing is probably the least understood part of a software development project. A bug is any unexpected, questionable, or undesired aspect or behavior displayed, facilitated or caused by the software being tested. Testing can uncover different classes of errors in a minimum amount of time and with a minimum amount of effort. The strategies used for testing are unit testing, integration testing and system testing.

- **Unit Testing**

Unit testing verifies that the component function properly with the types of input expected from studying the component's design. The first step is to examine the program code by reading through it, trying to spot algorithm, data and syntax faults. This is followed by comparing the code with specifications and with the design to make sure that all the relevant cases have been considered. Next, the browser is used to view the result, web pages and than eliminate remaining syntax faults if necessary. Finally, test cases are developed to show that the input is properly converted to the desired output. For Internet Security Online, unit testing is done concurrently with the development phases.

(i) Examining the Code

In this stage, the codes of the program are read to identify faults. After that, a code walk through is earned out. In a walk through, the code and the accompanying documentation are presented to the review team. Then, the team will comment on their correctness. For this project, the review team members consist of my course mates. Walk through is conducted in an informal manner. This method is useful to identify faults that have been left out by programmer.

- **Integration Testing**

When the individual components are working correctly and meet the objectives and requirements, these components are combined into a working system. In other words, integration testing is the process or verifying that the system and program design specifications.

For Internet Security Online, a bottom-up approach has been used. Each module at the lowest level of the system hierarchy is tested individually. Then, the next modules to be tested are those that called the previously tested module. This approach is followed repeatedly until all modules are included in the testing. Since Internet Security Online is developed modularly, errors found should be corrected in each module easily.

Sub-system Testing

This phase involved testing collections of modules that have been integrated into sub-systems. Sub-systems may be independently designated and implemented. The most common problem that rose in Internet Security Online system is sub-system interface mismatches. The sub-system test process was therefore concentrated on the decision of interface errors by rigorously exercising thse interfaces.

7.6 System Testing

The last testing procedure done is system testing. Testing the system is very different from unit and integration testing. The objective of unit and integration testing is to ensure that the code is implemented the design properly. In system testing, a very different objective is to be achieved to ensure that the system does what the customer wants it to do.

CHAPTER 8

PROBLEMS

8.0 Problems

8.1 Problems Encountered and Their Solution

Research and studies in fields such as the Intranet, Internet and education system are the important stages in building this Intranet-based application. Besides that, a lot of system analysis has been done on technological and programming concepts to grasp the concepts of Internet programming. The following are some of the major problems encountered from the beginning to the completion of the system development.

Difficulties in Choosing a Development Technology Programming Language and Tools

There are many software tools available to develop a web-based database system currently as stated in the earlier chapters. Choosing a suitable technology and tool was a critical process as all tools have their strengths and weaknesses. In addition, the availability of require and tool for development was also a major consideration. A though decision was needed to choose from Cold Fushion, ASP technology, or Java.

In order to solve this problem, seeking advises and views from experienced course mates and even seniors engaging in similar project were carried out. Future more, reading computer magazines, surfing the Internet and reading books helped to clarify some doubts.

8.2 System Strength

Friendly User Interface

The system has a friendly user interface that is easy to use. An authorized user is able to access all the function in the system. GUI components such as command buttons, radio buttons and check boxes are used to attract the users to navigate through the system. The learning curve is foreseen to be short and a user should be able to use the system with ease within minutes.

Easy Access of Web Browser

This system is a web-based application and can be accessed easily using the Web browser. The Web browser needed especially Internet Explorer 4.0 which would be downloaded free from Microsoft's Web site.

Consistency User Interface and Available User Guidance

The interface is consistent in that comparable operations should be activated in this some way.

Custom Password System

Creating a custom password-authentication system prevents unauthorized users from viewing pages that they don't have permission to access.

8.3 System Limitations

Platform

This system is limited to certain platforms in term of openness. It supports Windows 95, Windows 98, Windows 2000 and Internet Explorer 4.0 or above. This limitation is due to the usage of ActiveX controls and VBScript in the system, which is not recognized by other browser such as Netscape.

Browser's Cache Information

The web browser normally maintains a cache of web pages that a user has visited before on his local computer. If there are multiple users using the same computer, and all of the users share the same cache directory, then confidential data that is cached may be exposed to unauthorized users. To ensure confidentially, the user has to clear the cache on his computer each time he leaves his or her own computer unguarded.

CONCLUSION

Overall, Internet Security Online has achieved and fulfilled the objectives and requirements as a web-based learning server that provides facilities in providing information.

The birth of Internet Security Online probably brings about the ultimate fulfillment in a business, especially the new business. This is a revolutionary, groundbreaking concept that thrives on the implementation of Internet technology to provide sound business solutions, It is an important concept and the benefits brought by it cannot be denied.

A lot of knowledge was gained throughout the development of the system. These include knowledge in setting up Windows 2000, Internet technologies, programming and concepts as well as using Microsoft Access 2000. Programming in ASP and HTML proved to be valuable experience. ASP technology although new has captured the attention of many software and web developers. It provides very powerful features enabling one to create highly interactive and dynamic web pages. The core of the ASP technology lies in the implementation of object-oriented technology. As such, the object-oriented programming skill has improved tremendously. The tedious and difficult handling education structure and business rules is a challenge where help to improve patient and increase the level of logical thinking.

Finally, all the problems faced and experiences gained during the system development should be useful in the future endeavors. This is because the era is now moving towards Internet technology that requires decent knowledge in Internet programming including the knowledge in deploying the network systems and functionality.

USER MANUAL

USER MANUAL

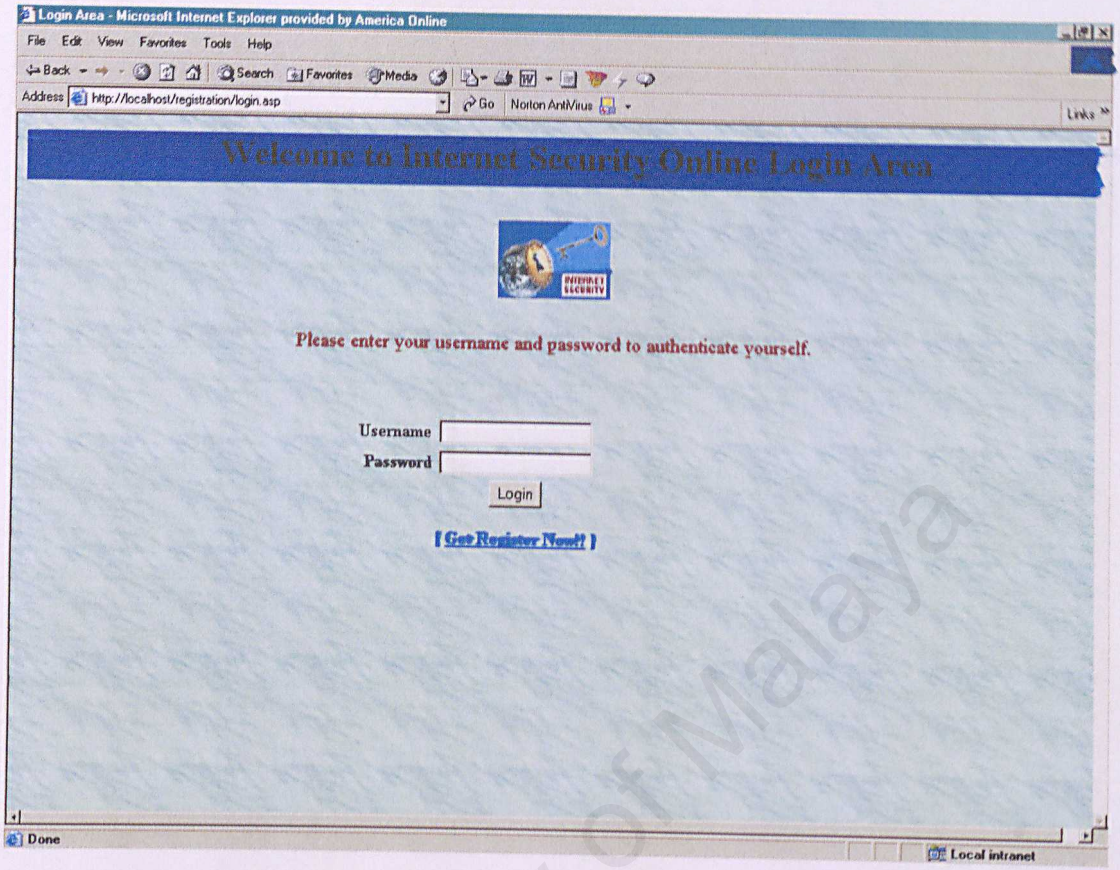
1.1 Welcome to User Manual

This document is the User Manual for Internet Security Online for the Faculty of Computer Science and Information Technology (FSKTM).

Internet Security Online is designed to make it a reality for the people out there and also especially FSKTM students to have an e-Internet Security. This system is actually design for students and business to help them to understand about Internet Security.

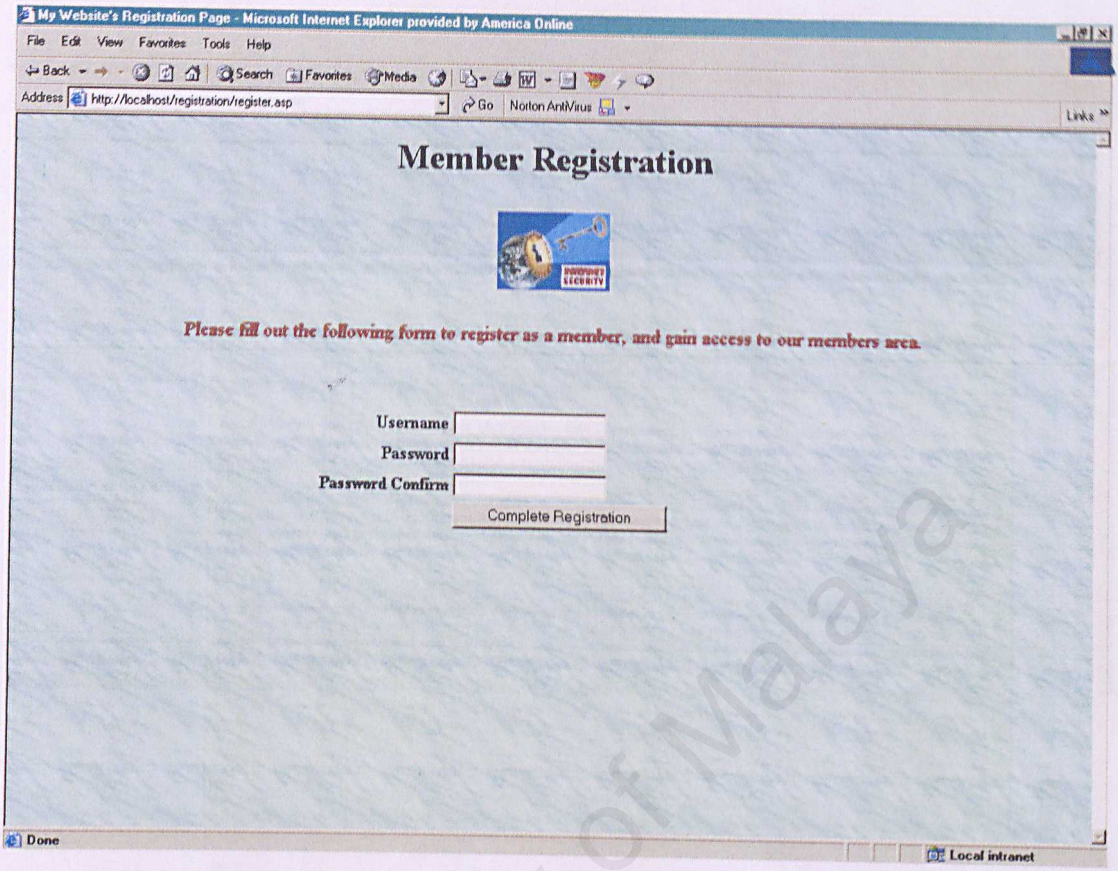
Internet Security is easy to use, all the functions in this system is meaningfully descriptive and can easily be executed by a simple point and click on the available function button and hyper text link.

LOGIN PAGE



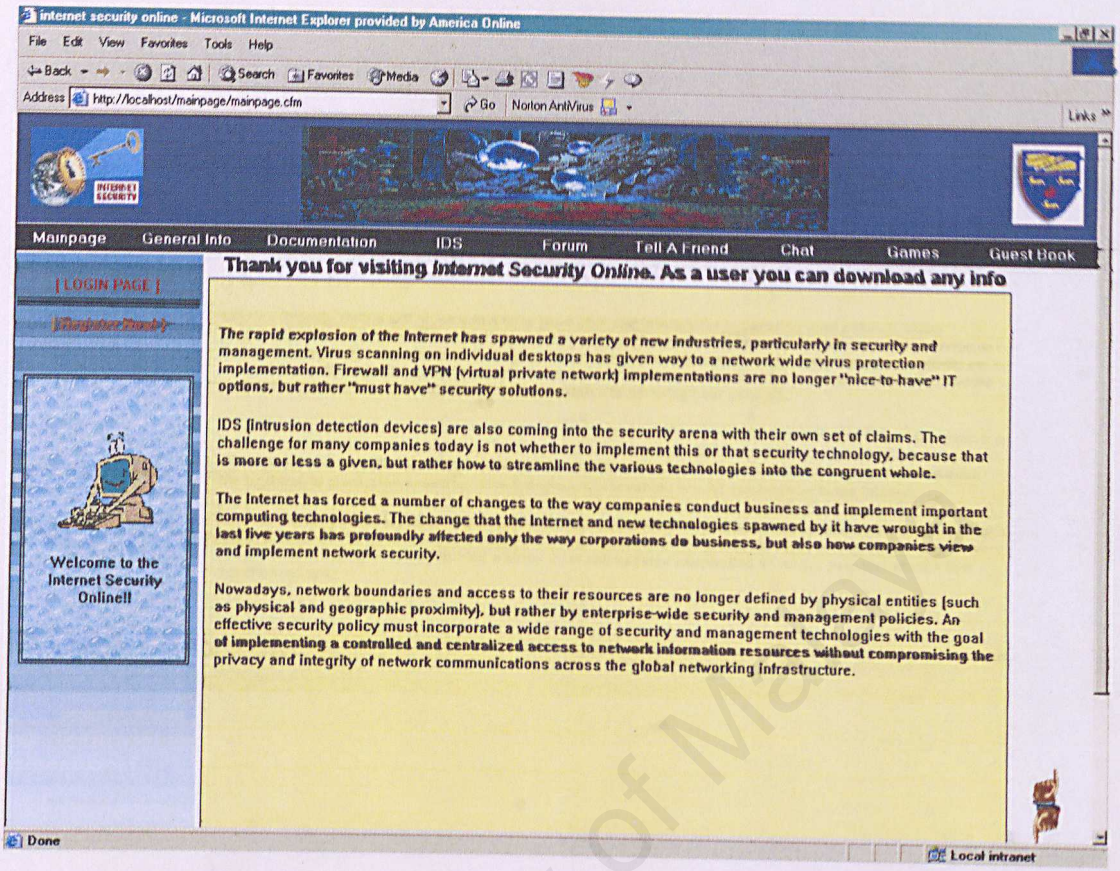
This is Login Page where the user must enter the valid username and password to enter the Main Page. If user is not a member of the Internet Security Online, they cannot access the web pages and they can click to button "Get Register Now!" and the Member Registration Page will be displayed.

REGISTRATION PAGE



At the Registration Page, user must enter the username and password. Don't forget to reenter the password for system confirmation. After the registration submitted, the Login Page will then appear.

MAINPAGE

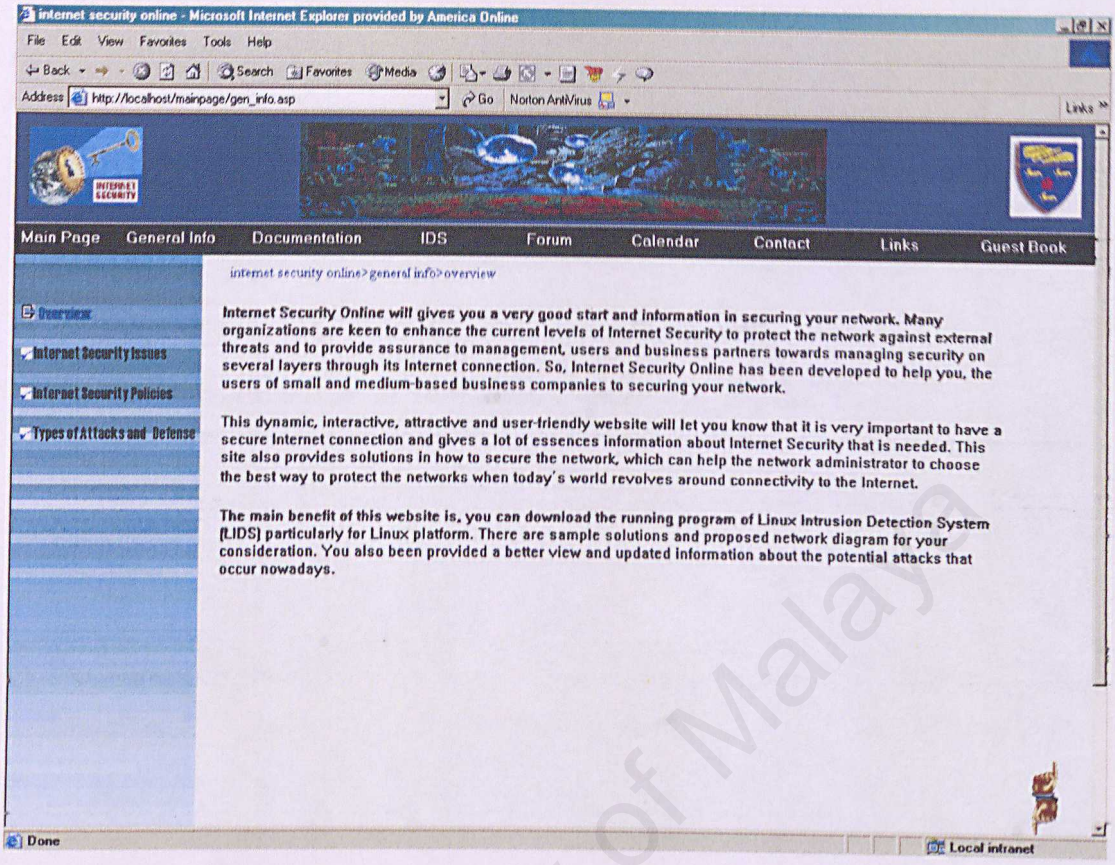


This is the Main Page of Internet Security Online web site. There are many option available for the user to click in the web site such as :

- General Info
- Documentation
- IDS
- Forum
- Tell A Friend
- Chat Room
- Games
- Guest Book

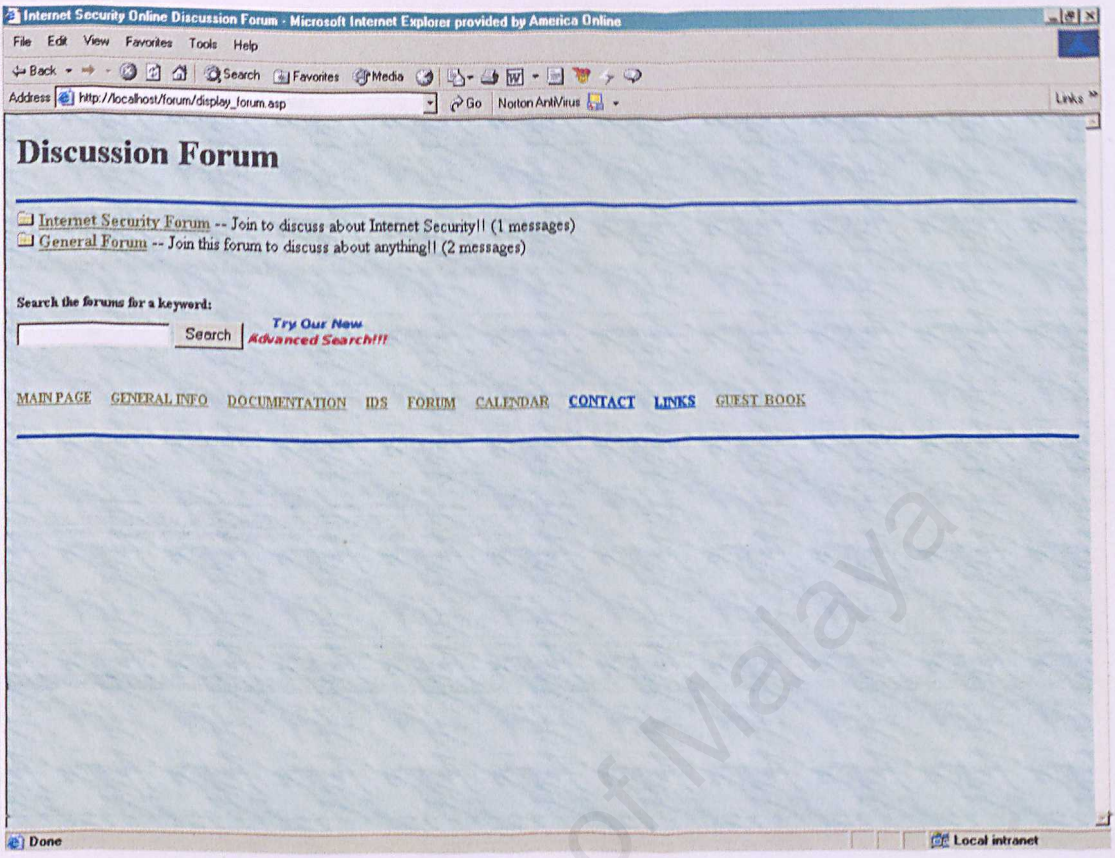
Any click on the option will bring user to the new page.

GENERAL INFO PAGE



This is static General Info Page that contains a lot of knowledge about Internet security issues, policies and specific attacks and the defenses.

FORUM PAGE



This is Discussion corner where allows users to make discussion with other users.

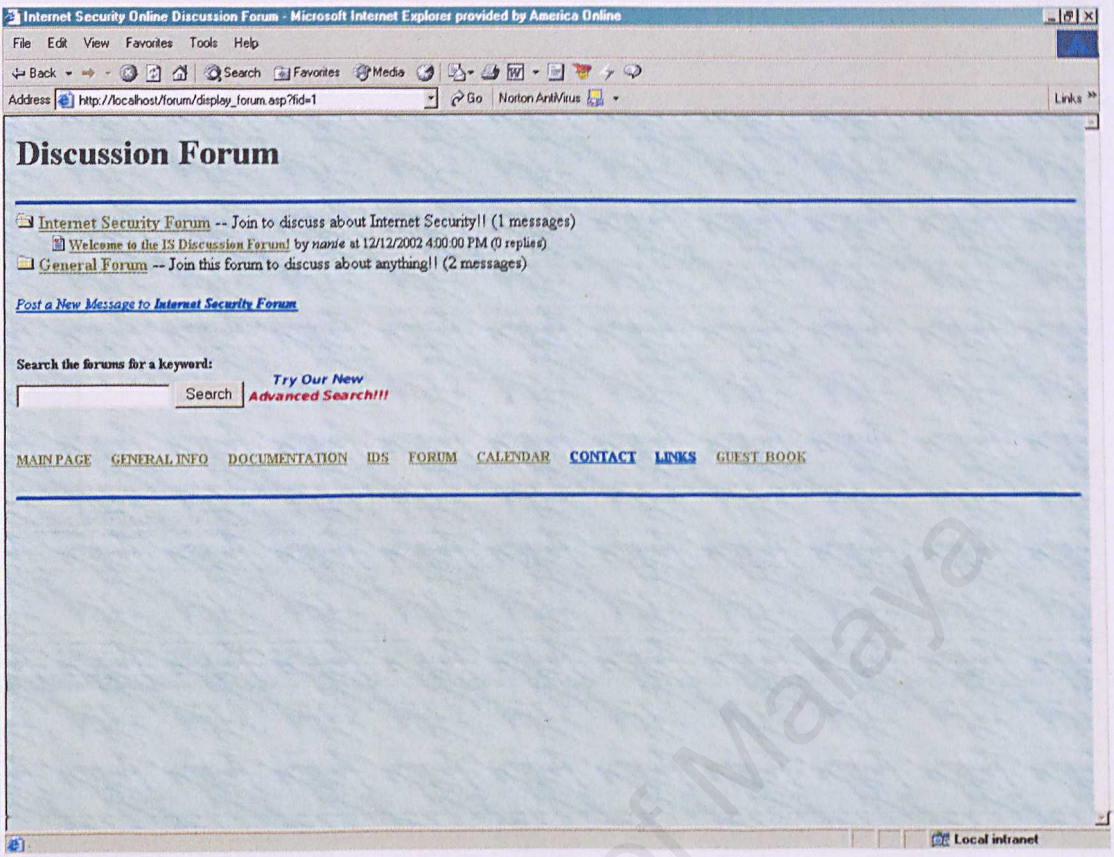
There are two options of discussion forum which are:

(i) Internet Security Forum

(ii) General Forum

Below the section, there is buttons to every module of site.

INTERNET SECURITY PAGE



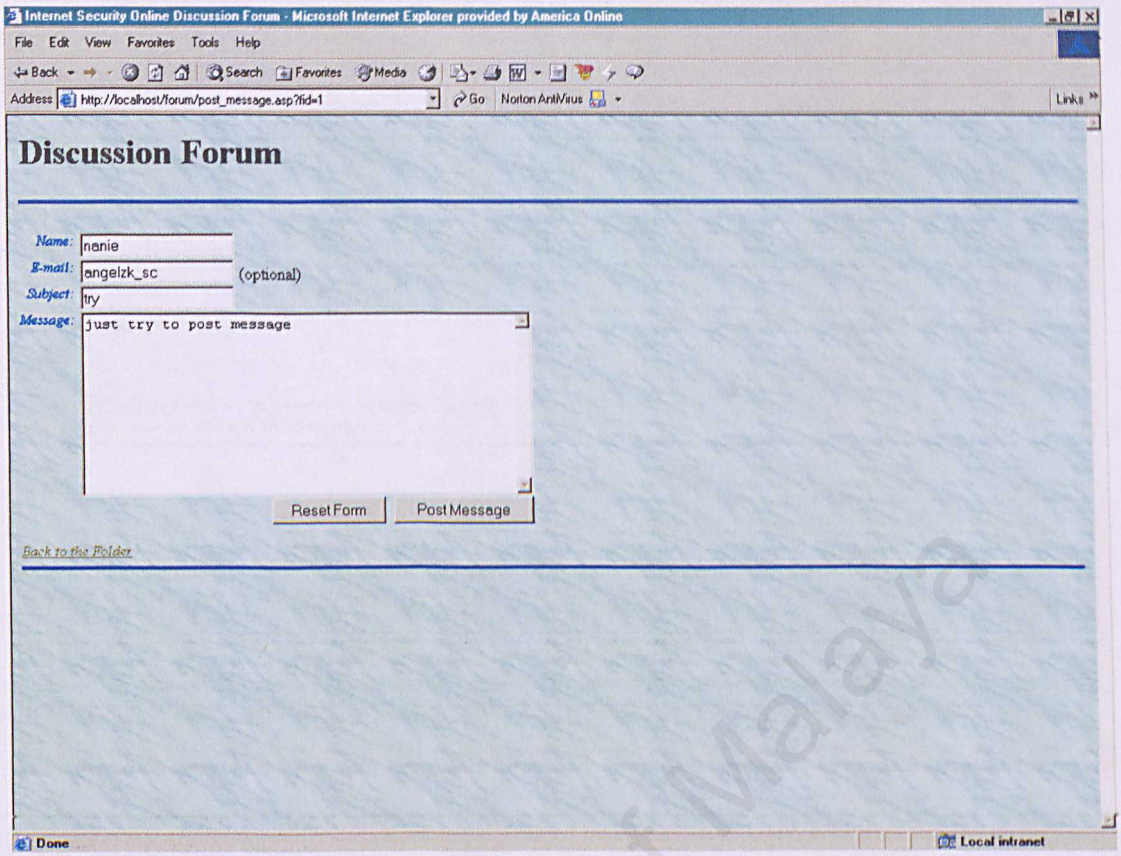
This page will show the user options that are available in this forum:

(i) Post a Message

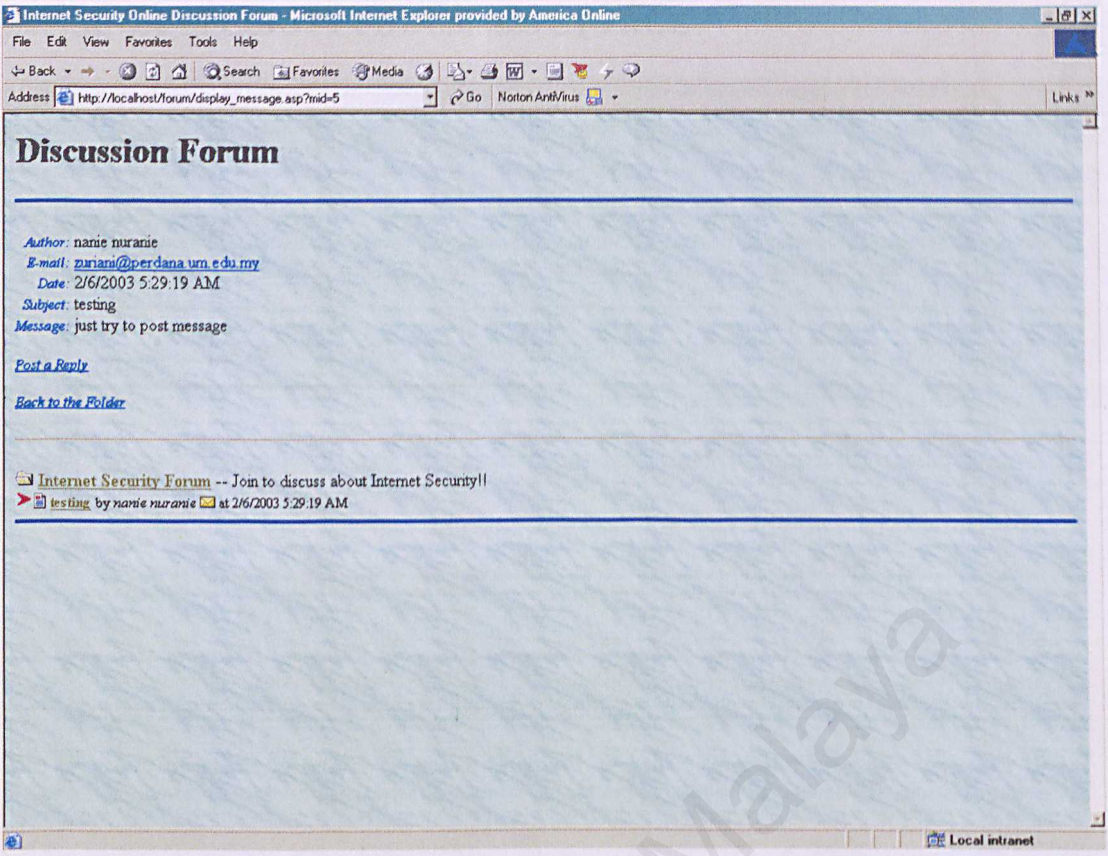
(ii) Reply a Message – can be check on topic name under the subject name.

Below the section, there is buttons to every modules of site.

POST A MESSAGE PAGE

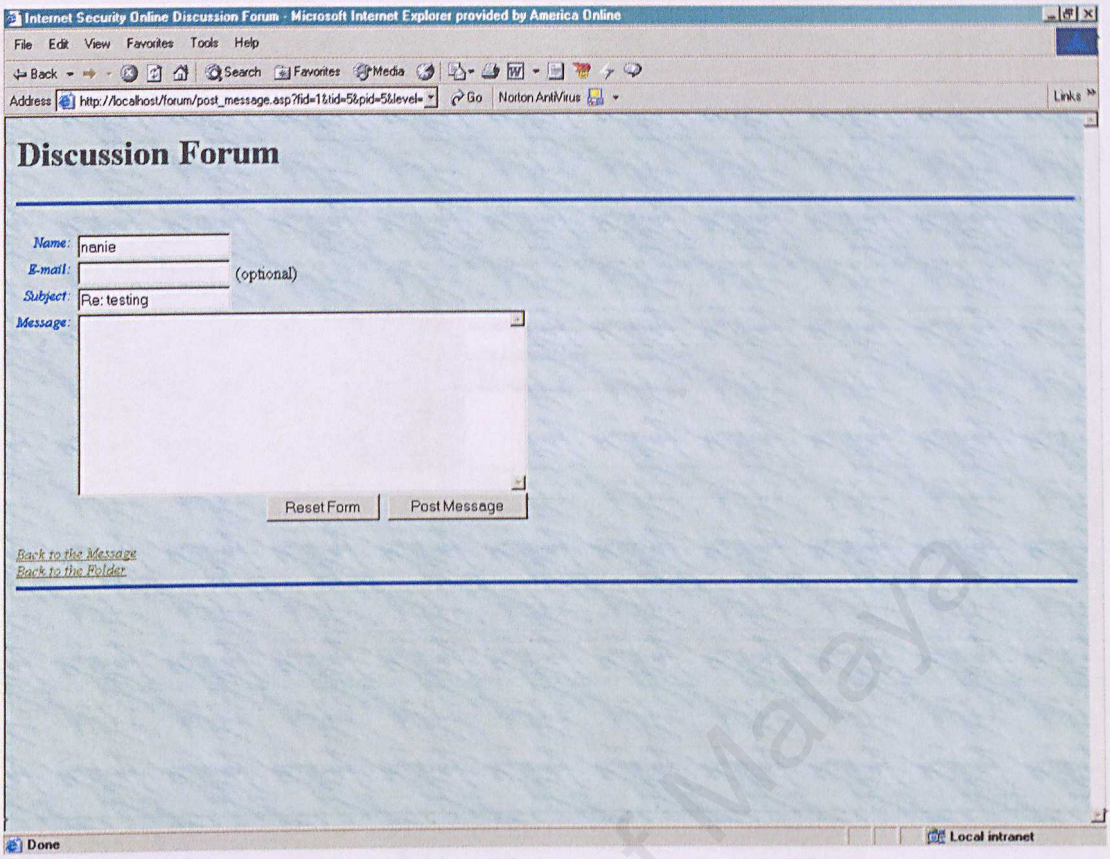


This page allows the user to post a message about Internet Security. User need to enter all the related information in the column available before sending out the message by clicking the button Post Message.



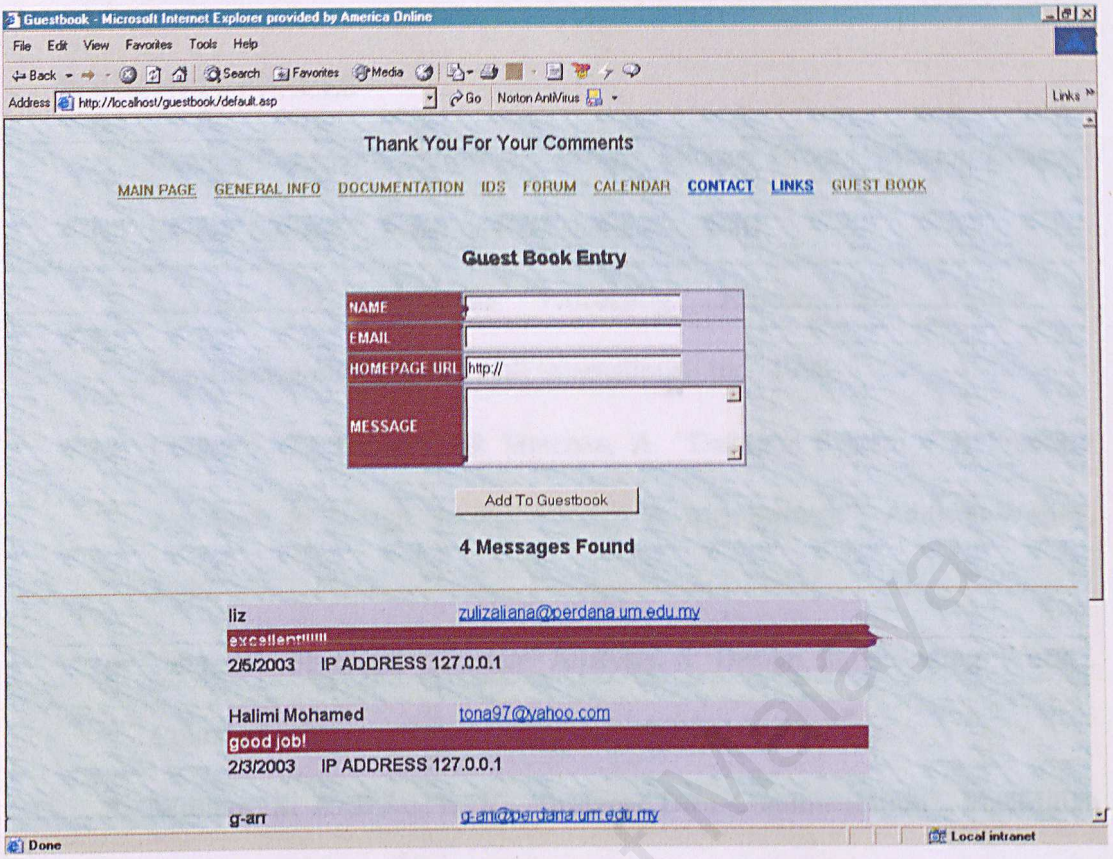
After the user sends the message, the user will be bringing to the Internet Security Forum page with the added new message called *testing*. User now given options on whether want to post a message again or want to reply the message.

INTERNET SECURITY FORUM REPLY PAGE



To reply the message, user needs to click on the reply box available in the page and message will be sent.

GUEST BOOK PAGE



This is Guest Book Page that allows user to give any comments about this web site. To add your name in the Gust Book, just fill the form and click Add To Guestbook button. Then your message will appear at the top of the message lists.

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Appendix

SURVEY QUESTIONS

1. Do you know what Internet Security is?

   Yes _____

   No _____

2. Does your company have a secure Internet connection?

   Yes _____

   No _____

3. Do you think you need a web site that provides information and samples of Internet Security?

   Yes _____

   No _____

4. How do you feel about the existing Internet Security Website?

   Good _____

   Need Changes _____

   Bad _____

5. What kind of column you need most in the web site?

   Information _____

   Sample plan _____

   Feed back _____

   News _____