FACULTY OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY
UNIVERSITY MALAYA

COUNSELLING PORTAL: AskAkak.Com

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ABSTRACT

We have reached the beginning of a new millennium, and needless to say, information technology is relatively changing very rapidly. Along with this revolution, the lives of people have become more complex and convoluted, with problems and insecurities creeping up endlessly. Traditional face-to-face counselling does not prove to be the best remedy for this phenomenon anymore. Living at a fast pace has forced people to turn to technology to provide them with the best solution for solving their problems and soothing their troubled mind – online counselling.

Online counselling has brought us into a new world of communication and problem solving. Ironically, computer counselling has already evolved before web has taken its roots. Initially it was more on program which counsels and acts like educators. When web evolved, online counselling was introduced due to the fact that there were numerous available mediums for communication and counselling. More people who knew the web well started experimenting on this medium for communication and counselling.

Well we are not pioneers, but we will try to carry on from where others have already reached. The system that we are going to build is called the Counselling Portal. Although this portal is built on the platform of existing knowledge and ideas, it attempts to address three different issues simultaneously; the issues of academic, career and relationship. These three issues were selected among all others because of the inherent fact that they are the most mind-boggling problems that students today have to face.

With the aim of building an elegant yet versatile portal in mind, we will try to select the best resource and information we could find. We hope to cater not only the current needs of students, but also their wants in the long run. Which is why we are using the latest web technology – PHP.

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Last but not least, Allah swt. for without His permission I wouldn't even be able to exist today.

THANK YOU ALL

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Chapter 1 – Introduction

- *Project Background*
- *Project Definition*
- *Purpose and Objectives*
- *Project Scope*
- *Project Importance and Significance*
- *Software and Hardware Requirements*
- *Project Schedule*
- *Summary*

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Chapter 1 – Introduction

1.1 Project Background

This project is part of the course requirements in order for me to complete my Bachelor's Degree in Software Engineering. The system that my two other colleagues and I are going to develop is called the Counselling Portal. This system is basically a website that provides free online guidance and counselling services on the topics of academic, career and relationship. This system will enable Malaysian students to get the advice and directions they need more easily, quickly, effectively and with cheaper cost. Users can get all the information they need just by accessing the web page, so long as they have Internet connection and a web browser.

This project consists of three developers, each responsible for their own type of counselling. As I am responsible for Academic Counselling, I will be focusing on this component throughout this report. Whenever relevant, I will also include snapshots and examples from the other 2 components of the portal: Career Counselling and Relationship Counselling.

This project will introduce to us a new breakthrough technology called PHP. Simply put, PHP is a recursive acronym for Personal Home Pages (PHP) Hypertext Preprocessor. It has quickly become one of the most popular server side scripting languages for creating dynamic Web pages. Throughout this report, I will gradually try to expose its attributes, its functions and its strengths so that we could understand it more clearly and thoroughly. Apart from that, we will be using Macromedia Dreamweaver MX to create this portal. Dreamweaver MX is a very sophisticated web-editing tool that allows web designing, development and programming to be done all in one integrated environment.

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1.2 Project Definition

1.2.1 Definition of Counselling Portal

According to Oxford Advanced Learner's Dictionary, *counselling* is a noun which refers to *direction, advice or suggestions as to a decision or a course of action, especially from a professional person.* With respect to relationship counselling, professional person may refer to a marriage counsellor or a physiotherapist. In the case of career counselling, a career consultant is probably better suited. Meanwhile, lecturers, academic advisors and course instructors might be regarded as the best person to give counselling on academic matters.

When people seek for counselling, they are trying to identify their problems, find out alternatives of solving their problems, receive advice and directions on which path is the best to take, and learn more helpful coping skills. Counselling also helps people to recognize and accept their own internal worth, and integrate their learned habits of thinking about themselves and their learned behaviours.

In the context of computing, the word *portal* has not made its way to the contemporary dictionaries. However, according to the Free Online Dictionary of Computing (www.dictionary.com), a portal is a *web site that aims to be a "doorway" to the World-Wide Web, typically offering a search engine and/or links to useful pages, and possibly news or other services. These services are usually provided for free in the hope that users will make the site their default home page or at least visit it often. Most portals on the Internet exist to generate advertising income for their owners, others may be focused on a specific group of users and may be part of an intranet or extranet.* In our case, our portal is focused on local students and undergraduates.

In short, we could conclude that a counselling portal is the convergence of the two

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1.2.2 Definition of Academic Counselling

Because I will be developing the academic counselling component of the portal, it would be incomplete if I were to leave out the meaning of academic counselling. Perhaps the most suitable definition for the word 'academic' in our context is *something that is associated with academia or an academy, and/or related to scholarly performance.* Therefore, the overall meaning of academic counselling would be *directions, advice or suggestions as to a decision or a course of action that is related to an academy or scholarly performance.*

At this point, we may be wondering, *what can academic counselling do for me?* A lot, actually. It can assist you in selecting your courses, choosing a program of study, clarifying your requirements for graduation, interpreting university and faculty policy and accessing all forms of financial assistance. Academic counselling also aims to strengthen your academic skills such as reading and note taking so that you will be able to benefit fully from university experience. And because the system we are going to build is a portal, much relevant information, news and assistance will be included with one target in mind: to be responsive to students' individual needs and to provide appropriate services so that students can gain the confidence essential for their success at the university.

1.3 Purpose and Objectives

Before we delve deeper into the purpose and objectives of this project, it would be a good idea to briefly explain the meaning of these two terms. According to Oxford Advanced Learner's Dictionary, a purpose is *something that one intends to do, get, or be*, or in other words, *a person's intention.* Objective, on the other hand, refers to *something that is aimed at or wished for.* However, we can deduct that the latter definition is equivalent to *something that one intends to get or achieve*, or put more appropriately, the

purpose of an action. Therefore, in this report, purpose and objective primarily refers to the same things and thus I will not try to distinguish between the two.

That being clear, we will now see the main purpose and objectives of the Counselling Portal:

- **To overcome the limitations of traditional face-to-face counselling.**

  Everybody knows that although the traditional face-to-face counselling is more effective, the process of getting one is very cumbersome and problematic. Listed below are the setbacks of traditional face-to-face counselling:

  - Time consuming

    The process of booking the counsellors, making appointments and finally meeting them can be long and unbearable. More often than not, the number of counsellors is limited, thus making it impossible to attend to the needs of every student.

  - Difficult to receive immediate advice

    As said earlier, the process of getting counselling can be long and unbearable. Thus, when counselees are facing problems, they cannot receive counselling immediately, especially when there is a shortage of counsellors. This can baffle the students and finally resort to them making uninformed decisions and bad choices.

  - Unsuitable location

    Some counselees might find it difficult to actually meet the counsellors at their offices. In University Malaya, for example, the counselling centre is located in the university itself and this might make it hard for students living outside the campus to receive immediate help.

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- Inflexible time

  By this stage, we should be well aware that full-time counsellors work at a fixed time, just like everybody else. They cannot work 24 hours a day. This might make it difficult for counselees to get help from them especially when their schedule overlaps with the counsellors'.

- Lack of privacy

  Although the counsellors will try to safeguard the particulars of every counselee, the fact that this is a face-to-face counselling introduces the inherent problem of counselees not being able to preserve total anonymity. Plus, being at the counselling centre itself might become a telltale to others.

- **To improve the weaknesses and deficiencies of existing counselling websites.**

  Existing counselling websites are usually owned and developed by academic institutions for the benefits of their students and staff. Therefore, the website content is usually constrained and guided by the policies and procedures of the institution itself, especially in the context of academic counselling. Thus, the services given might not appeal to everyone. Apart from that, most counselling portals deal with a specific issue only, such as relationship counselling or career counselling; but never both. We are trying to build a counselling portal which deals with academic, career and relationship counselling while being capable of serving any student from our country regardless of which university or academic institution he/she is from.

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- **To make the process of counselling easier, faster, cheaper and more effective.**

  This objective is probably the result of the limitations that traditional face-to-face counselling has imposed on us. Because this system provides online counselling, counselees will not have to go through the cumbersome ways of reaching the counsellors. No longer will they have to wait for hours or even days to get the advice they need. Everything they need to know is at the tip of their finger. This will certainly prove to be a lot easier and faster. And because the services provided here is free, users will only have to pay for their Internet connection. The fact that this portal is run by professional people also helps to make the online counselling process just as effective as the traditional one.

- **To fully utilize the strength of PHP**

  When the Internet started to achieve widespread popularity, the volume of requests for information from web servers began to increase tremendously. The power of the Web resides not only in serving content to users, but also in responding to requests from users and generating web pages with dynamic content. It became evident that the degree of interactivity between the user and the server would be crucial. While other languages can perform this function as well, PHP was written specifically for interacting with the Web. As we are trying to build a highly interactive counselling portal, using PHP to implement it proved to be the best choice.

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- **To build an elegant portal with good interface and site design**

  Most of the counselling websites we came across are more content-oriented rather than presentation-oriented. They tend to put more emphasis on the message they are trying to convey without putting too much effort on the interface and site design. The system we are going to build will place content and presentation at the same level. We will try to abide to good web design practices in our portal: using virtually pleasing colours and interesting yet relevant graphics, limiting the number of animations and multimedia elements, avoiding overly long text, enforcing consistent layout on every page to ease navigation, and last but not least keeping the simplicity and elegance of our portal.

- **To build a gateway to a warehouse of information**

  To understand this objective, we'll have to trace back to the definition of portal. Because this website is a portal (not just a common website), it will provide the users with a search engine, useful links, resources, news and articles, and many other exciting features and functions such as chat, forum, quiz, feedback, Frequently Asked Questions and direct e-mailing. This will certainly be a huge source of information to the users and will prove to be beneficial in the long run.

- **To maximize human capital in providing information**

  This system aims to provide effective solution and information with less human work by storing every solution and information into a database. Whenever there is a need to access the information, users only have to retrieve them by using their keywords or through the links available.

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- **To provide individuals with good advice and directions while motivating them to lead a positive thinking**

  This objective is closely related to the functions of counselling per se. Recalling the definition of counselling, it is a process of identifying the counselees' problems, finding out alternatives of solving their problems, pointing out advice and directions on which path is the best to take, and teaching them more helpful coping skills. Those functions are what we are trying to provide. We get the information and solutions only from trusted and reliable sources so that counselees will be able to make a sound decision and thus making them feel good about themselves.

- **To help overcome the shortage of professional counsellors in our country**

  Everybody knows that there is a lack of professional counsellors here in our country. In University Malaya itself, there is only one single counsellor in charge in the whole of Pusat Bimbingan dan Kaunseling. Thus, the target of this system is to overcome this problem of shortage more efficiently. To illustrate, this system will allow authorized counsellors to insert their solutions and advice into the database. They can also give counselling or voice out their thoughts and opinions through e-mail, chat or forum. Therefore, it would be possible for the system to operate with much fewer counsellors than those needed in the traditional face-to-face counselling.

- **To safeguard user's privacy**.

  The use of login and password system in this portal will assure the absolute anonymity of counselees. Counsellors do not have to know whose personal

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problems they are listening to while counselees do not have to know with whom they are sharing their innermost insecurities.

1.4.1 Project Scope

A scope defines the boundaries of the project – what part of the system is to be studied, analysed, designed, constructed, implemented and ultimately improved. Scope also defines those aspects of a system that are outside of the project. In our case, we have established these following items as those included in the scope of our project:

1.4.1 Product

The product to be built is the Counselling Portal, which covers these three components: Academic Counselling, Career Counselling and Relationship Counselling.

The first component, Academic Counselling, deals with the topics of basic study skills, study fields, academic problem solving, varsity info and college life guidance.

The second component, Career Counselling, deals with the topics of career planning, dream career, resume writing guidelines, interview tips and job vacancy listing.

Meanwhile, Relationship Counselling deals with the topics of perplexing problems, relationship quizzes, his/her say, relationship issues, relationship horoscope and goodies.

My part of the job is developing the Academic Counselling component, so throughout this report, emphasize will be given on this field.

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1.4.2 Target user

The target user for all three components are local students from every academic background or status. However, for my component, undergraduates and university students will find it more appealing because the information and resources provided here are better suited for them.

1.4.3 Language used

English is the medium used in this portal. We have chosen this language because it is the most widely used lingua franca and therefore understood my mostly anybody. The fact that most university courses and programs are taught in English also contributes to this. English also proves to be more user friendly, more semantically precise and has better expressions compared to Bahasa Melayu and that has to be taken into consideration especially when you are trying to advise someone who is emotionally dependent on you. Besides that, most of the resources that we have found are written in English, so keeping it that way is inherently natural.

1.4.4 Main functions

There are basically 13 main functions in this portal-to-be: They are:

a. **Search**

- Provides searching capabilities for the entire portal. There are four categories of search: Search on stories, comments, sections or users.

b. **Main Menu**

- Gives the ability of the normal user to go to the main page (home), submit news, read stories from the archive and pick articles based from the topics.

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c. **AskAkak Guides**

- This is where all the self-help articles and information on academic, career and relationship counselling are stored.
- Allows the normal user to read all the articles and display them in printer-friendly mode.
- Informs the user how many times the information has been viewed.

d. **Total Hits**

- Acts as a page counter whereby it tells the user how many times the portal has been accessed.

e. **Links**

- Displays the links to other interesting and informative made-in-Malaysia websites that are not at all related to the subject of counselling.

f. **Who's Online**

- A complex module that displays
  i. The name of the latest member
  ii. The total number of members
  iii. The total number of users currently accessing the portal
  iv. The number of visitors (normal users) currently accessing the portal
  v. The number of members currently accessing the portal and their names.

g. **AskAkak Support**

- Another complex module that provides the links to all the crucial features of this portal:

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i. Profile – displays the counsellors, administrators and system developers; the means of interacting with these people, and the mission and objective of the portal.

ii. Forum – provides the link to the forum of this portal. Basically, it is divided into three sections: Academic, Career and Relationship. Each of these sections has their own moderators, topics and attributes (e.g who can post replies and whether attachments are allowed).

iii. Contact Us- enables visitors and users to send e-mail to the administrators and counsellors at AskAkak.Com. This is the best method to make appointments with counsellors or ask them for advice. Those who wish to do this must have their own POP3 email account.

iv. Feedback – enables visitors and users to send their feedback on the website – report broken links and typo errors, and send comments and suggestions on the website.

v. Chat – enables the users to chat on a real time basis. Those who wish to do this must have their own nickname, thus only members are allowed to chat.

vi. FAQ – Those first time visitors who feel awkward when browsing this portal should definitely check this out. This function (Frequently Asked Questions) contains all you need to know about this website – who are its creators, what are the services it provides, how to use those services, etc.

h. **Survey**

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- With this module, users are able to cast their vote on the featured survey and give additional comments on that particular topic.
- Users can also take a look at the entire result of the poll – a bar graph will be displayed to show the statistics.
- Users can also vote on other polls not featured in the main page.

i. **Create new account**

- Those users who wish to become a part of AskAkak.Com community can fill in the form and enjoy the privileges.
- The same person may not become a member twice (this system checks for similar e-mails and usernames)
- Upon registration, the user will be given their temporary password (which is generated by the system) and they will be asked to change that password to increase security.

j. **Top 10 Jobs**

- Displays the links to the 10 most sought-after jobs in the job industry.

k. **Perplexed**

- Displays the links to the 3 most perplexing problems a student could face – as compiled by our relationship counsellor.

l. **Sources**

- Displays the links to the web pages that have become sources for the information in this portal.

m. Study Tips

- Displays the best tips on how to study more effectively – as compiled by our academic counsellor.

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1.5 Project Importance and Significance

At a glance, this counselling portal that we are going to build may seem common and nothing out of the ordinary. But indeed, on closer inspection, our system does possess some outstanding qualities that clarify its importance and significance compared to all the other existing online counselling systems.

First is the fact that it is a portal. Most counselling websites merely provide online counselling and self-help articles but that is basically it. We are trying to build web site that aims to be a "doorway" to the World-Wide Web, conveniently offering a search engine and links to useful and interesting pages. We will also provide news and related activities to keep our users well informed. And if that is not enough, we will also add exciting features such as user poll, forum, chat room and question submission capabilities where the user can send their mind-boggling questions straight to the counsellors. And because all this is provided free, users are required to register first in order to fully utilize our exciting functions. All this is done in the hope that users will make this site their default home page or at least visit it often.

Second is the fact that this portal attempts to serve the whole Malaysian student community. As we will see in the next chapter, most counselling websites are created by overseas' universities for the particular use of their own students. Therefore, some of the information given may not be applicable to students from other institutions. Furthermore, there is yet a local university that has put up a counselling website for its students' benefits. This portal hopes to overcome all that by providing information that applies to local students from all walks of life. We will try to make our explanation as general as possible while selecting only the best and most relevant topics. Specific issues will have to be personally entertained by the counsellors.

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Finally, the fact that this portal is using PHP is by itself a major breakthrough. PHP offers a simple and universal solution for easy-to-program dynamic Web pages. The intuitive interface allows programmers to embed PHP commands right in the HTML page. PHP's syntax is similar to that of C and Perl, making it easy to learn for anyone with basic programming skills. Its elegant design makes PHP significantly easier and faster to maintain and update than comparable scripts in other languages. Short development time means fewer programmers are needed to customize solutions and add new services. In today's market, when it is difficult to find programming staff, and Web applications need to be updated rapidly, short development time is the key to staying competitive.

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1.6 Software and Hardware Requirements

1.6.1 Hardware

These following hardware are essential for the development of my portal:

- Central Processing Unit (CPU)
- VGA Colour Monitor
- Multimedia Keyboard
- Mouse
- Printer
- Scanner
- Processor (Intel Pentium 3 which consists of 733 MHz of processor)
- 128MB Random Access Memory (RAM)
- Windows 98 and/or Windows XP
- Digital Camera
- Conventional Camera

1.6.2 Software

Software that will be used in the system development is:

- PHP compiler
- PHPMyAdmin
- Macromedia Dreamweaver MX
- Adobe Photoshop 7.0
- Adobe Illustrator 10.0
- MySQL 3.2.3
- EditPlus

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1.7 Project Schedule

The project schedule is developed to manage the time and resource allocation for the tasks that need to be accomplished. It is developed with a clear understanding of the required tasks, task duration and task prerequisites. The table below lists the activities undertaken to complete the first phase of this thesis and the start date and finish date of each activity.

Activity	Start Date	Finish Date	Duration (days)
1. Thesis title selection	18/3/2002	19/3/2002	2
2. Preliminary Investigation	20/3/2002	24/3/2002	5
3. Questionnaire administering	25/3/2002	29/3/2002	5
4. Fact finding and data collection	26/3/2002	6/4/2002	12
5. Introduction	31/3/2002	6/4/2002	7
6. Literature Review	7/4/2002	12/4/2002	6
7. System Analysis	11/4/2002	18/4/2002	8
8. System Design	13/4/2002	20/4/2002	8
9. Viva I	14/4/2002	19/4/2002	6
10. Viva presentation	19/4/2002	19/4/2002	1
11. Completing Report and documentation	20/4/2002	3/5/2002	13
12. Report submission	3/5/2002	3/5/2002	1
13. Learning the tools	4/5/2002	8/6/2002	35
14. Creating the design template	8/6/2002	29/6/2002	22
15. Coding and unit testing	8/6/2002	15/7/2002	38
16. Integration testing	15/7/2002	1/8/2002	17
17. Debugging and refining	1/8/2002	8/12/2002	11
18. System testing	12/8/2002	18/8/2002	7
19. Acceptance testing	19/8/2002	25/8/2002	7
20. Final improvements	26/8/2002	2/9/2002	8
21. Viva Preparation	2/9/2002	5/9/2002	3
22. Viva I	6/9/2002	6/9/2002	1
23. Completing final report	6/9/2002	16/9/2002	11
24. Report submission	16/9/2002	16/9/2002	1

Table 1-1 :Schedule of Activities

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	Task Name	Duration
1	Choosing title	2 days
2	Preliminary investigation	5 days
3	Questionnaire administering	5 days
4	Fact finding and data collecl	12 days
5	Introduction	7 days
6	Literature review	6 days
7	Methodology	8 days
8	System design	8 days
9	Viva preparation	6 days
10	Viva I	0 days
11	Completing report and docu	14 days
12	Report submission	0 days
13	Learning the Tools	35 days
14	Creating the design templat	22 days
15	Coding and unit testing	38 days
16	Integration testing	17 days
17	Debugging and refining	11 days
18	System testing	7 days
19	Acceptance testing	7 days
20	Final improvements	8 days
21	Viva preparation	3 days
22	Viva II	0 days
23	Completing final report	11 days
24	Report submission	0 days

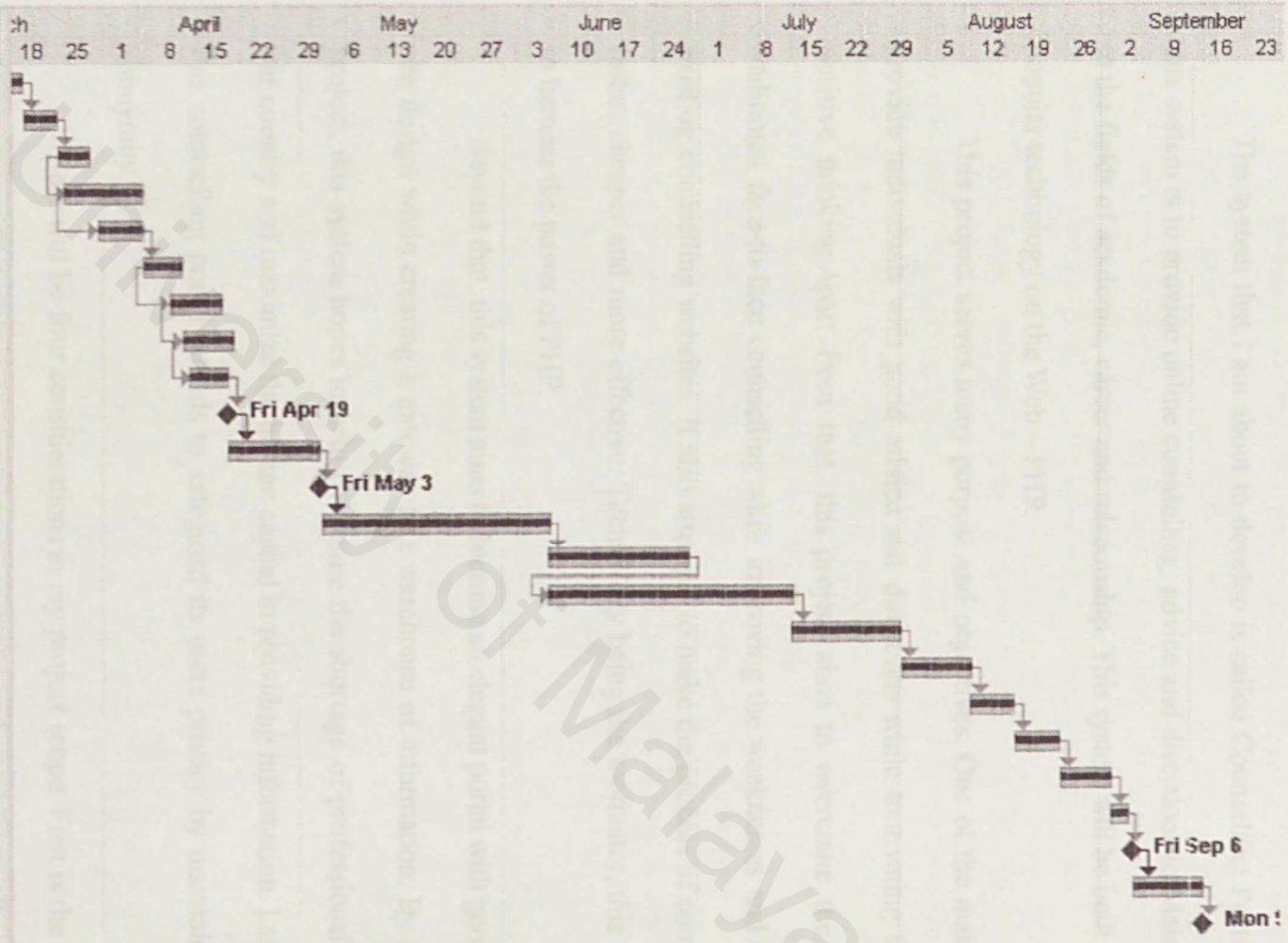

Fig. 1-1 : Gantt Chart for my project schedule

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1.8 Summary of Chapter 1

The system that I am about to develop is called Counselling Portal. The goal of this system is to provide online counselling, advice and directions to Malaysian students in the fields of academic, career and relationship. This system will be built using the most popular technology on the Web – PHP.

This project serves many purpose and objectives. One of the main reasons is to provide individuals with good advice and directions while motivating them to lead a positive thinking.Apart from that, this project aims to overcome the limitations of traditional face-to-face counselling while improving the weaknesses and deficiencies of existing counselling websites. It also attempts to make the process of counselling easier, faster, cheaper and more effective. Technology being the motivator, this system intends to harness the power of PHP.

Beyond that, this system aims to become an elegant portal with good interface and site design while creating a gateway to a warehouse of information. By the end of this project, this system hopes to help overcome the shortage of professional counsellors in our country and maximize the human capital in providing information. Last but not least, this counselling portal intends to safeguard its users privacy by maintaining their total anonymity.

There will be four considerations in my project scope. First is the product scope. We are going to build a counselling portal which consists of these three components: academic, career and relationship and therefore we will not stray into other topics. Second is the target user, and as I have mentioned before, this portal is focused on local students. Therefore, the information and resources that we are going to pick will be suitable and applicable for them only. Third, the language that is going to be used in this

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portal is English. Thus, we will not try to use other languages, although we may insert one or two Malaysia expression or exclamations just to make the site more interesting. Finally, we are going to include thirteen main functions in our portal: Search, Main Menu, AskAkak Guides, Total Hits, Links, Who's Online, AskAkak Support, Survey, Create New Account, Top 10 Jobs, Perplexed, Sources and Study Tips.

The strength and significance of this projects lies in the fact that it is a portal. Besides that, it tries to cater every Malaysian student regardless of background. Finally, it uses PHP as its web development technology, which is something refreshing and is considered a notable attempt by the students of UM.

The technology that will be used to develop this counselling portal is PHP. The main tool that is going to be used to implement this project is Macromedia Dreamweaver MX. This is the latest and most powerful edition of its kind. Other software, such as Adobe Photoshop 7 and Illustrator 10, will be used to create the interface. PHPMyAdmin and MySQL 3.2.3 will be used to create the database for this portal.

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Chapter 2 – Literature Review

- *Introduction to Literature Review*
- *Literature Review of My Project*
- *Literature Review on Tools*
- *Summary*

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Chapter 2 – Literature Review

2.1 Introduction to Literature Review

2.1.1 What is a literature review?

A literature review is an evaluative report of information found in the literature related to my selected area of study. This review should describe, summarize, evaluate and clarify this literature. It should give a theoretical base for the research and help me determine the nature of my research. Works, which are irrelevant, are discarded while those, which are peripheral, would be looked at critically.

A literature review is more than the search for information, and goes beyond being a descriptive annotated bibliography. All works included in the review are read, evaluated and analysed (as I would do for an annotated bibliography), but relationships between the literatures are also identified and articulated, in relation to my field of research.

> *"In writing the literature review, the purpose id to convey to the reader what knowledge and ideas have been established on a topic, and what their strengths and weaknesses are. The literature review must be defined by a guiding concept (e.g. your research objective, the problem or issue you are discussing, or your argumentative thesis). It is not just a descriptive list of the material available, or a set of summaries."*

2.1.2 Why do a literature review?

A crucial element of all research degree is the review of relevant literature. So important is this chapter that its omission represents a void or absence of a major element in research [Afolabi, 1992]. According to [Bourner, 1996], there are good reasons for

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spending time and effort on a review of the literature before embarking on a research project. These reasons include:

- To identify gaps in the literature
- To avoid reinventing the wheel (at the very least this will save time and it can stop you from making the same mistakes as others)
- To carry on from where others have already reached (reviewing the field allows you to build on the platform of existing knowledge and ideas)
- To identify other people working in the same fields (a researcher network is a valuable resource)
- To increase your breadth of knowledge in your subject area
- To identify seminal works in your area
- To provide intellectual context for your own work, enabling you to position your project relative to other work
- To identify opposing views
- To demonstrate that you can access previous work in your area
- To identify information and ideas that may be relevant to your project
- To identify methods that could be relevant to your project

As far as the literature review process goes, the ultimate goal for students is to complete their review in the allocated time and to ensure they can maintain currency in their field of study for the duration of their research [Bruce, 1990]

2.2 Literature Review of My Project

There are three types of items that I choose to be my literature review. They are books, websites and authoring tools. As for websites, I was able to find adequate information to assist me in carrying out my project. These websites include community

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portals, general counselling websites and academic counselling homepages. I was also able to find a generous amount of information about PHP from the Internet. This may be due to the fact that PHP is an open source technology that is supported by a large community of users and developers. This means that developers have all the access to the software's source code and free distribution rights.

However, I couldn't find many books on academic counselling, although there is a book on study skills in my keeping. Books on PHP and Photoshop are aplenty, and it's just a matter of selecting the best and most comprehensive ones. Bulletins and periodicals are a good source of information on academic counselling, albeit the fact that I could not find many which are relevant.

As for tools, I was not able to do so much review. This is due to the fact that I will only be using commercialized tools. Moreover, some of these tools are the ones that I have used before to do my past projects. They are Macromedia Dreamweaver MX, Adobe Photoshop and Illustrator, and MySQL.

2.2.1 Literature Review On Books

Photo not available

How To Get Good Grades and Still Keep Your Reputation As A Cool Person
Author: Kris Bearss
Publisher: Wrox Press

I got this book as a present from the school during my secondary school years. Which practically tells us that the contents should be more targeted to high school students. However, the author tried making the information as general as possible so it would be suitable for college reading too. The book title is a little quirky, but I find the study tips and techniques provided very useful and it really works! I even find myself

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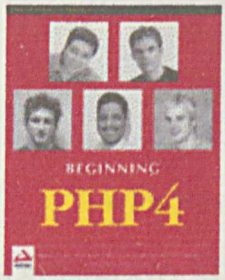
referring to this book now and then. This book will be my constant guidance in providing information about study skills.



Beginning PHP4
Author(s) : Chris Ullman, Jon Blank, Wankyu Choi, Ganesh Prasad, Allan James Kent, Chris Lea
Publisher: Wrox Press

For someone who doesn't know a thing about PHP, this is the book I could count on! This book is aimed for developers who have very little experience with web programming and are looking to move over to PHP. In a glance, this book provides me with a step-by-step introduction to the latest version of PHP, with plenty of worked examples that has helped me to gain a deep understanding of what PHP is all about, and how I can harness it to build powerful web applications.

There are 17 chapters altogether, with topics covered such as introduction to PHP, writing PHP programs, getting data from the client, decision making, working with the client, complex data, PHP database connectivity, retrieving data from MySQL, manipulating data in MySQL, XML and generating graphics. There are also useful maintenance topics such as debugging, error handling and optimization.

All in all, I find this book helpful in getting a simple grasp on what PHP is, what it does, and how it can be used. However, this book only exposes me to the core aspects of PHP. Moreover, this book does not explain how to create more complex features like forum, chat, mailing lists or polls.

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Dreamweaver MX : PHP Web Development
Publisher: Sams Publishing

With this book, I could kill two birds with one stone. I can learn how to use Dreamweaver MX to create dynamic PHP pages. Therefore, I didn't need to buy separate books to learn PHP and Dreamweaver MX. This book contains all I need to know about both technologies and how they work together.

Having used the previous version of Dreamweaver for making static pages, I was keen to try out Dreamweaver MX's capability for making PHP sites. This book gave me all the info I needed to get going. While it doesn't have a comprehensive language reference section, by the end of the book I was able to build my own dynamic PHP sites. I really liked the hotel reservation model that was built up in the book - very helpful to gain tips about how to use Dreamweaver to build real life projects.

When I used the Dreamweaver PHP tutorials, the sample files ended up throwing exceptions, and I wasn't able to finish the examples. In addition, the instructions and backup material on the Dreamweaver help pages were pretty sketchy. This volume, however, fills in all the blanks.

Dreamweaver users will find enough PHP info to round out the included scripts, and newcomers to MySQL and PHP will get all the information they need to find and properly install the files and servers on their local systems. The hotel reservation model works well, is well planned to introduce readers to the software and the underlying PHP/MySQL code, and produces a very nice product. The authors have done a nice job in anticipating the sort of questions that newcomers to either PHP, MySQL, or Dreamweaver might have. More importantly, the book delivers on its promise to teach the

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power of Dreamweaver to produce PHP/MySQL sites easily.

Adobe® Photoshop® 6.0 Web Design
Author : Michael Baumgardt
Publisher: Adobe Press

As we are trying to build a visually competent website, we had to emphasize more on creating and editing graphics and images. That is why we had to refer to a few books on Photoshop – to gain a more thorough understanding of web designing. Even other applications like Flash 5.0 requires a basic, if not advanced understanding of graphics and images. This book offers a thoughtful and image-packed look at using Photoshop to design for the Web.

The first of four sections gives an overview of Web basics--how all the elements work and what the main issues are (e.g., browser problems; web palettes; the differences between image formats like GIFs, JPEGs, and PNGs). The second section covers the basics of Photoshop with a focus on creating web content (for example, fixing digital photos for Web display or making smooth GIF animations). The third section details optimizing image sizes. The last section deals with basic GoLive tools--fitting the pieces together to create web pages.

This book is flexible in that it attempts to cater all levels of readers: beginners, intermediate and experts alike. Its content is also compact, concise and accurate. However, this book only discusses issues generally and doesn't really show the specific steps of creating a particular image. Conclusively, this book is a good source of information for me as I do have some fundamental background in web designing.

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Design Essentials: Professional Studio Techniques using Adobe® Photoshop® and Adobe® Illustrator®
Author : Luanne Seymour Cohen
Publisher: Adobe Press

Ever since I became a computer science student, this book has become my companion in designing graphics and images. This book is intended for intermediate users who have already had experience of using Photoshop and Illustrator and their elements. Basically, this book is divided into six chapters, organized from the very basics to the more advanced tasks. They are drawing, painting, patterns and textures, text effects, special effects and web techniques.

Although the final chapter contains the most related topics to my thesis, all the other topics are very useful too. This book contains countless recipes and endless variations of creating superb graphics. Some of the explanations are a little sparse but it actually opens the program up for exploration. It even opened my eyes into creating great graphics that I have never thought of before. I would definitely put the techniques recommended here into good use in my portal-to-be.

2.2.2 Literature Review on Websites

There are three types of websites which I am going to present in this section. They are community portals, general counselling websites and academic counselling websites. The following examples are relatively the best and most relevant websites I could find on the Internet. It is crucial for me to display a visual snapshot of how the website looks like in order for me to compare and contrast each one of them. I will also provide the pros and cons of each of these websites so that I could form a basis of how my portal should be. At

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the end of this section, a conclusion table will also be presented to give an overall idea of how these websites fared and what their strengths and weaknesses are.

2.2.2.1 Community portals

[1] Sifoo.com – Sumber Grafik / Multimedia Malaysia
www.sifoo.com

Fig. 2-1 : Homepage of Sifoo.com – Sumber Grafik / Multimedia Malaysia

This portal is basically targeted at the local graphic artists' community. It features articles, techniques and tutorials on Photoshop, Illustrator, Flash and Dreamweaver – the most popular tools in the web designing industry today. There is also a forum where designers and students alike can discuss issues related to web designing or web development. This portal has become a great inspiration for me in designing my future system. Most of our web designing concepts and layouts are going to be based on this portal.

Pros:

- As this is the only local graphic artists' community portal, the graphics are also exceptionally brilliant
- Good layout and superb site design
- Good organization and categorization of information
- Fast downloading times despite the huge amount of graphics
- Compact and concise information. There is a good balance of graphics and text
- Information provided is always updated. Even the starting page is changed every month – very good *web gardening*
- Every page is consistent, thus aiding navigation
- Very technologically competent – uses PHP as its web development technology
- Uses Bahasa Melayu as its entire medium – a refreshing and plausible attempt
- Gave everybody (including me) a pretty good idea of how a portal should be

Cons:

- No search engine is provided although this is a crucial element to a portal
- The language used may create a barrier for those who couldn't understand BM

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[2] Xfresh: By Teens For Teens
http://www.xfresh.com

Fig. 2-2 : Homepage of Xfresh: By Teens For Teens

Pros:

- Provides dynamic content as it uses Active Server Pages (ASP) as its web development technology
- Very cute and fun interface – refreshingly appealing for teenagers
- Complete with all the functions that a portal should have – member login and registration, forum and discussion board, notes and shout outs, downloadables, chat room, news and events and even contests
- Provides a section called lingua franca where users can submit their articles in Bahasa Melayu and read other articles in BM too
- Superb organization and categorization of information – users will find it very easy to find what they are looking for
- Good layout and consistent pages

Cons:

- Takes a frustratingly long time to download
- Colour coordination is not very intelligent and may make the page not very visually pleasing to some people
- No search engine is provided although this is a crucial element to a portal
- As this is a teen portal, emphasis should be given on academic and education rather than entertainment

2.2.2.2 General counselling websites

[3] Counselling Online (Singapore)
http://www.counselling.org.sg

Fig. 2-3 : Homepage of Counselling Online (Singapore)

Pros:

- Uses interesting flash animation in its start page and provides users with flexibility of whether to view the intro or skip it

- Presents the user with an agreement section afterwards that asks the user to undisclose the information given out by the counsellors
- Includes very useful links and functions such as bulletin board, feedback, letters from youth, games, news and frequently asked questions
- Caters a wide field of audience and addresses numerous social issues
- Simple layout is visually pleasing especially for new visitors.

Cons:

- Uses black colour as its background – not very suitable for an organization that tries to counsel and motivate people
- The colour scheme used is not too impressive. The orange is too bright and doesn't go well with the other dark colours
- Uses frames which can be very confusing for users. Bookmarking and printing would also be more difficult.
- Certain pages contain overly long text which requires users to scroll down endlessly
- Images used are not very suitable and lacks the professional look and feel

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[4] University of Victoria Counselling Services Homepage
http://www.coun.uvic.ca

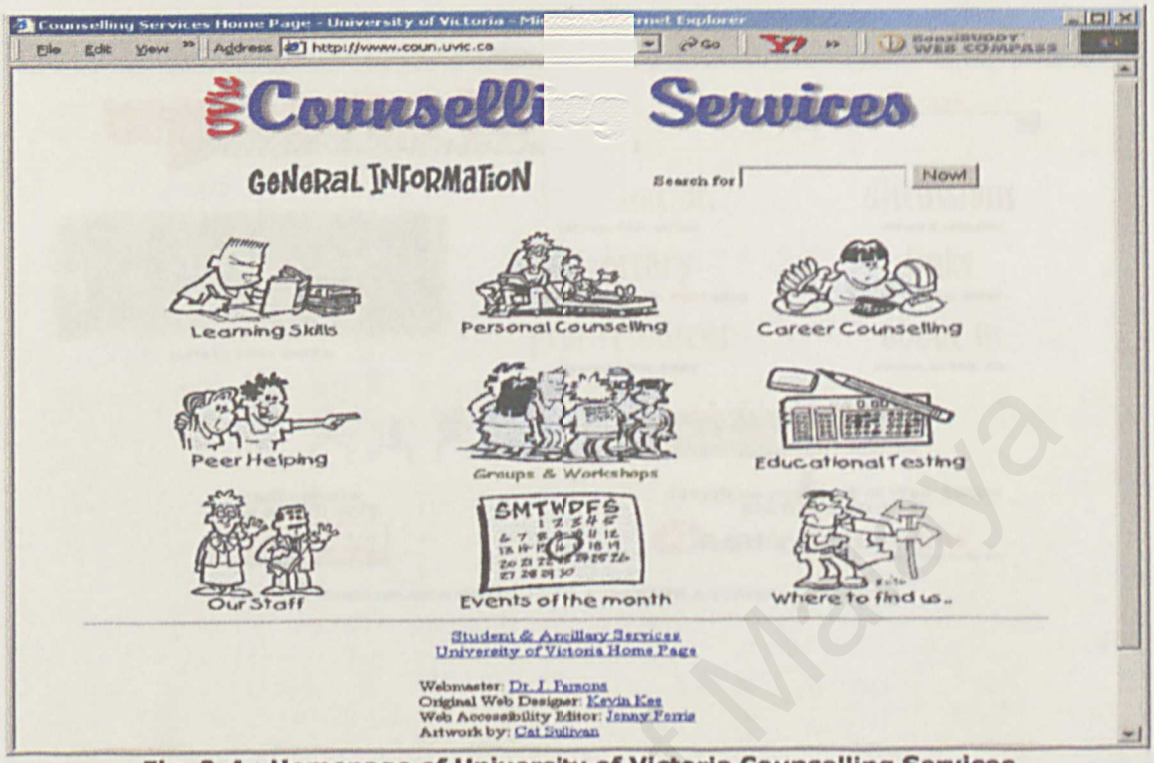

Fig. 2-4 : Homepage of University of Victoria Counselling Services

Pros:

- Covers many different areas of counselling such as academic counselling, personal counselling, career counselling and peer helping
- Includes a simple and nice search engine
- Uses fun and interesting graphics which would win the hearts of students
- Simple layout aids navigation
- Includes information about the web developers along with their e-mail addresses

Cons:

- Very few colours are used – makes the website look very boring and uninviting
- Too much text is used in subsequent pages – makes the website look dull and decreases visitor's interest in reading the material

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[5] All About Counselling
http://www.allaboutcounseling.com

Fig. 2-5 : Homepage of All About Counselling

Pros:

- Includes a fast find site menu at its start page – greatly aids site navigation and usability
- Uses simple layout and site design
- Provides a huge amount of resources and information regarding counselling
- Has a discussion room where users can choose a nickname and chat online
- Includes a link for questions, comments and suggestions

Cons

- Unsuitable colour scheme and uninteresting graphics and images make the site look dull and uninteresting
- Lacks elegance and professional look and feel
- The sub-menu is too small compared to the main menu above it and makes it

difficult for users to see

- Uneven background colour – certain areas are covered in patterns while others are covered in white – not visually pleasing

2.2.2.3 Academic Counselling Websites

[6] Academic Enhancement Centre @ Concordia College
http://www.cord.edu/dept/aec

Fig. 2-6 : Homepage of Academic Enhancement Centre @ Concordia College

Pros:

- Very neat site layout with intelligent use of graphics and pictures
- Very colourful yet visually pleasing
- Good organization and categorization of information
- Provides a search engine, faqs, and useful information about the organization
- Very content-based – provides complete yet compact and concise information on everything you need to know about academic counselling – what it actually is, what are the services provided, academic information and referrals, related brochures and

handouts, technology assistance and graduate school preparation

- Gives a brief description on the purpose and objective of the site and the organization itself, and their working hours – very informative
- Enforces consistency in each of its pages – increases navigation

Cons:

- Does not provide other interesting functions such as forum or chat
- Some of the information supplied are generally applicable only to the students of this particular college

[7] CollegePrep 101
http://collegeprep.okstate.edu/

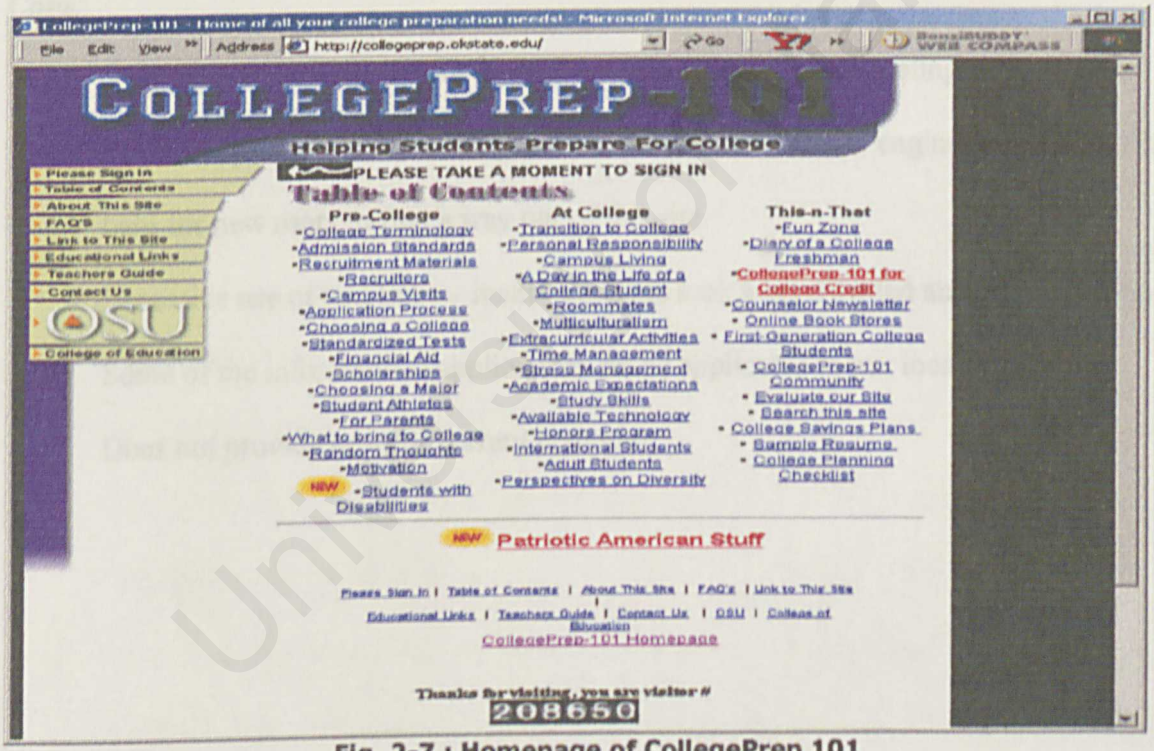

Fig. 2-7 : Homepage of CollegePrep 101

Pros:

- Does its job remarkably in providing very useful information about college and how to prepare for it
- Divides its information into 3 categories: Pre-College, At College and This-n-That – makes it easier for users to find what they are looking for.

- Although this website focuses on assisting college students, its content is very relevant to academic counselling and I find it as a constant source of information in my portal-to-be
- Includes neat features such as log-in module, web counter and feedback
- Provides indicators to articles or links that are most recently added
- Very simple layout aids in site navigation
- Even though there are a lot of text links, the use of the html <vlink> clause provides the user with an indication of which pages have been visited and which pages have not. This reduces confusion and aids navigation

Cons:

- Very little use of graphics or images – might make it less appealing to some users
- Does not provide a search engine or links to other search engines – might make it hard for new users to find a way out of this site
- Excessive use of text links – makes the page look a bit crowded and more complex
- Some of the information supplied may no be applicable to our local students
- Does not provide news or current activities

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[8] Johns Hopkins University [Undergraduate Academic Advising]
http://www.jhu.edu/~advising

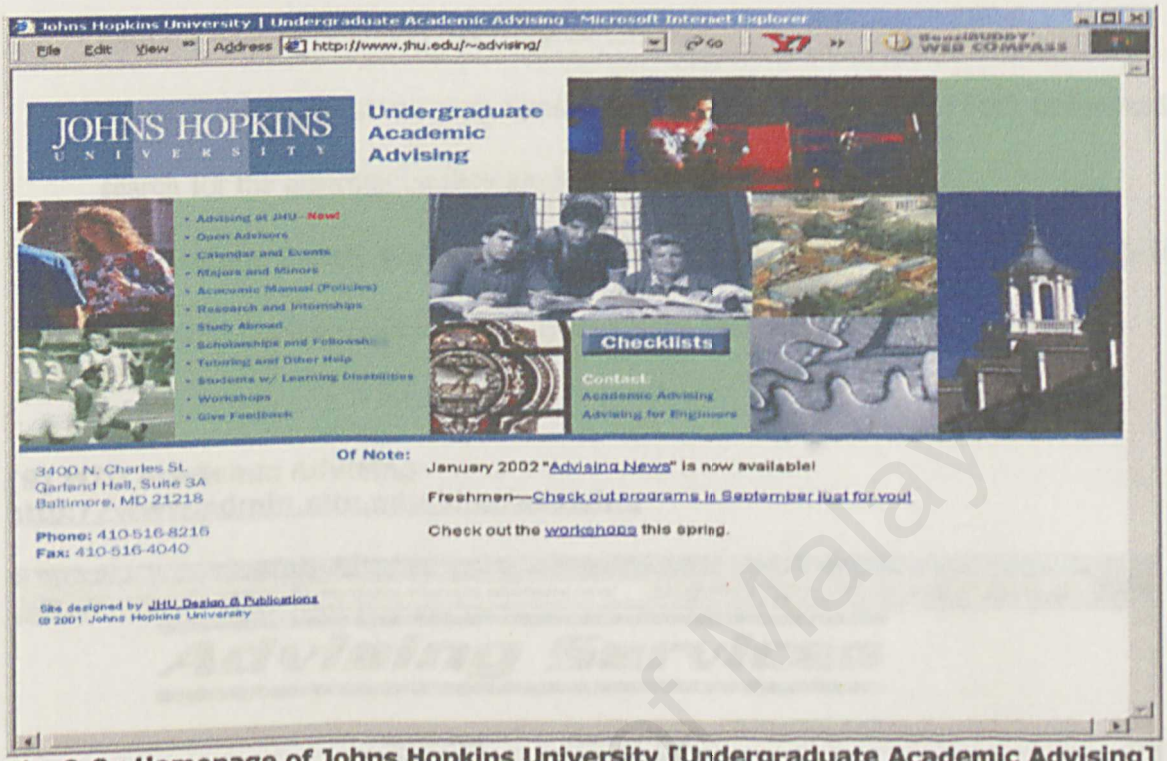

Fig. 2-8 : Homepage of Johns Hopkins University [Undergraduate Academic Advising]

Pros:

- Very simple yet neat layout – good balance of graphics and text
- Uses dynamic rollovers for its links
- Uses PHP as its web development technology – provides dynamic content and is technologically competent
- Provides indicators to links or articles that are most recently added
- Although this website is basically about academic advising, it supplies very useful and informative items regarding academic counselling. It has become a guide for me in organizing my counselling information.
- Provides contact information of the organization
- Provides news and current happenings in the community
- Contains links for user's feedbacks and comments

Cons:

- Does not provide a search engine or links to other search engines – might make it hard for new users to find a way out of this site
- Some of the pages are not very consistent – users might have to go back or forward to search for the information they are looking for
- This website merely provides articles and self-help literatures. It does not provide users with interesting functions such as forum, chat, quiz or online counselling

[9] MTU Academic Advising
http://www.admin.mtu.edu/dos/advising

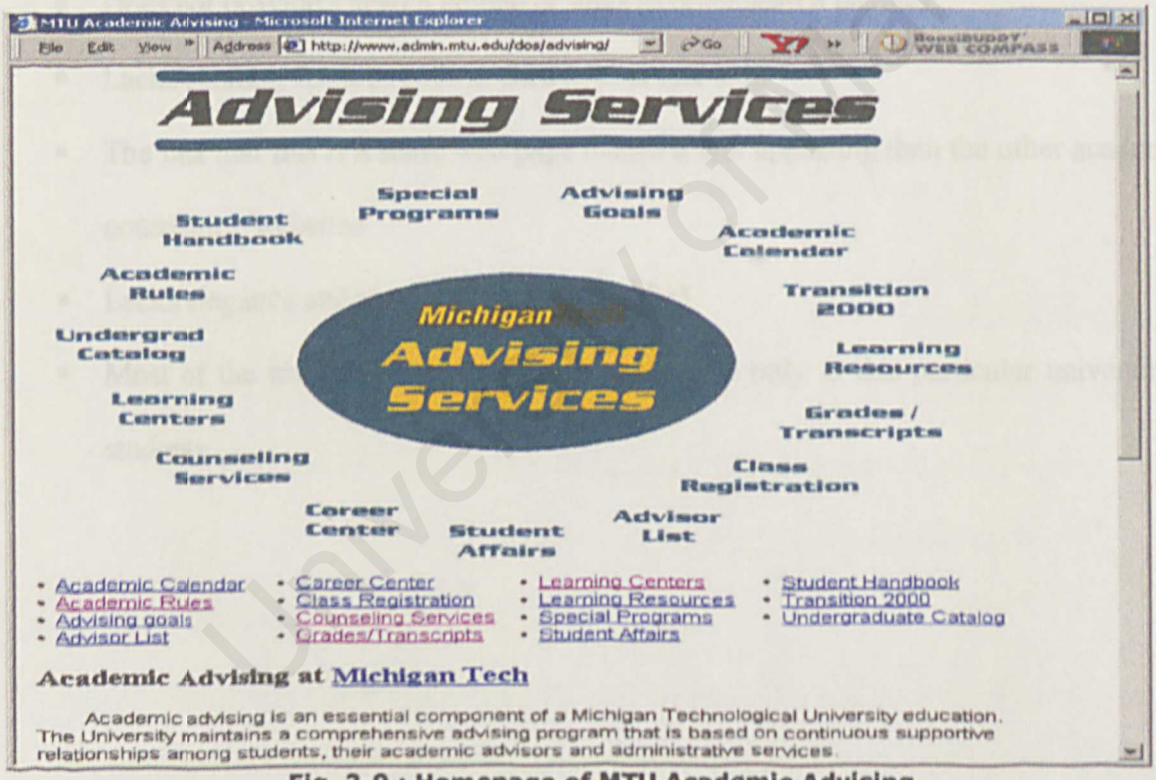

Fig. 2-9 : Homepage of MTU Academic Advising

Pros:

- Illustrates a very clear picture of what academic advising is and how it relates to academic counselling
- Presents useful topics such as student affairs, class registration, learning resources,

undergrad catalogue, advising goals and academic calendar.

- Main menus are presented in two ways: First in the form of graphical link and second, as text links. This redundancy aids users in flipping through the pages
- Uses the html <vlink> clause in its links. This provides users with an indication of which pages have been visited and which pages have not. This reduces confusion and aids navigation

Cons:

- Very plain graphic is used, making the site look dull and less interesting
- Colour used is also very minimal and might make users less inclined to come again
- Does not provide a search engine or links to other search engines
- Lacks exciting features such as forum, chat and help
- The fact that this is a static web page makes it less appealing than the other academic counselling websites
- Lacks elegance and professional look and feel
- Most of the information provided are applicable only to this particular university's students

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[10] Counseling.com's Academic Bulletin Board
http://www.counseling.com/

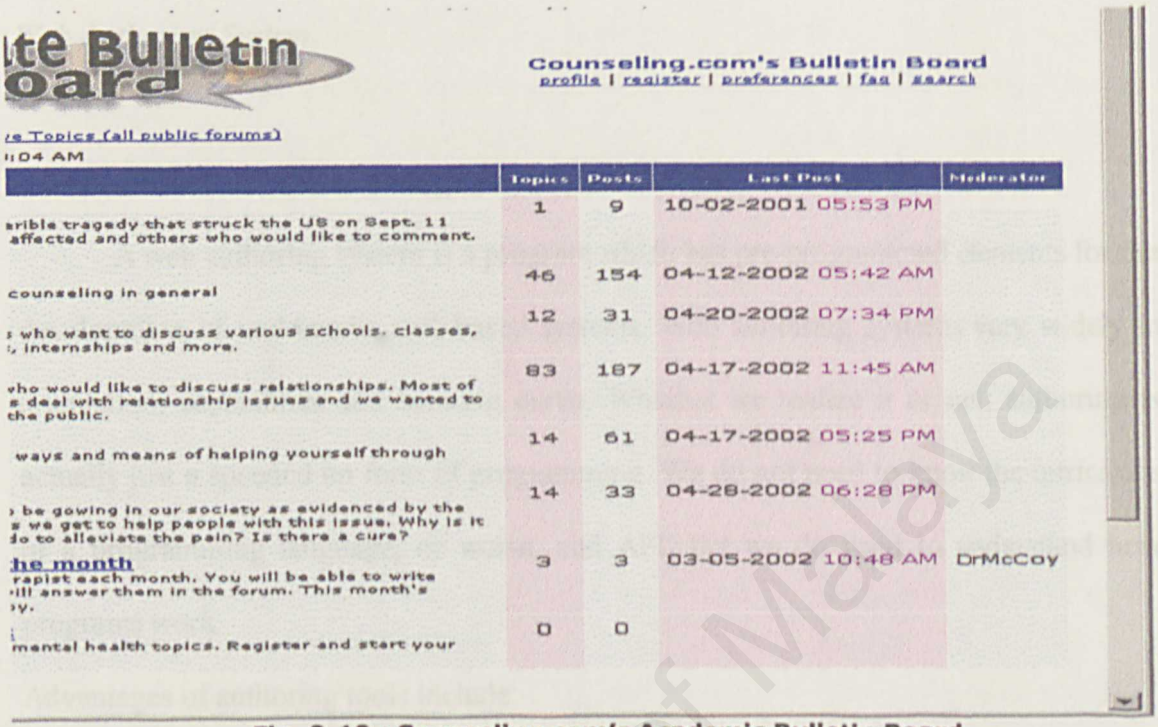

Fig. 2-10 : Counseling.com's Academic Bulletin Board

Pros:

- Although this is just a bulletin section from the Counseling.com homepage, it gave a very good foundation in designing the forum module in my portal-to-be
- The topics related are also very informative and closely related to the system that we are going to build. Issues on terrorism, students, relationships, depression and mental health are directly linked to counselling
- The layout of this discussion board is also very neat and easy to read and scan through. We plan to use the same layout in our forum
- This discussion board uses the Common Gateway Interface (CGI) technology. CGI pages are very speedy and efficient.
- Overall, this page is wonderfully and outstandingly well-designed

Cons:

- My only complain is that more topics could have been added and discussed

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2.2.3 Literature Review of Tools

Before I proceed with the comparison of the tools reviewed, I will discuss the meaning of *Web Authoring System.*

2.2.3.1 What is a Web Authoring System?

A web authoring system is a program which has pre-programmed elements for the development of multimedia web-based systems. Web authoring systems vary widely in orientation, capabilities and learning curve. Whether we realize it or not, authoring is actually just a speeded up form of programming. We do not need to know the intricacies of a programming language, or worse, and API, but we do need to understand how programs work.

Advantages of authoring tools include:

- ✓ Ability to do fast prototyping
- ✓ Ease of expanding the prototype to a full web based system
- ✓ Ease of use
- ✓ Built-in multimedia capabilities
- ✓ Less need for programming expertise

On the other hand, the disadvantages include:

- ✓ Slow execution – sometimes we do have difficulties in handling too many elements, especially if the processor, ROM and RAM is not at high speed and the disk storage is limited.
- ✓ Poor data handling – conflicts happen frequently in any software or system tool. Usually, authoring tool does not allow a built-in database. As a result, the data is mixed up and difficult to control.

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2.2.3.2 Comparison of tools

Tools	Pros	Cons
Macromedia Dreamweaver MX Website editing tool	▪ Lets users work in a single environment to quickly create, build, and manage websites and Internet applications. ▪ Provides powerful visual layout tools, rapid web application development and extensive code-editing support in one complete, integrated solution. ▪ Provides comprehensive support for PHP, ASP, JSP, ASP.NET & ColdFusion	▪ The single integrated environment may be too complex and might introduce confusion to beginners. ▪ Although most functions are pre-programmed, strong programming skills are still required from users.
Adobe Illustrator 10 Vector Graphic editing tool	▪ Provides groundbreaking creative options and powerful tools for efficiently publishing artwork on the Web, in print and everywhere else ▪ Produces superb Web graphics using symbols and innovative slicing options. ▪ Let users explore creative ideas with live distortion tools. ▪ Enables speedy publishing with dynamic data-driven graphics and other productivity features.	▪ Quite hard to learn especially for those with a weak background of computer graphics ▪ Quite hard to master because it involves drawing skills ▪ Files can be imported to Photoshop only.
Adobe Photoshop 7 Image editing tool	▪ Helps users work more efficiently, explore new creative options, and produce the highest quality images for the Web. ▪ Creates exceptional imagery with easier access to file data; streamlined web design, professional-quality photo retouching; and more ▪ Quite easy to learn, even for beginners because of the visually aiding interface	▪ Very expensive ▪ Cannot make animated images
MySQL 3.2.3 Database	▪ Free (with some caveats) ▪ Simple	▪ Not "full-featured" ▪ not "ACID" compliant

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management tool	▪ Fast, even when compared with commercial systems ▪ Distributed ▪ Good connectivity with Perl, PHP and Java ▪ Large, active user groups (~ 3 million users, including Yahoo, Census Bureau) ▪ Great documentation, in books and on-line	atomicity, consistency, isolation, and durability ▪ no embedded transaction/rollback support ▪ no stored procedures (they minimize database access) ▪ no sub-selects

Table 2-3: Comparison of the tools reviewed

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2.1 Summary of Chapter 2

A literature review is an evaluative report of information found in the literature related to a person's selected area of study. This review should describe, summarize, evaluate and clarify this literature. It should give a theoretical base for the research and help the author determine the nature of his/her research. A crucial element of all research degrees is the review of relevant literature. There are four types of items that I have chosen to become my literature review. They are books, online documentation, websites and tools.

Books reviewed include *How To Get Good Grades and Still Keep Your Reputation As A Cool Person* by Kris Bearss, *Beginning PHP4* by Wrox's Programming Team, *Dreamweaver MX : PHP Web Development* by SAMS Publishing, *Adobe® Photoshop® 6.0 Web Design* by Michael Baumgardt and *Design Essentials: Professional Studio Techniques using Adobe® Photoshop® and Adobe® Illustrator®* by Luanne Seymour Cohen.

There are 10 different websites that I have chosen to become my literature review. These websites can be divided into 3 categories: community portals, general counselling websites and academic counselling websites. I have compared and contrasted each of them and pointed out their pros and cons in order for me to create a foundation on how my portal should be. These 10 websites are:

1. Sifoo.com – Sumber Grafik / Multimedia Malaysia
2. Xfresh – By Teens For Teens
3. Counselling Online (Singapore)
4. University of Victoria Counselling Services Homepage

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Chapter 3 – System Analysis

- *System Development Methodology*
- *Information Gathering Techniques*
- *Requirements Analysis*
- *Programming Language*
- *System Requirements*
- *A Peek at the Technology*
  -PHP's Strengths and Weaknesses
- *Hardware Requirements*
- *Summary*

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Chapter 3 – Systems Analysis

3.1 System Development Methodology

For the development of this counselling portal, I have used the Software Engineering Life Cycle (SELC) methodology. The main reason I applied this method is because it allows me to modify my mistakes along the system development cycle. Other methodologies do not have this important stage in their model.

SELC model describes its phases early in order for me to develop my system easily. Describing clear phases are very important because these will be my guidance in order to succeed in developing my system. Besides that, information stacking could be redirected although it is impossible to occur. It is very vital for me to make sure that all my work and effort are always in the right path.

Other than the advantages mentioned, the other fact that made me chose SELC is that it provides a clear interaction with system user on what to do. All the needs and desires of the system can be determined during the system development's infancy. The result of my work progress could be shown to the final users from time to time so that the system-to-be will always follow and fulfil their needs and requirements.

For the purpose of illustration, I will give a brief review of this methodology and provide you with a short description of the phases involved in this model. Simply put, there are 12 main phases in this methodology:

1. Software requirements

   Includes analyzing software problem at hand and concludes complete specification of the desired external behaviour of the software system to be built.

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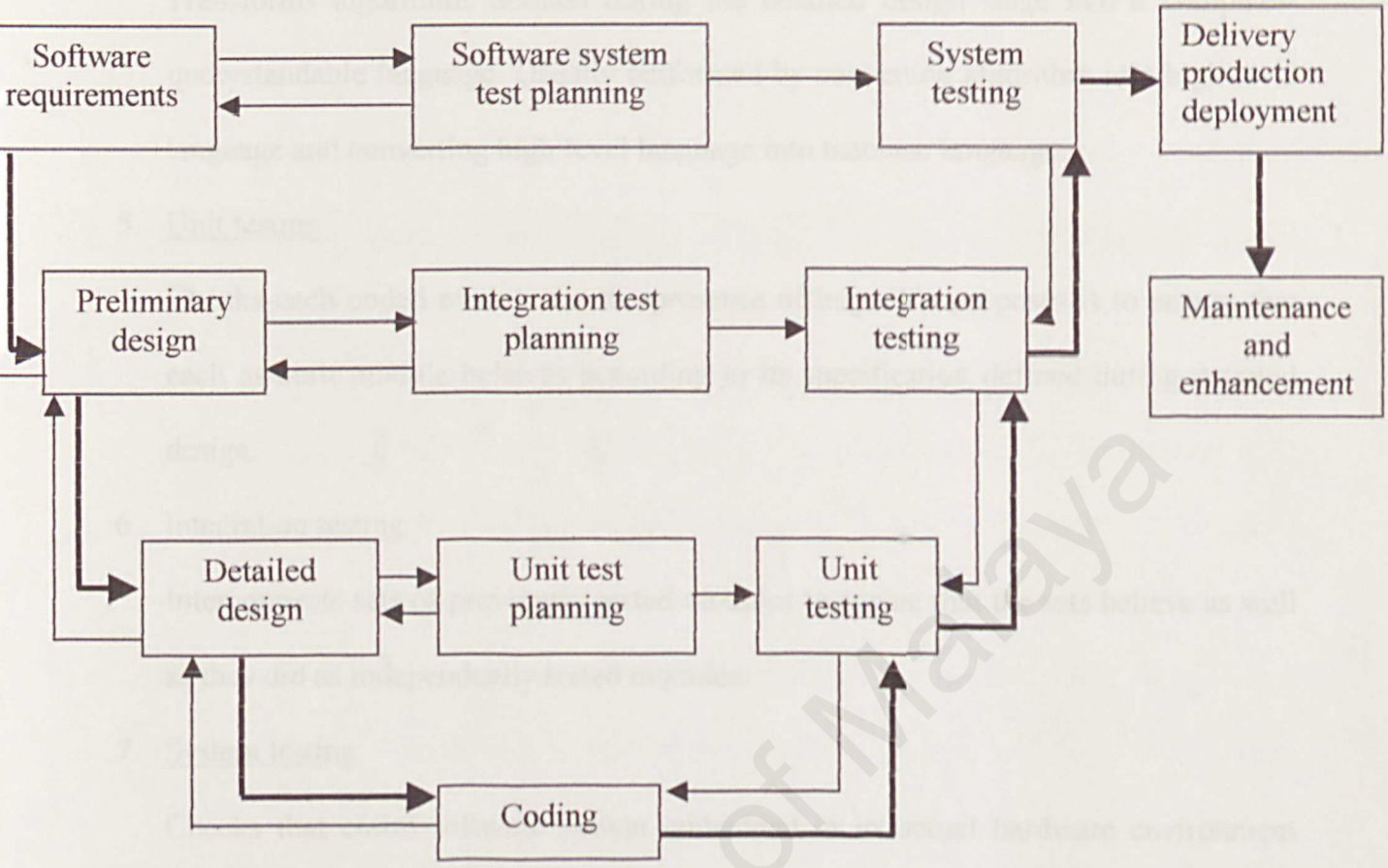

Fig. 3-1 : Software Engineering Life Cycle (SELC) Model

2. Preliminary design

   Decomposes the software system into its actual architectural components. Then decomposes components into smaller and smaller subcomponents until subcomponents located at the leaves of the resulting design tree are small enough.

3. Detailed design

   Defines and documents algorithms for each module in the design tree that will be realized as code

4. Coding

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Transforms algorithms defined during the detailed design stage into a computer-understandable language. Usually performed by converting algorithm into high-level language and converting high-level language into machine language.

5. Unit testing

   Checks each coded module for the presence of bugs. It's purposes is to ensure that each as-built module behaves according to its specification defined during detailed design.

6. Integration testing

   Interconnects sets of previously tested modules to ensure that the sets behave as well as they did as independently tested modules.

7. System testing

   Checks that entire software system embedded in its actual hardware environment behaves according to the Software Requirements Specification (SRS)

8. Delivery, production and deployment

   After final system testing, software and its surrounding hardware become operational

9. Maintenance and enhancements

   Maintenance and enhancements processes are actually a full development life cycle.

10. Software system test planning

    Assesses how the software system will be tested for conformity to the software requirements

1. Integration test planning

   Generates and documents plans and procedures to effect an orderly system integration.

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2. Unit test planning

   Generates and documents plans and procedures to test each module independently and thoroughly.

3.2 Information Gathering Techniques

There are a few techniques that I used in gathering and collecting information for my portal-to-be. This related information includes information about the software that are going to be used for the development of the system, such as Macromedia Dreamweaver MX, Photoshop, Illustrator and MySQL. More importantly, I have to search for adequate information on PHP in order to utilize it effectively and efficiently. Besides that, a good knowledge of academic counselling is a must since my part of the portal is all about academic counselling. The techniques used for information gathering include:

i. Discussion with my supervisor

Early discussion is more towards the technology that I am about to use for developing my portal. Initially, we were free to choose any type of technology to implement our portal. That was why we chose ASP.NET as the technology during the first stage of our project (WXES3181). We thought that we could grasp and master this technology wistfully during the implementation stage.

However, halfway during the development stage we found that ASP.NET was too difficult to learn and no one could offer us any guidance for it was a very new technology and was still in its infancy – an ASP.NET programmer was very rare in this country. Even installing the platform was a pain. After much thought, we decided to switch to an easier and more established technology that has gained wider

popularity – PHP. We consulted our supervisor about this problem, and lucky for us, he agreed to let us use PHP.

The first phase of the project involved discussions on creating the interface of the system, choosing the right information to be inserted in the system and solving problems that might creep up during analysis and design.

The second phase was more to discussions on coding and debugging problems, choosing the right testing techniques, picking the right modules and using the right maintenance methods.

ii. Internet Surfing

Surfing the Internet has been proved to be one of the best methods of gathering and collecting information about my system. There is a plethora of information contained in the world wide web, it's just a matter of collecting the ones most related to my field of study. Internet surfing is also very easy and fast method to collect information – everything you need to know is just a click away. More over, there are many forms and varieties of knowledge available, and most of them are very useful, accurate and up to date.

There are four types of information that I searched for comprehensively from the Internet. They are:

i. Information on PHP. This includes source codes, tips, tutorials, and code debugging articles. Results are aplenty due to the fact that PHP is an open source technology.

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ii. Information on the software that I am going to use – the software that I will be using is quite new to me (especially Dreamweaver MX) so I need to do a lot of learning through examples to get the job right.

iii. Information on academic counselling and all the related topics it covers, so that I could come up with the correct and reliable facts in my portal-to-be.

iv. Information on website designing so that I could come up with the best design – one that has good contents, interface, layout, navigation and speed.

iii. Reference books

PHP is an established web technology, and this is evident through its widespread use in the Internet. Therefore, it is not surprising that there are many PHP books available in the market. It has also made its way to our university, but finding the latest version of PHP (PHP 4) is quite difficult. Besides that, I did a lot of book reading on web designing and study skills. However, there are very few reference books on Macromedia MX available, probably because it is a very new software.

iv. Past Research

The past research by FSKTM students is one of my main references in developing my system. Numerous projects on online counselling and web-based counselling system have been carried out, so this gives me the advantage of getting some ideas on how my portal is supposed to be, how to work on it, how to start and complete my proposal report and how to launch the development of my portal. This past research is obtained from the documentation room of Faculty of Computer Science and

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Information Technology. References from different researches allow me to compare and obtain the information that is needed for my counselling portal.

v. Survey/Questionnaire

In order for me to identify the user's needs and desires, a survey has been conducted. A questionnaire was given out to 30 respondents from different age groups, professions and different academic status. The only similarity between them is that they have a computer background or interest. Questions that were asked during this survey are mainly about the Internet, general counselling and academic counselling. By doing this, it helps me to capture some general and specific information on users' preferences in my upcoming portal.

vi. Interview

To obtain a more reliable and accurate information in my academic counselling portal, an interview has been done with the club members of Seksyen Kaunseling and Kerjaya, Universiti Malaya. This interview was done to get a better understanding on what academic counselling is all about and what it offers. It was also carried out to get a brief insight on how counselling is actually done here in Universiti Malaya and how much the students participate and respond to it.

I have also done an interview with a few website designers (which happens to be my friends) to get an idea of how to start developing my portal. I was also able to learn from them the essential steps involved in building an impressive and remarkable website, and the tips and tricks of designing a visually enticing website.

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vii. Informal discussion

This is more towards general and unguided discussions with friends and project mates. Usually I will start the discussion by asking general questions about academic counselling, PHP or website designing, with a goal in mind. If they were to be off the track, I will try to redirect them. They are free to say anything they want about the subject matter, so long as it doesn't stray away from the topic. By doing this, it allows me to exchange and share ideas and opinions with others.

3.2.1 Survey

Survey is an effective way to obtain information on system and user requirements. A survey form consists of information that is needed by a system analyst [Igor Hawryszkiewyez, 1997]. The survey form was titled Academic Counselling Portal – knowledge, needs and characteristics. Specifically, this survey was done to:

i. Identify to what degree Malaysians fully utilize the Internet and are aware of the most popular web technology – PHP
ii. Identify how far Malaysians from different profession and academic background know about online counselling and counselling portal
iii. Determine whether the respondents actually feel they need counselling and would find an academic counselling portal useful to them
iv. Determine how the respondents score the existing counselling websites and whether they find them beneficial or not
v. Identify the elements that should be included and/or stressed in this system so that it satisfies the user's needs

This questionnaire has 40 questions that are divided into 4 main sections:

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a. **About You**, where the questions are asked to know about the respondents' background – their age, sex, race, occupation, education level and whether they own a computer. This section consists of 7 closed questions.

b. **The Internet**, where respondents are asked about the frequency, purpose, and location of their Internet usage. They were also asked whether they have heard of PHP or have seen any PHP applications. The final questions were asked to identify whether they find the Internet useful or not. This section comprises of 10 closed questions.

c. **General Counselling**, where respondents are asked about their knowledge of and experience in counselling. There is also a question that identifies whether the respondents have been to any academic counselling websites. There are 7 closed questions in this section.

d. **Academic Counselling**, which is further divided into 2 sub-sections. Section A is for those respondents who have been to any academic websites while Section B is for those who have not. The questions featured here are more specific in that it tries to capture what topics, functions and elements the user would like to see in my upcoming academic website. These questions also try to identify the weaknesses of existing academic portals and how we could improve them. There are 16 closed and open-ended questions in this section.

Please refer to Appendix A for a sample of this questionnaire.

3.2.1.1 Sampling

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The questionnaire administering went on for 5 days. It involved 30 respondents that consists of 3 groups/categories that were chosen randomly. They are Computer Science/ IT students, students from other courses with computer / IT background and non-students with computer background or interests. The students are from my university, University of Malaya, Universiti Kebangsaan Malaysia and various other private colleges in the Klang Valley. Others are professionals working in a non-computer industry but have a keen interest in the Internet and the World Wide Web.

3.2.1.2 Survey Output and Analysis

This survey has done its job well in providing me with a good understanding of the users' requirements. The results obtained are quite conclusive although there are a few obscurities caused by the open-ended questions. For the purpose of illustration, I will display the output and brief analysis of the most relevant questions to my field of study. This is because this questionnaire consists of 40 questions and it would be inappropriate to include all of them in this report. These are the 20 questions that I have chosen and further divided into 3 categories:

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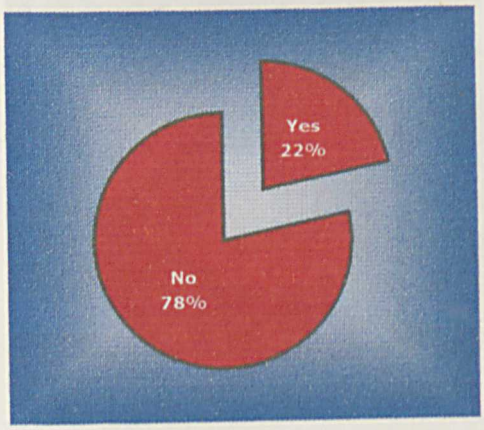
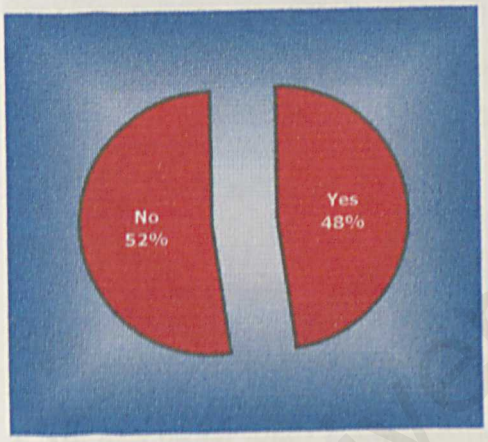
Questions asked to every respondent:

1. Have you heard of the PHP technology and its advantages?



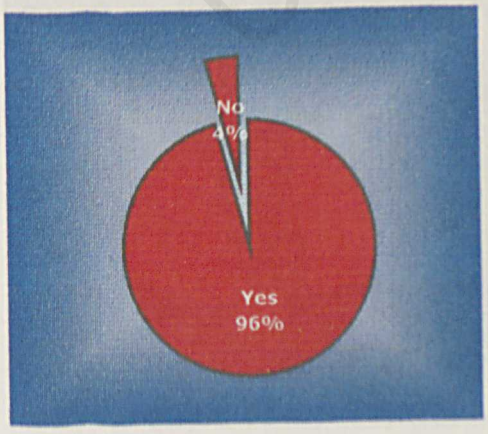
Out of 30 people, 22% (9 respondents) have never heard of the PHP (Personal Home Pages) technology or its advantages, while only 78% (21 respondents) have heard of it. This may be due to the fact that PHP is an open source technology, thus much has been talked about it.

2. Have you come across any websites made using PHP?



Out of 30 people, 22% (9 respondents) have never come across any PHP web pages, while only 78% (21 respondents) have seen one. This may be because many of the most popular websites in Malaysia are using PHP as their technology. The fact that PHP is very easy to use and is open sourced may also contribute to the fact that it is very widely used.

3. Do you know what counselling is and what it can do for you?



28 respondents (96%) claim to know the meaning and functions of counselling while 2 respondents (4%) are clueless of what counselling really is. I have no idea why this is the case. Maybe it is just because of ignorance or maybe they have other better things to think about.

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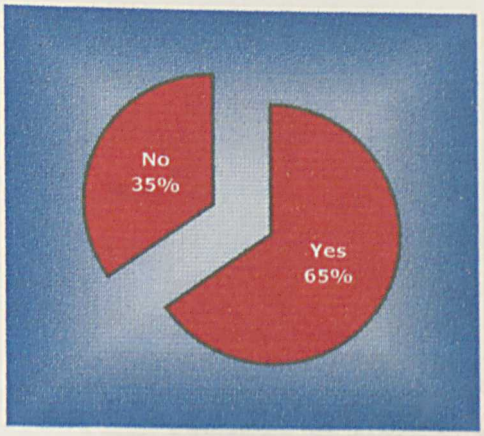
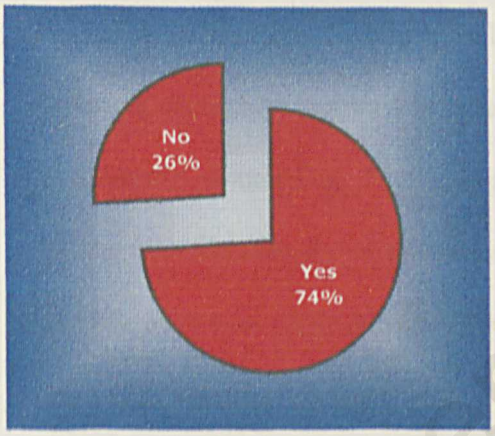
4. Have you had counselling of any kind before?



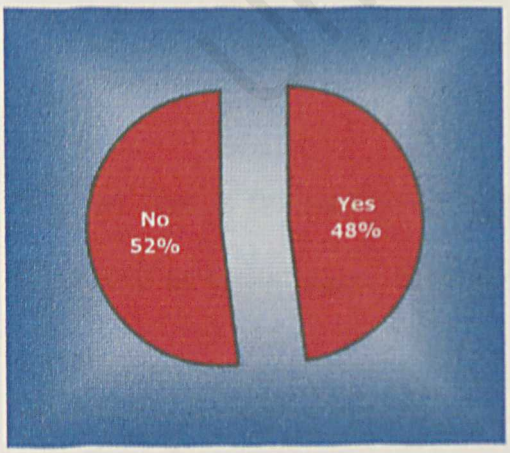
65% out of 30 respondents have had some kind of counselling while 35% (10 respondents) have never had any kind of counselling. This may be due to the cause that counselling is not available at their institution or organization. Or maybe they prefer to solve their problems by themselves before turning to other parties for help. There is also a possibility that they did get some kind of counselling, without them realizing it.

5. Do you think you might need any kind of counselling services in the near future?



22 respondents (74%) thought that they might need some kind of counselling in the near future while the other 8 don't feel the same. Some people are sceptical about counselling because they think they are better at handling their own problems. Others are totally into it because they know that counselling offers a lot of benefits and advantages.

6. Do you know what a counselling portal is?



Out of 30 people, only 48% (14 respondents) know what a counselling portal is. Those who are unsure of it may be so because they are confused with the term 'portal'. I too, was clueless of what portal is in the beginning. Most respondents who knew what a counselling portal is, are actually computer science students.

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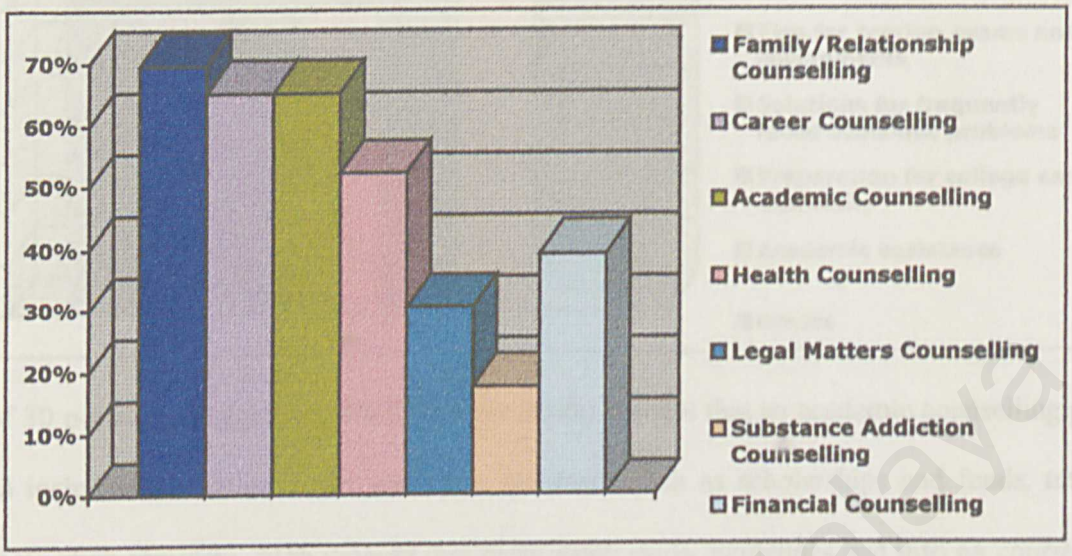
7. In your opinion, which of these types of counselling should be included in a counselling portal?



Out of 30 people that I interviewed, 70% (21 respondents) thought that family/relationship counselling should be included in a counselling portal. 65% felt the same for career counselling and academic counselling. 52% thought that health counselling should also be included while 39% thought likewise for financial counselling. Legal matters counselling scored the 5th place with only 30% vote while substance addiction counselling drew the least with 17%. Most people thought that family/relationship counselling should be included in the portal simply because of the perception that counselling means relationship counselling. Well, this is not very accurate. Upon the completion of this questionnaire, we decided that we should include the type of counselling with the most votes and that's how we end up with our scope.

8. What type of information do you often seek for in the academic counselling website? @ Which of these topics do you think should be included in an academic counselling website?

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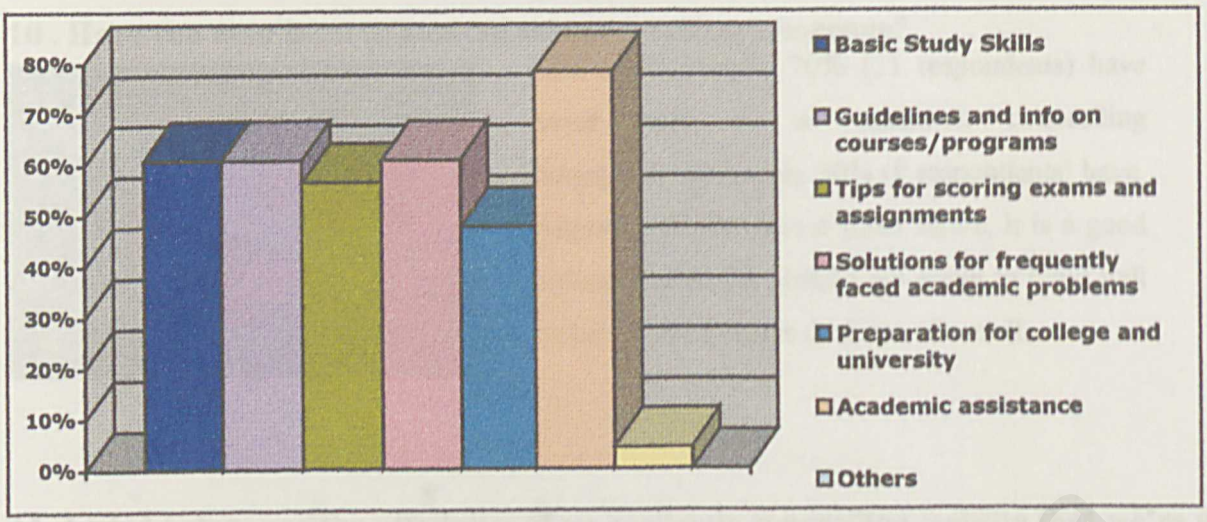
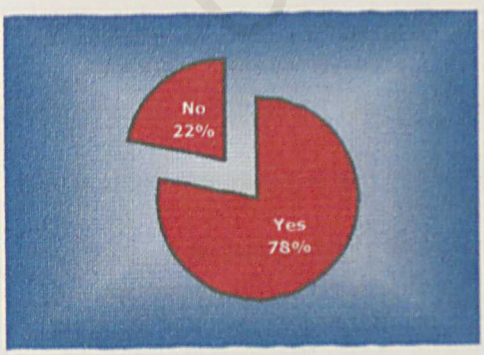


Out of 30 people, a staggering 78% (23 respondents) thought that an academic counselling portal should include information about academic assistance such as scholarships and funds, tutoring and motivation seminars. 61% thought that basic study skills, guidelines and info on courses and programs, academic problems and solutions should also be included in an academic counselling portal. Tips for scoring exams and assignments scored the 5th place amongst the respondents with only 57%. More than half of the respondents (51%) thought that preparation for college and university should not be included in an academic counselling website. One respondent even thought that sex education should also be included. Most people like the academic assistance stuff because of the thought that it would made them richer.

9. Do you face any academic related problems, difficulties or uncertainties?



Out of 30 people, 22% (7 respondents) have never had any academic related problems, uncertainties or difficulties while a staggering 78% (23 respondents) have. I don't find this large figure hard to believe because of the work load and pressures that we undergrads have to face.

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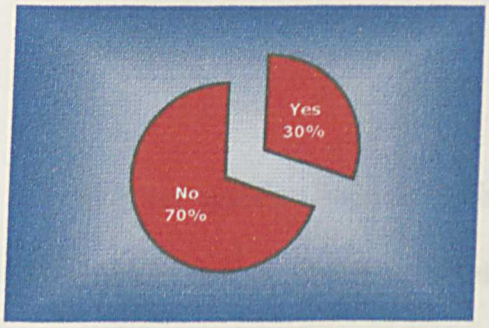
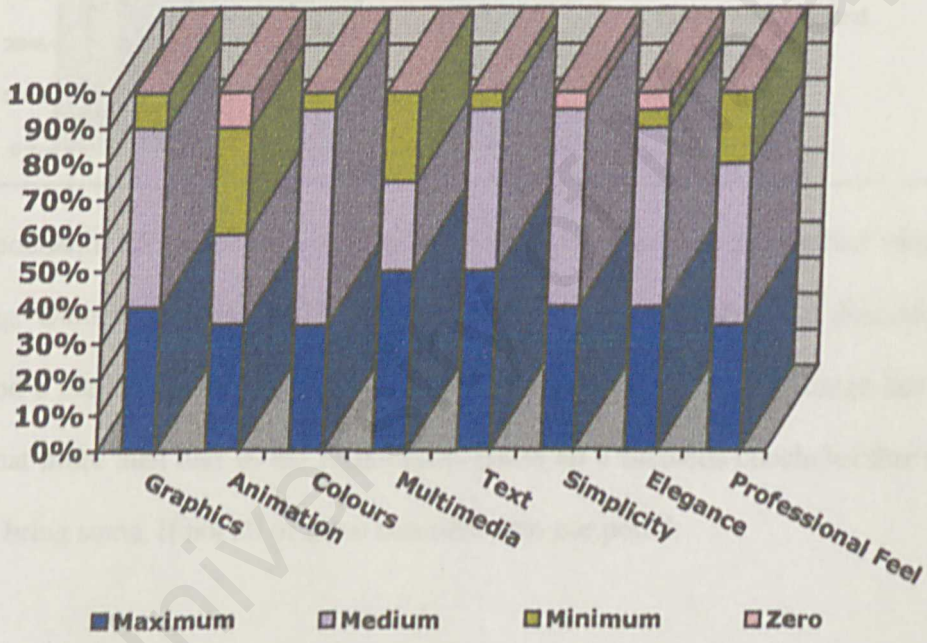
10 . Have you ever been to an academic counselling homepage?



Out of 30 people, 70% (21 respondents) have never been to an academic counselling homepage, while only 30% (9 respondents) have. Although this is quite a small figure, it is a good indication that the portal I am going to build will be beneficial to some students, if not all.

11. Listed below are the attributes of an academic counselling website that we're going to build. Indicate how you would like them displayed.



This question is a bit complicated to elaborate, so I will just explain the highest votes for each of the attributes. In terms of graphics, most respondents (43.5%) thought that it should be displayed in a medium amount. On the other hand, most people (30.4%) thought that there should be a lot of animation in our portal, although I find that hard to believe. Most people also thought that there should be a medium amount of colours, simplicity, elegance and professional look and feel in our portal-to-be. Multimedia and Text should be used generously according to most people.

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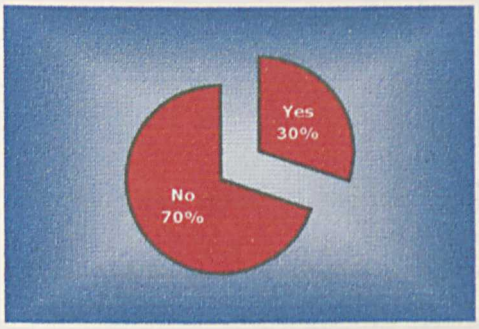

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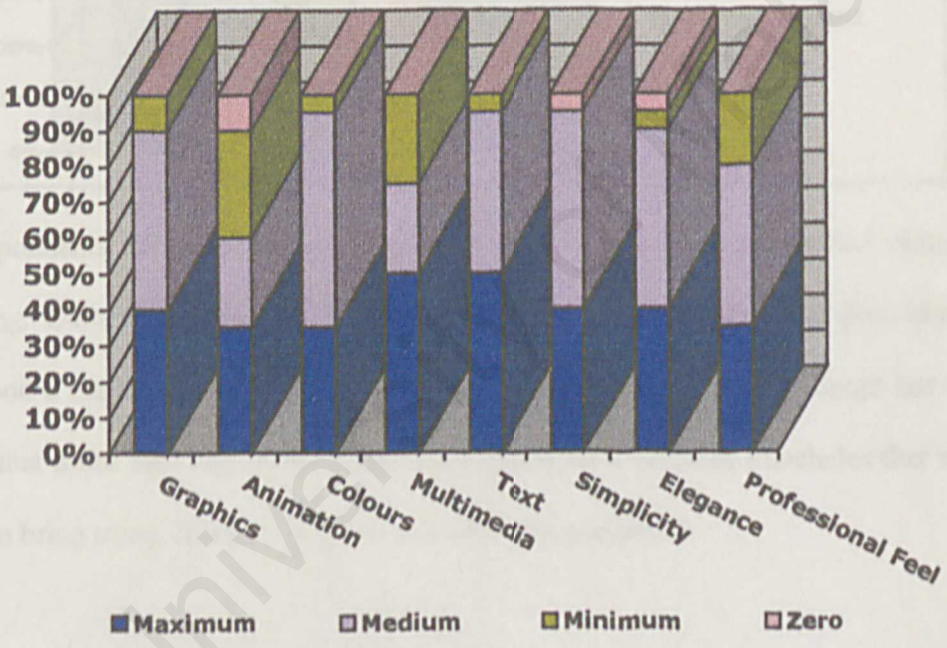

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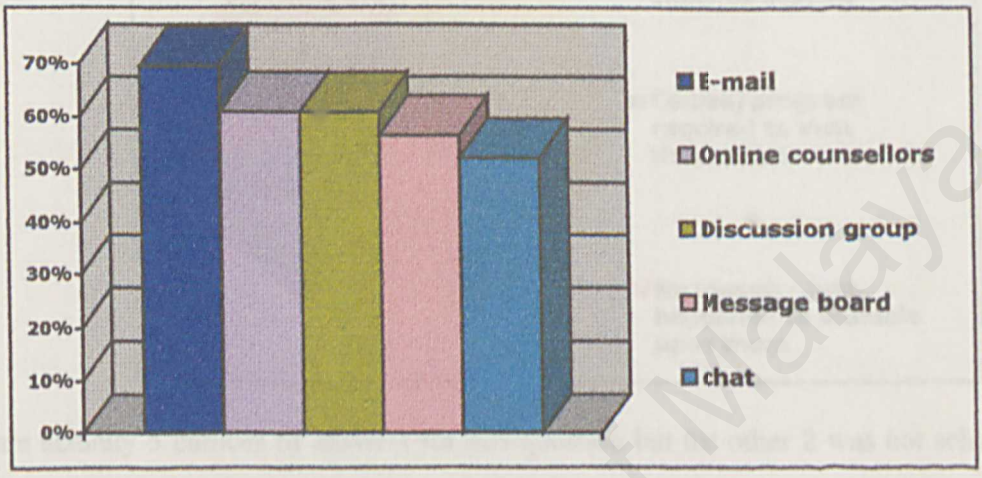
Although I find this fact quite hard to believe, I will try to find the best way to satisfy the users' requirements.

12. In your opinion, which of these methods of virtual academic counselling should be provided in our academic counselling website?



Most respondents (70%) thought that e-mail is the best method to conduct virtual academic counselling. Quite a number (60.1%) thought that online counsellors and discussion group are just as good a method. Message board scored 4th with 56.5% while chat scored last with 52.2%. The fact that more than half of the respondents chose all 5 methods concludes that we should at least try to bring some, if not all of these functions into our portal.

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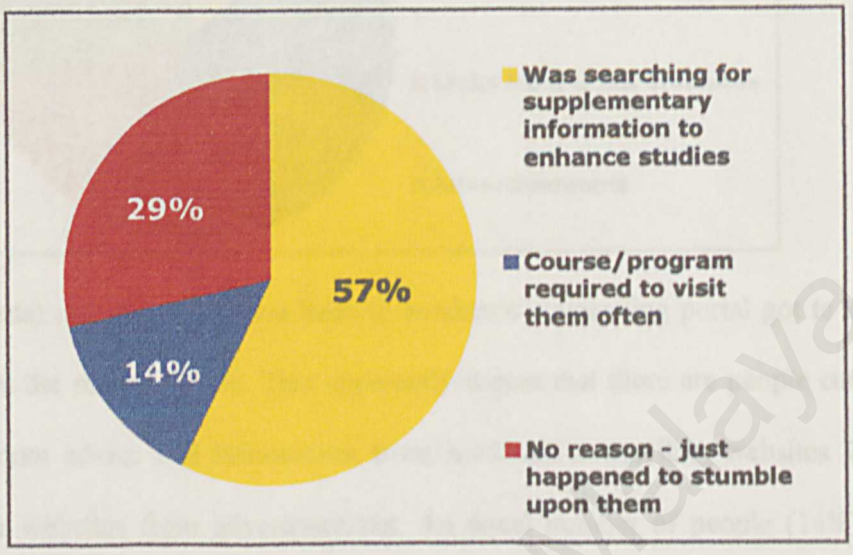
Questions asked only to respondents who have visited academic counselling websites:

13. Why did you visit the academic counselling website in the first place?



There are actually 5 choices of answers for this question but the other 2 was not selected by any of our respondents. Of the 9 respondents that have been to an academic counselling website, more than half (57%) did so because they were searching for supplementary information to enhance their studies. 14% visited those websites because their university course/program required them to visit those sites often. Funnily, 3 people (29%) just ended up in those academic counselling websites for no apparent reasons.

14. Where did you find out about the academic counselling website that you've visited?

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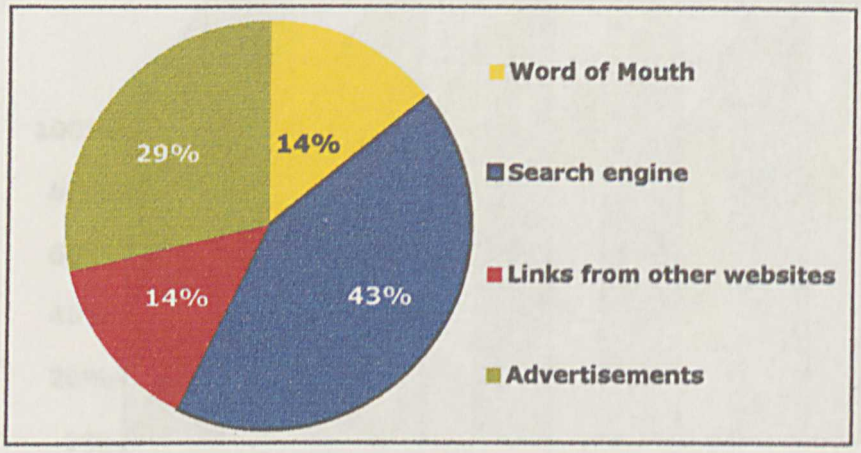
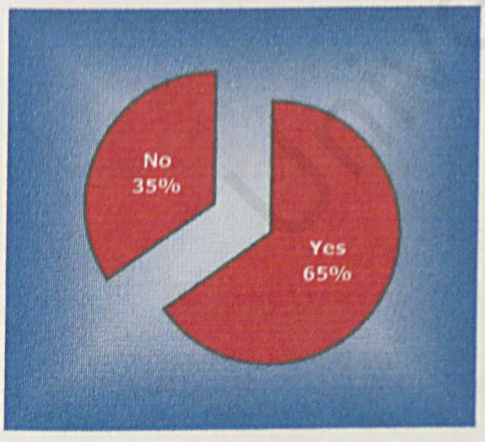


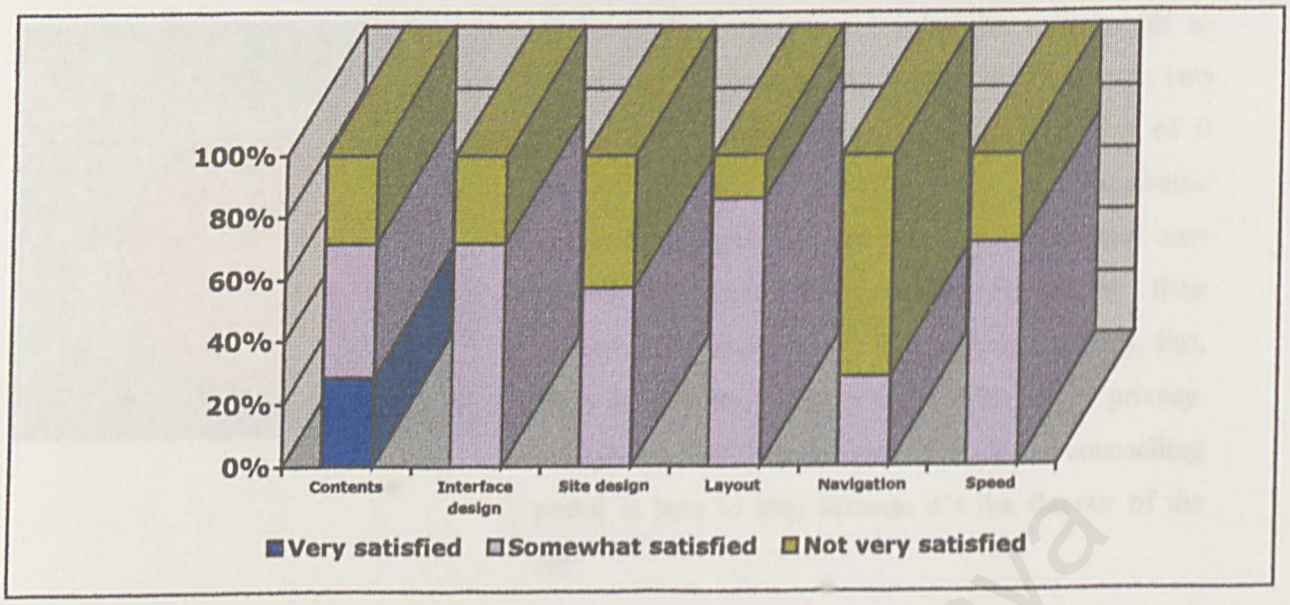
43% (4 respondents) out of 9 who have been to academic counselling portal got to know about those portals from the search engine. This apparently means that there are people out there who try hard to get some advice and information from academic counselling websites. 29% got to know about these websites from advertisements. An equal number of people (14%) were told about the academic counselling websites that they've been to from word of mouth and links from other websites..

15. Were you always able to find what you wanted from those academic counselling websites?



A greater fraction of respondents (65%) were able to find what they were searching for in those academic counselling websites that they've visited while only 35% weren't able to do so. Some of these unlucky folks feel that those websites should provide information about examination marking and grading scheme and give out details about the relevance of courses offered to their field of work.

16. Listed below are the elements of a web site. Indicate how satisfied you are in each element as you've seen them in the academic counselling website you've visited.



There are actually four choices of answers for this question, the most negative one being *not satisfied at all*, but funnily, nobody chose that answer at all. The most positive answer – *very satisfied* – was also not very popular. This question is quite hard to explain so I'll just point out the most popular answers for each element. In terms of content, most people (42.9%) are somewhat satisfied with what they've seen in the academic counselling websites they've entered. There are also a few respondents (3 of them, actually) who are very satisfied the sites' contents. Likewise, most people are also somewhat satisfied with the interface design, site design, layout and speed of the academic counselling homepages that they've visited. Contrarily, most people (71%) are not very satisfied with the navigation at those sites. This may be so because most academic counselling websites do not enforce consistency in each of their pages.

17. Do you agree that the academic counselling portal can substitute the traditional one-to-one academic counselling offered at your institution?

18. Do you think that the academic counselling portal is here to stay?

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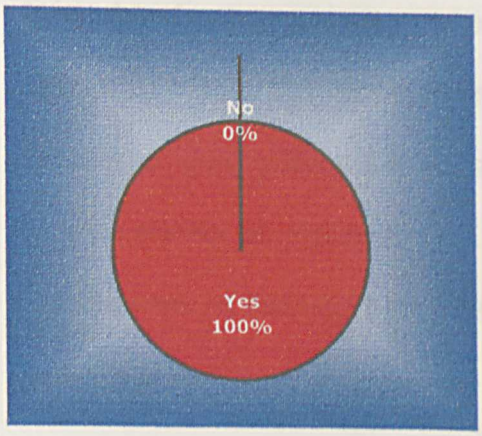
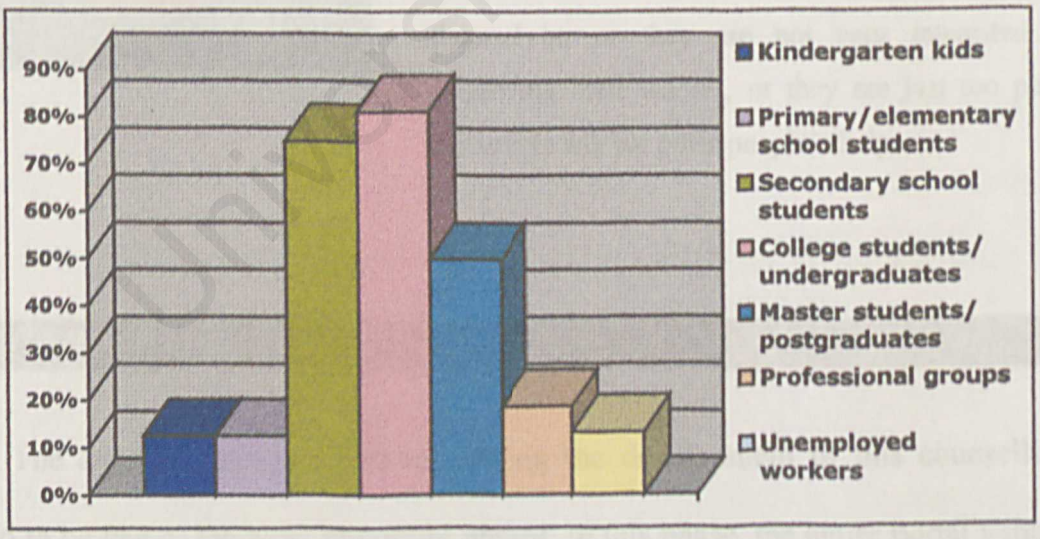


Both of these questions yielded the same result so that's why I've combined them together. These two questions cast unanimous votes for yes. Out of 9 people, everyone thought that the academic counselling portal can substitute the traditional one-to-one academic counselling offered at their institution because of its attractive benefits: easy, fast, high availability, cheaper and offers more privacy. Everybody also thought that the academic counselling portal is here to stay because it's the flavour of the day.

Questions asked only to respondents who have never visited any academic counselling websites:

19. Who do you think should be the target audience for an academic counselling website?



Out of 23 people, most of them (81%) thought that an academic counselling website should be targeted at college students and undergraduates. This is probably the fact that influenced us to decide on the same target audience for this portal – local university students. A third quarter

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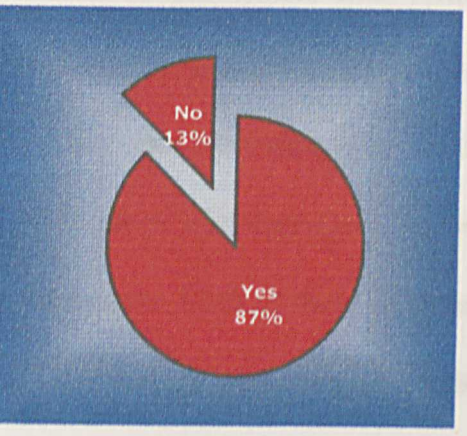
(75%) thought that secondary school students are more appropriate. Exactly half of the respondents thought that master students or postgraduates should also be the target audience for this website. Quite a few (18.8%) thought professional groups should also be included. Finally, the same number of respondents (12.5%) thought that an academic counselling website should cater the needs of these three categories of users: kindergarten kids, primary school students and unemployed workers.

20. Do you think an academic counselling portal would be beneficial to your everyday life?



Out of those 21 respondents who have never visited any academic counselling websites, 18 of them (87%) thought that an academic counselling portal would be beneficial to their daily life. However, 3 others are not in the same boat. I could draw three conclusions about this 13%: either they are confident in solving their own academic problems themselves, or they are not very interested in improving their studies, or they are just too plain egoistic to ask for other people's help.

.3 Requirements Analysis

The analysis phase carried out during the development of this counselling portal eemed to be one of the most important phases. In this phase, the entire portal's initial needs uch as identifying the objective, scope, functions, modules and other related information ould be defined.

There are literally two types of requirements: functional or non-functional:

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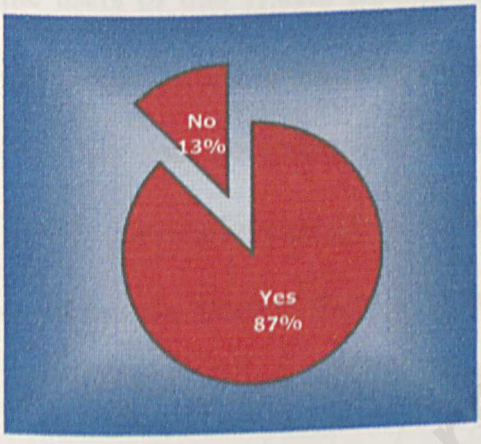

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3.3 Requirements Analysis

The analysis phase carried out during the development of this counselling portal deemed to be one of the most important phases. In this phase, the entire portal's initial needs such as identifying the objective, scope, functions, modules and other related information should be defined.

There are literally two types of requirements: functional or non-functional:

- *Functional requirements* are services that are offered by the system, how the system reacts towards the input and the characteristics of the system at different situations.
- *Non-functional requirements* are limitations or constraints towards services that is offered by the system. This includes limitations that exist on system developing process and time limitations.

3.4.1 Functional Requirements

Before settling down on the functional requirements of this system, we had to specify the users of this system first. After knowing each of these user's needs and wants can we only establish the system requirements. Basically, there are three types of users: the normal user- the ones who visit this website casually just to browse through; the members of this portal – those who sign up as a member; and the system administrators – those who take care of the system. Each of these users has their own unique requirements.

The highest ranking of authority belongs to the system administrators – their requirements encompasses those unique to them and those of the member's and normal users' requirements. The second highest ranking belongs to the members – they have less features compared to the administrator but more features compared to the normal user. The normal user's requirements illustrate the basic requirements for this system. As we go up the ladder, the requirements get relatively more complex.

The following are the modules for each type of user, listed in the ascending order of authority.

i. Normal User

a. Search

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- Provides searching capabilities for the entire portal. There are four categories of search: Search on stories, comments, sections or users.

b. Main Menu

- Gives the ability of the normal user to go to the main page (home), submit news, read stories from the archive and pick articles based from the topics.

c. AskAkak Guides

- This is where all the self-help articles and information on academic, career and relationship counselling are stored.
- Allows the normal user to read all the articles and display them in printer-friendly mode.
- Informs the user how many times the information has been viewed.

d. Total Hits

- Acts as a page counter whereby it tells the user how many times the portal has been accessed.

e. Links

- Displays the links to other interesting and informative made-in-Malaysia websites that are not at all related to the subject of counselling.

f. Who's Online

- A complex module that displays
  i. The name of the latest member
  ii. The total number of members
  iii. The total number of users currently accessing the portal
  iv. The number of visitors (normal users) currently accessing the portal

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v. The number of members currently accessing the portal and their names.

g. AskAkak Support

- Another complex module that provides the links to all the crucial features of this portal:

i. Profile – displays the counsellors, administrators and system developers; the means of interacting with these people, and the mission and objective of the portal.

ii. Forum – provides the link to the forum of this portal. Basically, it is divided into three sections: Academic, Career and Relationship. Each of these sections has their own moderators, topics and attributes (e.g who can post replies and whether attachments are allowed).

iii. Contact Us- enables visitors and users to send e-mail to the administrators and counsellors at AskAkak.Com. This is the best method to make appointments with counsellors or ask them for advice. Those who wish to do this must have their own POP3 email account.

iv. Feedback – enables visitors and users to send their feedback on the website – report broken links and typo errors, and send comments and suggestions on the website.

v. Chat – enables the users to chat on a real time basis. Those who wish to do this must have their own nickname, thus only members are allowed to chat.

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vi. FAQ – Those first time visitors who feel awkward when browsing this portal should definitely check this out. This function (Frequently Asked Questions) contains all you need to know about this website – who are its creators, what are the services it provides, how to use those services, etc.

h. Survey

- With this module, users are able to cast their vote on the featured survey and give additional comments on that particular topic.
- Users can also take a look at the entire result of the poll – a bar graph will be displayed to show the statistics.
- Users can also vote on other polls not featured in the main page.

i. Create new account

- Those users who wish to become a part of AskAkak.Com community can fill in the form and enjoy the privileges.
- The same person may not become a member twice (this system checks for similar e-mails and usernames)
- Upon registration, the user will be given their temporary password (which is generated by the system) and they will be asked to change that password to increase security.

j. Top 10 Jobs

- Displays the links to the 10 most sought-after jobs in the job industry.

k. Perplexed

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- Displays the links to the 3 most perplexing problems a student could face – as compiled by our relationship counsellor.

l. Sources

- Displays the links to the web pages that have become sources for the information in this portal.

m. Study Tips

- Displays the best tips on how to study more effectively – as compiled by our academic counsellor.

ii. AskAkak.Com Members

a. Search

b. Main Menu

- Apart from the standard Main Menu Module presented to the normal user, a few additional features were added exclusively for the benefits of AskAkak.Com members. These features include:

  i. Member List – allows the member to see the list of all the registered users of AskAkak.Com Counselling Portal along with their personal information.

  ii. Your Account – allows the member to edit or modify his/her personal information; personalize and customize his/her home page; and submit comments and news to the portal.

  iii. Private Messages – enables the member to store, send and receive private messages from other registered users. Private messaging capabilities include message icons, smilies and text formatting.

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c. AskAkak Guides

d. Total Hits

e. Links

f. Who's Online

g. Survey

h. AskAkak Support

i. Create new account

j. Top 10 Jobs

k. Perplexed

l. Sources

m. Study Tips

iii. Administrators

i. Add story

- Enables the administrator to add new articles to the homepage and delete or modify existing articles

ii. Backup database

- Enables the administrator to save the database into another folder as a back up in case of disaster.

iii. Blocks Manager

- Enables the admin to create new blocks, delete or edit old blocks and change their layout and appearances.

iv. Content Manager

- Enables the admin to add a new page into the portal.

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v. Edit admins

- Enables the super user (super administrator) to create other administrators of a lower rank or to delete administrators.

vi. Edit users

- Enables administrators to register new users or delete existing users as they like.

vii. FAQ

- Enables the admin to define new questions, and edit or delete existing questions

viii. Forums

-Enables the admin to start a new forum, edit forum preferences and delete a forum.

ix. Messages

- Enables the admin to send messages to other members

x. Modules

- Enables the admin to create new modules and delete or edit existing modules.

xi. Newsletter

- Enables the admin to send a notice or circulate a newsletter to subscriber or all the members.

xii. Optimize database

- Enables the admin to optimize the structure of the database to increase its overall speed

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xiii. Preferences

- Lets the admin specify the settings and layout of the homepage

xiv. Sections Manager

- Lets the admin create new sections (like those of the counselling's) or delete existing sections.

xv. Submissions

- Lets the admin manage all the articles, comments or stories submitted by the users.

xvi. Surveys/Polls

- Enables the admin to create new polls, edit or delete existing polls, manage poll comments and determine whether the poll should be published in the homepage or not.

xvii. Topics Manager

- Enables the admin to create new topics (categories) for the articles published in the homepage, edit or delete them, and assign pictures for each of them.

xviii. Logout

- Enables the administrator to log out after each session for security reasons.

3.3.2 Non-functional Requirements

After the search for information on modules is completed, there still exists some non-functional requirements that has to be established and absorbed into this counselling portal. The elements that are desired by the users could be obtained from general and informal discussions with fellow friends and through the results yielded from the survey.

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✓ **User friendlier portal**

The counselling portal that I am about to develop will be very user-friendly. A user-friendly system will be very easy to utilize and manipulate, and thus rates high on usability. The reason I have to preserve this is because most of my portal users are emotionally distressed or mentally unstable. They are turning to me for help and guidance, and they surely wouldn't appreciate it if this portal is very complicated and hard to use or understand. Therefore, pop-up menus and complex JavaScript rollovers are a big no-no. Furthermore, users will cease surfing this portal if the information they are looking for is too hard to find.

✓ **Visually pleasing interface design**

The design of this portal's interface will be one of the top elements in my priority list. As we all know, human beings always judge by their first impression. Due to this reason, the interface design needs to be visually pleasing especially for the first few pages. There are a few criteria that have to be considered upon designing my portal's interface – the colour scheme, typeface, and graphics and images. The colour scheme used should be one that is visually soothing – pastel colours are most appropriate. The typeface used should be easy to read, and simple without too many embellishments. Finally, intelligent use of graphics and images should be enforced.

✓ **Simple and Elegant Presentation**

My survey output and analysis shows that most users value simplicity and elegance in a website, and thus this is what I am trying to preserve. By simplicity, I mean that

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there will be no convoluted layouts or complex control forms and functions. Everything will be plain and easy, nothing out of the ordinary. However, this portal will still try to maintain its stylish and tasteful appearance. There will be nice, attractive images that are unique to our portal only. Even the borders and dividers will be custom designed by us.

✓ **Good Speed and Navigation**

A good portal should have good speed and navigability and that is what we are trying to achieve. By enforcing consistency on each and every page of our portal, we will make it easier for users to surf through the sites without pressing the back and forward button on their browser. Furthermore, it will avoid them from getting lost or reaching any orphan pages. On the other hand, speed is a function of the design and technology of the website. In terms of design, we will try to limit the elements that could affect the speed of our website – large-sized graphics and images, audio files and animations. We will also use the fastest server possible in order to provide the best download times to the user.

3.4 Programming Language

PHP (recursive acronym for "PHP: Hypertext Preprocessor") is a widely-used Open Source general-purpose scripting language that is especially suited for Web development and can be embedded into HTML. Simple answer, but what does that mean? An example:

```
<html>
<head>
<title>Example</title>
 </head>
 <body>
<?php echo "Hi, I'm a PHP script!";?>
</body>
```

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```
</html>
```

Notice how this is different from a script written in other languages like Perl or C -- instead of writing a program with lots of commands to output HTML, you write an HTML script with some embedded code to do something (in this case, output some text). The PHP code is enclosed in special that allow you to jump into and out of "PHP mode".

What distinguishes PHP from something like client-side JavaScript is that the code is executed on the server. If you were to have a script similar to the above on your server, the client would receive the results of running that script, with no way of determining what the underlying code may be. You can even configure your web server to process all your HTML files with PHP, and then there's really no way that users can tell what you have up your sleeve.

The best things in using PHP are that it is extremely simple for a newcomer, but offers many advanced features for a professional programmer.

When PHP parses a file, it simply passes the text of the file through until it encounters one of the special tags which tell it to start interpreting the text as PHP code. The parser then executes all the code it finds, up until it runs into a PHP closing tag, which tells the parser to just start passing the text through again. This is the mechanism which allows you to embed PHP code inside HTML: everything outside the PHP tags is left utterly alone, while everything inside is parsed as code.

There are four sets of tags which can be used to denote blocks of PHP code. Of these, only two (<?php. . .?> and <script language="php">. . .</script>) are always available; the others can be turned on or off from the php.ini configuration file. While the short-form tags and ASP-style tags may be convenient, they are not as portable as the longer versions. Also,

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if you intend to embed PHP code in XML or XHTML, you will need to use the <?php. . .?> form to conform to the XML.

The tags supported by PHP are:

1. `<?php echo("if you want to serve XHTML or XML documents, do like this\n");?>`

2. `<? echo ("this is the simplest, an SGML processing instruction\n"); ?>`
   `<?= expression ?> This is a shortcut for "<? echo expression ?>"`

3. `<script language="php">`
   `echo ("some editors (like FrontPage) don't like processing instructions"); </script>`

4. `<% echo ("You may optionally use ASP-style tags"); %>`
   `<%= $variable; # This is a shortcut for "<% echo . . ." %>`

The first way, <?php. . .?>, is the preferred method, as it allows the use of PHP in XML-conformant code such as XHTML. The second way is not always available. Short tags are available only when they have been enabled. This can be done via the short_tags() function (PHP 3 only), by enabling the short open tag configuration setting in the PHP config file, or by compiling PHP with the --enable-short-tags option to configure. Even if it is enabled by default in php.ini-dist, use of short tags are discouraged.

The fourth way is only available if ASP-style tags have been enabled using the asp tags configuration setting. The closing tag for the block will include the immediately trailing newline if one is present. Also, the closing tag automatically implies a semicolon; you do not need to have a semicolon terminating the last line of a PHP block.

PHP supports eight primitive types: Boolean, integer, floating-point number (float), string, array, object, resource and NULL. The type of a variable is usually not set by the

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programmer; rather, it is decided at runtime by PHP depending on the context in which that variable is used.

Variables in PHP are represented by a dollar sign followed by the name of the variable. The variable name is case-sensitive. Variable names follow the same rules as other labels in PHP. A valid variable name starts with a letter or underscore, followed by any number of letters, numbers, or underscores. As a regular expression, it would be expressed thus: '[a-zA-Z_\x7f-\xff][a-zA-Z0-9_\x7f-\xff]*'

To assign by reference, simply prepend an ampersand (&) to the beginning of the variable which is being assigned (the source variable). For instance, the following code snippet outputs 'My name is Bob' twice:

```
<?php $foo = 'Bob';     // Assign the value 'Bob' to $foo
      $bar = &$foo;     // Reference $foo via $bar.
      $bar = "My name is $bar";  // Alter $bar... echo
      $bar;
      echo $foo;      // $foo is altered too.
?>
```

One important thing to note is that only named variables may be assigned by reference.

```
<?php $foo = 25;
      $bar = &$foo;        // This is a valid assignment.
      $bar = &(24 * 7);   // Invalid; references an unnamed expression.
      function test() {return 25; }
      $bar = &test();     // Invalid. ?>
```

3.5 System Requirements

The selection of the right hardware and software is very crucial in guaranteeing the success of the system. The task of choosing the most appropriate hardware and software needs to be done carefully and thoroughly to ensure that it fulfils system requirements.

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3.5.1 Software Requirements

The main software that was used to develop this portal is Macromedia Dreamweaver MX. The inherent fact that made us choose this software is because it is the only web editing tool that is able to develop PHP websites.

Besides that, a few other software and tools are used to produce this software. Each of these tools is meant for a certain task. These additional soft wares include Adobe Photoshop 7.0, Adobe Illustrator 10.0, MySQL 3.2.3 and PHPMyAdmin.

3.5.1.1 Macromedia Dreamweaver MX

Macromedia Dreamweaver MX is tool for creating, building and managing websites and Internet Applications using one single integrated environment. Countless elegant and professional looking websites that we are able to see on the Internet today are made using this tool. Macromedia Dreamweaver MX has also become the first choice of big companies and conglomerates of creating their powerful and attractive websites. Most professional web designers are also adept in using this tool, so I think it might be a good idea to master it.

Dreamweaver MX does offer a lot of advantages. It enhances productivity through its new integrated workspace, which is shared with Flash MX and Fireworks MX. This workspace includes tabbed document windows, dockable panel groups, customisable toolbars and integrated file browsing. Additionally, it helps users write code faster through its high-powered coding features like code hints, extensible colour coding, tab library editor and tag chooser

Other than that, it provides multiple technology development environment with server code libraries for ColdFusion, ASP, ASP.NET, JSP and PHP. It also provides an integrated

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database panel where users can view the structure and content of databases before creating queries.

One of the most important factors that made me choose this software is that it provides a unique support for PHP. Other web authoring tools like FrontPage does not offer this feature. A peek at Macromedia's homepage also revealed a few organizations that have used Dreamweaver MX to create PHP applications – and the results are very encouraging. This further boosts my confidence in using this software.

3.5.1.2 Additional Software

- **Adobe Photoshop 7.0**

  Adobe Photoshop is one of the most essential tools that a competent web designer has to master. This version of Photoshop is the latest and most powerful of its kinds. All of the images that will be displayed in this portal will be built and created with this software.. Probably the most useful and feature offered by Photoshop is its powerful image layering and slicing ability – it allows users to create countless compelling and life-like images with effects that have never been thought of before. The functions featured in this software are also very numerous and this allows endless exploration. One of it is the Document States palette that can manage rollovers, animations, slices and image maps.

- **Adobe Illustrator 10**

  I will only use Adobe Illustrator to define and create flat 2D graphics, such as clip art pictures, cartoons and borders. This is also its latest version and it has just been out in the markets for a few months. With this version, it easier than ever to produce high

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quality, low maintenance web pages. I will consider using this graphic to create the image map in my portal's main menu so that URL links can be created faster.

- **MySQL 3.2.3 and PHPMyAdmin 2.2.3**

MySQL is a mature, stable and robust database platform for most applications. MySQL has many advantages. It is extremely fast and scalable on reads (faster than most commercial databases) and is supported on multiple platforms (Solaris, Linux, Win32). It also has mature APIs for database application development and it supports one-way replication. However, all database queries have to be typed into the UNIX box in order to run them, even when creating databases. This can be troublesome and unproductive especially for large scaled databases. Thus, an interface is needed to make database operations easier. This is where PHPMyAdmin comes in. PHPMyAdmin has to be run on the localhost server in order for it to run. Practically every database operation can be done here. You can browse the tables in the database, select, insert, empty and even drop them. There are so many things that can be done with much less time and effort.

3.5.2 A Peek at the technology – PHP's strengths and weaknesses

Developers creating scripted, dynamic Web applications have an embarrassment of riches in programming languages to choose from, although the choices may sometimes be limited by the platform. For example, WebSphere developers work in Java, whereas IIS coders tend toward Microsoft's JScript and VBScript languages. But when a company uses Apache to host a Web site, Web programming can be done in countless languages. Along

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with Perl, the open-source PHP (Hypertext preprocessor; originally Personal Home Page) language has emerged as a favorite of Apache developers.

PHP's easy-to-learn syntax, strong database connectivity, broad platform compatibility, and huge base of contributed extensions account for its large and growing base of users. PHP Version 4 sweetened the pot with multithreaded Web-server support, buffered output, and an optimized execution engine, among many other added features. This release, as were those before it, is free and open-source, so companies can exploit PHP's technical strengths and lower their operating costs at the same time.

Whereas Apache is the Web server of choice for PHP developers, users of other servers needn't switch to use the language. PHP has been packaged as an extension to Netscape/iPlanet and Microsoft commercial Web servers. When running under Windows, PHP 4 fits into its hosting server's multithreaded architecture, improving the performance and lowering the resource burden of PHP applications. Recognizing that Windows users often lack C development tools, PHP's authors offer the Windows version of the PHP language interpreter in binary form. Unix, Linux, and BSD releases are distributed as source code.

Among PHP's strengths is its capability for driving just about any database. The open-source MySQL database is often bundled with PHP and is even included in some Windows binary distributions. In addition to MySQL, PHP directly supports Oracle, Sybase, Informix, SQL Server, and others, as well as databases reachable via ODBC.

PHP has a dedicated group of functions for each database type, making migration across databases challenging unless you rely on ODBC. A PHP extension called Metabase provides a unified programming interface to most popular commercial and open-source databases.

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On the Windows platform, PHP can create and call any COM object that exposes an IDispatch (script-compatible) interface. Similarly, if the Java run time is installed on a Windows or Unix/Linux/BSD server, PHP can instantiate and call into Java classes.

However, PHP is not without its flaws. One of PHP's few limitations is that the lifetime of COM and Java objects is limited to a single Web page; that is, after the page is fully rendered in the client, the object instance is destroyed.

PHP does support the concept of session variables that persist across multiple Web pages, but COM and Java objects cannot be stored as session variables. Any such objects that are part of a multipage operation, such as a shopping cart, must be reconstructed at the top of each page. This limitation affects database connections as well, but at least one contributed database library, ADODB for PHP, manages to preserve database connections across multiple pages. Because PHP has so many active users, limitations exist only until someone in the community creates a work-around.

PHP's language syntax is a cross between C and Perl. It's easy for any C/C++, Java, JavaScript, or Perl programmer to adapt his or her skills. In our opinion, PHP ranks near the top in ease of use, and consequently, speed of coding. VBScript is the only language that might be easier for new programmers to learn, and it's not nearly as versatile or extensible as PHP.

Developers will be impressed by PHP's huge library of built-in data types and functions. Arrays can be simple or associative, accepting either lists of items or associated key/value pairs. Character strings are an intrinsic data type, and the language's string-handling facilities are strikingly similar to the string functions in the C standard library. PHP is not an object-oriented language per se, but it supports user-defined classes and simple

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inheritance. Uniquely, arrays can be converted to objects so that the array's keys become object properties.

There are few roles that PHP, aided by its many extensions, can't fulfill. Object-programming adherents may point to PHP's limited object support – its missing destructors, private members, and multiple inheritance, among other things – are limiting PHP's usefulness in complex projects.

PHP lacks inherent support for transactions, but it can handle an SQL database transaction as long as all the transaction code fits on a single Web page. And although there are XML-RPC and SOAP (Simple Object Access Protocol) extensions, PHP can't transform objects into Web services as effortlessly as .Net can. But as long as architects and coders can work within and around these constraints, PHP deserves consideration as a low-cost, quick-turnaround alternative to Active Server Pages and Java.

3.5.3 Hardware Requirements:

The table below lists the hardware requirements for my portal to be:

Hardware	Requirements
Multiprocessor	Intel Pentium III 733 MHz
Random Access Memory (RAM)	128 MB
Hard Disk	5GB
Monitor	SVGA
Input device	Multimedia Keyboard, Mouse, Digital Camera, Scanner
Peripheral	Printer, Graphic Card

Table 3-2 : Hardware Requirements

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3.6 Summary for Chapter 3

In developing this Counselling Portal, the system development methodology that was used is the Software Engineering Life Cycle (SELC) model. This model will describe phases early and clearly in developing my project. It will also maintain the consistency of the deliverable of each phase with the user requirements.

There are seven different types of information collection technique that I have applied in gathering the users' requirements. They are discussion with my supervisor, Internet surfing, reference from books, past research, survey, interviews and informal discussion.

There are two types of system requirements that have to analysed – functional requirements and non-functional requirements. Functional requirements describe what the system is supposed to do while non-functional requirements identify the performance constraints of the system. There are three types of functional requirements – those of the normal user's, member's and system administrator's. Each of these users has their own modules prepared for them. In terms of non-functional requirements, my portal is restricted to a few performance constraints: it is supposed to be user friendly, to have visually pleasing interface design, to display a simple yet elegant presentation and to possess good speed and navigation.

The technology that will be used to develop this portal is PHP. It is basically an open source server-side technology for creating dynamic web pages. The main software that will be used to develop this counselling portal is Macromedia Dreamweaver MX. On top of that, other supporting tools such as Adobe Photoshop 7.0, Adobe Illustrator 10, MySQL 3.2.3 and PHPMyAdmin 2.2.3 will also be used.

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Chapter 4 – System Design

- *Introduction*
- *Program Design*
- *User Interface Design*
- *Output Expected*
- *Summary*

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Chapter 4 - System Design

4.1 Introduction

In this phase, information and data that was gathered for system requirements is applied to create a logical design for the portal that I am going to build. Procedures for data input is created to ensure the correctness and consistency of the data entered into the information system. Furthermore, interactive input will be available for the information system by using form techniques and good screen design.

Certain parts of the logical designing for this application are aimed to set and improve the user interface. User interface is vital because it will be a channel that connects the user and the system. Lack of simplicity, usability, navigability interactivity and elegance are often interface related issues. After doing a thorough analysis, I will be able to design a system and its interface that will meet the requirements specification.

This design phase will also cover file design and database design for data storage. A well-managed database will be the root for this system to support information access. Thus, the objective of this phase is to design an effective system that will meet the requirements and is within the constraints and boundaries established.

4.2 Program Design

For designing system, I used the decomposition approach. It is a top-down approach that decomposes a system into a hierarchy of modules where it begins from a high-level (or general) description and then moves down to a low-level (or detailed) description. Advantages of decomposition approach include:

i. It prevents the development cycle from developing the whole system all at once

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ii. It prevents the development cycle from misdirecting away from its purposes

4.2.1 Modular Design

A system is modular if it is decomposed into simpler, well-defined modules and use inter-modular interfaces. Advantages of this modularity includes:

i. Easier to write and compile modules because it is able to stand alone

ii. Modules are easier to manage for modifying certain functions and not the whole program

iii. Easier to understand the characteristics of each module. Developer will be able to grasp a module and understand its functions easier as when compared to trying to understand the whole system

In this project, there will be 13 main modules. They are:

a. **Search**.

b. **Main Menu**

c. **AskAkak Guides**

d. **Total Hits**

e. **Links**

f. **Who's Online**

g. **AskAkak Support** with sub-modules:

   i. Profile.

   ii. Forum

   iii. Contact Us

   iv. Feedback

   v. Chat

   vi. FAQ (Frequently Asked Questions)

h. **Survey**

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i. **Create new account / Members Login**

j. **Top 10 Jobs**

k. **Perplexed**

l. **Sources**

m. **Study Tips**

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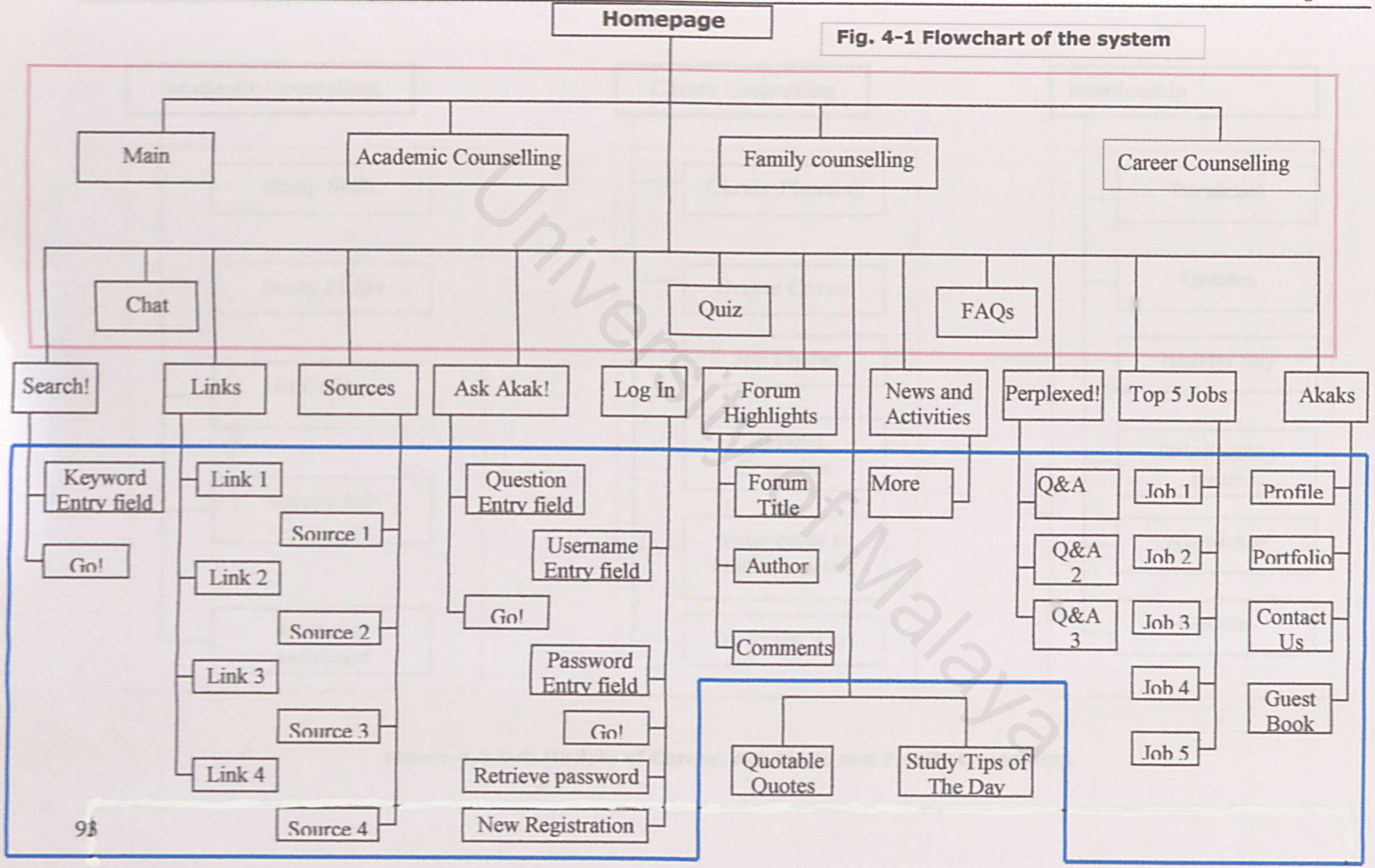

Fig. 4-1 Flowchart of the system

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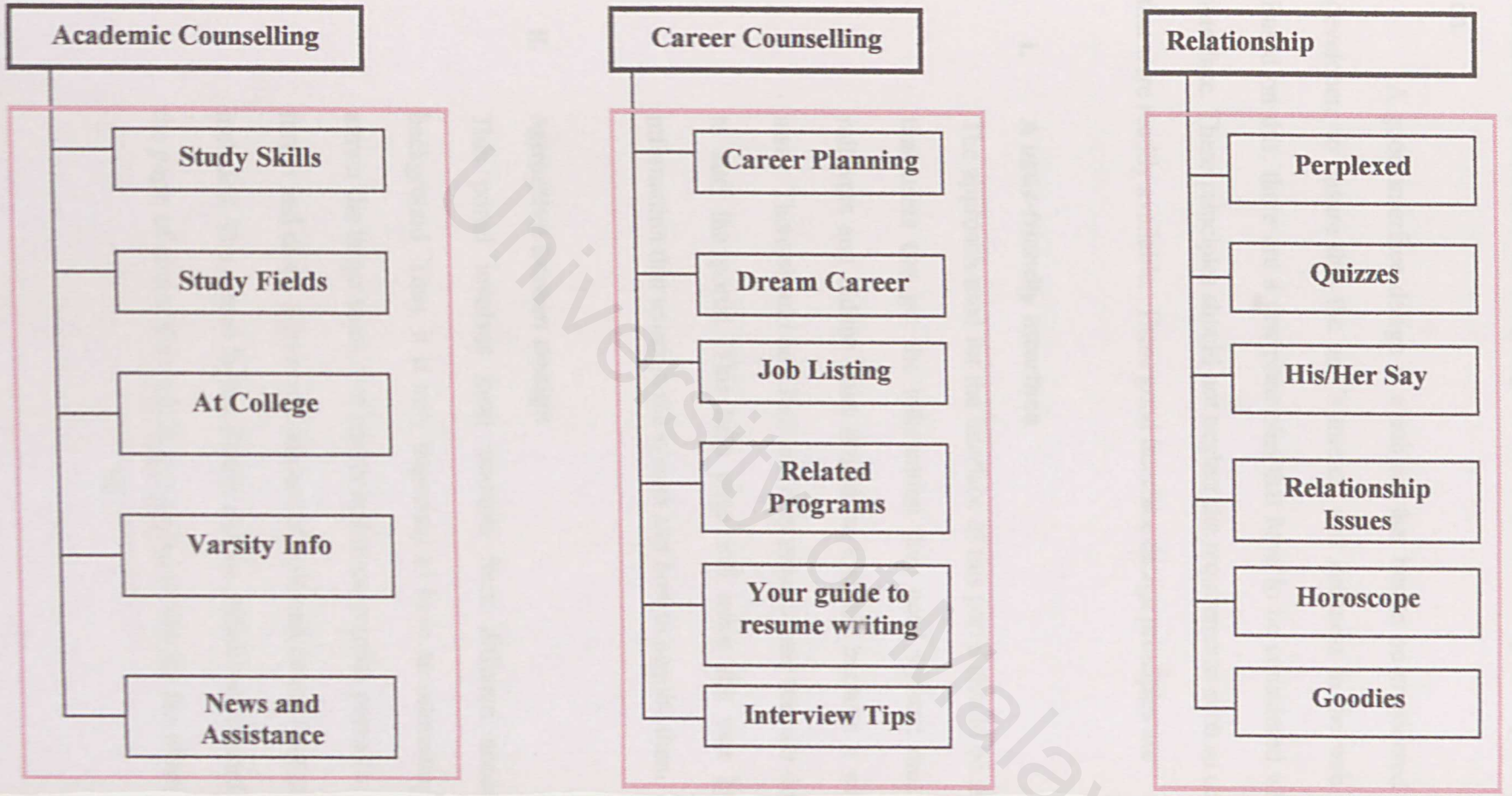

Figure 4.2 Sub Module of Career, Academic and Family Counseling

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4.3 User Interface Design

First and foremost, this stage has to be done manually. This is because it will become our reference for designing the real interface during the implementation phase later on.

A good interface design is a subject that has to be considered thoroughly by us developers to ensure that the user's interest and keenness in the web pages are sealed. Based on this, there are a few principles that have to be considered when designing the interface. These principles should not neglect the requirements such as cost, time and tools that were readily available. These good interface design principles are:

i. A user-friendly interface

The approach used for the interface of this portal should be simple and easy so that users can get the information they need without much fuss. Complex rollovers and hidden links should be avoided because it will shun the users away. There should be a link to a help page in case the user does not know how to surf the portal. This help page will assist the user by explaining the information that exists in the system and how to acquire them.

ii. Attractive Screen Design

This portal involves local students from different academic status and background. Thus, it is very important to have an interesting screen that will attract the target users. For earlier and more popular pages (such as main, help, forum and chat), a generous amount of cool and compelling graphics should be included. The screen layout should also be stylish and elegant. If the users like the page, of course they will be compelled to stay for the whole show.

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iii. Standardized screen

Enforcing a standard towards each functional element and links in the layout is needed. In developing this portal, we have ensured the consistency of the location of every element on the pages. The left and top portion of every page should contain the same elements and links to avoid confusion. If the elements are laid out inconsistently, users could not find the link they are looking for very easily. This will of course detriment the usability and navigability of this portal.

iv. Colour

Colour plays main role in capturing the user's interest, especially for reading and scanning purposes. Links should be displayed using distinguishable colours such as blue, green or purple. For the background of the pages, soft pastel colours need to be used so that it will be more visually pleasing to users. The images should also have good colour coordination in order to preserve the elegance and professional look and feel of our portal. Finally, shocking, neon colours should be used sparingly, if at all.

v. Presentation

Every screen should have high quality graphics and images, particularly those pages that are more frequently visited. The layout should be simple and smart, without too many animations that may affect the concentration of users. The contents should also be presented in a moderate amount, with a good balance of graphics and text. The text should not be overly long because users do not enjoy

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scrolling down endlessly. All in all, the presentation should be simple but elegant.

vi. User help

The interface should accommodate users' queries should they encounter any problems with the portal.

4.3.1 Logo Design

Because we are serving the community of students in Malaysia (especially undergrads), we had to design a logo that is suitable to our culture, orientation and adherent to the current situation. Thus, we came up with this logo (pictured below) because we feel that it satisfies all the criteria we mentioned before.

Fig. 4.3 – AskAkak.Com Logo

We think that this is the best logo because it has that Malaysian flavour to it. Also, the friendly look on that cartoon character reminds us of our school counsellor and thus we feel that visitors will be compelled to browse through our

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page just from looking at the logo. The colour combination used is also very soothing and the typeface is cute yet elegant.

4.3.2 Blocks design

In our portal, each module will be placed in blocks located at the two opposite sides of the screen. Blocks located at the left side of the screen are static, meaning that they will always remain there and appear at every page. This will enforce consistency and at the same time aid user navigability. Blocks located at the right side of the screen are dynamic, meaning that they can be disabled at certain pages. Each block has the same template; only the contents are different. The design of the blocks are as follows:

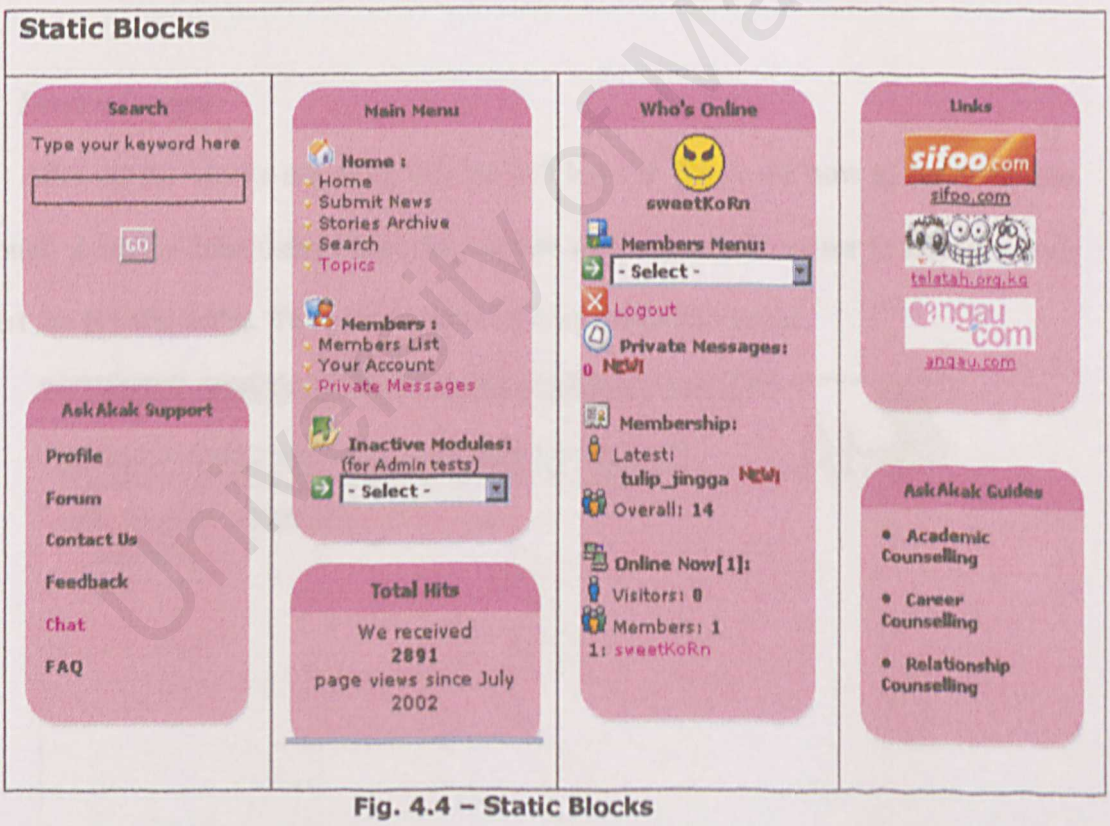

Fig. 4.4 – Static Blocks

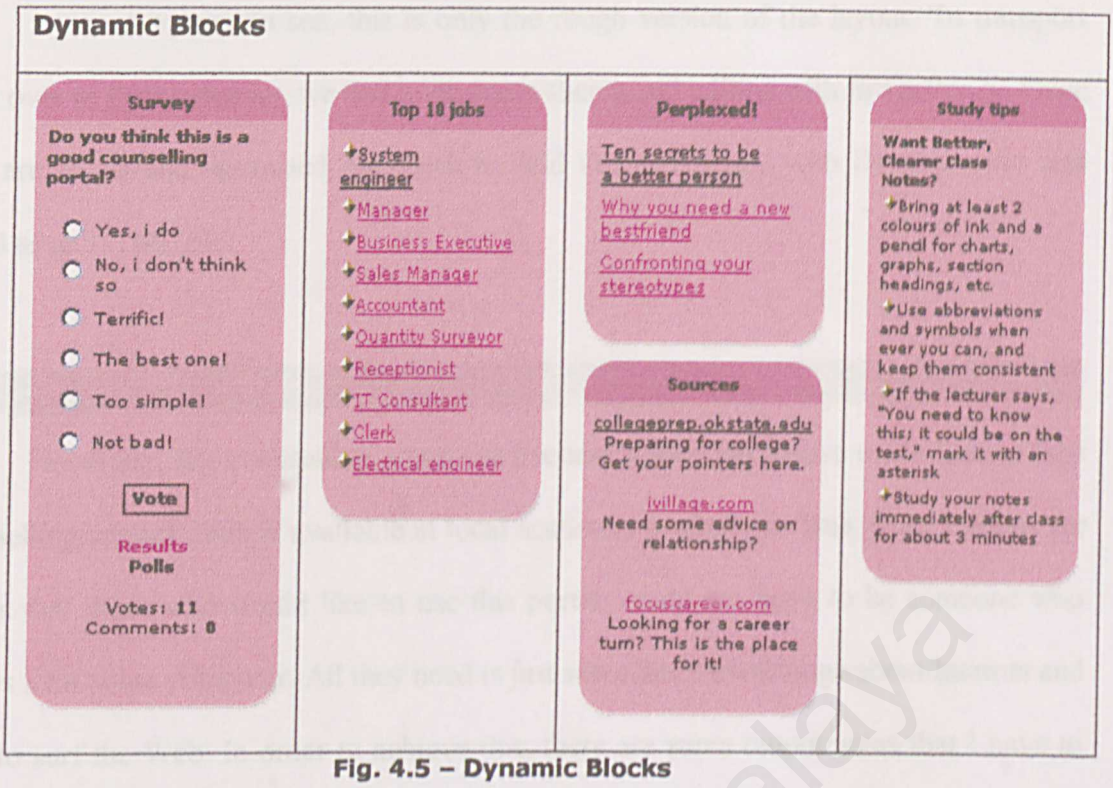

Fig. 4.5 – Dynamic Blocks

4.3.3 Screen Design

After all the blocks are designed, we will have to figure out how to lay them out. The rough sketch is done using Photoshop before we transport them over to Dreamweaver to insert the HTML codes. The picture below shows the initial layout:

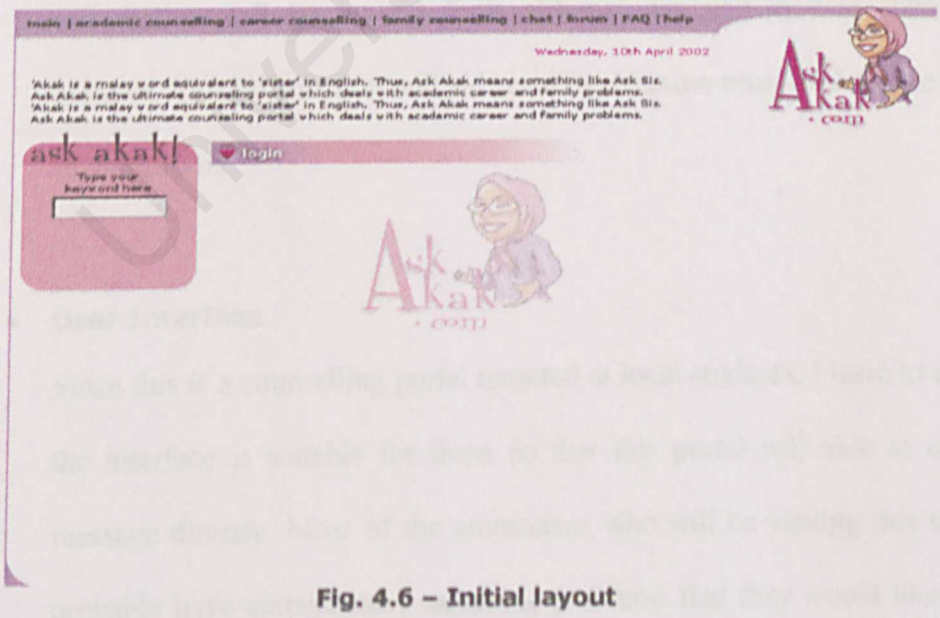

Fig. 4.6 – Initial layout

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As you can see, this is only the rough version of the layout. To transport them over to Dreamweaver, we had to do some slicing and editing with ImageReady. Once they are sliced and optimised, they will be laid out completely with Dreamweaver and saved as an HTML file.

4.4 Output Expected

Hopefully, this counselling portal can become a good alternative to the face-to-face counselling service already available at local academic institutions. One of the reasons for this is that those who would like to use this portal would not have to be someone who knows a lot about computer. All they need is just some basic knowledge about Internet and how to surf the Web. In order to achieve this, there are some output areas that I have to concentrate on. They are:

- **Information**

  Counselling covers a wide scope of areas and topics. I have to make sure that the information presented will be compact, concise and accurate. Most of the information will be in text form although we will include some relevant pictures. This information will aid scanning because most of them are presented in point form.

- **User Interface**

  Since this is a counselling portal targeted at local students, I have to make sure the interface is suitable for them so that this portal will able to convey its message directly. Most of the counselees who will be visiting this site would probably have certain nerve wrecking problems that they would like to solve.

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Thus, we have to provide a visually pleasing interface for them so that it could ease their troubled minds. The intelligent use of layout, graphics and colour coordination would surely get this job done.

- **Technology**

  As I have mentioned so many times before, we are going to use the latest and most popular web technology – PHP to develop this portal. Therefore, we intend to fully utilize its powerful features so that we could make an excellent portal. The proponents of PHP claim that this language can be used to create powerful forum, user polls, chat and many more, all while preserving strong security on the web. This is what we plan to explore and discover. Really, a good use of technology is one of the outcomes that we are looking forward to see.

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Summary of Chapter 4

In this phase, information and data that has been collected during the requirements discovery phase will be used to do a logical design for the system that I am going to build.

For designing the system-to-be, I will be using the decomposition approach. This approach decomposes a system into a hierarchy of modules where it begins from a high-level (or general) description and then moves down to a low-level (or detailed) description.

The modular approach is very important in system designing when decomposition approach is applied. This particular approach is done by further decomposing the system into logical and more manageable modules.

A good interface design is a subject to be considered well by developers in order to attract the interest of users in using their system. This consideration includes user-friendly interface, attractive screen design, standardized screens, colour, presentation and help for user. The logo and module design also play a big role in determining the quality of the interface design.

Finally, the discussion on the expected outcome covered these three aspects: the information to be presented, the user interface and the technology utilized. These aspects were chosen based on the comparison of websites in Chapter II – Literature Review.

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Chapter 5 – System Implementation

- *Introduction*
- *Data Preparation*
- *Coding*
- *Summary*

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CHAPTER 5: SYSTEM IMPLEMENTATION

5.1 Introduction

System implementation is a process of writing the programming codes that implement the design. This task can be daunting for several reasons. First, the designer may not have addressed all of the idiosyncrasies of the platform and programming environment. Second, the designer must write the codes in a way that is understandable to others. Third, the designer must also take advantages of the characteristic of the design's organization, the data structure and the programming language's construct while still creating code that is easily reusable. Lastly, the designer needs to be very familiar with the organization's standards and procedures so that not only others can understand what they have written but also why they are written.

Listed below are the software and tools that has been used in implementing this Counselling Portal.

Software	Usage	Description
Windows 98	System Development	Operating System
Apache	System Requirements	Web Server
Dreamweaver MX	Interface Development	PHP Editor
Internet Explorer	System Development	Web browser
MySQL	Database Management	Database Platform
EditPlus	System Development	Code Editor
Photoshop 7.0	Interface Design	Image Editor
Illustrator 10	Interface Design	Graphics Editor
ImageReady 3.0	Interface Design	Web Images Editor
Microsoft Word	System Development	Documentation

Table 5.1 – Software and Tools Used

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5.2 Data Preparation

5.2.1 *Still Images and Graphics*

All images are prepared using Adobe Photoshop 7.0 and Adobe ImageReady. Certain graphics, such as the logo, has to be rendered using Adobe Illustrator first because transporting it to Photoshop. This is because Photoshop does not allow vector graphics and if we were to draw the logo using this software, we will come up with jagged crooked lines. All images are in .gif and .jpg interleaved graphic format. They are all optimized for faster web delivery and smaller storage.

5.2.2 *Database Preparation*

The database is created on MySQL platform. This platform has to be installed first in order for it to run. PHPMyAdmin acts as the interface to this database because it doesn't have an interface of its own. PHPMyAdmin is actually run on our intranet (local server) and thus is run in our Internet Browser. There are many more interface applications made for MySQL, but we chose PHPMYAdmin because it is built specially for PHP applications. With it, every creation and modification is easy. This is important because we have a big database with around 70 tables inside it.

5.2.3 *Input Form Design*

Because this portal involves a lot of data input, we have to put a lot of effort into the form design. New Member Registration, Private Message Submission, Articles Submission, Comments Submission, Polls, and Feedback are just some of

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the functions that require data input. Thus, each form design must be done carefully so that users can utilize the system correctly. All designs were made using Dreamweaver to produce elegant and efficient results. HTML tables were the main ingredient in creating the form layout. Cascading Style Sheet (CSS) were applied to appropriate elements such as buttons and textboxes to produce attractive yet consistent effects .

5.3 Coding

Coding is the process of translating the design specification into a form understandable by the machine. This is done systematically by using the code generation steps. These steps can become easier to implement if standards and procedures are in place. Standards and procedures can help the developer organize their thoughts, avoid mistakes and maintain correspondence between design and code components. As this Counselling Portal that we are going to build is a web-based system, we are going to use these web programming tools: HTML, CSS and PHP.

5.3.1 HTML

All HTML codes are edited using Macromedia Dreamweaver MX. HTML is especially important for creating the layout of the portal. The layout of the main screen consists of 2 HTML files: `header.html` and `footer.html`. The diagram below shows the codes for `header.html`.

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```
<body bgcolor="white" leftmargin="0" marginwidth="0"
topmargin="0" marginheight="0" >

<table width="736" border="0" cellspacing="0" cellpadding="0"
align="center"><table width="736" border="0" cellspacing="0"
cellpadding="0" align="center" >

  <tr>

    <td width="10" height="33"
background="themes/AskAkak/images/top_bg.gif"><img
src="themes/AskAkak/images/top01.gif" width="9" height="33"></td>

    <td background="themes/AskAkak/images/top_bg.gif"
valign="top">

      <table width="100%" border="0" cellspacing="0"
cellpadding="0"> <tr> <td width="531" height="10" valign="top"></td>

    </tr>

    <tr><td height="22" valign="top"></td></tr></table></td>

    <td width="185" valign="bottom"><img
src="themes/AskAkak/images/top02.gif" width="185"></td></tr>

</table>

<table width="736" border="0" cellspacing="0" cellpadding="0"
align="center" bgcolor="#ffffff">

  <tr>

    <td background="themes/AskAkak/images/bdr_left.gif"
width="12"><img src="themes/AskAkak/images/bdr_left.gif"
width="10"></td>

    <td valign="top">

      <table width="541" border="0" cellspacing="0"
cellpadding="5" bgcolor="#ffffff"
background="themes/AskAkak/images/bg.gif">

      <tr><td>

        <div align="right"><font class="content"><b>

<script language="javascript">

<!--

<!--- Hide from old browsers

    month = new Array(12);

      month[0]="January" month[1]="February"

      month[2]="March" month[3]="April"

      month[4]="May" month[5]="June"

      month[6]="July" month[7]="August"

      month[8]="September" month[9]="October"

      month[10]="November" month[11]="December"


  day = new Array(7);
```


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```
        day[0]="Sunday" day[1]="Monday"
        day[2]="Tuesday" day[3]="Wednesday"
        day[4]="Thursday" day[5]="Friday"
        day[6]="Saturday"

      today=new Date();
       d0=today.getDay();
       m0=today.getMonth();
       d1=today.getDate();
       y0=today.getFullYear();

      // end hiding --->
    </SCRIPT>
    <script language="JavaScript">
    <!--- Hide from old browsers
    document.write(day[d0],", ",month[m0],"  ",d1,", ",y0);
    // end hiding --->
    </script>
          </b></font></div>
             </td> </tr> <tr>
             <td><font size="1" face="Verdana, Arial, Helvetica,
sans-serif"><b>Akak</b> is a malay word equivalent to <i>sister</i>
in English. Thus, Ask Akak is an exclamation which means something
like <i>ask sis</i>!. Ask Akak is the ultimate counselling portal
which deals with academic, career and relationship
problems.</font></td>
           </tr>
         </table>
       </td>
       <td width="185" valign="top"><img
src="themes/AskAkak/images/top03.gif" width="185"></td>
      </tr>
    </table>
    <table width="736" cellpadding="0" cellspacing="0" border="0"
bgcolor="#ffffff" align="center" ><tr valign="top"><center>
    <td bgcolor="#BF8EC1" valign="right"><img
src="themes/AskAkak/images/pixel.gif" width="2" height="1"
border="0" alt=""></td><td width="12">  </td>
  <td bgcolor="#ffffff" width="147" valign="top">
```

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5.2.2 CSS

Cascading Style Sheet (CSS) is a web technology that allows us to specify the presentation of elements on a Web Page (spacing, margins, colour, etc.) separately from the structure of the document (section headers, body text, links, etc.). This separation of structur from presentation simplifies maintaining and modifying a document's layout. In this project, we created CSS using Dreamweaver because it's very easy and fast. All the styles for the portal are kept in one CSS file – styles.css. The codes for this file are shown below:

```
FONT {FONT-SIZE: 10px; FONT-FAMILY: Verdana,Helvetica}

TD {FONT-SIZE: 10px; COLOR: #000000; FONT-FAMILY: Verdana,Helvetica}

BODY {      FONT-SIZE: 10px; COLOR: #000000; FONT-FAMILY:
Verdana,Helvetica}

P {FONT-SIZE: 10px; COLOR: #000000; FONT-FAMILY: Verdana,Helvetica}

DIV {FONT-SIZE: 10px; COLOR: #000000; FONT-FAMILY: Verdana,Helvetica}

FORM {FONT-SIZE: 10px; COLOR: #000000; FONT-FAMILY: Verdana,Helvetica}

INPUT {BORDER-TOP-WIDTH: 1px; FONT-WEIGHT: bold; BORDER-LEFT-WIDTH:
1px; FONT-SIZE: 10px; BORDER-LEFT-COLOR: #000000; BORDER-BOTTOM-WIDTH:
1px; BORDER-BOTTOM-COLOR: #000000; COLOR: black; BORDER-TOP-COLOR:
#000000; TEXT-INDENT: 2px; FONT-FAMILY: Verdana, Arial, Helvetica,
sans-serif; BACKGROUND-COLOR: transparent; BORDER-RIGHT-WIDTH: 1px;
BORDER-RIGHT-COLOR: #000000}

TEXTAREA {BORDER-TOP-WIDTH: 1px; FONT-WEIGHT: bold; BORDER-LEFT-WIDTH:
1px; FONT-SIZE: 10px; BORDER-LEFT-COLOR: #000000; BORDER-BOTTOM-WIDTH:
1px; BORDER-BOTTOM-COLOR: #000000; COLOR: black; BORDER-TOP-COLOR:
#000000; TEXT-INDENT: 2px; FONT-FAMILY: Verdana, Arial, Helvetica,
sans-serif; BACKGROUND-COLOR: white; BORDER-RIGHT-WIDTH: 1px; BORDER-
RIGHT-COLOR: #000000}

SELECT {FONT-WEIGHT: bold; FONT-SIZE: 10px; COLOR: white; FONT-FAMILY:
Verdana, Arial, Helvetica, sans-serif; BACKGROUND-COLOR: #cc0099}

A:link {FONT-SIZE: 10px; BACKGROUND: none transparent scroll repeat 0%
0%; COLOR: CC0099; FONT-FAMILY: Verdana, Helvetica; TEXT-DECORATION:
none}

A:active {FONT-SIZE: 10px; BACKGROUND: none transparent scroll repeat
0% 0%; COLOR: CC0099; FONT-FAMILY: Verdana, Helvetica; TEXT-DECORATION:
none}
```


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```
A:visited {FONT-SIZE: 10px; BACKGROUND: none transparent scroll repeat
0% 0%; COLOR: black; FONT-FAMILY: Verdana, Helvetica; TEXT-DECORATION:
none}

A:hover {FONT-SIZE: 10px; BACKGROUND: none transparent scroll repeat 0%
0%; COLOR: #996699; FONT-FAMILY: Verdana, Helvetica; TEXT-DECORATION:
none}

.title {FONT-WEIGHT: bold; FONT-SIZE: 10px; BACKGROUND: none
transparent scroll repeat 0% 0%; COLOR: #000000; FONT-FAMILY: Verdana,
Helvetica; TEXT-DECORATION: none}

.content {FONT-SIZE: 10px; BACKGROUND: none transparent scroll repeat
0% 0%; COLOR: #000000; FONT-FAMILY: Verdana, Helvetica}

.storytitle {FONT-WEIGHT: bold; FONT-SIZE: 10px; BACKGROUND: none
transparent scroll repeat 0% 0%; COLOR: #000000; FONT-FAMILY: Verdana,
Helvetica; TEXT-DECORATION: none}

.storycat {FONT-WEIGHT: bold; FONT-SIZE: 10px; BACKGROUND: none
transparent scroll repeat 0% 0%; COLOR: #000000; FONT-FAMILY: Verdana,
Helvetica; TEXT-DECORATION: underline}

.boxtitle {FONT-WEIGHT: bold; FONT-SIZE: 10px; BACKGROUND: none
transparent scroll repeat 0% 0%; COLOR: #000000; FONT-FAMILY: Verdana,
Helvetica; TEXT-DECORATION: none}

.boxcontent {FONT-SIZE: 10px; BACKGROUND: none transparent scroll
repeat 0% 0%; COLOR: #000000; FONT-FAMILY: Verdana, Helvetica}

.option {FONT-WEIGHT: bold; FONT-SIZE: 10px; BACKGROUND: none
transparent scroll repeat 0% 0%; COLOR: #000000; FONT-FAMILY: Verdana,
Helvetica; TEXT-DECORATION: none}

.tiny {FONT-WEIGHT: normal; FONT-SIZE: 9px; BACKGROUND: none
transparent scroll repeat 0% 0%; FONT-FAMILY: Verdana, Helvetica; TEXT-
DECORATION: none}

BODY {SCROLLBAR-ARROW-COLOR: #ffffff; SCROLLBAR-BASE-COLOR: #ec6cad}

A.boldblack:hover {
      COLOR: #f7bbe0; TEXT-DECORATION: none
```

5.2.3 PHP

Most of the PHP coding is done using Dreamweaver but sometimes it's faster to use EditPlus to do the coding, especially when finding errors and debugging. Below is the PHP code for Search module.

```
<?php

if (!eregi("modules.php", $PHP_SELF)) {
    die ("You can't access this file directly...");
```


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```
}

require_once("mainfile.php");
$module_name = basename(dirname(__FILE__));
get_lang($module_name);

if ($multilingual == 1) {
    $queryalang = "AND (s.alanguage='$currentlang' OR s.alanguage='')";
/* stories */
    $queryrlang = "AND rlanguage='$currentlang' "; /* reviews */
    $queryslang = "AND slanguage='$currentlang' "; /* sections */
} else {
    $queryalang = "";
    $queryrlang = "";
    $queryslang = "";
}

switch($op) {

        case "comments":
                break;

        default:
                $offset=10;
                if (!isset($min)) $min=0;
                if (!isset($max)) $max=$min+$offset;
                $query = stripslashes($query);
            $pagetitle = "- "._SEARCH."";
                include("header.php");
            if ($topic>0) {
                $result = sql_query("select topicimage, topictext from
".$prefix."_topics where topicid=$topic", $dbi);
                list($topicimage, $topictext) = sql_fetch_row($result,
$dbi);
            } else {
                $topictext = ""._ALLTOPICS."";
                $topicimage = "AllTopics.gif";
            }
            OpenTable();
            if ($type == "users") {
                echo "<center><font
class=\"title\"><b>"._SEARCHUSERS."</b></font></center><br>";
            } elseif ($type == "sections") {
                echo "<center><font
class=\"title\"><b>"._SEARCHSECTIONS."</b></font></center><br>";
            } elseif ($type == "reviews") {
                echo "<center><font
class=\"title\"><b>"._SEARCHREVIEWS."</b></font></center><br>";
            } else {
                echo "<center><font class=\"title\"><b>"._SEARCHIN."
$topictext</b></font></center><br>";
            }
            echo "<table width=\"100%\" border=\"0\"><TR><TD>";
            if (($type == "users") OR ($type == "sections") OR ($type
== "reviews")) {
                echo "<img src=\"images/topics//info.gif\"
align=\"right\" border=\"0\" alt=\"\">";
```


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```
                } else {
                echo "<img src=\"images/topics/$topicimage\"
align=\"right\" border=\"0\" alt=\"$topictext\">";
            }
            echo "<form action=\"modules.php?name=Search\"
method=\"POST\">"
                    ."<input size=\"25\" type=\"text\" name=\"query\"
value=\"$query\">  "
                    ."<input type=\"submit\"
value=\"". _SEARCH."\"><br><br>"
                    ."<!-- Topic Selection -->";
            $toplist = sql_query("select topicid, topictext from
".$prefix."_topics order by topictext", $dbi);
            echo "<select name=\"topic\">";
                echo "<option value=\"\">". _ALLTOPICS."</option>\n";
                while(list($topicid, $topics) = sql_fetch_row($toplist,
$dbi)) {
                    if ($topicid==$topic) { $sel = "selected "; }
                    echo "<option $sel
value=\"$topicid\">$topics</option>\n";
                $sel = "";
                }
            echo "</select>";
            /* Category Selection */
            echo " <select name=\"category\">";
                echo "<option value=\"0\">". _ARTICLES."</option>\n";
            $catlist = sql_query("select catid, title from
".$prefix."_stories_cat order by title", $dbi);
                while(list($catid, $title) = sql_fetch_row($catlist,
$dbi)) {
                    if ($catid==$category) { $sel = "selected "; }
                    echo "<option $sel
value=\"$catid\">$title</option>\n";
                $sel = "";
                }
            echo "</select>";
            /* Authors Selection */
                $thing = sql_query("select aid from ".$prefix."_authors
order by aid", $dbi);
            echo " <select name=\"author\">";
                echo "<option value=\"\">". _ALLAUTHORS."</option>\n";
                while(list($authors) = sql_fetch_row($thing, $dbi)) {
                    if ($authors==$author) { $sel = "selected "; }
                echo "<option
value=\"$authors\">$authors</option>\n";
                $sel = "";
                }
                echo "</select>";
                /* Date Selection */
                ?>
             <select name="days">
                    <option <?php echo $days == 0 ? "selected " :
""; ?> value="0"><?php echo _ALL ?></option>
                    <option <?php echo $days == 7 ? "selected " :
""; ?> value="7">1 <?php echo _WEEK ?></option>
                    <option <?php echo $days == 14 ? "selected " :
""; ?> value="14">2 <?php echo _WEEKS ?></option>
```


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```
                        <option <?php echo $days == 30 ? "selected " :
""; ?> value="30">1 <?php echo _MONTH ?></option>
                    <option <?php echo $days == 60 ? "selected " : ""; ?>
value="60">2 <?php echo _MONTHS ?></option>
                        <option <?php echo $days == 90 ? "selected " :
""; ?> value="90">3 <?php echo _MONTHS ?></option>
                </select><br>
            <?php
            if (($type == "stories") OR ($type == "")) {
                $sel1 = "checked";
            } elseif ($type == "comments") {
                $sel2 = "checked";
            } elseif ($type == "sections") {
                $sel3 = "checked";
            } elseif ($type == "users") {
                $sel4 = "checked";
            } elseif ($type == "reviews") {
                $sel5 = "checked";
            }

            $num_sec = sql_num_rows(sql_query("select * from
".$prefix."_sections", $dbi), $dbi);
            $num_rev = sql_num_rows(sql_query("select * from
".$prefix."_reviews", $dbi), $dbi);

            echo ""._SEARCHON."";
            echo "<input type=\"radio\" name=\"type\" value=\"stories\"
$sel1> "._SSTORIES."";
            echo "<input type=\"radio\" name=\"type\"
value=\"comments\" $sel2> "._SCOMMENTS."";
            if ($num_sec > 0) {
                echo "<input type=\"radio\" name=\"type\"
value=\"sections\" $sel3> "._SSECTIONS."";
            }
            echo "<input type=\"radio\" name=\"type\" value=\"users\"
$sel4> "._SUSERS."";
            if ($num_rev > 0) {
                echo "<input type=\"radio\" name=\"type\"
value=\"reviews\" $sel5> "._REVIEWS."";
            }
            echo "</form></td></tr></table>";
        $query = addslashes($query);
        if ($type=="stories" OR !$type) {

            if ($category > 0) {
                $categ = "AND catid=$category ";
            } elseif ($category == 0) {
                $categ = "";
            }
                $q = "select s.sid, s.aid, s.informant, s.title,
s.time, s.hometext, s.bodytext, a.url, s.comments, s.topic from
".$prefix."_stories s, ".$prefix."_authors a where s.aid=a.aid
$queryalang $categ";
                if (isset($query)) $q .= "AND (s.title LIKE '%$query%'
OR s.hometext LIKE '%$query%' OR s.bodytext LIKE '%$query%' OR s.notes
LIKE '%$query%') ";
                if ($author != "") $q .= "AND s.aid='$author' ";
```

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```
                if ($topic != "") $q .= "AND s.topic='$topic' ";
                if ($days != "" && $days!=0) $q .= "AND TO_DAYS(NOW())
- TO_DAYS(time) <= $days ";
                $q .= " ORDER BY s.time DESC LIMIT $min,$offset";
            $t = $topic;
                $result = sql_query($q, $dbi);
                $nrows  = sql_num_rows($result, $dbi);
                $x=0;
            echo "<br><hr noshade
size=\"1\"><center><b>"._SEARCHRESULTS."</b></center><br><br>";
                echo "<table width=\"99%\" cellspacing=\"0\"
cellpadding=\"0\" border=\"0\">\n";
            if ($nrows>0) {
                        while(list($sid, $aid, $informant, $title,
$time, $hometext, $bodytext, $url, $comments, $topic) =
sql_fetch_row($result, $dbi)) {

                    $result2 = sql_query("select topictext from
".$prefix."_topics where topicid=$topic", $dbi);
                    list($topictext) = sql_fetch_row($result2, $dbi);

                          $furl =
"modules.php?name=News&file=article&sid=$sid";
                              $datetime = formatTimestamp($time);
                        $query = stripslashes($query);
                        if ($informant == "") {
                            $informant = $anonymous;
                        } else {
                            $informant = "<a
href=\"modules.php?name=Your_Account&amp;op=userinfo&amp;uname=$informa
nt\">$informant</a>";
                        }
                        if ($query != "") {
                            if (eregi("$query",$title)) {
                              $a = 1;
                            }
                            $text = "$hometext$bodytext";
                            if (eregi("$query",$text)) {
                              $a = 2;
                            }
                            if (eregi("$query",$text) AND
eregi("$query",$title)) {
                              $a = 3;
                            }
                            if ($a == 1) {
                              $match = _MATCHTITLE;
                            } elseif ($a == 2) {
                              $match = _MATCHTEXT;
                            } elseif ($a == 3) {
                              $match = _MATCHBOTH;
                            }
                            if (!isset($a)) {
                              $match = "";
                            } else {
                              $match = "$match<br>";
                            }
                        }
```

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```
                                printf("<tr><td><img
src=\"images/links/urlgo.gif\" border=\"0\" alt=\"\"> <font
class=\"option\"><a href=\"%s\"><b>%s</b></a></font><br><font
class=\"content\">"._CONTRIBUTEDBY." $informant<br>"._POSTEDBY." <a
href=\"%s\">%s</a>",$furl,$title,$url,$aid,$informant);
                                echo " "._ON." $datetime<br>"
                            ."$match"
                            .""._TOPIC.": <a
href=\"modules.php?name=Search&amp;query=&amp;topic=$topic\">$topictext
</a> ";
                        if ($comments == 0) {
                            echo "("._NOCOMMENTS.")";
                        } elseif ($comments == 1) {
                            echo "($comments "._UCOMMENT.")";
                                } elseif ($comments >1) {
                            echo "($comments "._UCOMMENTS.")";
                        }
                        if (is_admin($admin)) {
                            echo " [ <a
href=\"admin.php?op=EditStory&amp;sid=$sid\">"._EDIT."</a> | <a
href=\"admin.php?op=RemoveStory&amp;sid=$sid\">"._DELETE."</a> ]";
                        }
                        echo "</font><br><br><br></td></tr>\n";
                        $x++;
                        }

            echo "</table>";
            } else {
                        echo "<tr><td><center><font
class=\"option\"><b>"._NOMATCHES."</b></font></center><br><br>";
                    echo "</td></tr></table>";
                }

                $prev=$min-$offset;
                if ($prev>=0) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$t&amp;min=
$prev&amp;query=$query&amp;type=$type&amp;category=$category\">";
                        print "<b>$min
"._PREVMATCHES."</b></a></center>";
                }

                $next=$min+$offset;
            if ($x>=9) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$t&amp;min=
$max&amp;query=$query&amp;type=$type&amp;category=$category\">";
                        print "<b>"._NEXTMATCHES."</b></a></center>";
                }


    } elseif ($type=="comments") {

                $result = sql_query("select tid, sid, subject, date,
name from ".$prefix."_comments where (subject like '%$query%' OR
comment like '%$query%') order by date DESC limit $min,$offset", $dbi);
                $nrows  = sql_num_rows($result, $dbi);
```

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```
            $x=0;
          echo "<br><hr noshade
size=\"1\"><center><b>"._SEARCHRESULTS."</b></center><br><br>";
          echo "<table width=\"99%\" cellspacing=\"0\"
cellpadding=\"0\" border=\"0\">\n";
          if ($nrows>0) {
                  while(list($tid, $sid, $subject, $date, $name)
= sql_fetch_row($result, $dbi)) {
                $res = sql_query("select title from
".$prefix."_stories where sid='$sid'", $dbi);
                list($title) = sql_fetch_row($res, $dbi);
                $reply = sql_num_rows(sql_query("select * from
".$prefix."_comments where pid='$tid'", $dbi), $dbi);
                $furl =
"modules.php?name=News&amp;file=article&amp;thold=-
1&amp;mode=flat&amp;order=1&amp;sid=$sid#$tid";
                    if(!$name) {
                  $name = "$anonymous";
                } else {
                  $name = "<a
href=\"modules.php?name=Your_Account&amp;op=userinfo&amp;uname=$name\">
$name</a>";
                }
                $datetime = formatTimestamp($date);
                    echo "<tr><td><img
src=\"images/links/urlgo.gif\" border=\"0\" alt=\"\"> <font
class=\"option\"><a href=\"$furl\"><b>$subject</b></a></font><font
class=\"content\"><br>"._POSTEDBY." $name"
                      ." "._ON." $datetime<br>"
                  .""._ATTACHART.": $title<br>";
                if ($reply == 1) {
                  echo "($reply "._SREPLY.")";
                  if (is_admin($admin)) {
                    echo " [ <a
href=\"admin.php?op=RemoveComment&amp;tid=$tid&amp;sid=$sid\">"._DELETE
."</a> ]";
                  }
                  echo "<br><br><br></td></tr>\n";
                } else {
                  echo "($reply "._SREPLIES.")";
                  if (is_admin($admin)) {
                    echo " [ <a
href=\"admin.php?op=RemoveComment&amp;tid=$tid&amp;sid=$sid\">"._DELETE
."</a> ]";
                  }
                  echo "<br><br><br></td></tr>\n";
                }
                    $x++;
                }

          echo "</table>";
          } else {
                  echo "<tr><td><center><font
class=\"option\"><b>"._NOMATCHES."</b></font></center><br><br>";
              echo "</td></tr></table>";
          }
```

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```
                $prev=$min-$offset;
                if ($prev>=0) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$topic&amp;
min=$prev&amp;query=$query&amp;type=$type\">";
                        print "<b>$min
"._PREVMATCHES."</b></a></center>";
                }

                $next=$min+$offset;
            if ($x>=9) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$topic&amp;
min=$max&amp;query=$query&amp;type=$type\">";
                        print "<b>"._NEXTMATCHES."</b></a></center>";
                }

      } elseif ($type=="reviews") {

                $result = sql_query("select id, title, text, reviewer,
score from ".$prefix."_reviews where (title like '%$query%' OR text
like '%$query%') $queryrlang order by date DESC limit $min,$offset",
$dbi);
                $nrows  = sql_num_rows($result, $dbi);
                $x=0;
            echo "<br><hr noshade
size=\"1\"><center><b>"._SEARCHRESULTS."</b></center><br><br>";
            echo "<table width=\"99%\" cellspacing=\"0\"
cellpadding=\"0\" border=\"0\">\n";
            if ($nrows>0) {
                  while(list($id, $title, $text, $reviewer, $score) =
sql_fetch_row($result, $dbi)) {
                $furl =
"modules.php?name=Reviews&amp;op=showcontent&amp;id=$id";
                $pages = count(explode( "<!--pagebreak-->", $text ));
                    echo "<tr><td><img
src=\"images/links/urlgo.gif\" border=\"0\" alt=\"\"> <font
class=\"option\"><a href=\"$furl\"><b>$title</b></a></font><br>"
                    ."<font class=\"content\">"._POSTEDBY."
$reviewer<br>"
                    .""._REVIEWSCORE.": $score/10<br>";
                if ($pages == 1) {
                    echo "($pages "._PAGE.")";
                      } else {
                    echo "($pages "._PAGES.")";
                }
                if (is_admin($admin)) {
                    echo " [ <a
href=\"modules.php?name=Reviews&amp;op=mod_review&amp;id=$id\">"._EDIT.
"</a> | <a
href=\"modules.php?name=Reviews.php&amp;op=del_review&amp;id_del=$id\">
"._DELETE."</a> ]";
                }
                      print "<br><br><br></font></td></tr>\n";
                      $x++;
                  }
              echo "</table>";
```

```
        } else {
                echo "<tr><td><center><font
class=\"option\"><b>"._NOMATCHES."</b></font></center><br><br>";
                echo "</td></tr></table>";
                }

                $prev=$min-$offset;
                if ($prev>=0) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$t&amp;min=
$prev&amp;query=$query&amp;type=$type\">";
                        print "<b>$min
"._PREVMATCHES."</b></a></center>";
                }

                $next=$min+$offset;
            if ($x>=9) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$t&amp;min=
$max&amp;query=$query&amp;type=$type\">";
                        print "<b>"._NEXTMATCHES."</b></a></center>";
                }

    } elseif ($type=="sections") {

                $result = sql_query("select artid, secid, title,
content from ".$prefix."_seccont where (title like '%$query%' OR
content like '%$query%') $queryslang order by artid DESC limit
$min,$offset", $dbi);
                $nrows  = sql_num_rows($result, $dbi);
                $x=0;
            echo "<br><hr noshade
size=\"1\"><center><b>"._SEARCHRESULTS."</b></center><br><br>";
            echo "<table width=\"99%\" cellspacing=\"0\"
cellpadding=\"0\" border=\"0\">\n";
            if ($nrows>0) {
                        while(list($artid, $secid, $title, $content) =
sql_fetch_row($result, $dbi)) {
                        $pages = count(explode( "<!--pagebreak-->",
$content ));
                        $result2 = sql_query("select secname from
".$prefix."_sections where secid='$secid'", $dbi);
                        list($sectitle) = sql_fetch_row($result2, $dbi);
                        $surl =
"modules.php?name=Sections&amp;op=listarticles&amp;secid=$secid";
                        $furl =
"modules.php?name=Sections&amp;op=viewarticle&amp;artid=$artid";
                                echo "<tr><td><img
src=\"images/links/urlgo.gif\" border=\"0\" alt=\"\"> <font
class=\"option\"><a href=\"$furl\"><b>$title</b></a></font><font
class=\"content\"><br>"._INSECTION.": <a
href=\"$surl\">$sectitle</a><br>";
                        if ($pages == 1) {
                          echo "($pages "._PAGE.")";
                              } else {
                          echo "($pages "._PAGES.")";
                        }
```

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```
                    if (is_admin($admin)) {
                      echo " [ <a
href=\"admin.php?op=secartedit&amp;artid=$artid\">"._EDIT."</a> | <a
href=\"admin.php?op=secartdelete&amp;artid=$artid&amp;ok=0\">"._DELETE.
"</a> ]";
                    }
                    echo "</font><br><br><br></td></tr>\n";
                    $x++;
                      }

            echo "</table>";
            } else {
                      echo "<tr><td><center><font
class=\"option\"><b>"._NOMATCHES."</b></font></center><br><br>";
                    echo "</td></tr></table>";
                  }

                  $prev=$min-$offset;
                  if ($prev>=0) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$t&amp;min=
$prev&amp;query=$query&amp;type=$type\">";
                        print "<b>$min
"._PREVMATCHES."</b></a></center>";
                  }

                  $next=$min+$offset;
              if ($x>=9) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$t&amp;min=
$max&amp;query=$query&amp;type=$type\">";
                        print "<b>"._NEXTMATCHES."</b></a></center>";
                  }

        } elseif ($type=="users") {

                  $result = sql_query("select uid, uname, name from
".$user_prefix."_users where (uname like '%$query%' OR name like
'%$query%' OR bio like '%$query%') order by uname ASC limit
$min,$offset", $dbi);
                  $nrows  = sql_num_rows($result, $dbi);
                  $x=0;
              echo "<br><hr noshade
size=\"1\"><center><b>"._SEARCHRESULTS."</b></center><br><br>";
              echo "<table width=\"99%\" cellspacing=\"0\"
cellpadding=\"0\" border=\"0\">\n";
              if ($nrows>0) {
                        while(list($uid, $uname, $name) =
sql_fetch_row($result, $dbi)) {
                      $furl =
"modules.php?name=Your_Account&amp;op=userinfo&amp;uname=$uname";
                      if ($name=="") {
                        $name = ""._NONAME."";
                      }
                            echo "<tr><td><img
src=\"images/links/urlgo.gif\" border=\"0\" alt=\"\"> <font
```


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```
class=\"option\"><a href=\"$furl\"><b>$uname</b></a></font><font
class=\"content\"> ($name)";
                    if (is_admin($admin)) {
                        echo " [ <a
href=\"admin.php?chng_uid=$uid&amp;op=modifyUser\">"._EDIT."</a> | <a
href=\"admin.php?op=delUser&amp;chng_uid=$uid\">"._DELETE."</a> ]";
                    }
                    echo "</font></td></tr>\n";
                        $x++;
                    }

            echo "</table>";
            } else {
                        echo "<tr><td><center><font
class=\"option\"><b>"._NOMATCHES."</b></font></center><br><br>";
                    echo "</td></tr></table>";
                }

                $prev=$min-$offset;
                if ($prev>=0) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$t&amp;min=
$prev&amp;query=$query&amp;type=$type\">";
                        print "<b>$min
"._PREVMATCHES."</b></a></center>";
                }

                $next=$min+$offset;
            if ($x>=9) {
                        print "<br><br><center><a
href=\"modules.php?name=Search&amp;author=$author&amp;topic=$t&amp;min=
$max&amp;query=$query&amp;type=$type\">";
                        print "<b>"._NEXTMATCHES."</b></a></center>";
                }

        }
    CloseTable();
    include("footer.php");
    break;
}

?>
```

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Summary for Chapter 5

System implementation is a process of writing the programming codes that implement the design. This process consists of three activities: interface development, system development and system requirements. The tools used in this process includes: Windows 98, Apache, Dreamweaver MX, Internet Explorer, MySQL, EditPlus, Photoshop 7.0, Photoshop 7.0, Illustrator 10, ImageReady 3.0, and Microsoft Word.

First, all the data and components have to prepared. The data preparation activity involves preparing still images and graphics, setting up the database, designing and creating the input form. Next comes the coding part. There are three types of codes to consider: HTML, CSS and PHP. During coding, we have to abide to these 4 principles: reusability, readability, maintainability and robustness.

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Chapter 6 – System Testing

- *Introduction*
- *Unit Testing*
- *Integration Testing*
- *Product Verification Testing*
- *Test Cases*
- *Summary*

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CHAPTER 6: SYSTEM TESTING

6.1 Introduction

Testing provides a method to uncover logical errors and to test the system reliability. Hence, all the new procedural manuals, new hardware and system interfaces must be tested thoroughly. Testing is done throughout systems development, not just as the end. Because it is far less disruptive to test beforehand than to have a poorly tested system fail after installation that will result a waste in time, cost and effort. Successful testing will result in quality software where software with fewer errors which work according to specification and user requirements.

6.2 Unit Testing

Unit testing concentrates on the smallest component of the system for testing. Every individual components developed in a system are tested independently, without other system components, to ensure that they operate correctly. These components might be performing tasks such as checking valid input value of email address. Unit that were independently unit-tested are: insert record into database, retrieve data from database, search around database for particular record and form posting. During testing, all programs are checked to verify whether the routine works as it is written. Two type of unit testing are applied in this project, there are white box testing and black box testing.

6.2.1 *White Box Testing*

This testing involved analyze the code and use knowledge about the structure of a component to derive test data. The advantage of white box testing is that an analysis of

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the code can be used to find out how many test cases are needed to guarantee a given level of test coverage.

6.2.2 *Black Box Testing*

The test object's behavior can only be determined by studying its inputs and the related outputs. Advantage of this kind of testing is that a black box is free of the constraints imposed by the internal structure and logic of the test objects. The disadvantage is that it is not always possible to run a complete test in this manner.

6.3 Integration Testing

This testing is to ensure that the interfaces among the components are defined and handled properly as described in the system design specifications. The Top-Down Integration approach is used where testing begins from the top and works the way down. The process is continued until all the modules are tested.

6.4 Product Verification Testing

This is one of other fundamental tests. It includes:

- Usability – Usability should be based on building interface that are easy to learn.
- Reliability – Reliability testing is monitoring the mean time between failures. This testing is measured for consistency.
- Performance – Performance tests are conducted to ensure that the system response time meets user expectations and does not exceed the specified performance criteria under heavy stress or volume.

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6.5 Test Cases

These test cases are carried out in order to find and uncover errors or irregularities and hence, verify and validate the system.

No.	Test Case	Expected Result	Verdict	Remarks
1.	Connecting to the system	• User should be able to connect with a minimal amount of time • The page should download completely without any errors	Pass	
2.	Sign up as a new member	• User should be able to submit the registration form, receive their temporary password instantly and enter their personal page	Pass	Nicknames / emails should be unique so double registration is not allowed
3.	Search / browse	• User should be able to search according to their search criteria • Search results should be returned to the user correctly	Pass	
4.	Members Login	• Verified members should be able to log in to their personal page with valid usernames and emails • Users who provide wrong nicknames or passwords should not be authorized to enter the member's page	Pass	
5.	Retrieve lost password	• The correct password should be sent to the verified members through emails	Pass	Nicknames and emails should match and exist in the database
6.	Update member info	• Members should be able to update their current personal info • The latest info should be kept in the database	Pass	
7.	Change password	• Members should be able to change their passwords	Pass	Old passwords must match those in the database
8.	Start a forum	• Authorized users should be able to start a forum and become their moderators • Non-authorized users should not be allowed to do so • Moderators should be able to specify who can join the forum	Pass	Only the administrators are allowed to start a forum
9.	Join a forum	• Authorized users should be able to join a forum • Non-authorized users should not be allowed to do so.	Pass	There are three levels of forum access restrictions: all users, all

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				members or moderators only.
10.	Messaging members	• Members should be able to send private messages to other users. • Those messages should be received by the recipient completely and correctly	Pass	
11.	Checking message inbox	• Members should be able to check their private message inbox.	Pass	
12.	Managing newsletter	• The administrator should be able to send newsletter to anybody he/she wishes. • The recipient should receive the correct and complete message from the admin • The newsletter should be send promptly and without delay	Pass	
13.	Sending feedback	• Every user should be able to send their feedback to the administrator • The administrator should be able to open those feedbacks without error	Pass	
14.	Changing content	• The administrator should be able to add a new content or edit/delete existing contents	Pass	
15.	Logging out	• Administrator and members should be able to log out after every session • Unauthorized users must not be able to log in after the member/administrator has logged out.	Pass	

Summary for Chapter 6

Testing process is done to a new program and to a program that have been changed. Before a system can be used by user, all buttons and icons have to be tested. Testing process involved unit testing (white box and black box testing), integration testing and product verification testing. Every testing have their own advantages and disadvantages. Various test cases are carried out in order to find faults in the system. After everything runs well, the system is verified and validated.

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Chapter 7 – System Evaluation and Conclusion

- *Introduction*
- *Problems Encountered*
- *System's Strengths*
- *System's Limitations*
- *Future Enhancements*
- *Conclusion*

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CHAPTER 7: SYSTEM EVALUATION AND CONCLUSION

7.1 Introduction

This chapter summarizes the entire system development together with problems encountered and steps taken to overcome these problems. It also suggests future enhancements that can be added to complement the developed system to provide better user-friendly features and capabilities. Strengths and limitations of the system will also be discussed here.

7.2 Problems Encountered

- ***Difficulty in defining the scope***

  It was quite a job settling on a scope that would satisfy every targeted group. During the early stages, the target audience for this portal were Malaysian students of all ages and stages. But as the project progressed, we had to restrict our material to cater college or university students only. Having a big audience means that we had to find a whole lot of information that is suitable for each and every one of them, and that requires too much effort. Then there's the question of the medium used. As mentioned before, this portal is targeted at local university students. Should we use English, or Bahasa Melayu, or both? We had a discussion with our supervisor and decided that we should concentrate in using English first. When the system has established itself, then we can use Bahasa Melayu as a further enhancement.

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- ***Difficulty in choosing the tools and programming languages***

  Developers creating scripted, dynamic Web applications have an embarrassment of riches in programming languages to choose from, such as ASP, ASP.NET, JSP, Servlets, CGI, Perl, and Python. Each of these languages has their own strengths and weaknesses. Choosing the best language can be a daunting task. During the preliminary stage of our project, we chose ASP.NET as the technology, not aware of the complexity and complications that lie beneath it. We were judging the language only by theory; through reading books and articles, without really knowing how it works. That's why we turned to PHP. We knew real people who knew how to create PHP applications and are available to help us understand how it really works. With their help, we are able to create a running and functioning web portal. Choosing the tools that can go with it is not so much a task anymore. PHP applications almost always run on Apache Servers and MySQL databases, and there'd be no reason for us to change that. It's always safer that way.

- ***Lack of knowledge and guidance***

  As mentioned before, we were only relying on books to get all the first hand details of the technology. This is just like studying your subjects without going to the lectures. You never really understand them well enough. That's what happened to us. We were lost when using ASP.NET, and there weren't any professional ASP.NET programmers here to guide us, basically because they don't exist! ASP.NET is very knew and even the professional programmers are taking their time to get a grip of this

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technology. With PHP, we are still newcomers, but there are a lot of professionals around who can guide and assist us in pursuing our project.

- ***Difficulty in setting up server and platform***

If you have seen the user manual, you will see that an application called PHPTriad 2-2-1 is used to install PHP, Apache Server and MySQL all at the same time. Well, thank God we found that application. For before that, we had to manually install PHP, Apache Server and MySQL. It was a nightmare. We had to configure so many things and even if a step was accidentally left out, the whole thing would not work and we wouldn't know where the source of the error is. At certain times, the PHP program would run but at other times, error messages would pop up. After we found PHPTriad, everything was a breeze and it was pleasantly stable. We haven't found any errors or bugs as yet.

- ***Unanticipated appearances of web pages***

Different web browsers impose different offsets and margins for their layouts. A page that looks fine in Internet Explorer may look otherwise in Netscape. The table might not be properly aligned or the fonts may look smaller or bigger. That's what we went through. Our pages look not as good in Netscape compared to Internet Explorer. We did the best we could to reconcile the differences but were unsuccessful, so we had to choose. We picked Internet Explorer mainly because it is more widely used, and it's the only web browser used in the faculty. Other than that, certain Netscape versions do not support JavaScript, which could cause some problems to the pages.

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- ***Time constraints***

Time is the only thing in the world that anybody couldn't get enough of. If time weren't an option, we would've been able to build a better portal with better interface, functionality and higher quality content.

7.3 System's Strengths

- ***User friendly***

During our acceptance testing, we asked the respondents what they thought of the portal. Most of them thought that it is very user friendly. They didn't take much time to get accustomed to the environment and found it easy to find things they were looking for, thanks to the consistent layout of blocks. There were also no funny functions or usage of over the edge technology that could confuse the user.

- ***Attractive screen design***

Most of the respondents also thought that this portal has a very attractive screen design. This may be due to the fact that we try to abide to good web design practices in our portal: using virtually pleasing colours and interesting yet relevant graphics, using the right size and style of fonts, avoiding overly long text, enforcing consistent layout on every page to ease navigation, and last but not least keeping the simplicity and elegance of our portal

- ***Easy accessibility***

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Because this portal is placed in the Internet, it will be available around the clock, 24 hours a day, 7 days a week. Users will be able to access it and make full use of it, so long as they have Internet connection.

- ***Increased Security***

Every member or administrator who wishes to log into their accounts has to supply the correct username and password. They can further increase the security by changing their passwords whenever they like. The restricted duplication of usernames or email addresses also prevents unwanted situations like hacking or impostor accesses.

- ***Transparency***

System transparency is a condition whereby the users do not need to know where the database is, how the system structure is or how the underlying technology works. This condition applies to our system. The user just has to access our system, search for whatever information he/she wants to look for, and log out. They needn't know how the backstage people do it. All that is done by the server-side technology.

- ***Reliable System with effective error handling***

In this portal, every data input is validated and verified to prevent errors and irregularities. If there is an input failure, an error message is sent to the user to inform them of the mistake, for example - invalid login ID, invalid private message recipient name, or invalid Yahoo Messenger ID.

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- ***Attractive Member's Features***

  Members are able to do a whole lot of things. Besides enjoying the features like those of the normal users', members can join the forums, chat with other users, send messages with other users, see which other members are online and see the details of other users.

7.3 System's Limitations

Despite some of the strengths mentioned previously, there still exist some weaknesses and limitations that we were not able to correct or banish due to time constraints and lack of resources. These limitations include:

- ***Uses Cookies*** which could undermine the system security. Users who forgot to log out after each session may find that others are able to access their accounts without logging in. This is crucially significant in multi-user environments.

- ***Web browser dependent*** which results from the fact that this portal is made for view in Internet Explorer only. Users of Netscape, Opera or NeoPlanet may find the tables not properly aligned with different offsets.

- ***Long download times*** which rises due to the large amount of graphics and images in every page of the portal. This lagging phenomenon is inherently true during peak hours.

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7.4 Future Enhancements

Every system should be maintained throughout its lifetime. This is mainly true because user requirements might change from time to time. System enhancements will extend the usability of the system while improving the limitations. Here are some suggestions for future enhancements:

- Add in an audio video conferencing module which allows users to receive online counselling straight from the counsellors. The users, however, would have to have digital video camera and microphone and other related gadgets attached to their PCs.
- Create another version in Bahasa Malaysia so as to increase the understanding of viewers and to reach a wider set of audiences.
- Improve the layout of the screen so that it would be browser independent. This means it would yield consistent pages for every browser available – be it IE, Netscape, Opera or others.
- Create more design templates so that users will have the opportunity to choose the theme they like best from the many that are available.
- Create a shout box module where members can post their messages or shout outs to be seen by every visitor that visits the portal. This function is very suitable for sending greeting or wishes.
- Create a guest book module so that users will be able to leave their comments or suggestions about the portal to be seen by other visitors.
- Add in a quiz module where users can key in their answers and the system would rate them according to their answers. This module should be built specifically for the use

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of the administrator so that they could easily define different quizzes with different answers.

7.5 Conclusion

In conclusion, AskAkak.Com Counselling Portal is indeed a good and feasible system solution for the counselling of academic, career, and relationship of Malaysian students. This is evident due to these reasons:

- There are many benefits that could be derived from this counselling portal,
- There is a lot of guidance and self-help tips that could offer solutions faster and easier without going for long counselling sessions. These online solutions will provide the users with a sense of flexibility and simplicity. As this is a user-friendly web application, there should be no problem of using or learning how to go about with the system.
- The issue of counsellor availability doesn't exist here. The system is ready round the clock and the counsellor could provide his/her services whenever he/she is available.

However, computer services in the counselling field should be considered as a notable effort, not as final answers for the users. Users experience very chronic or serious problems should probably seek a real counselling agency first before turning to us. This is because the portal might not be able to produce the best solution when complex problems occur. This system should be viewed as an aid rather than a substitute to counsellors and professionals.

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Knowledge wise, the development of this counselling portal has been very beneficial to me. I have successfully developed a comprehensive and feasible system within the given period, which is from mid-March 2002 to mid-September 2002. During this period, I was able to apply the knowledge and theory that I have I have learnt and gained during class lectures. Furthermore, I had the chance to learn many programming languages and tools such as PHP, XML, MySQL, Photoshop, Illustrator and Dreamweaver. Extensive use of these tools and languages also reinforced my understanding of them and made me use them more efficiently and effectively. In addition to that, I have also learned to be more independent, resourceful, perseverant and confident. These values are very important to prepare me for the professional world out there.

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User Manual

- *Hardware & Software Requirements*
- *Compatibilities*
- *Configuring the Counselling Portal*
- *Tour Guide through AskAkak.Com Counselling Portal*

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About This Manual

This manual will guide you on the following area:

- Hardware and Software Requirements
- Compatibilities
- Configuring the Counselling Portal
- Tour Guide through AskAkak.Com Counselling Portal

Hardware & Software Requirements

Hardware Requirements

Listed below are the minimum hardware requirements for running the AskAkak.Com Counselling Portal:

- Pentium 233 MHz or above (Runs well in Celeron and AMD Processor also)
- 16MB RAM
- Other basic requirements for a desktop computer

Software Requirements

AskAkak.Com Counselling Portal runs well in:

- Windows 98 Second Edition (SE) Operating System
- Internet Explorer 4 and above Web Browser
- Apache HTTP Web Server

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Compatibilities

AskAkak.Com Counselling Portal has been tested in various Windows OS platforms and different web browsers. Below is the result of the tests conducted:

Operating System/ Web Browser	COMPATIBILITY WITH ASKAKAK.COM		
	Compatible	Not Compatible	Not Tested
Windows 95	✔		
Windows 98 SE	✔		
Windows Millennium			✔
Windows NT4	✔		
Windows 2000	✔		
Windows XP Home Edition (32 Bit)		✔	
Windows XP Home Edition (64 Bit)		✔	
Internet Explorer Version 1-3			✔
Internet Explorer Version 4-6	✔		
Netscape 4 to Netscape 6	✔		
Opera			✔
NeoPlanet	✔		

Table 1 – System Compatibility

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Configuring AskAkak.Com Counselling Portal

Follow the steps listed below:

Step 1: Installing PHP 4, MySQL 3.2.3 and Apache HTTP Server using PHPTriad 2-2-1

1. Insert the accompanying CD into your CD-ROM drive.
2. Browse through the CD.
3. Double click on the icon labelled PHPTriad 2-2-1. The window below will appear:

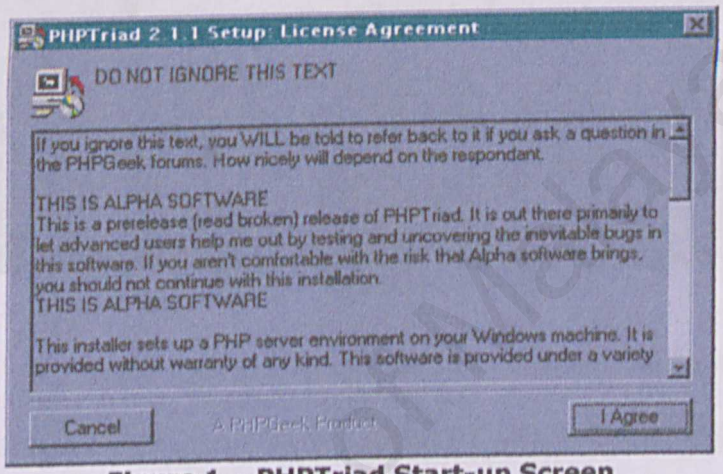

Figure 1 – PHPTriad Start-up Screen

4. Click on the button 'I Agree' and wait until setup has finished installing.

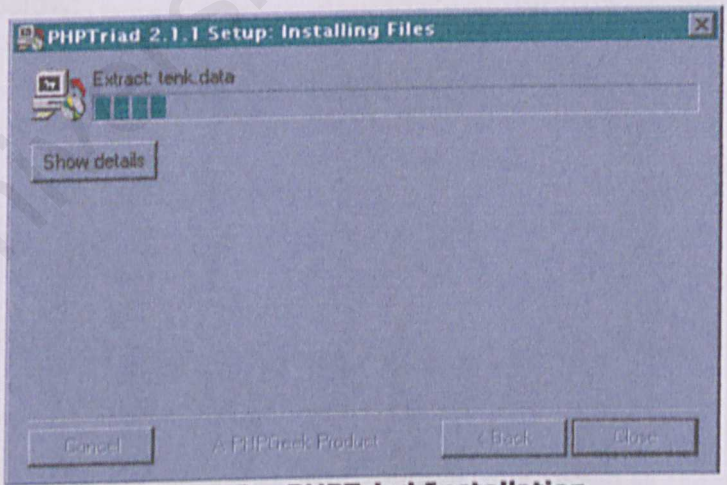

Figure 2 – PHPTriad Installation

5. When setup is completed, click 'Close'.

Step 2: Setting up the database

1. Go to your `Start` menu. Find the folder `Apache Console` in the program `PHPTriad`. Click on `Start Apache`. The window below will appear:

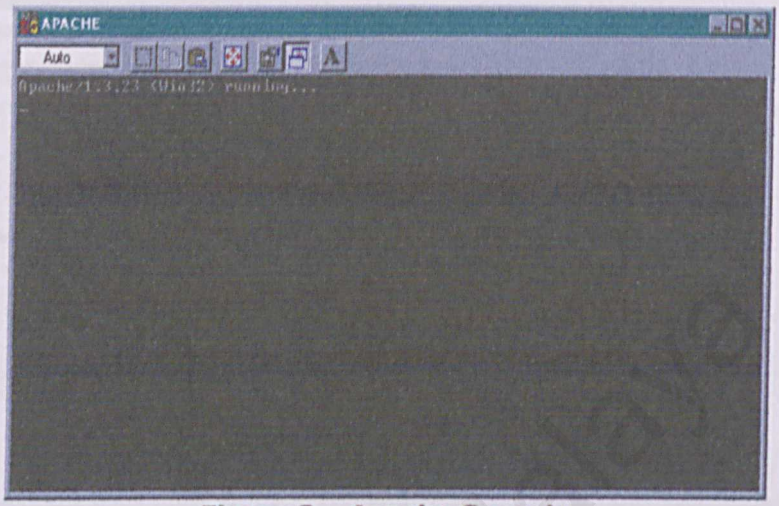

Figure 3 – Apache Console

2. Go to your `Start` menu Again. Find the folder `MySQL` in the program `PHPTriad`. Click on `MySQL-D`. You can check whether MySQL-D is actually running by pressing `CTRL-ALT-DEL`. `Mysqld` should be listed in the Task Manager, as shown in the diagram below:

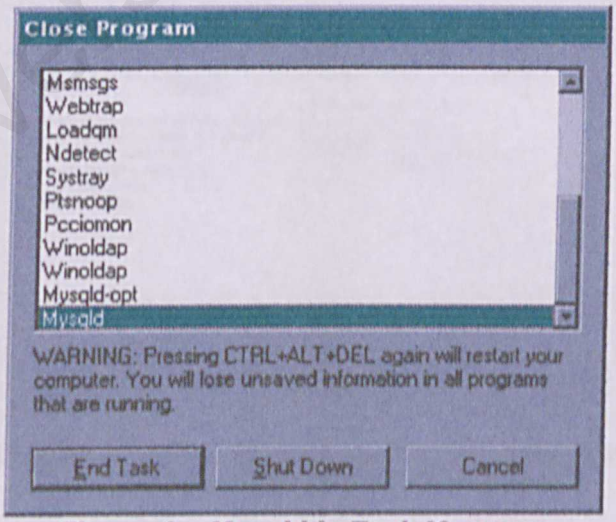

Figure 4 – Mysqld in Task Manager

3. Open your web browser and type the following in the Address Bar: http://localhost/

   The window below will appear.

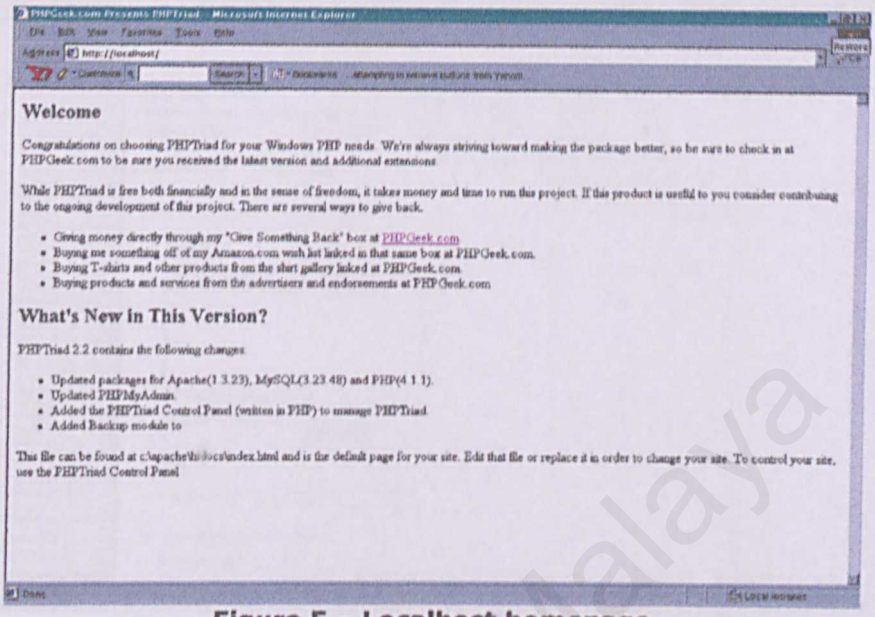

Figure 5 – Localhost homepage

4. Next, type in http://localhost/phpmyadmin/ in the Address Bar. The screen below will appear:

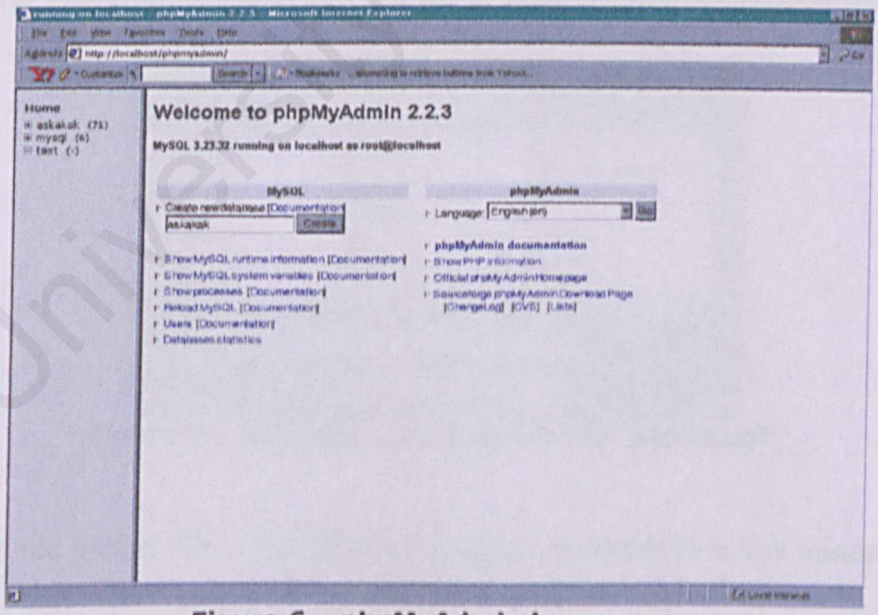

Figure 6 – phpMyAdmin homepage

5. In the textbox Create New Database, type in **askakak**. The window below will appear.

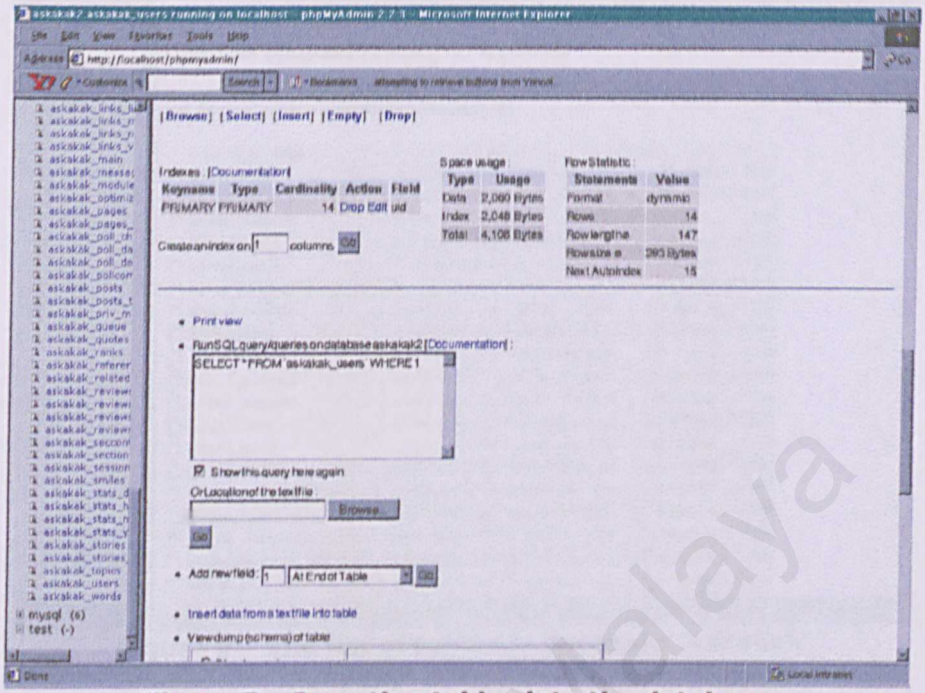

Figure 7 – Inserting tables into the database

6. Click on the button 'Browse' and click on the file admin.sql in your CD-ROM directory. This file will probably be a notepad program or an sql program.

Figure 8 – Inserting the notepad file "admin.sql"

7. Click on the button 'Go'. The database should load itself in a few minutes. After it has finished loading, the screen below will appear:

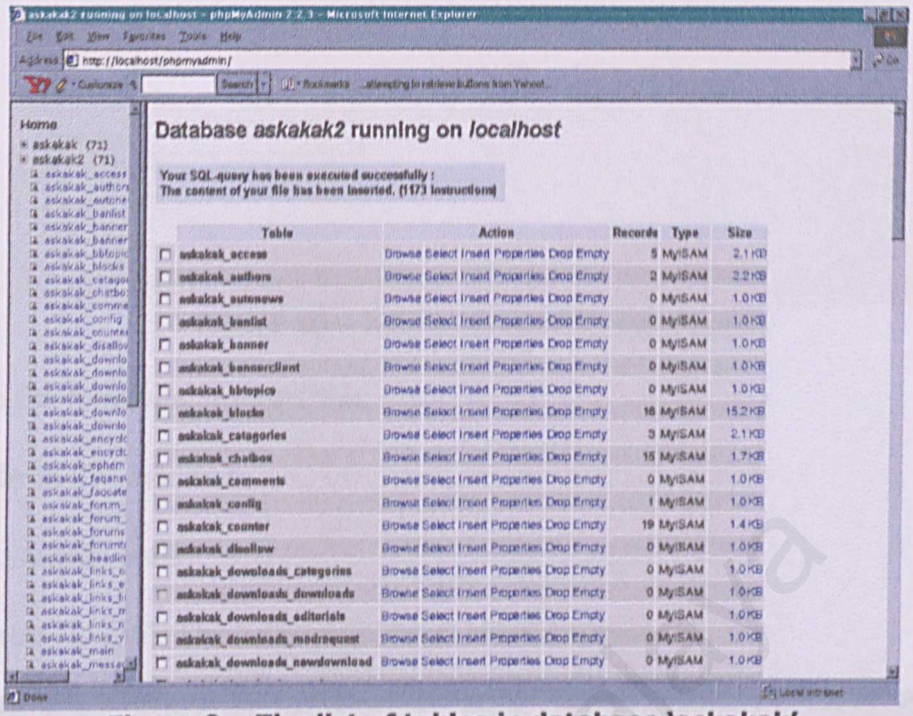

Figure 9 – The list of tables in database 'askakak'

8. Congratulations! This means that your askakak database has executed successfully. Proceed to the next step.

Step 3: Configuring your AskAkak.Com Administration Page

1. Browse through the folder **apache** in **C:**. Click on the folder **htdocs**.
2. Browse again through the CD labelled **AskAkak.Com**. Copy the folder **askakak** from the CD and paste it into your current directory (**C:\apache\htdocs**).
3. Making sure that your Apache Console and MySQL-D is still running, launch your Internet Explorer again and type in the following in the Address Bar:

   http://localhost/askakak/admin.php

   The following screen should appear:

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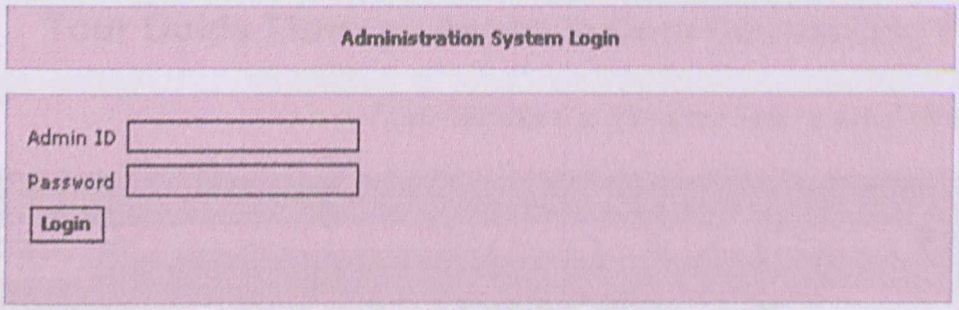

Figure 10 – Administration System Login

4. Key in the following information:

   Admin ID : **askakak**

   Password : **tesis**

   And press 'Login'. The following screen should appear.

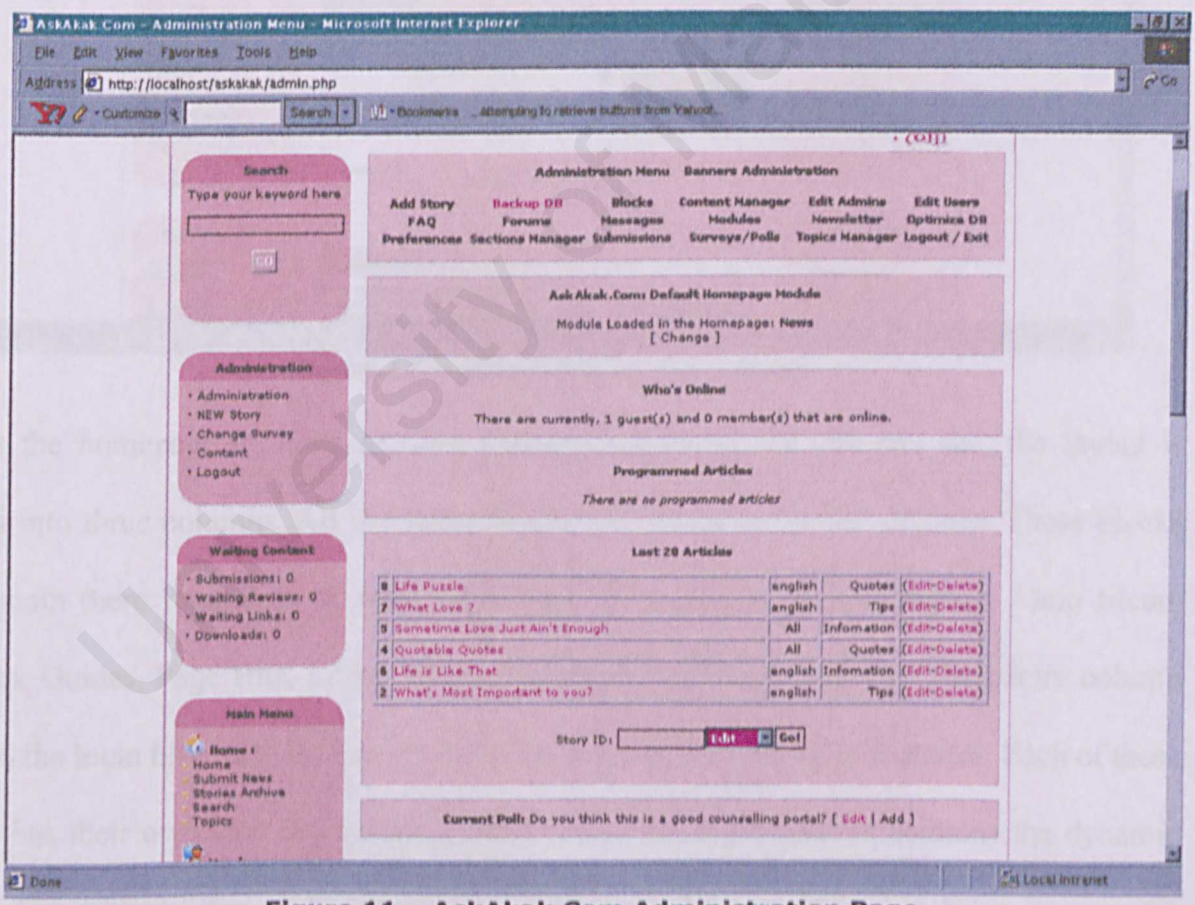

Figure 11 – AskAkak.Com Administration Page

5. There you go! You're free to edit, delete or add anything you like. Feel free to play around and experiment with it.

Tour Guide Through AskAkak.Com Counselling Portal

Tour Guide for Normal Users and Members

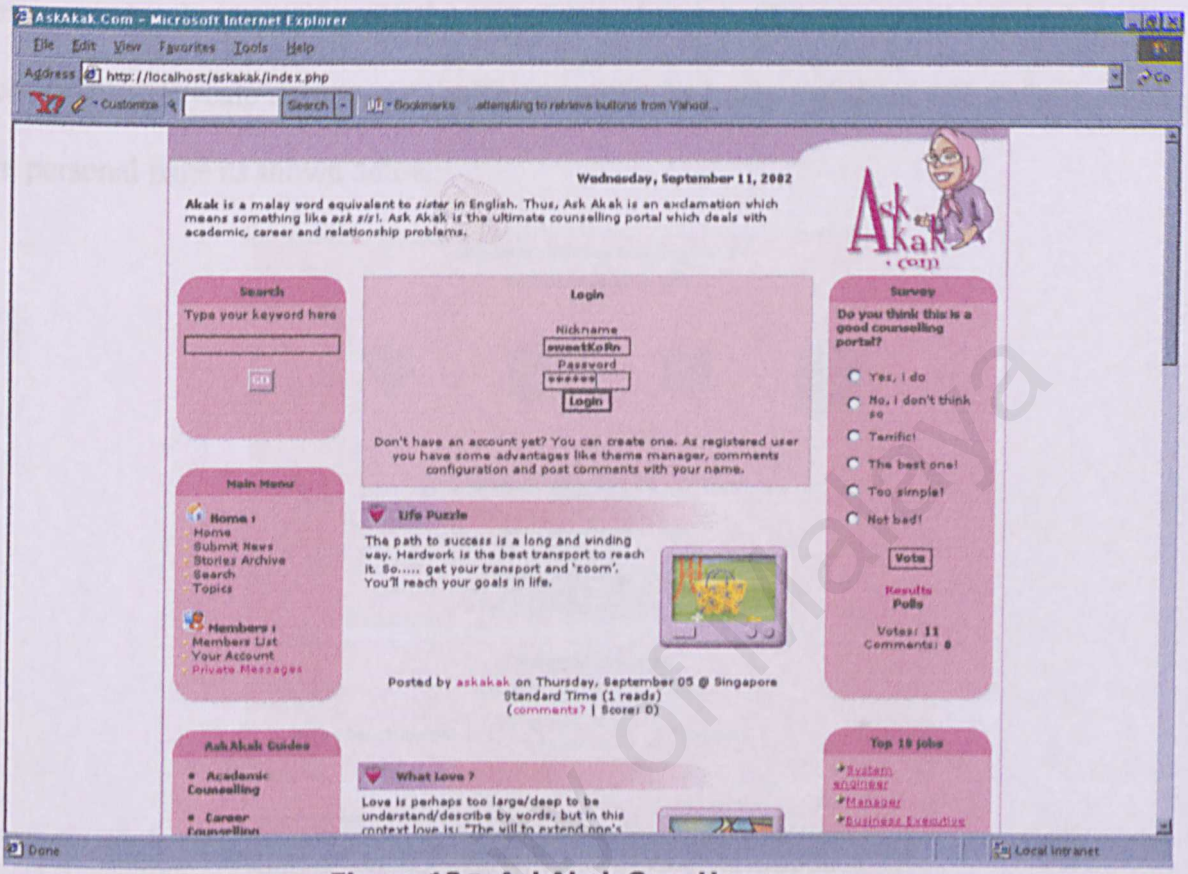

Figure 12 – AskAkak.Com Homepage

This is the homepage of Askakak.Com Counselling Portal. As you can see, the layout is divided into three columns. All the static blocks are placed in the left column. These blocks will remain there regardless of what page it is. These blocks include Search, Main Menu, AskAkak Guides, Page Hits, Links, Who's Online and AskAkak Support. The centre column contains the login block and all the latest articles submitted by the Administrator. Each of these articles has their own icon depending on their topic. The right column contains the dynamic blocks. These blocks are usually disabled and can only be viewed in certain pages, e.g. the startup screen. These blocks are Survey, Top 10 Jobs, Perplexed!, Sources and Study Tips.

Registered users or members can login through their Nickname and Password. Normal users can also browse through the portal but their capabilities are limited, thus they are encouraged to "create an account". After a successful login, members will be brought to their own personal page as shown below:

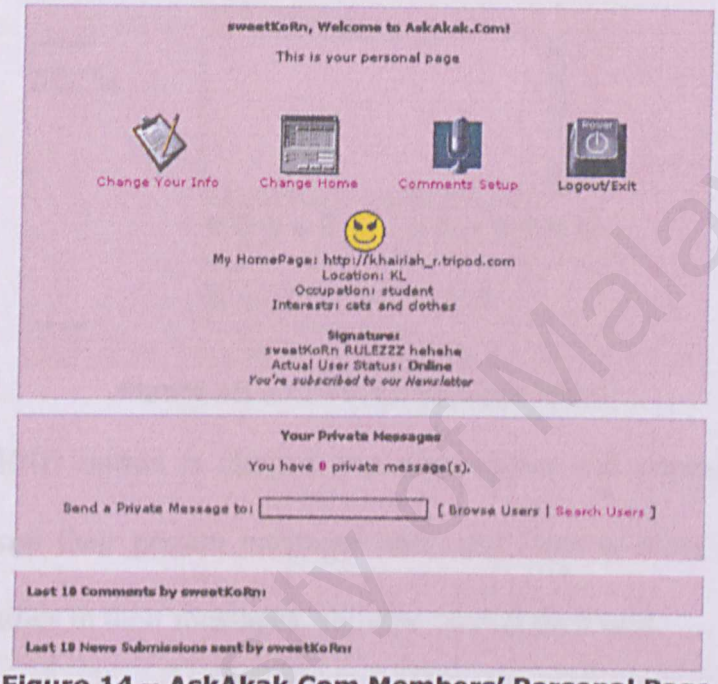

Figure 14 – AskAkak.Com Members' Personal Page

Here, members will be able to change their personal details, change the look of this page, submit comments and articles, check their private messages inbox, send private messages to other members, and browse and search for other members.

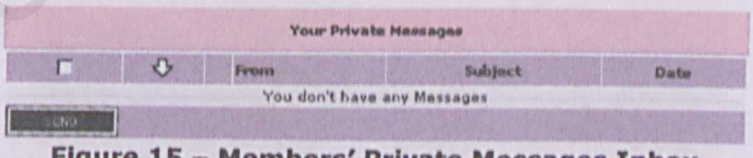

Figure 15 – Members' Private Messages Inbox

The diagram above shows the members' private message inbox. The members have the flexibility to sort, reply and delete the messages in their inbox. They can also compose new

messages to other members. This is done by clicking the SEND button (the black button on the bottom left corner).

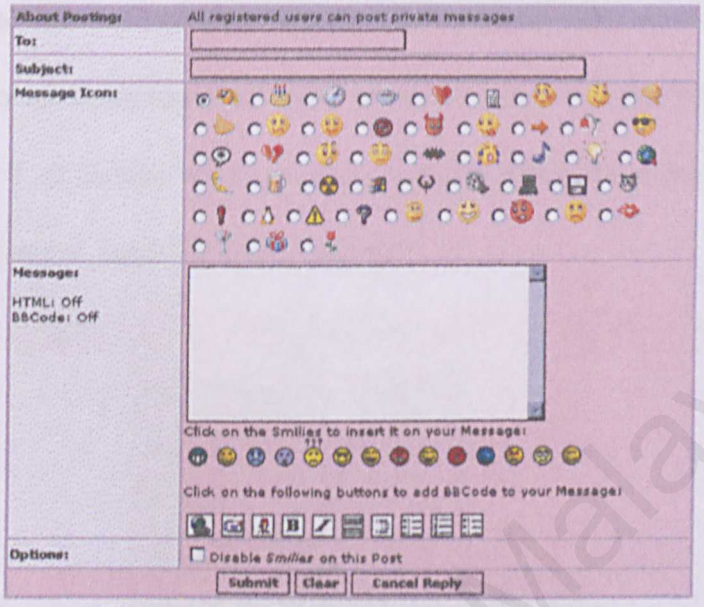

Figure 16 – Private Messages Form

When the SEND button is clicked, the page above will appear. This is where the members can compose their private messages and send them to other users. Members can include icons and smilies in their messages, and also format their text.

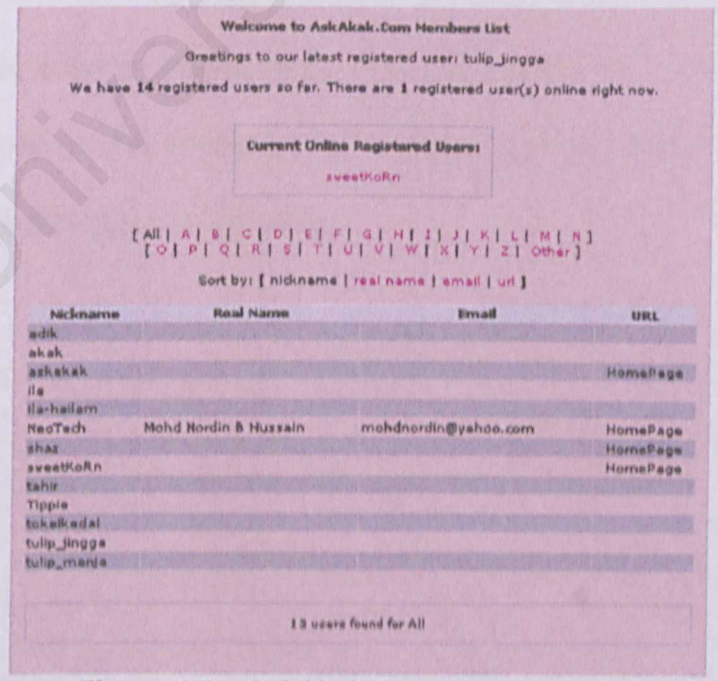

Figure 17 – AskAkak.Com Members List

The screen above shows the Members List of AskAkak.Com. Only members are authorized to see this list. This list can be customized, that is, members are able to view all the other members in one list or view them by the first letter in their name. For example, if the member would like to see other members with names starting with the letter T, then he/she will just have to click on T to display all the results. Members also have the flexibility to sort the list by nickname, real name, email or URL address.

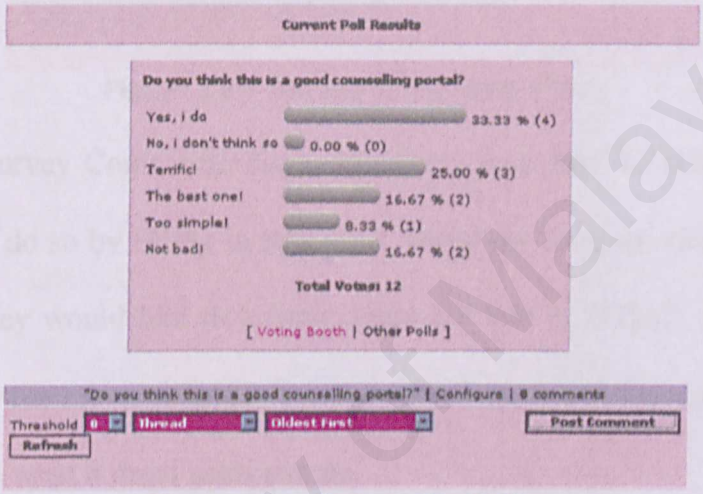

Figure 18 – Survey Statistics

The figure above shows the results of the poll. They are displayed using a horizontal bar graph to provide a better visualization. The percentage and number of votes are also displayed for every option. Any user can see this page, but only members are allowed to post their comments about the subject of the survey.

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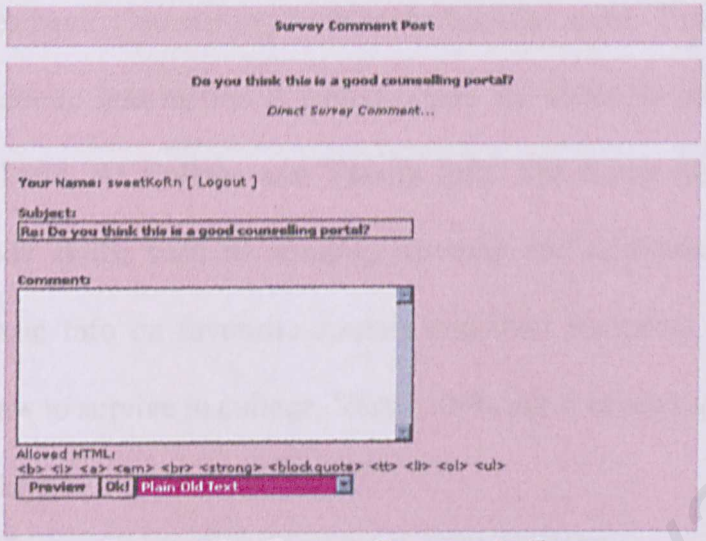

Figure 19 – Survey Comments Form

This is the Survey Comments Form. Members who wish to comment further on the topic of the poll can do so by filling in this form. Members have the flexibility to choose the type of comments they would like to submit: plain old text or HTML. When they are done, they can also preview the message first to see how it will appear in the real page.

Now, let's see what normal users can do.

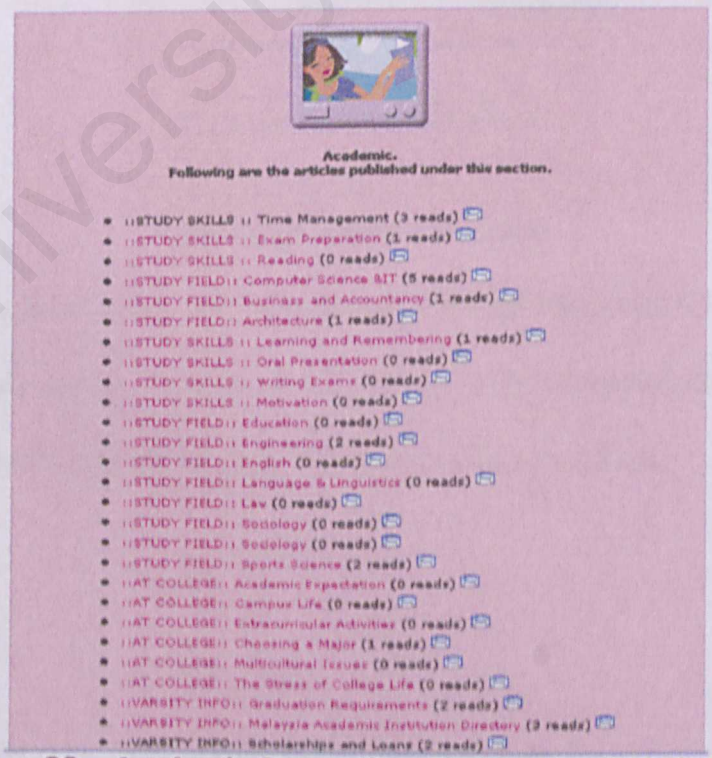

Figure 20 – Academic Counselling Section @ AskAkak.Com

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This is the Academic Counselling Section @ AskAkak.Com. This is where all the self-help articles and academic information is stored. There are about 30 articles in 4 categories: Study Skills, Study Field, At College and Varsity Info. The Study Skills Section contains articles on basic study skills, such as reading, listening and note-taking. The Study Field Section offers the basic info on favourite courses and their prospects. At College contains essential guides on how to survive in college. Varsity Info stores related sources of information on universities in Malaysia.

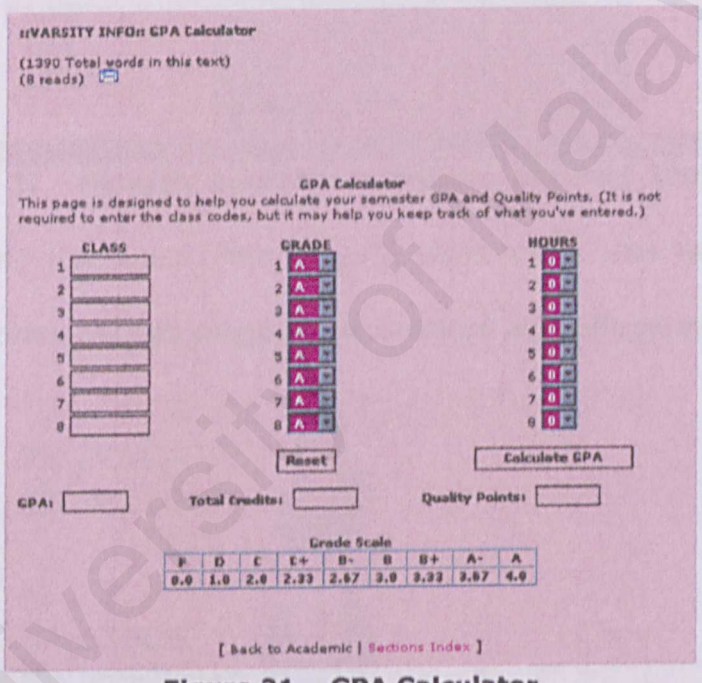

Figure 21 – GPA Calculator

One of the tools available in the Academic Counselling Section is the GPA calculator. It is very easy to use, and it actually works! Once all the required data is entered, it will provide you with your GPA, total number of credits and quality points.

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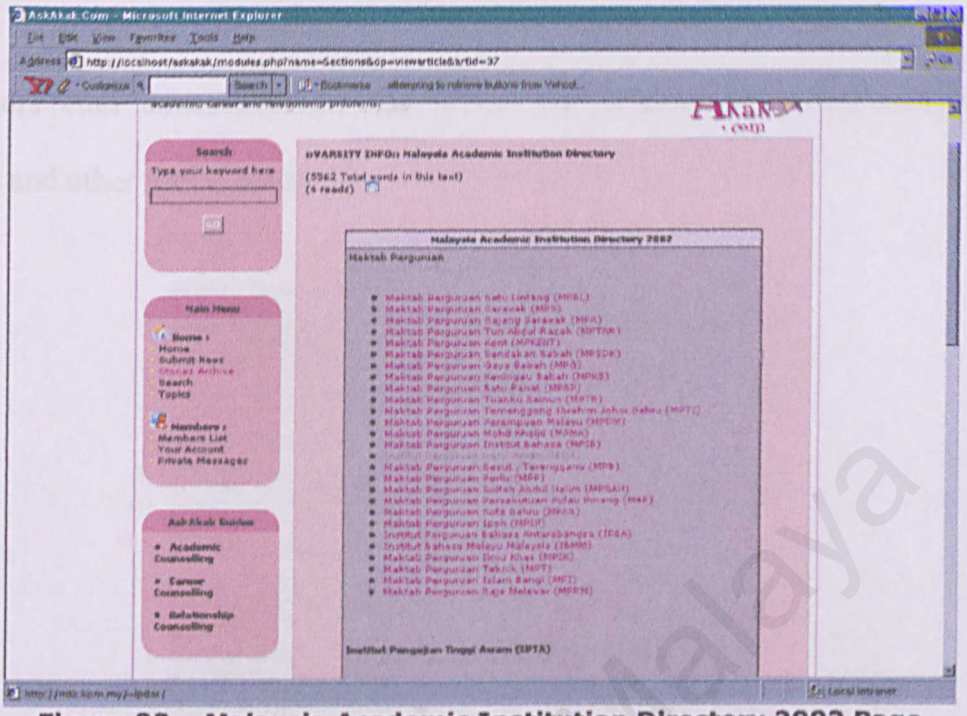

Figure 22 – Malaysia Academic Institution Directory 2002 Page

This Academic Institution Directory will prove to be very useful for students. It contains the links to every maktab perguruan, universities and colleges in Malaysia.

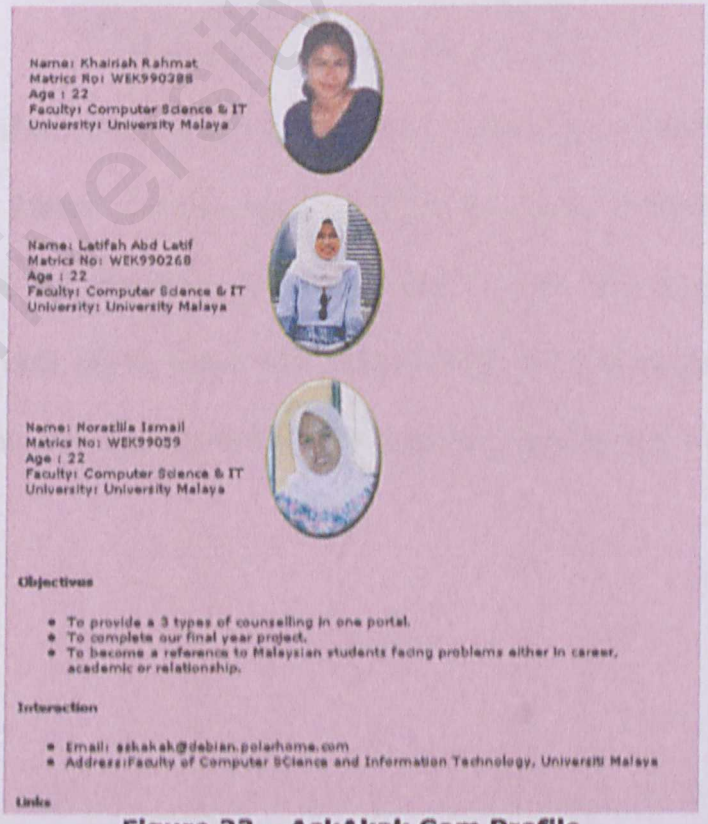

Figure 23 – AskAkak.Com Profile

The diagram above shows the Profile of AskAkak.Com. This page displays the administrators cum counsellors of this portal, its objectives, how to interact with the counsellors and other useful links.

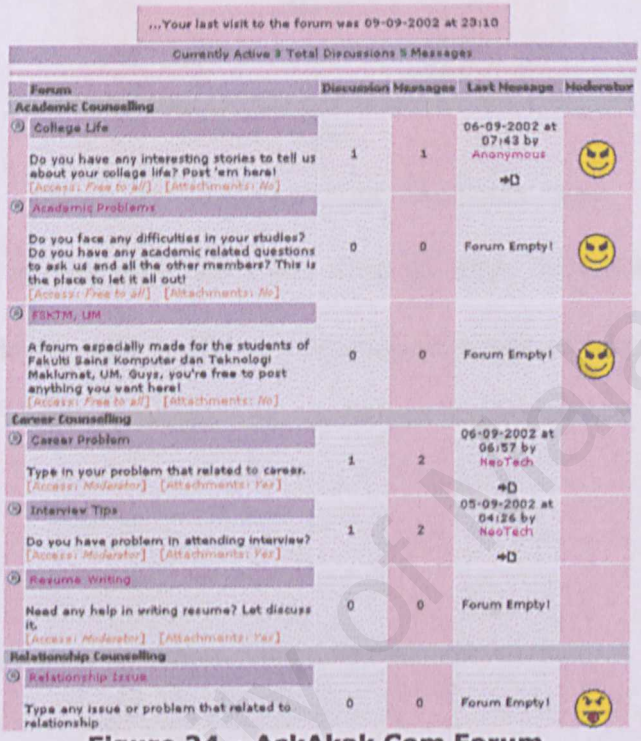

Figure 24 – AskAkak.Com Forum

The diagram above displays one of the most powerful features in this portal – its forum. However, different forum sections impose different access restrictions. The Academic Counselling Section, for example, allows any user to join the forum while the Career Counselling Section only allows those who are specified by the moderator to join the forum. Thus, it is best that the users register first before using any services provided by this portal.

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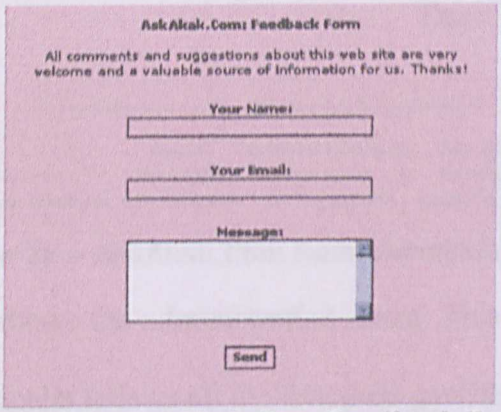

Figure 25 – AskAkak.Com Feedback Form

After your tour is over why don't you drop us some feedback? Your comments and suggestions will provide us with useful information in order to increase the quality of our services.

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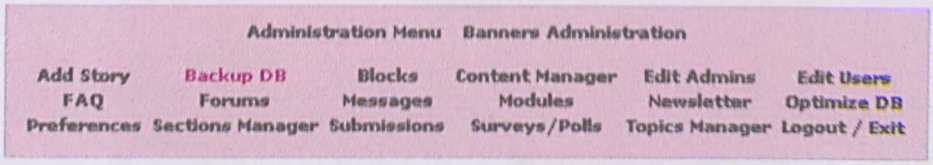

Figure 26 – AskAkak.Com Administration Menu

The diagram above shows the administration menu. This menu is displayed when the administrator signs in. It basically tells us all the functions available to the administrator. They include Blocks and Content Manager, Edit Admins and Users, Forums, Newsletter Sections and Topics Manager.

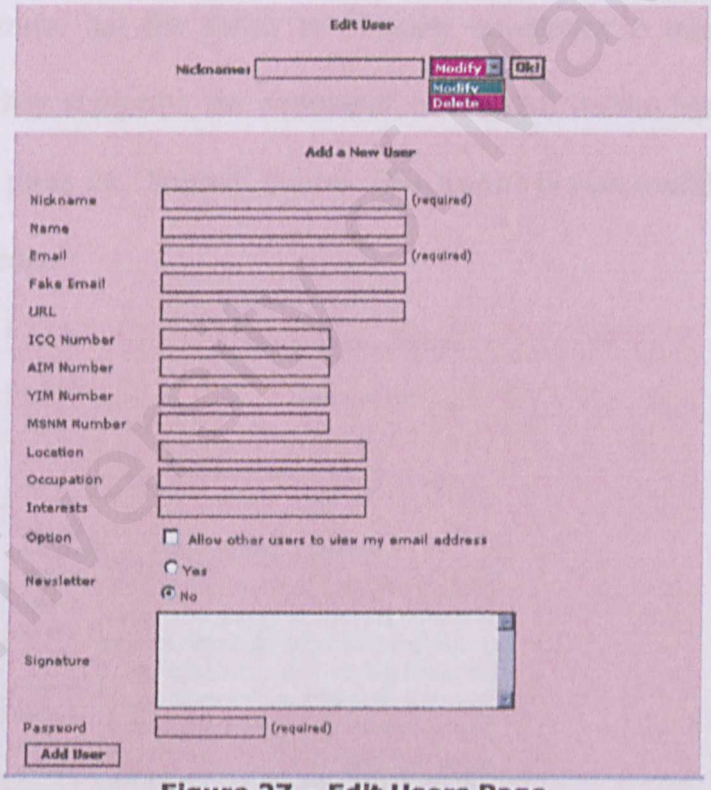

Figure 27 – Edit Users Page

The screen above comes from the Edit Users page. Here, the administrator can edit existing users (modify and delete) and add new users by providing all the details required. This is a great way for us as administrators to register our friends and family members.

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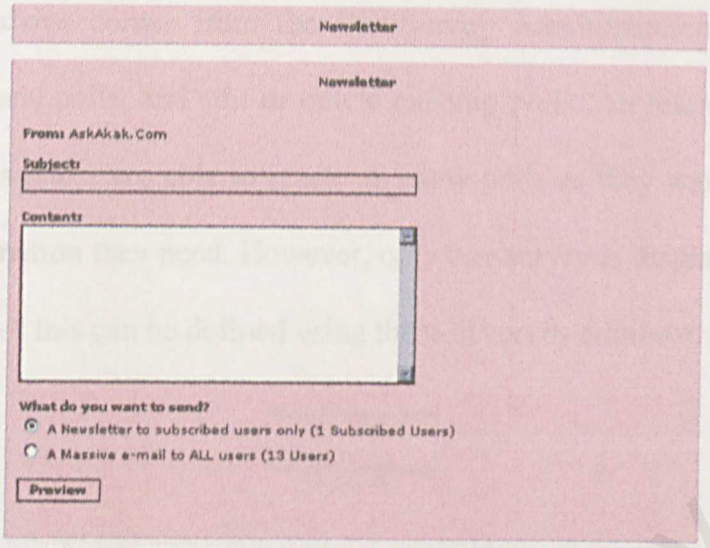

Figure 28 – Newsletter Administration Page

The administrator has the ability to circulate newsletter to members of this portal, regardless whether they subscribe the newsletter or not. All he/she has to do is fill in this Newsletter form and press the 'Submit' button. This feature is very useful for announcing new articles or special events.

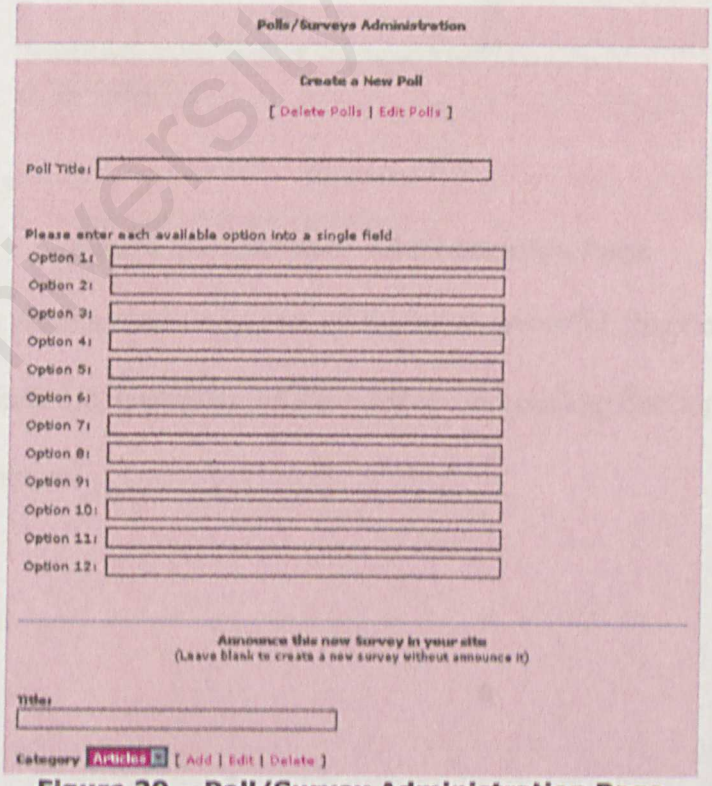

Figure 29 – Poll/Survey Administration Page

The figure above comes from the Poll/Survey Administration. This is where the administrator adds new polls, and edit or delete existing polls. An interesting fact about this portal is that administrators are able to create as many polls as they want to so that they can capture all the information they need. However, only one survey is displayed at the main page to avoid confusion. All this can be defined using the poll/survey administration function.

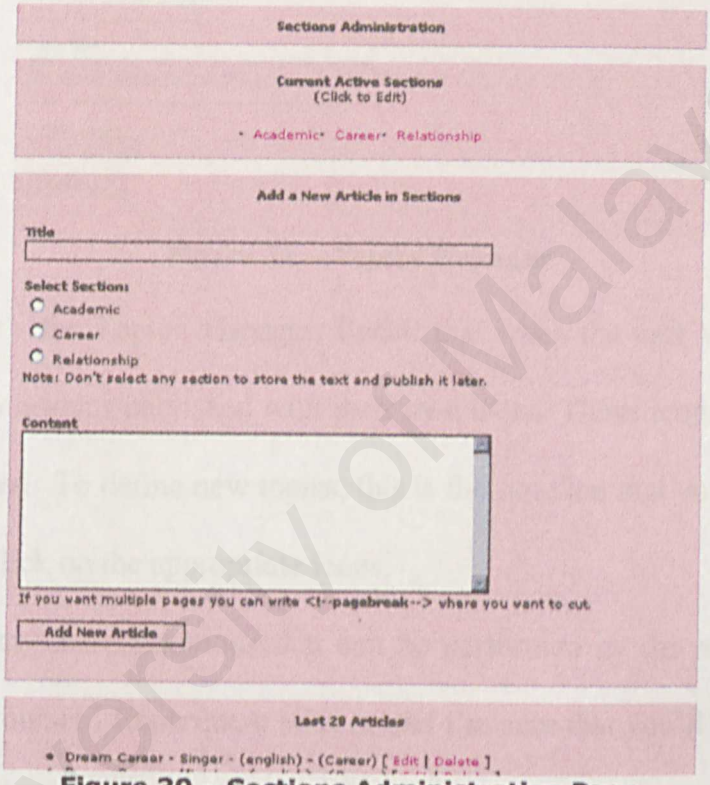

Figure 30 – Sections Administration Page

The Sections Administration is one of the most powerful functions in this portal. All the articles in the Academic, Career and Relationship Counselling Section are added, edited or deleted using this function.

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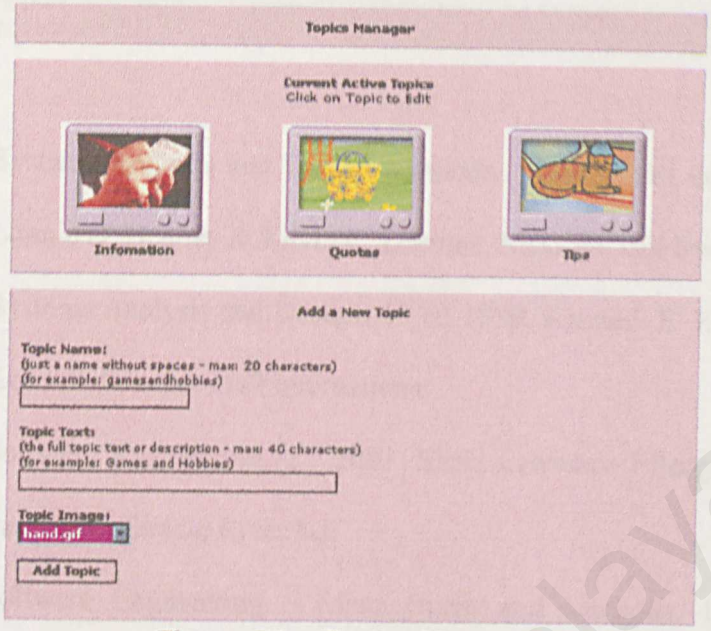

Figure 31 – Topics Manager

Finally, there's the Topics Manager. Recall that when the user visits the home page, he/she will see a few articles published with their own icons. Those icons actually specify the topics of those articles. To define new topics, this is the function that you should use. To edit existing topics, just click on the appropriate icons.

There are many more functions that can be performed by the administrator, but I'd rather you try it for yourself. Experiment with it, and I'm sure that you'll find this counselling portal a very powerful and effective one indeed.

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APPENDIX A – SAMPLE QUESTIONNAIRE

Academic Counselling Portal – knowledge, needs and characteristics

We are computer science students of University Malaya, currently working on our thesis. The following questionnaire will help us understand the requirements of our system-to-be-built, specifically the Academic Counselling Portal. We greatly value your honest opinion.

ABOUT YOU

Q1. ☐ Male ☐ Female

Q2. Age
☐ 14 and under
☐ 15-17
☐ 18-19
☐ 20-24
☐ 25-29
☐ 30-34
☐ 35-39
☐ 40-44
☐ 45-49
☐ 50 and above

Q3. Your marital status:
☐ Single ☐ Married
☐ Other (Please specify) _____

Q4. What race are you?
☐ Malay ☐ Indian
☐ Chinese ☐ Other (please specify) _____

Q5. What is your occupation?
_____

Q6. What is your highest education level?
☐ Primary school ☐ Postgraduate / Masters
☐ Secondary School ☐ PhD. / Specialist
☐ College / Undergraduate School ☐ Other (Please specify) _____

Q7. Do you own a computer?
☐ Yes ☐ No
If no, are you planning to get one?
☐ Yes ☐ No
Why?
_____

THE INTERNET

Q8. Do you have access to the Internet?
☐ Yes ☐ No

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Q9. How often do you use the Internet? (Tick as many as apply)

- ☐ Everyday
- ☐ Few times a week
- ☐ About once a week
- ☐ About once a fortnight
- ☐ About once a month
- ☐ Less often

Q10. What do you use the Internet for? (Tick as many as apply)

- ☐ General surfing
- ☐ E-mail / messaging
- ☐ Information
- ☐ Banking
- ☐ Booking travel, show or concert tickets
- ☐ Shopping
- ☐ Entertainment
- ☐ Online discussion and chat rooms
- ☐ Job-hunting
- ☐ Other (please specify) _____

Q11. Where do you usually surf the web?

- ☐ At home
- ☐ Cyber Café
- ☐ Office
- ☐ Computer Lab
- ☐ Other (Please specify) _____

Q12. What is your current operating system?

- ☐ Windows 9x
- ☐ Windows 2000
- ☐ Windows ME
- ☐ Windows XP
- ☐ Mac
- ☐ Other (Please specify) _____

Q13. What is your favourite web browser?

- ☐ Netscape
- ☐ Microsoft Internet Explorer
- ☐ NeoPlanet
- ☐ Other (Please specify) _____

Q14. Have you heard of the PHP technology and its advantages?

- ☐ Yes
- ☐ No

Q15. Have you come across any websites made using PHP?

- ☐ Yes
- ☐ No

Q16. Do you normally find the things that you search for on the Internet?

- ☐ Yes
- ☐ No

Q17. Over all, do you think that the Internet is beneficial to your daily life?

- ☐ Yes
- ☐ No

GENERAL COUNSELLING

Q18. Do you know what counselling is and what it can do for you?

- ☐ Yes
- ☐ No

Q19. Have you had counselling of any kind before?

- ☐ Yes
- ☐ No

Q20. Do you think you might need any kind of counselling services in the near future?

- ☐ Yes
- ☐ No

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Q21. Do you know what a counselling portal is?
☐ Yes ☐ No

Q22. In your opinion, which of these types of counselling should be included in a counselling portal? (Tick as many as apply)
☐ Family / relationship counselling
☐ Career counselling
☐ Academic counselling
☐ Health counselling
☐ Legal matters counselling
☐ Substance addiction counselling
☐ Money counselling

Q23. Do you face any academic related problems, difficulties or uncertainties?
☐ Yes ☐ No

Q24. Have you ever been to an academic counselling homepage?
☐ Yes ☐ No

If yes, proceed to Section A.
If no, skip Section A and proceed to Section B.

Section A

Q25. Why did you visit the academic counselling website in the first place?

☐ I was facing a huge academic problem and was looking for a solution which I couldn't find elsewhere
☐ I was searching for supplementary information to enhance my studies
☐ I was too shy to see my academic advisor and tried looking for virtual help instead
☐ My course/program required me visit them often
☐ I was curious to know what academic counselling really is
☐ No reason – I just happened to stumble upon them

Q26. Where did you find out about the academic counselling website that you've visited?
☐ Word of mouth
☐ Search engine
☐ Links from other websites
☐ Advertisements
☐ Other (Please specify) _____

Q27. What type of information do you often seek for in the academic counselling website? (Tick as many as apply)
☐ Basic study skills
☐ Guidelines and information on related course/program
☐ Tips for scoring examinations and assignments
☐ Solutions for academic problems frequently faced by students
☐ Preparation for college and university
☐ Academic assistance, such as scholarships and funds, tutoring and motivation seminars.
☐ Others (Please specify) _____

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Q28. Were you always able to find what you wanted from those academic counselling websites?

☐ Yes ☐ No

Q29. If no, tell us what topic(s) you would like to be covered more thoroughly in the website.

_____

_____

Q30. Listed below are the elements of a web site. Indicate how satisfied you are in each element as you've seen them in the academic counselling website you've visited.

	Very Satisfied	Somewhat Satisfied	Not Very Satisfied	Not At All Satisfied
Contents	☐	☐	☐	☐
Interface design	☐	☐	☐	☐
Site design	☐	☐	☐	☐
Layout	☐	☐	☐	☐
Navigation	☐	☐	☐	☐
Speed	☐	☐	☐	☐

Q31. Listed below are the attributes of an academic counselling website that we're going to build. Indicate how you would like them displayed.

	Maximum	Medium	Minimum	Zero
Graphics	☐	☐	☐	☐
Animations	☐	☐	☐	☐
Colours	☐	☐	☐	☐
Multimedia elements	☐	☐	☐	☐
Text	☐	☐	☐	☐
Simplicity	☐	☐	☐	☐
Elegance	☐	☐	☐	☐
Professional-feel	☐	☐	☐	☐

Q32. In your opinion, which of these methods of virtual academic counselling can provide the most effective result?

☐ E-mail
☐ Online counsellors
☐ Discussion group
☐ Message board
☐ Chat

Q33. Do you agree that the academic counselling portal can substitute the traditional one-to-one academic counselling offered at your institution?

☐ Yes ☐ No

Why? _____

Q34. Do you think that the academic counselling portal is here to stay?

☐ Yes ☐ No

Why? _____

35. What services would you expect an academic counselling website provide you?

_____

_____

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_____

_____

Q36. Which of these topics do you think should be included in an academic counselling website? (Tick as many as apply)

- ☐ Basic study skills
- ☐ Guidelines and information on related course/program
- ☐ Tips for scoring examinations and assignments
- ☐ Solutions for academic problems frequently faced by students
- ☐ Preparation for college and university
- ☐ Academic assistance, such as scholarships and funds, tutoring and motivation seminars.
- ☐ Others (Please specify) _____

Q37. Who do you think should be the target audience for an academic counselling website? (Tick as many as apply)

- ☐ Kindergarten kids
- ☐ Primary/elementary school students
- ☐ Secondary school students
- ☐ College students/Undergraduates
- ☐ Master/PhD students / Postgraduates
- ☐ Professional groups
- ☐ Unemployed workers

Q38. Listed below are the attributes of an academic counselling website that we're going to build. Indicate how you would like them displayed.

	Maximum	Medium	Minimum	Zero
Graphics	☐	☐	☐	☐
Animations	☐	☐	☐	☐
Colours	☐	☐	☐	☐
Multimedia elements	☐	☐	☐	☐
Text	☐	☐	☐	☐
Simplicity	☐	☐	☐	☐
Elegance	☐	☐	☐	☐
Professional feel	☐	☐	☐	☐

Q39. In your opinion, which of these methods of virtual academic counselling should be provided in our academic counselling website? (Tick as many as apply)

- ☐ E-mail
- ☐ Online counsellors
- ☐ Discussion group
- ☐ Message board
- ☐ Chat

Q40. Do you think an academic counselling portal would be beneficial to your everyday life?

☐ Yes ☐ No

Thank you for answering this questionnaire.

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