

ABSTRACTS

Perpustakaan SKTM

FAMOUS MALAYSIAN INDIANS WEB PORTAL (FMIWP)

By

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WET 010117

ABSTRACTS

The internet holds unimaginable amount of information. Nevertheless, resources related to Malaysian, especially concerning the biographical type of information are hardly available. The biographies are of great value in that they helped to shape the future leaders of Malaysia. This report describes the proposed project on the Famous Malaysian Indians Web Portal. The Famous Malaysian Indians Web Portal is developed by a team of three members. It is a web-based biography repository, which aims to provide relevant, up-to-date and beneficial biographical resources on achievements done by the Indians community in Malaysia, to all ages especially students and teachers. Each member of the team plays their own part in developing the modules for the web portal. The modules describe in this report are the Portal Enabled Knowledge Tools module, Data Manipulation module, Indexing module, Search module and Retrieval module. The development methodology used is the Waterfall with Prototyping Model, which is suitable for the project as it helps the developer gain a better sense on how the user should interact with the system. Users will benefit from this web portal as it is an influential repository that is rich in various multimedia contents.

ACKNOWLEDGEMENT

First and foremost, I would like to express my deepest gratitude to my project supervisor, Associate Professor Dr Diljit Singh who has been patient and kind throughout the development of this project. His continuous guidance has helped me a lot in determining how the project should take shape, and his willingness to listen to the problem related to the project is very much appreciated. In addition, I would like to thank my project moderator WXES 3181, Puan Hannyzzura Pal @ Affal, for her constructive comments during my project proposal presentation and also project moderator WXES 3182, Professor Madya Dr Roziati Zainuddin. I would also like to thank my team members Jasvinder Kaur and Susan for their commitment by attending discussion after discussion to ensure the project will run smoothly and successfully. Last but not least, I would like to thank my friends and course mates for offering ideas and opinions to solve problems related to project. The completion of this project WXES 3181/3182 will not be accomplished without the assistance of the people mentioned above.

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1.1 BACKGROUND TO PROJECT

Since the internet is gaining popularity among younger generations, putting an informational site on the internet will be very ideal. A web portal for example, functions as a gateway to various and wide information, will be helpful in providing information to the user.

Although there are a number of web portals over the internet, but has yet a web portal on the prominent Indian figures in Malaysia. The Famous Malaysian Indians Web Portal is the proposed web portal that focuses on the Indian community. This portal will cover the various races such as Tamil, Gujarathi, Sindhi, Punjabi, Singapore, Malaysian, Telugu, Kannada and Urdu.

The information about these famous Indian figures will be covering because they have made great achievements in various areas such as in Business, Sports, Health, Law and Arts. Their works that have brought significant difference in the Malaysian society and the nations, have made them well-known and become the highlight in the media such as newspapers, magazines, radio and television broadcasts.

Introduction

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The information about Malaysian Indian figures or personalities is worth covering because they have made great achievements in various arenas such as in Business, Sports, Health, Law and Arts. Their works that have brought significant difference in the Malaysian society and the nations, have made them well-known and became the limelight in the media such as newspapers, magazines, radio and television broadcasts.

1.2 PROJECT OVERVIEW

This report proposed the development of a premier biographical portal on famous Malaysian Indians who have gain great achievements and somehow influenced the Malaysian history and culture. The Famous Malaysian Indians Web Portal is one of the web-based applications, which caters for famous Malaysian Indian information in different format such as text, image, audio and video. It provides a comprehensive collection of famous Malaysian Indians information online. The target users of this portal are students, teachers and educators.

The contents to everyone in a more interesting and interactive manner. The resource will include information of the famous Malaysian Indians from past to present which is suitable for all ages. The contents will be presented in a way that the user will be able to interact with the web portal through the links and search facility available.

- To develop an accurate, effective and efficient search system that enables data of different formats such as text, graphic, audio and video searchable. This search system allows the content to be search in those 5 options such as 'Simple Search' by just typing the keyword, 'Advanced Search' that allows the use of Boolean operators and specify the format of the data, 'Name Search' where the user key in the name of the personality they want to search for, 'List Browsing' where the user can browse through the lists of the famous personalities available and 'Personality Search' that need the user to input few specific details of the personalities that they are looking for.

1.3 OBJECTIVES OF PROJECT

This project is to be developed by a group of three team members. Each member has their own goals and objectives to determine the outcome of the web portal. Each member will focus on different aspects of the project to come out with a successful and integrated Famous Malaysian Indians Web Portal. The Famous Malaysian Indian Web Portal hopes to realize the following objectives:

- To offer up-to-date resource and provide readable contents to everyone in a more interesting and interactive manner. The resource will include information of the famous Malaysian Indians from past to present which is suitable for all ages. The contents will be presented in a way that the users will be able to interact with the web portal through the links and search facility available.
- To develop an accurate, effective and efficient search system that enables data of different formats such as text, graphic, audio and video searchable. This search system allows the content to be searched in these 5 options such as 'Simple Search' by just typing the keyword, 'Advanced Search' that allows the use of Boolean operators and specify the format of the data, 'Name Search' where the users key in the name of the personality they want to search for, 'List Browsing' where the user can browse through the lists of the famous personalities available and 'Personality Search' that need the user to input few specific details of the personalities that they are looking for.

- To develop a textual and multimedia retrieval system that ranks the search result with and integrated advisor system that suggests or recommends information to assists the end user.

In order to develop the Famous Malaysian Indians Web Portal, each members of the group will collect and gather information of renowned famous Malaysian Indian figures to populate our initial knowledge repository.

The developed Famous Malaysian Indians Web Portal will contain well known Malaysian Indians from the business and health arena. Under business, the personalities may be the owner of a company or a product, made contribution in the business or economic world and anyone who simply conducted a business that is good enough to make him or her famous. Whereas under health, there will be Indians working in the health industry, made a discovery in medical science and created a health product.

The proposed project will include the Malaysian Indians in general, which refers the various Indian races such as Tamil, Gujarathi, Sindhi, Punjabi, Singhalese, Malayalam, Telegu, Kannada and Urdu. The Malaysian Indians that are featured in the web portal are those famous in the 1950's up till today.

With the purpose of providing comprehensive functions and extensive access to the web portal, two categories of modules have been identified. The categories are as follows:

- Administrator - Interface and Navigation
 - Portal Enabled Knowledge Tools
 - Authentication
 - Registration
 - Information Management

1.4 SCOPE OF PROJECT

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With the purpose of providing comprehensive functions and extensive access to the web portal, two categories of modules have been identified. The categories are as follows:

- Administrator - Interface and Navigation

Portal Enabled Knowledge Tools

Authentication

Registration

Information Management

Data Manipulation

Indexing

- User - Search

Retrieval

1.4.1 INDIVIDUAL MODULES

As a member of the team, I will focus on five mutual significant modules of the whole project – Portal Enabled Knowledge Tools module, Data Manipulation module, Indexing module, Search module and Retrieval module.

a. Portal-Enabled Knowledge Tools Module

This module consists of the general features usually found in an internet portal. The feature that will be included in this module is the 'Personality of the Day'. The 'Personality of the Day' will automatically display the image and brief particular of the personality chosen for the particular day. This feature has the purpose of exposing the personality to the users so that the users would be aware of the many personalities and the role they play in our country. In this feature, a random of different personality will be generated and display in the portal everyday.

b. Data Manipulation Module

Through authentication module that provides access to the administrators only, the data manipulation module allows the administrator to access administrative

records. Besides that, it also allows the administrator to manipulate the data which includes updating and editing the data.

c. Indexing Module

The indexing module is the entry point component for the textual information as well as for the multimedia contents such as images, and audios. The index module function will create a set of keys or an index that organizes the data, so that swift searches can be performed and the desired information can be located and retrieved quickly. It will deliver the most relevant search result. On the other hand, multimedia contents will be indexed according to properties, which will include description, categories and keywords. The content database administrators will input these property values once manually then the content is firstly introduced to the database. In addition, a friendly graphical user interface will facilitate the indexing process. An integrated subject headings utility will generate the synonymous, controlled vocabularies or keywords for the content properties during the indexing process.

d. Search Module

This is the module that searches the index or database for information to match the use queries. It will also include a user interface that provides a mechanism forms by which a user can submit the queries. Furthermore, the user interface would be simple and friendly. A multi-criteria search is employed to locate information fast and accurate. The searches will utilize the indexed information to increase the recall or the number of relevant results retrieved. On the other hand, the high precision in the search will also be included to search for certain criteria such as file types, size,

date and others. This advance features will most likely be applied in multimedia contents. Generally, all the contents can be search in two ways which are keyword matching and lists browsing.

Keyword matching for the multimedia contents is similar as the textual searching. Basically the users just need to input the relevant keywords to retrieve the desired information. Lists browsing is a basically a browsing search for the required media. The contents are grouped into appropriate categories and menu-based interface to allow users to preview the contents.

e. Retrieval Module

The retrieval module main purpose is to retrieve and display the search results. In addition, it also assigns a relevancy score to each of the search result. In other words, information will be retrieved with ranking applied to the result set. The ranking method proposed in this module utilizes a very basic ranking algorithm the TF-IDF algorithm (Term Frequency-Inversed Document Frequency). This ranking algorithm is limited to textual searches while the multimedia contents search will utilize the pattern matching queries. The pattern matching will return any content that contains the matched keywords. This module also utilizes a friendly and simple graphical user interface. Result interface should be able to preview the contents such as displaying thumbnail images, playing audio and video clips. Moreover, the results retrieved will also be included in a recommended information section. This is to allow the user to access to other related information in the portal. If the search item does not match those in the database, the system will display results that suggest the similar word in spelling to the searched item.

1.5 IMPORTANCE OF PROJECT

The proposed project, Famous Malaysian Indians Web Portal suits the Malaysian need for local knowledge repositories, as the current learning environment in Malaysia is mainly based on various forms of traditional media which relies on printed resources. There is a need to use digital media such as web portal, as learning tools to reduce the obstacles of accessing printed materials. The project will contribute to wide distribution of information and knowledge and makes learning more enjoyable regardless of geographical and physical limitation.

The Famous Malaysian Indian Web Portal provides information in different formats such as text, audio, video and still image. It gives opportunity to any individual with internet connection, particularly teachers and students to access search and retrieve various information regarding the famous Malaysian Indians.

Furthermore, it is hoped that this portal will be beneficial in molding a cultural based society where the public understands and acknowledges the contribution of the famous Malaysian Indians.

Indians - Member of the race of people relating to or characteristic of India or peoples, or languages or cultures. It includes the Tamils, Gujarathi, Sindhi, Punjabi, Singhalese, Malaysian, Telugu, Kanada and Urdu.

Famous Malaysian Indians Portal - A website that provides gateway to other repositories information on well-known Indians who is a citizen of Malaysia.

1.6 DEFINITIONS AND TERMS

Chapter 1 - Introduction

Followings are the definition of terms which are used and modified to suit the project:

the objectives, scope, the importance and definition of project

Web portal - A website considered as an entry point to other websites, often by providing access to a search engine. Or, as a cyber term, a website that aggregates a wide range of content in hopes of attracting millions of readers and lucrative advertising deals. A web portal is commonly referred to as simply a portal.

Chapter 2 - Methodology

Famous - Well-known to many people for something, especially achievement or contribution

Malaysian - Person who inhabit in Malaysia or is a permanent resident or citizen of Malaysia

Indians - Member of the race of people relating to or characteristic of India or peoples, or languages or cultures. It includes the Tamils, Gujerathi,

Sindhi, Punjabi, Singhalese, Malayalam, Telegu, Kanada and Urudu.

Famous Malaysian Indians Portal - A website that provides gateway to other

repositories information on well-known Indian race who is a citizen of Malaysia.

1.7 REPORT OVERVIEW

Chapter 1- Introduction

This opening chapter introduces an overview of the project's proposal. This includes the objectives, scope, the importance and definition of project.

Chapter 2 – Literature Review

This chapter includes the literature review of other works on associated issues and fields of interest. The main topic consists of the study on the difference in the similar type of web portal to the proposed project which includes the analysis and feature study and the evaluation on the Data Management System (DBMS).

Chapter 3 – Methodology

This chapter identifies and provides the clarification on the methodology, mechanism and approach that will be used in this project. A detailed analysis of the system development tools is covered which include the practicality and effectiveness of the chosen tools use in this project. This includes the fundamental design such as the data flow approach, architectural and database design, functional design and also the user interface.

Chapter 4 – Implementation

This chapter reviews on the conversion of system requirements into program codes.

Chapter 5 – System Testing

This chapter describes the testing conducted to determine the errors that occur until the system is free from errors.

Chapter 6 – System Evaluation

This chapter covers the system strength and limitations.

2.1 ROLE OF LITERATURE REVIEW

Literature review is a background study about the knowledge and information gained to develop this Famous Malaysian Indirect Web Portal system. Research is a systematic and goal-oriented investigation of facts that seeks to establish a relationship between two or more situations. This is because most of the conclusions are based on scientific and goal-oriented research. Research is also needed in order to have a better understanding of the system's needs and requirements.

During the process, information relevant with the project is collected through available media such as books, magazines and internet.

2

Review of Literature

A few ways have been identified to do the research in completing this web-based application system as shown below.

• Internet research

Internet is used as the main resource for referring any ambiguities that arise during the entire development period. By analyzing in the similar web portal system through research on the World Wide Web has help in giving ideas on the features, functionality as well as the design of the web-based system. The various search engines there were useful as below:

<http://www.google.com>

<http://www.yahoo.search.com>

<http://msn.com>

2.1 ROLE OF LITERATURE REVIEW

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During this phase, information relevant with the project is collected through available medium such as books, magazines and internet.

2.2 APPROACHES TO LITERATURE REVIEW

A few ways have been identified to do the research in completing this web-based application system as shown below:

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- <http://www.google.com>

- <http://www.yahoo.search.com>

- <http://msn.com>

2.3 Besides that, online tutorials regarding programming language can also be obtained through the internet.

2.3.1 ANALYSIS OF SIMILAR WEB PORTAL SYSTEM

- *Group discussion and brainstorming sessions*

Currently, there are several websites that look similar or have similar functions with the Famous Malaysian Indian Web Portal that I am developing. This method proved to be a productive way in gathering workable suggestions, solutions and new ideas. Sources of information were from project supervisor, show the examples of the interesting features existing in other biographical web portal course mates and friends.

- *References*

<http://www.biography.com>

Examples of references are material such as books, magazine, journals, newspapers, and previous senior's thesis in the document room. Those references were read through for new ideas about the biographical web portals, to make comparisons with the existing web-portals. Technologies were analyzed to see if they are suitable in the current system's environment. These sources offer much information regarding the latest technologies currently in the market. Nevertheless, the information is useful for future development of the system.

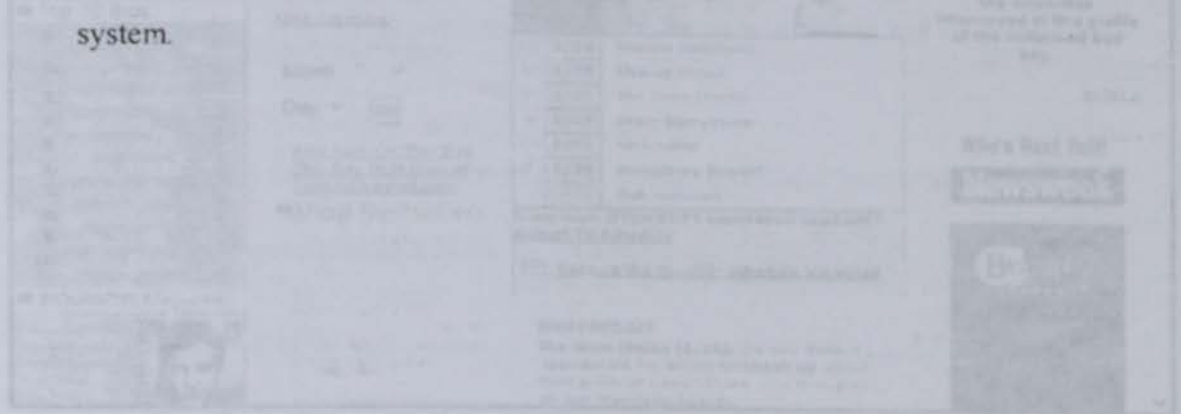


Figure 2.1. Screenshot of Biography.com web portal

2.3 FINDINGS

2.3.1 ANALYSIS OF SIMILAR WEB PORTAL SYSTEM

Currently, there are several websites that look similar or have similar functions with the Famous Malaysian Indian Web Portal that I am developing. The following show the examples of the interesting features existing in other biographical web portal available:

- <http://www.biography.com>

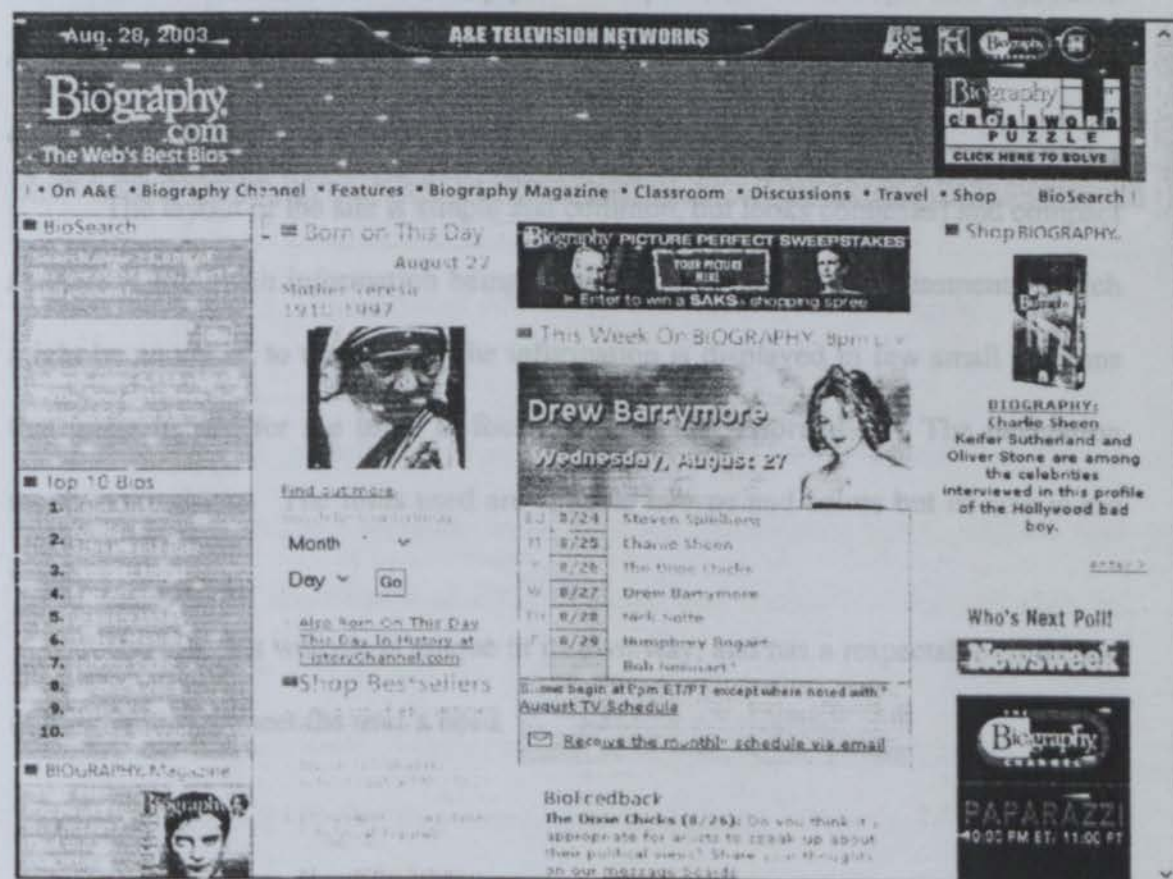


Figure 2.1: Screenshot of Biography.com web portal

Biography.com is a web portal with over 25,000 greatest personalities in the past and present from all over the world. It is a commercial website and is associated with other website such as A&E.com, Ganealogy.com, HistoryInternational.com, HistoryTravel.com and Mysteries.com and is also affiliated with Military.com.

It has an interesting feature called 'Born on This Day' that display the picture and name of the great personality that was born on the same day and month of a year as today. This feature allows user to get to know some of the personalities without having them to purposely look for the biography. There is also the 'Top 10 Bios' that recommends the ten most sought-for personalities of the day. The search feature in this website allows user to search any particular personalities through their birth date or name. Other features include the feedback where the users can submit their comment on the website and information updates through email.

The layout of the site is simple and common, but looks congested and compact as there is too much information being displayed. It is full of advertisements, which might be annoying to the users. The information is displayed in few small columns that make it hard for the users to focus on particular information. The navigation menu is consistent. The fonts used are suitable in type and colors but its size is too small.

Overall, this website is unique in its own way, and has a respectable collection of biographies to meet the user's need.

ii. <http://www.HistoryUK.com>

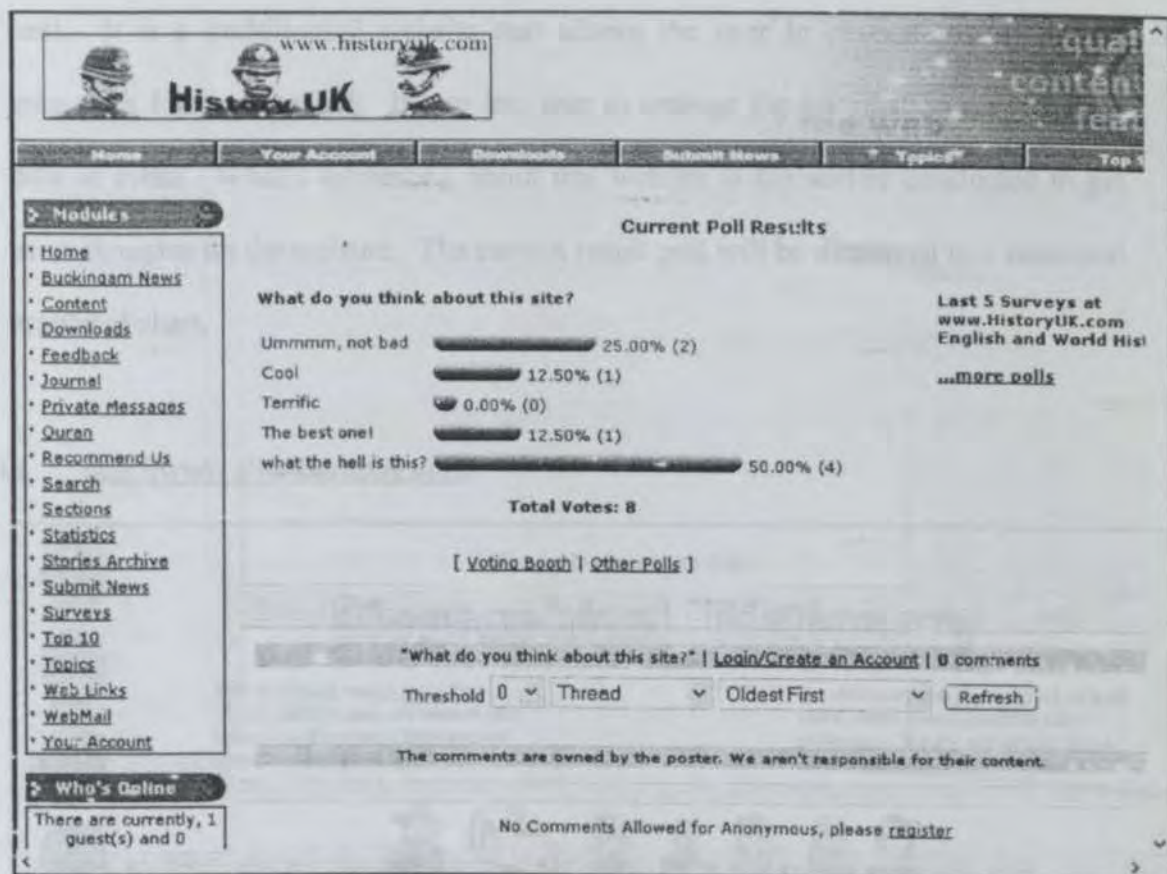


Figure 2.2: Screenshot of Poll Result from HistoryUK web portal

History UK website portrays the personalities in the history of United Kingdom. The web site includes news from the Buckingham News, journals and stories archive on the history of UK. Besides that it also has features such as 'Downloads' which allows user too download information, 'Submit News' where users can submit their news, 'Feedback' and 'Recommend Us' column which requires the users comments on anything concerning the website, 'Web Links' which links users to related links to other websites and within the website, and 'Top 10' which recommends the user of the top 10 most sought for personalities. Users can even have their own account in the website and receive WebMail from this website.

The menu bar and information displayed on this website are consistent and neat. It is a multilingual website that allows the user to choose any of the 33 languages for the interface. It also lets user to arrange the information according to date of event. What's interesting about this website is the survey conducted to get users thoughts on the website. The current result poll will be displayed in a statistical graphical chart.

iii. <http://www.s9/biography.com>

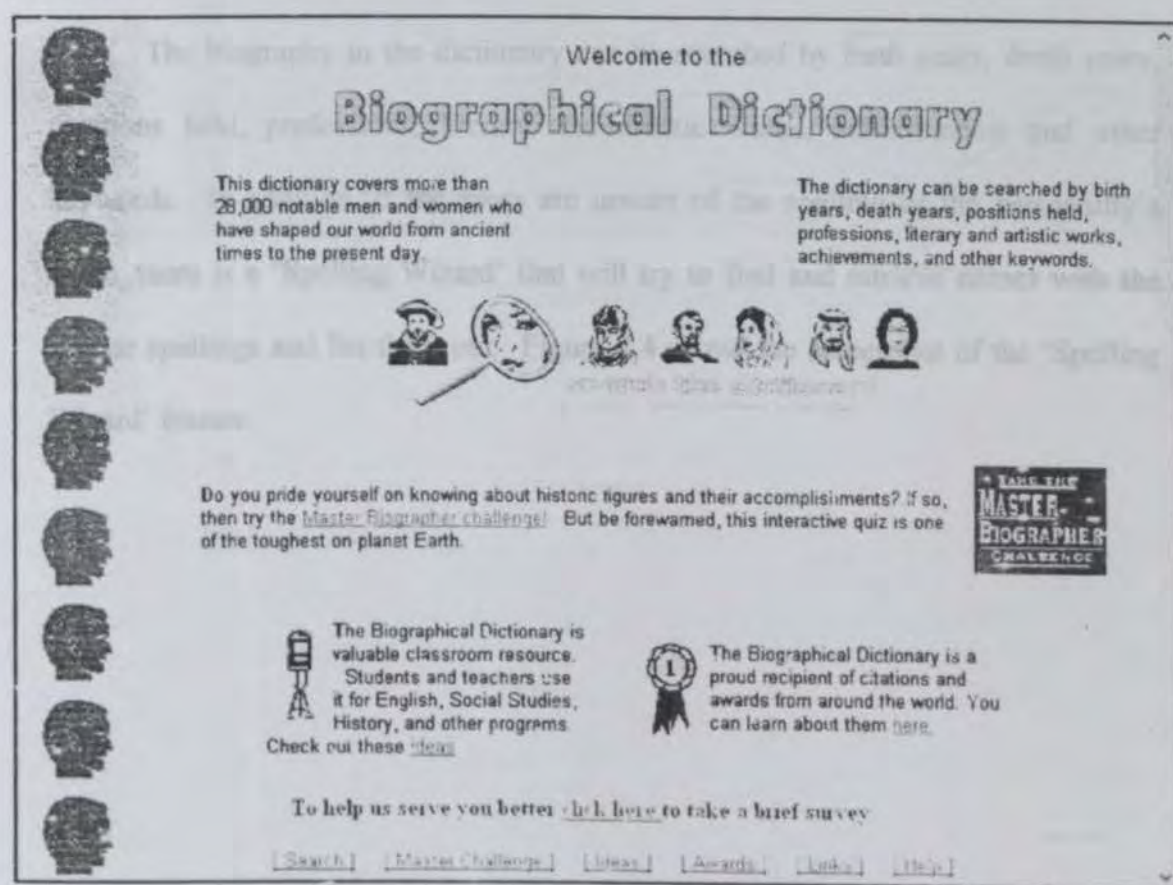


Figure 2.3: Screenshot of Biographical Dictionary

As its name reflects, this is an electronic biographical dictionary that covers more than 28,000 notable men and women who have shaped our world from ancient

times to the present day. It provides valuable and suggests classroom resources for student and teachers to use it for English, Social Studies and History.

The difference from this website to other similar website is that it has quizzes in a form of 'Master Biographer Challenge' which test the user's knowledge of the historic figures and their accomplishment. It is an interactive quiz and the test is known to be one of the toughest in the planet.

The layout and navigation of this website is plain and simple as there are only a few graphic in it but the fonts used are clear and suitable in color to present its information.

The biography in the dictionary can be searched by birth years, death years, positions held, professions, literary and artistic works, achievements and other keywords. In addition, if the users are unsure of the spelling of the personality's name, there is a 'Spelling Wizard' that will try to find and retrieve names with the similar spellings and list them out. Figure 2.4 shows the screenshot of the 'Spelling Wizard' feature.

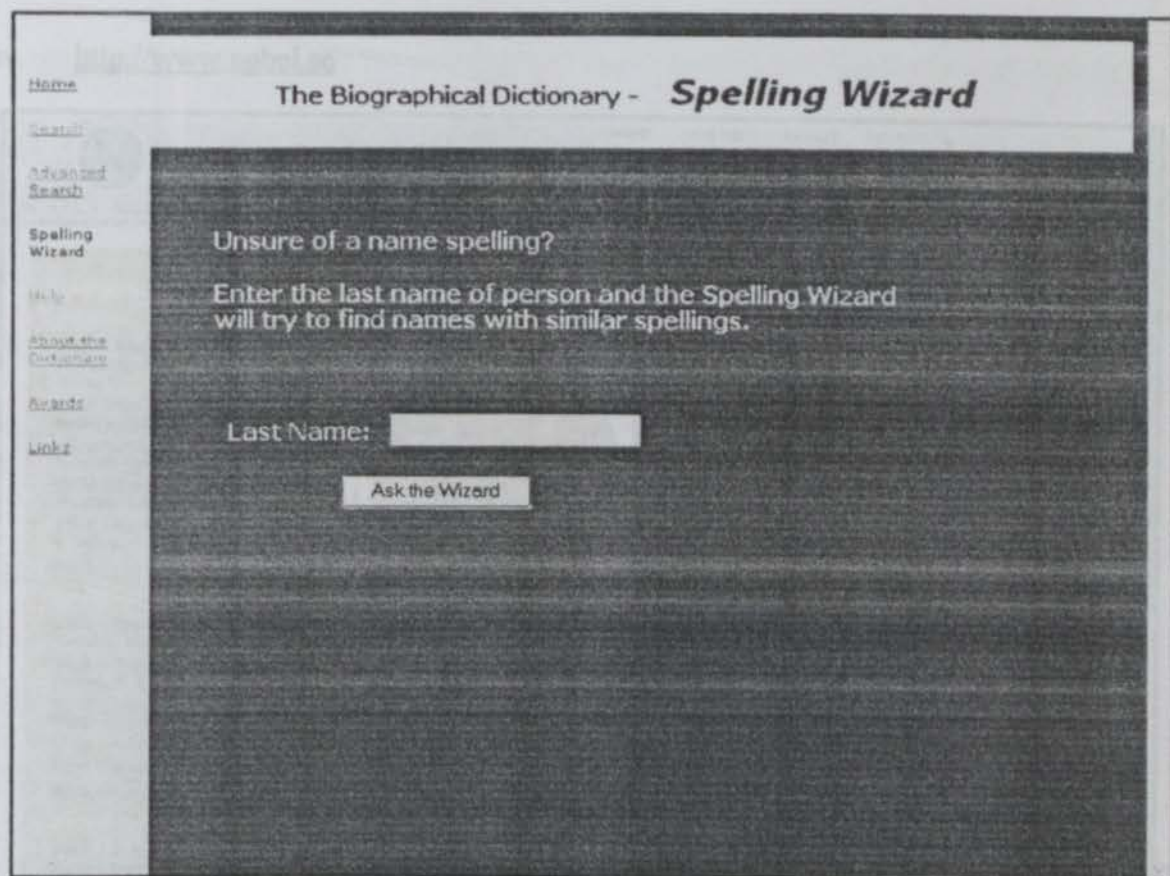


Figure 2.4: Screenshot of Spelling Wizard

Figure 2.5: Screenshot of Nobel e-Museum web portal

This is a Nobel e-Museum that offers information on all 736 prize winners to date, the Nobel Organisation, Alfred Nobel and Nobel events, as well as educational material and games. Nobel e-Museum consists of more than 9,000 static documents, several databases and a number of multimedia productions with Nobel Prize connections.

It has an impressive interface design which separates the different categories and topics in a different background color. The navigation bar is placed on top aligned with the header, which gives more space to display the information.

It has a very comprehensive search features which will allow users to search the contents of over 8000 documents at Nobel e-Museum. There are five options of



Figure 2.5: Screenshot of Nobel e-Museum web portal

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It has an attractive interface design which separates the different categories and topic in a different background color. The navigation bar is placed on top aligned with the banner which gives more space to display the information.

It has a very comprehensive search features which will allow users to search the contents of over 8000 documents at Nobel e-Museum. There are five options of

search that the user can use to ease their findings which are the 'Simple Search' where users type the words which they think a document may contain, 'Advanced Search' where users may type as many keywords as they like using Boolean operators (i.e. and, or, near) to narrow down the search, 'Find a Laureate' by typing the laureates family name, 'Laureate Lists' where users can select the personalities from the lists provided and 'Laureate Search' user may specify the name of a Laureate, words in the prize motivation and etc. Users may also use the search alternative provided to generate the desired list of Laureates.

v. <http://www.masterylife.com>



Figure 2.6: Screenshot of Contributors portal through Mastery Life web portal

Mastery Life is a web portal that allows user to share their experience on meditation, life style and conscious leaving. It provides links to various subject portals under the feature called 'Portal's Quick Jump'. Through the 'Portal's Quick Jump', users are link to other portal related to Mastery Life.

Under Mastery Life, there is a Contributors' Portal which displays the biographies of the contributors of Mastery Life including the pictures.

This website has an attractive interface with bright background colors and large fonts so that the users can see clearly. It has a very simple layout and side navigation bar. It does not have any significant features like the 'Top 10' or search modules as it link users straight from the menu on the navigation bar to the information.

2.3.1.1 COMPARISON TO THE FAMOUS MALAYSIAN INDIAN WEB PORTAL

Table 2.1 below shows the comparison between the significant features available from the 5 analyzed web portals and the Famous Malaysian Indian Web Portal. The features marked with 'X' are the features available in each web portal and will be implemented in the Famous Malaysian Indian Web Portal.

Features	1	2	3	4	5	FMIWP
GUI interface	X	X	X	X	X	X
Multimedia Content (text, images, audio)				X		X
Search	X	X	X	X		X
Spelling Wizard			X			
Voter's Poll / Survey	X	X			X	X
Feedback / Guestbook	X	X		X	X	X
Quiz / Games / Edutainment	X		X	X		

Table 2.1: Comparison features available in the similar web portals and FMIWP

1 - <http://www.biography.com>

4 - <http://www.nobel.se>

2 - <http://www.HistoryUK.com>

5 - <http://www.masterylife.com>

3 - <http://www.s9/biography.com>

FMIWP - Famous Malaysian Indians Web Portal

2.3.2 DATA MANAGEMENT SYSTEM

2.3.2.1 MICROSOFT SQL SERVER 7.0

Microsoft SQL Server 7.0 is the latest release of Microsoft relational database management system (RDBMS) for windows platforms. It is built on the solid foundation established by SQL Server 6.7 for a broad spectrum of corporate customers and independent software vendor (ISV). As a low-cost, entry-level, data mart platform, the combination of SQL server and Microsoft Office 7.0 can bring basic query, reporting and online analytical processing (OLAP) technology to fulfill all small and medium sized businesses well as global enterprises.

The key and notable features in Microsoft SQL Server 7.0 are as follows:

- First database to scale from the laptop to the enterprise using the same code base offering 100% code compatibility
- First database to support auto-configuration and self-tuning
- First database with an integrated online analytical processing (OLAP) server
- First database with integrated Data Transformation Services
- Wide array of replication options of any database
- Universal Data Access, US strategy for enabling high-performance access to a variety of information sources

The table below describes some of the Microsoft SQL server 7.0 standard and noteworthy features.

Features	Functions
OLAP services	This featured Online Analytical Processing (OLAP) component of Microsoft SQL server 7.0 provides fast, efficient analysis, decision support and data modeling.
Simplified on disk	Sophisticated yet simplified on-disk storage architecture allows scalability from small laptop databases to terabyte-size enterprise databases.
Multiphase Query Optimizer	Multiphase Query Optimizer finds the optimum plan for queries to improve performance of complex queries.
Parallel Queries	Allows steps in a single query to be executed in parallel, delivering optimal response time
English Query	This allows users to pose questions in English instead of forming queries with complex SQL statements.
Auto Statistic	Auto statistics extract using fast sampling, enabling the Query Optimizer to use the latest information and increase query efficiency.
Tools and Utilities	Tools and utilities run much faster and are designed to have less impact on server operations.
Active Backup	Active backup provides high performance online

	backup with minimal impact on operational systems.
Merge Replication	Merge Replication allows users to work freely and independently, then combine their work later-built-in priority-based conflict resolution resolves merge conflicts.
Data Transformation Services	Simplifies the process of importing and transforming data from multiple, hetero-genus sources, either interactively or automatically.
DBCC	Checks physical and logical consistency of database. Patented single-pas algorithm speeds performance. New features are supported and can fix some problems. New storage engine architecture minimizes need for DBCC, but is still a good practice.
Dynamic Locking	This automatically chooses the optimal level of lock (row, key range page, or table) for all database operations. It maximizes the trade-off between concurrency and performance, resulting in optimal usage. No tuning required.
Dynamic Self-Management	This enables the server to monitor and manage itself, allowing for hands-off standard operations.

Table 2.2 Standard Microsoft SQL Server 7.0 features

2.3.2.2 MICROSOFT ACCESS 2000

Microsoft Access 2000 is a powerful relational database application designed for desktop category users, in particular for individuals and work groups managing large amount of data. It includes features that make designing and manipulation of database system easy and efficiently.

Microsoft Access 2000 aids users in generating, analyzing as well and cheating reports in a short period of time. It provides ease-of-use wizards throughout, such as the Database Wizard for getting up and running quickly, and the simple Query Wizard for easily finding information from the data. The combination of ease-to-use and power in Microsoft Access 2000 makes it the top choice among developers who

frequently use Microsoft Access 2000 as a front-end to SQL server in a client-server scenario.

Microsoft SQL Server 7.0 vs. Microsoft Access 2000

Features	Microsoft SQL Server 7.0	Microsoft Access 2000
Data Capacity	1 terabyte per database	1.2 Gigabytes of database
Solution for transaction based database of downtime	Rollback automatically Reduce the expenses of downtime	Do not support automatic recovery, data can be lost
Backup ability	Dynamic backup	Do not have built in backup capabilities
Degree of security	Offering logon Ids and passwords, user permission and encryption	Allow developers to customize security to their needs
Application run time	Fast	Slow
Maximum number of users	32,767 users connection	255 users connection
Distributed transaction	Yes	No

Table 2.3 Comparison between Microsoft SQL Server 7.0 and Microsoft Access 2000

2.3.3 TERM FREQUENCY INVERSE DOCUMENT FREQUENCY

The internet holds unimaginable amount of information and are rapidly growing everyday. In most cases it is impossible for an individual to check all sites, which contain the desired data. Problem occur such as how to decide, which site is good and which is not; how to find those sites; how to find answers to previous two questions without loosing too much valuable time? To ease the users, there is a need to implement an intelligent search tool that will be able to automatically find the desired data using sophisticated searching techniques.

One of the techniques discovered is the Term Frequency Inverse Document Frequency (TF-IDF) algorithm. It is commonly used in the Information Retrieval System (IR). It is a way of weighting the relevance of a term to a document. Term Frequency refers to the amount of times a particular term appears within a document and the Document Frequency refers to the amount of times that term occurs in a group of documents. TF-IDF algorithm works by creating a document vector of each unique term in the document and giving each document a frequency.

The main step to this algorithm is users are required to provide the keywords or terms which describe the desired topic. These terms are then sent to one of the search system to retrieve the relevant data. Through TF-IDF algorithm the term will be measured according to the number of occurrences of the keyword in the document and the number of occurrences of the keyword in all linked documents. The underlying assumptions of this weighting scheme are made based on two empirical observations regarding text which is, first, the more times a term appears in a document, the more likely it is that term is relevant to the topic of the document and the second, the more times the term occurs throughout all document, the more poorly the term discriminates between documents. TF-IDF algorithm then attempts to produce a ranked list of best search result according to the similarity of the users query.

2.4 SUMMARY

Although there are several similar web-portals on biography, each of it has its own distinctive features that make it special. Most of it has an attractive interface and a simple layout. Besides that, some provide a very effective and efficient search functions for the convenience of the users and others only through keyword search. There are also significant features such as the 'Top 10 Bios' and 'Born on this Day'. Other features that was found are 'Links' that links the website to other similar websites, 'Help' which provides assistant to the users on how to navigate within the website, 'Site Map' which gives the user an overview of the website's content.

Compared to Microsoft Access 2000, Microsoft SQL Server 7.0 is useful for manipulation and storage of large amount of data. It has useful features such as the Active Backup, OLAP services and Dynamic Self Management which is beneficial in storing data for the proposed Famous Malaysian Indians Web Portal.

TF-IDF algorithm ranking is used for searches. The algorithm function is to produce a ranked list of the best result from the user query.

2.5 RELATIONSHIP TO PROPOSED PROJECT

Building a web-based application such as the Famous Malaysian Indians Web Portal should consider multimedia representation in order to attract the user's attention. Multimedia data element that should be included in the web-portal is text, document images, photographic images, moving graphics, audio and video to permit interactivity.

Several similar web-portals to the proposed project are compared to look at the differences and enhance the available features to be implemented in the Famous Malaysian Indians Web Portal. This features are the 'Personality of the Day' where a random of different personality will be display in the web portal everyday, 'Voter's Poll' where the users can vote their thought on the website, 'Feedback' where the users can submit their comment on anything concerning the website and 'Search' where it provides a comprehensive search on desired information for the users.

A suitable data management system is required to store the information and data of the Famous Malaysian Indians Web Portal. From the research done on the available data management system, MS SQL Server 7.0 will be use as the data management system.

The search and retrieval modules in the Famous Malaysian Indians Web Portal will implement the Term Frequency-Inverse Document Frequency (TF-IDF) algorithm to retrieve and rank a list of the best search result from the users query.

3.1 PROJECT OBJECTIVES

The purpose of this project is to develop a web-based information system that is interested in knowing about the history and culture of the various Malaysian Indian Web Portal. It is a project that is designed to provide a web-based resource which includes personality tests that can be used to assess a user's personality. The information will be used to create a web-based system that is designed to provide

In order to provide a user with a particular information from the web portal, a search engine will be developed that enables data of different types to be searched. The search engine will be developed

develop. The search engine will be developed using a system such as 'Simple Search' by using a search engine that enables the use of Boolean operators and logic to search for data. The search engine will be developed through the use of the following parameters: 'Simple Search' and 'Personality Search' which will be used to search for specific data of the personalities that they are looking for.

A textual and graphical user interface will be developed that will display the search result with and without a search engine. The search engine will be developed to assist the end user with the search. This is the main purpose of the search system.

3

Methodology

3.1 PROJECT OBJECTIVES

The purpose of this project is to offer useful information to anyone who is interested in learning about the Malaysian Indian figures. The Famous Malaysian Indians Web Portal hopes to benefit everyone by providing up-to-date resource which includes personalities from the past to present with readable content. The information will be presented with interactive and user friendly interface.

In order to provide convenience to the user to find a particular information from the web portal, an accurate, effective and efficient search system that enables data of different formats such as text, graphic, audio and video searchable will be develop. This search system allows the content to be search in these 5 options such as 'Simple Search' by just typing the keyword, 'Advanced Search' that allows the use of Boolean operators and specify the format of the data, 'List Browsing' where the user can browse through the Lists of the famous personalities available and 'Personality Search' that need the user to input few specific details of the personalities that they are looking for.

A textual and multimedia retrieval system that ranks and display the search result with and integrated advisor system that suggests or recommends information to assists the end user will be develop. This is to compliment the search system.

- Each method or tool in the methodology results in successful completion of each development task
- Reviewer procedures are available to identify any errors, in considerations and discrepancies during development
- Increase the system quality by enforcing the developer to produce flexible systems and adequate documentation

3.2 DEVELOPMENT METHODOLOGY

A system development methodology or also known as process model is a collection of procedures, technology, tools and documentation aids which help system developers in their task of implementing a new information system. It consists of a set of phases which consists of a set of sub phases. This shows the way in applying the set of software process activities and associated results towards producing a software product. It defines the stages of a system development project, specifies the task to be carried in and out, and the output is expected from each stage. Methodology provides guideline for the developers and helps them to plan, manage, control and evaluate info system project.

There are many types of development model in the software engineering, such as prototyping model, waterfall model with prototyping and V model. A good methodology which is able to provide the effective ways of system development is best defined before the project starts and then becomes the framework to development staff. Below are some benefits offered by a good methodology:

- Provides a standard framework that the developer does not have to reinvent the wheel for each project
- Each method or tool in the methodology results in successful completion of each development task
- Reviews procedures are available to identify any errors, in consistencies and discrepancies during development
- Increase the system quality by enforcing the developer to produce flexible systems and adequate documentation

3.2.1 WATERFALL WITH PROTOTYPING MODEL

The waterfall model is also called the 'classic life cycle' or the 'linear sequential model', which considered the process as progressing through a series of stages from requirements analysis through specification, design, coding, testing to documentation and maintenance. As the name implies, the stages of development cascades from one phase to another. Each stage of a development is required to be completed before proceeding to the next phase. Although it is the easiest to understand model, it has the difficulty of accommodating change after the process is underway. Therefore, this model is only appropriate when the requirements are well understood. Because of the drawback, prototyping activities are amended to the waterfall model to improve understanding.

Waterfall with prototyping model is derived from the existing waterfall model. It uses prototyping approach within a waterfall lifecycle early stage or for elements of interface and or technical prototyping.

It is a sub process where the prototype is a partially developed product. Prototypes help to gather requirements and demonstrate architecture before locked into the actual application code. Since prototypes can visualize the system working, developers can examine some aspects of the system and decide if it is suitable. Shortcomings, misconceptions and disagreements that tend to appear as the system takes form can be dealt with earlier.

The idea of waterfall with prototyping model is to control the process by including activities and sub process that enhance understanding on what the new system will be like as well as helping designers gain a better sense of how the user will interact with the system. This will aid in the validation and verification

process. If there are changes in the requirements and system designs during the system testing, requirement will be analyze again and implemented to the prototype. The iteration process will continue until the latest requirement is achieved.

internet. The requirements gathering process is intensified and focused on software, as well as the gathering of required function, performance, and interfacing. All the hardware, software requirements, services that will be provided, constraints, functionality and customer goals are established at this stage.

2. System Design
The system design process translates the established requirements from the first stage into either hardware or software systems. The result is a functional specification of the system that the system should have. This stage establishes overall system architecture. It also involves drafting data flow diagrams that resembles the functionality of the systems and its subsystems.

3. Program Design
The program design involves representing the software system in a form that may be transformed into one or more executable programs.

4. Prototyping
This is the stage where the prototype of the system is built. Requirements

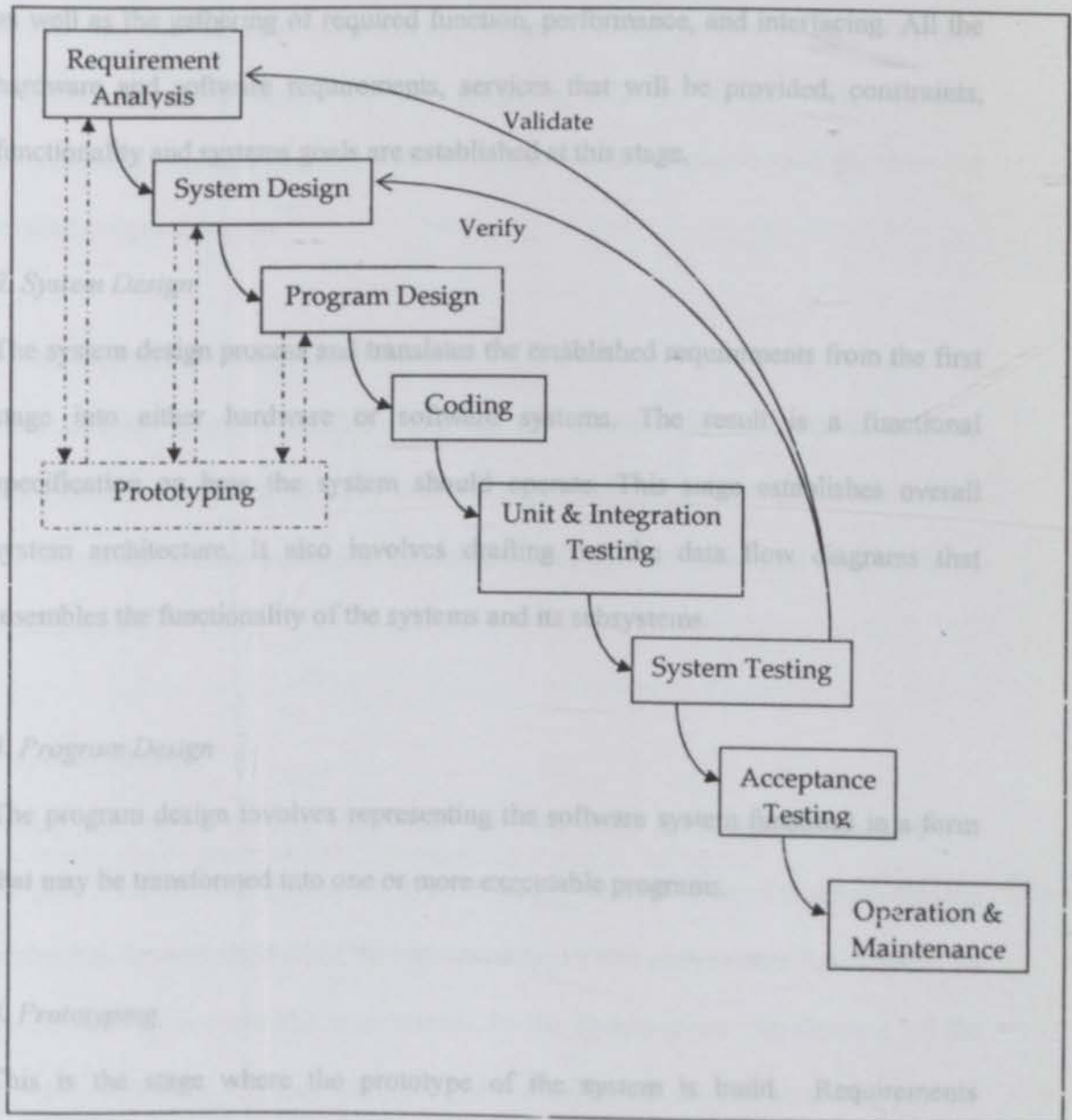


Figure 3.1: The flow of Waterfall with Prototyping Model

Descriptions of stages involved in the Waterfall with Prototyping model are as follows:

1. Requirement Analysis

The requirements of the web portal have been determined during the preproduction. Information relevant with the project is collected through printed materials and internet. The requirements gathering process is intensified and focused on software, as well as the gathering of required function, performance, and interfacing. All the hardware and software requirements, services that will be provided, constraints, functionality and systems goals are established at this stage.

2. System Design

The system design process and translates the established requirements from the first stage into either hardware or software systems. The result is a functional specification on how the system should operate. This stage establishes overall system architecture. It also involves drafting out the data flow diagrams that resembles the functionality of the systems and its subsystems.

3. Program Design

The program design involves representing the software system functions in a form that may be transformed into one or more executable programs.

4. Prototyping

This is the stage where the prototype of the system is build. Requirements prototyping is developed based on the requirement analysis to ensure that the requirements are feasible and practical. If not, revisions are made at the requirement stage again. After the system and program design stage, design prototyping is added

to the previous prototype as it helps developers assess alternative design strategies and decide which is best for the project.

When unit, integration and system testing have fully done and no errors or problem

5. Coding the system, the testing will be accepted and the system is considered

This is when the computer programs are created. The design must be translated into a machine-readable form. All the programs will be coded using selected programming language together with the application development tools based on the detailed program design.

after the system is installed and put into practical use. It involves correcting the errors that being encountered, which were not discovered in

6. Unit Testing and Integration Testing the implementation of the system units and

Each computer program is called a unit, and unit testing is the verification that every unit meets its specification. After unit testing, an integration testing will be carried out which will test the success of the integration of all the individual program units or programs.

product, and not of the strict development, although improvements and fixes can still be considered as 'development'. Maintenance for the system has to be

7. System Testing

During this stage, all the individual program units or programs modules are integrated and tested as a complete system. The system is validated to ensure that the system has implemented all of the requirements, so that each system function can be traced back to a particular requirement in the specification. Verification of the system is also done to check the quality of the implementation. The testing process focuses on the logical internals of the software, ensuring that all the statements have been tested, and on the functional externals that is, conducting tests to uncover errors. When the combined programs are successfully tested, the software product is completed.

3.3 RATIONALE FOR PROPOSED METHODOLOGY

8. Acceptance Testing

When unit, integration and system testing have fully done and no errors or problem occur in the system, the testing will be accepted and the system is considered complete.

9. Operation and Maintenance

Maintenance takes place after the system is installed and put into practical use. It involves correcting the errors that being encountered, which were not discovered in earlier stages of the life cycle, improving the implementation of the system units and enhancing the system's services as new requirements are discovered. Making these changes may involve feedback to some or all of the previous process stages and the development are set back to that stage again. This stage is part of the life cycle of software product, and not of the strict development, although improvements and fixes can still be considered as 'development'. Maintenance for the system has to be done from time to time.

3.3 RATIONALE FOR PROPOSED METHODOLOGY

No special skills are required in this approach. This is because all the outlined of the system is draft out. What the developer needs to do then is done according to what was already structured out. The simplicity makes it easy to explain to customers who are not familiar with the software development.

- *System is visibility*

The waterfall with prototyping model is good visibility. For a relatively big system, documentation of the project is important. It can be used as a reference in the future. The software engineering can be clearing in mind that at what stage the software process is currently in. This will let them easily manage the software the software process. The waterfall with prototyping model also presents a very high level view of what goes on during development.

- *System is well structured*

Waterfall with prototyping model emphasis on how the application should look upon completion. It provides an outline that should be followed during development, and it keeps everyone on the same path. Prototyping is an exercise in risk management and development facilitation and it minimizes the chances of producing the wrong functionality or an illogical design.

- *System is predictable*

Waterfall with prototyping can save both time and money because it's fast and inexpensive way to concretize, what a requirement specification fails to do. For this purpose, it is easier to estimate the cost needed to develop the system.

3.4 System is ease to use ANALYSIS

No special skills are required in this approach. This is because all the outlined of the system is draft out. What the developer needs to do then is done according to what was already structured out. The simplicity makes it easy to explain to customers who are not familiar with the software development.

3.4.1 FACT FINDING TECHNIQUES

There are various methods of information gathering to identify requirements. All these methods have been proven to be effective, although some are more efficient than others are. Different types of fact-finding technique produce different types of information. Therefore, it is essential that members in a project evaluate the different types of data and information to develop a system that satisfies the vital needs. In most cases, a combination of methods is used to increase both the effectiveness and efficiency.

Together, they provide a comprehensive fact finding method that is widely used for the development of systems, especially the large and complex ones. Any successful project development needs to include the step of obtaining requirements from existing as well as potential users. Information, both quantitative and qualitative, should be studied so as to project out a precise picture of the proposed project.

3.4 REQUIREMENTS ANALYSIS

The fact finding and requirements analysis activities are closely related and are often interleaved (Whitten et al, 2002). If requirements found during the fact-finding process seem to be a problem, the analysis activities is done in order to resolve the problems before continuing to elicit additional system needs and desires. The requirements can be categorized as functional requirements and non-functional requirements.

3.4.1 FACT FINDING TECHNIQUES

There are various methods of information gathering to identify requirements. Currently, the internet is a host to numerous materials, including academic information. Internet in the past has proven useful for researchers to communicate with each other, with the availability of electronic mail and discussion groups. Over the years, the internet still remains as a platform for people to inter-network and different types of data and information to develop a system that satisfies the vital needs. In most cases, a combination of methods is used to increase both the effectiveness and efficiency.

Together, they provide a comprehensive fact finding method that is widely used for the development of systems, especially the large and complex ones. Any successful project development needs to include the step of obtaining requirements from existing as well as potential users. Information, both quantitative and qualitative, should be studied so as to project out a precise picture of the proposed project.

(a) Utilizing Printed Materials

A broad variety of printed materials ranges from books, encyclopedias, magazines, newspapers, dictionaries and others is available. All this aid in the analysis of literature published in these areas of study. These documents mentioned serve a specific purpose, and are published for a group of targeted audience. Today, printed materials are best used as ready reference sources. Besides, printed materials provide fast and accurate answers to factual queries. Printed materials have also helped in providing meanings for definitions and also provide information on recent events.

(b) Utilizing Internet and Electronic Materials

Currently, the internet is a host to numerous materials, including academic information. Internet in the past has proven useful for researchers to communicate with each other, with the availability of electronic mail and discussion groups. Over the years, the internet still remains as a platform for people to inter-network and communicate from all over the world.

The members of the proposed project have found that the internet is a good source for gathering website by authoritative international organizations. Information that focuses on core issues and research works could be obtained. Besides, the project team members were able to extract essential information related to the proposed project, such as implemented system architecture, related policies and practical mechanisms. The information found on the internet has definitely help to give a clearer understanding to the project members on aspects related to the proposed project.

(c) *Interviewing* - obtain the desired information by typing the keywords which they

think Interview is defined as a meeting with a person whose views are requested (Ruse, 1989). It is the most time consuming and resource-expensive. Using this technique, members of the project team (system analyst) meet with the individuals or group of users to obtain particular information related to the system. This may take time, so it usually requires multiple sessions with each of the users or stages and each stage focused individually.

* *Retrieve*

3.4.2 FUNCTIONAL REQUIREMENTS

Functional requirements are the functions expected by the users in the interaction between the system and its environment. It describes the way the system should behave under certain circumstances. The following represents the functional requirements for the proposed project.

matching queries will return any content that contains the matched keywords.

- *'Personality of the Day'* - the last retrieved. If the search term does not match

This feature introduces a personality of a Famous Malaysian Indian each time a user access the homepage. The personality is randomly introduced and when all the personalities have been introduced, the same personalities will be introduced again. With this feature, the users will be able to see the dynamic side of the portal.

- *Search and Indexing*

Search and indexing are vital to the proposed system. It provides an efficient and powerful way to search desired information. The information on the famous Malaysian Indians is searchable in five ways which are 'Simple Search' where

users can search the desired information by typing the keywords which they think might be in the document, 'Advanced Search' with the use of Boolean operator to match the keyword and type of file (document, audio, image or news clipping), 'Name Search' which require the users to type the name of the person the user wish to look for, 'List Browsing' where users are able to browse through the content of the web portal in specific category and 'Personality Search'.

** Graphical User Interface*

▪ Retrieve

From the search, the information retrieved will be displayed with ranking applied to the result set. The ranking method utilizes a very basic ranking algorithm the TF-IDF algorithm (Term Frequency-Inversed Document Frequency). This ranking algorithm is limited to textual searches while multimedia contents search will utilize the pattern matching queries. The pattern matching queries will return any content that contains the matched keywords. The users can choose from the list retrieved. If the search item does not match those in the database, the system will display results that suggest the similar word in spelling to the searched item.

** Reliability*

The Famous Malaysian Indian Portal must be reliable so that programmed tasks can be executed effectively and functions as intended. Thorough testing will be carried out to ensure the system can be trusted in performing its functions.

3.4.3 NON-FUNCTIONAL REQUIREMENTS

Non functional requirements are the constraints or the restriction on the system, which limits the option of solving any problem faced by the system. In order to ensure the quality of the system produced, it must conform to certain software quality factors. The non functional requirements are:

- *Graphical User Interface*

The Famous Malaysian Indians Portal incorporates a user-friendly interface. This is to ensure that the users would not feel uneasy and frustrated when using the knowledge portal. Menu-driven and hyperlink mechanisms will provide a systematic and standard navigation interface for the users. The overall screen design of the portal is also consistent while the notification messages should be accurate and clear.

- *Usability*

The Famous Malaysian Indians Portal must be useful for the users. Information and database collections of the portal must be readily available and can be retrieved at anytime and anywhere.

- *Reliability*

The Famous Malaysian Indian Portal must be reliable so that programmed tasks can be executed effectively and functions as intended. Thorough testing will be carried out to ensure the system can be trusted in performing its functions.

- *Security*

The administrators' module should only be accessed by administrators.

Unauthorized login to the administrators' module will be prevented.

- *Maintainability*

This application is designed so that the effort required to maintain, locate and fix an error in the program is as minimum as possible. The system should also be

adapted and allow enhanced in the future. Comment is required to ensure the application is easy to maintain.

- *Portability*

The system should be design in such a way that the application is able to work on various platform and hardware. It should have the capability where migration of component in the system does not require minimum or even no modification, recompiling, reconfiguration or redesign.

- *Schedule feasibility*

A timetable of the project is drawn out to make sure the schedule is reasonable to complete the project.

- *Economic feasibility*

Discussions with consultant who have done similar applications are carried out to determine the cost-effectiveness of the project.

3.5 FEASIBILITY STUDIES

Feasibility is the measure of how beneficial or practical the development of an information system will be (Whitten et al, 2002). Analysis on the feasibility is conducted before the requirements are gathered. Four categories of feasibility tests that are carried out are as follows:

Description	Technologies/Software
<ul style="list-style-type: none"> Operational feasibility <p>Other similar existing web portals are looked up to measure and compare how the proposed project will work. Interview is also carried out to measure the potential users' opinion on the system.</p>	Microsoft Window 2000
<ul style="list-style-type: none"> Technical feasibility <p>Research and literature review on hardware and software requirement is done in order to obtain technical solutions and availability of technical resources.</p>	Microsoft FrontPage, Adobe Photoshop 7, Macromedia Flash MX Active Server Pages (ASP) HTML, VBScript, JavaScript, Java

▪ Schedule feasibility

A timetable of the project is drawn out to make sure the schedule is reasonable to complete the project.

Processor	Someshing 1.1 GHz Processor
Hard disk	20 GB
Memory	256 MB RAM
Peripheral	Mouse, Keyboard, Speaker, Monitor

Table 3.2: Hardware requirements

▪ Economic feasibility

Discussions with seniors who have done similar applications are carried out to determine the cost-effectiveness of the project.

3.6 SYSTEM REQUIREMENTS

Following are the description of the software and hardware needed to develop the proposed project.

Software requirements

Description	Technologies/Software
Operating system	Microsoft Window 2000
Web server	Internet Information Service (IIS)
Database Management System	Microsoft SQL Server 7.0
Web development tools	Microsoft FrontPage, Adobe Photoshop 7, Macromedia Flash MX
Web technology	Active Server Pages (ASP)
Programming language	HTML, VBScript, JavaScript, Java
Web browser	Internet Explorer

Table 3.1: Software requirements

Hardware requirements

Description	Hardware
Processor	Something 1.1 GHz Processor
Hard disk	20 GB
Memory	256 MB RAM
Periphera!	Mouse, Keyboard, Speaker, Monitor

Table 3.2: Hardware requirements

3.6.1 HARDWARE AND SOFTWARE CONSIDERATIONS

Operating System (Microsoft Window 2000 Server)

The Window 2000 Server operating system is design to increase the value of existing investment while lowering overall computing costs. Windows 2000 Server is easy to deploy, configure and use since it provides centralized, customizable managements services to reduce total cost of ownership (TCO). TCO includes everything from the initial costs of hardware and software to deployment expenses, hardware and software update costs, training, day-to-day maintenance, and technical support. Since these management services work with existing management solutions and mixed platform distributed networks, the organization's IT department is able to get maximum value from their current infrastructure. Below are the features of Window 2000 Server:

- Easier to deploy
- Easier network configuration
- Easier Daily Maintenance
- Centralized Management Services

The services provided are:

1. *Group Policy*; helps to control user access to desktop settings and applications by group rather than by individual user and computer. Group policy lets you define and control amount of access users have to data, applications and other network resources.
2. *Windows Management Instrument (WMI)*; provides unified access and event services, allowing you to control and monitor window-based environments,

Simple Network Management Protocol (SNMP devices) and all host environments that support the Web-based Enterprise Management (WBEM) standards initiative of the Distribution Management Task Force (DMTF).

3. *Windows Script Host (WSH)*; allows you to automate and integrate common tasks using a variety of scripting environments including Microsoft Visual Basic, Scripting Edition (VBScript), Microsoft Jscript and Perl. This feature includes direct scripting to Active Directory and MMC.
4. *Microsoft Management Console (MMC)*; gives you a common user interface presentation tool where you can integrate all the necessary windows-based and web-based administration components needed to fulfill a specific task.

Web Server (IIS)

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

Database Management System (MS SQL Server 7.0)

The Microsoft SQL Server will be used as the system's database to store all the information and data of the Famous Malaysian Indians Web Portal. Microsoft SQL Server is chosen because with an integrated online analytical processing (OLAP), this tool provides fast, efficient analysis of complex information essential to reporting, data analysis, decision support and data modeling. This will help to enhance the portal performance. Beside that, the team has also taken the future expandability of the increasing size of the portal into consideration. As Microsoft SQL Server is used for manipulation and storage of large amount of data so this is an important consideration. Furthermore, it consists of relational tables, databases structure, data stored procedures and task scheduling.

Web development tools

The team has decided to use Microsoft FrontPage and Macromedia Flash MX as the web development tools. Macromedia Flash MX is an application that developers use to produce interactive, animated movies. Flash can create Web-based banner advertisements, interactive Web sites and Web-based applications with stunning graphics and multimedia effects. The advantage Flash has over other multimedia development applications is that Flash has provides for drawing graphics, generating animation and adding sound and video. Another advantage of using Flash to produce interactive content is that Flash includes tools for writing its language, ActionScript. ActionScript, which is similar to JavaScript, is the enabling technology for Flash interactivity.

The most successful web pages use both text and graphics to enhance the user experience. Web site graphics, such as buttons, banners or product images,

define the user experience and distinguish a site from its competitions. Adobe Photoshop 7 provides an easy-to-use graphics package that offers the functionality to create graphics such as title images, banners, buttons and advanced photographic effects.

Web-Development Technologies

Developing web-based applications relies on many network and application components working together to deliver information to the requesting client. It transforms the global network into a reliable application. The original architecture of the web must be enhanced to meet the needs where we have taken for granted when developing traditional applications.

The programming language used to develop this system is Active Server Pages (ASP) with Visual Basic Script (VBScript) as its main scripting language. VBScript is used because it's the most desirable scripting language and it is by default the scripting language for ASP. Besides that, it is much easier to pick up and much easier to implement as it does not require any additional software. However, on both server-side and client-side scripting, both VBScript and JavaScript will be used to write ASP based on the suitability on performing certain functions in ASP architecture.

- *Active Server Pages (ASP)*

ASP technology is a specification for building dynamic web pages that utilizes ActiveX scripting, which enables internet and intranet applications to be interactive. ASP is implemented using server-side scripting that can be performed in any language such as Visual Basic, MS Jscript, Java or C. ASP

allows interaction with ODBC compliant databases on the web server, such as MS ACCESS, MS SQL Server, Oracle, Informix or Sybase. ActiveX controls can optionally be used to encapsulate functions on the client computer that interact with ASP on the server.

An Active Server Pages is developed in a text file just like a HyperText Markup Language (HTML) page. Developers can use any text editor to create an ASP. MS FrontPage products support inserting server-side script and saving files as ASP. Both Netscape Navigator and MS Internet Explorer browsers as well as other browsers can view ASP pages because the ASP is executed on the server and delivered to the client computer as simple HTML.

ASPs can initially be executed only on MS IIS Web Server until a company called Chili Soft developed Chili! ASP which is a software product that facilitates ASP functions on web servers other than MS IIS web server, such as; Netscape's NT-based web servers like Enterprise or Fast Tract, Lotus Domino Go Webserver, or O'Reilly's Website. The Chili Soft site has a nice introduction to server objects. It describes the objects; Request, Response, Application, Server and Session which provides the framework for developing ASP pages applications. ASP provides powerful and flexible web session management to help maintain web visitors' selections.

ASP allows persistent connections between the client and server, the development of client-server sessions, and the access and management of databases from the client side. They are not static pages, but rather they are

dynamically produced from information stored in a database. Each time the databases is updated the client's website is updated. When changes are made to the ASP file on the server, it just needs to be saved. The next time the web page is loaded, the script will automatically be complied.

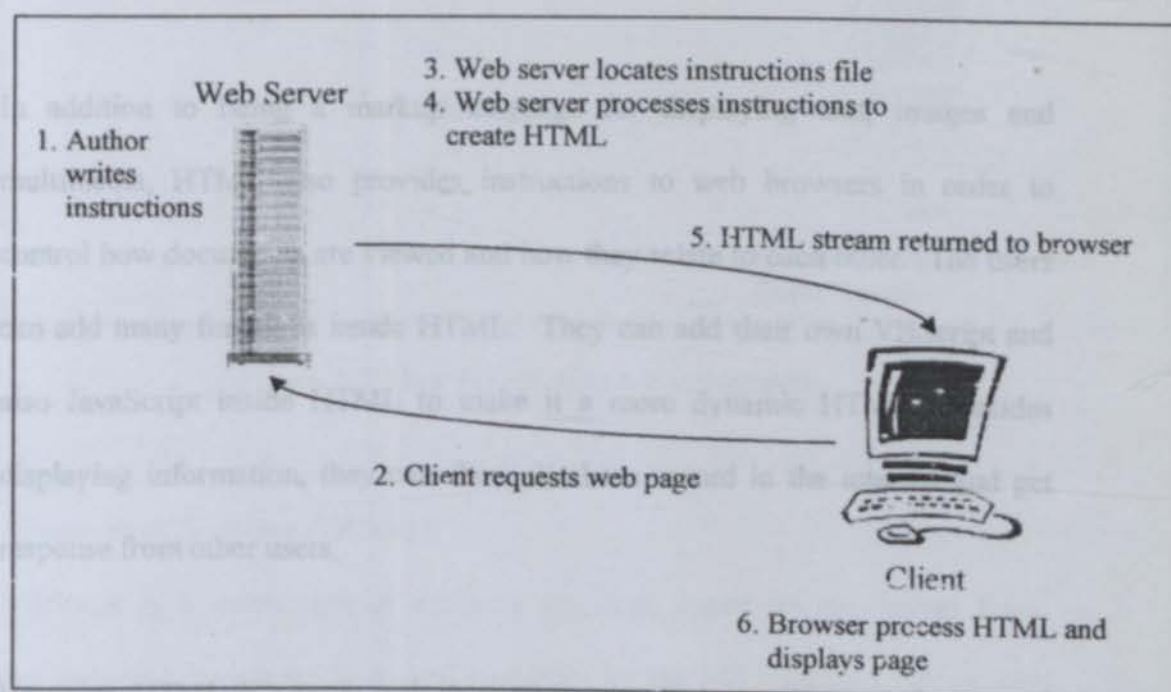


Figure 3.2: How ASP files are interpreted

Programming Language

- *HyperText Markup Language (HTML)*

HyperText Markup Language or better known as HTML, is the authoring language used to create documents on the World Wide Web (WWW). HTML specifies the logical organization of a document by using hypertext extensions. Basically, it defines the structure and layout of a web document through a variety of tags and attributes. It is not designed to be the language of a WYSIWYG word processor such as MS Word or Word Perfect. HTML is a browser-dependent page, where the display of elements is based on the

browser's ability. Different web browsers may view the same HTML document differently. HTML fundamentally allows users to mark selections of text as titles or paragraphs, but it leaves the interpretations of these marked elements up to the browser. For example, one browser may indent the beginning of a paragraph, while another may only leave blank line.

In addition to being a markup language for displaying text, images and multimedia, HTML also provides instructions to web browsers in order to control how documents are viewed and how they relate to each other. The users can add many functions inside HTML. They can add their own VBScript and also JavaScript inside HTML to make it a more dynamic HTML. Besides displaying information, they can show database record in the internet and get response from other users.

However, HTML is a static web page where the content will never change and the author of the page has already determined the exact content of the page. Normally, HTML files are interpreted on the client side or in a user's web browser. HTML consists of pairs of opening and closing tags, with attributes and values in between. The tags describe each element on a web page, such as a paragraph of text, a table, or an image. The correct structure for an HTML document starts with `<HTML> <HEAD> </HEAD> </HTML>` and ends with `</BODY></HTML>`. All the information of the web page will fit in between the `<BODY>` and `</BODY>` tags.

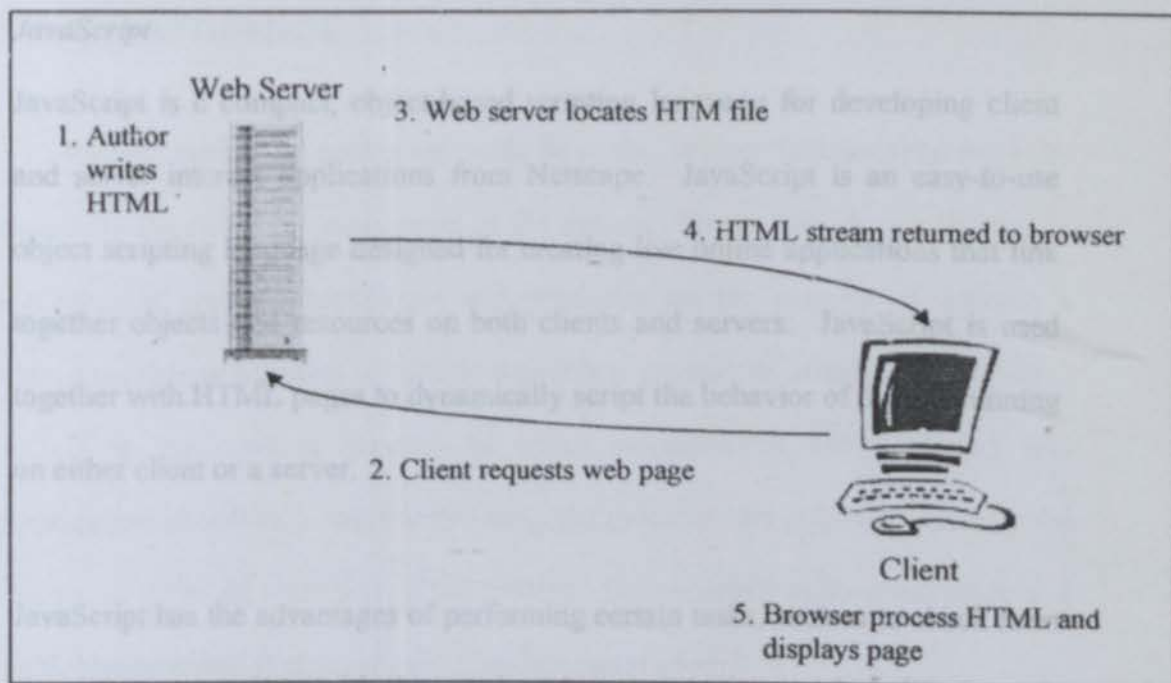


Figure 3.3: How HTML files are interpreted

- *Visual Basic Scripting (VBScript)*

VBScript is a much simpler scripting language based on the Visual Basic programming language. It is well supported by the MS Internet Explorer web browser and also other browser with appropriate plug-ins. It enables web authors to include interactive controls, such as buttons and scrollbars, on their web pages. VBScripts can take input from the user and check the data to make sure it is valid or meets certain criteria. Then, it can put an internet server to work either by actually storing the data or causing some action to take place on the server based on the information given.

VBScript also plays an important role in many ways including validating data pricing, providing impressive multimedia feedback, and initiating data storage.

The user can use VBScript to sequence the questions based on responses.

- *JavaScript*

JavaScript is a compact, object-based scripting language for developing client and server internet applications from Netscape. JavaScript is an easy-to-use object scripting language designed for creating live online applications that link together objects and resources on both clients and servers. JavaScript is used together with HTML pages to dynamically script the behavior of objects running on either client or a server.

JavaScript has the advantages of performing certain tasks, such as to check form contents, communicate with the user-based on their actions, and modify the web page dynamically without web page being reloaded and without the use of Java, plug-ins or ActiveX controls.

JavaScript is unique in that it integrates with the web. JavaScript code included as parts of a standard HTML documents just like other HTML tags and elements. JavaScript support, regardless of the operating system. JavaScript resides inside the HTML file, and can provide levels of interactivity far beyond typically flat HTML pages.

JavaScript is much simpler to use than Java, only simple sequence is needed instead of compiling or applets. JavaScript also supports functions, without requiring any special declarative requirement. Functions can be properties of objects, executing as loosely typed methods.

3.7 SYSTEM DESIGN FUNCTIONALITY DESIGN

System design is concerned with how the system functionality is to be provided by the different components of the system. Meanwhile, design defined as architecture, context-flow diagram, data flow diagram and system structure for the the process of applying techniques and principles for the purpose of defining a device, a process or a system in sufficient details to permits its principal realization.

It is the creative process in which requirements are translated into representation of software and transforming the problem into solution. Initially the presentation gives an overview of the system. Subsequently refinement leads to a design representation that is very close to the source code.

The common steps involved including analyzing, designing, coding and testing the system to ensure that it conforms to the software specifications and requirements. The design of this system can be viewed from the following aspects:

- System functionality design
- Database design
- GUI design

ii. Second tier

The second or middle tier is known as the functionality or service tier. It is also known as web server that is responsible to link the first and third tier. The components reside in this tier are the Internet Information Service (IIS) and MS SQL Server. The communication between this tier and the frontier

3.7.1 SYSTEM FUNCTIONALITY DESIGN

In the system functionality design, it will include description on the system architecture, context-flow diagram, data flow diagram and system structure for the Famous Malaysian Indian Web Portal.

3.7.1.1 SYSTEM ARCHITECTURE DESIGN

Three-tier web client/server architecture was being deployed in this project to achieve the requirements specification. Figure 3.4 shows the overview of the web portal system architecture, which is built after the feasibility study and also the relationship between services and system. Generally, the architecture can be divided into three distinctive tiers.

i. *First tier (Application layer)*

The first-tier consists of all the necessary applications. Web browser such as the Internet Explorer is the main component that appears to the users. Besides that, the HyperText Markup Language (HTML) and VBScript components are also included in this tier to provide interactive and dynamic pages or interfaces to the users.

ii. *Second tier*

The second or middle tier is known as the functionality or service tier. It is also known as web server that is responsible to link the first and third tier. The components reside in this tier are the Internet Information Service (IIS) and MS SQL Server. The communication between this tier and the frontier

depends on the Hypertext Transfer Protocol (HTTP) for the web pages transfer. The functionality tier consists of the components that are created to support the Famous Malaysian Indians Web Portal system such as:

- User name and password verification
- Search information
- Database updating

All these components require Active Server Pages (ASP) and Active Server Pages Server objects to perform the functions in the web servers. The server in this tier will process the request from the client and produces the result in the web pages format. It will also process any data request of the user by linking to the database server, which contain in the bottom tier. The server will do other extra additional activity during the data processing.

iii. *Third-tier (Data Repository)*

The bottom tier is the data repository for the web-based Famous Malaysian Indian Web Portal system. The data repository is built up by the SQL databases. It functions as the main database for the system. The components in the middle tier are connected with the SQL database in the bottom tier through the combination of the structures Query Language (SQL) and Open Database Connectivity (ODBC).

• Browser recognizes the HTML file and displays the page on the screen.

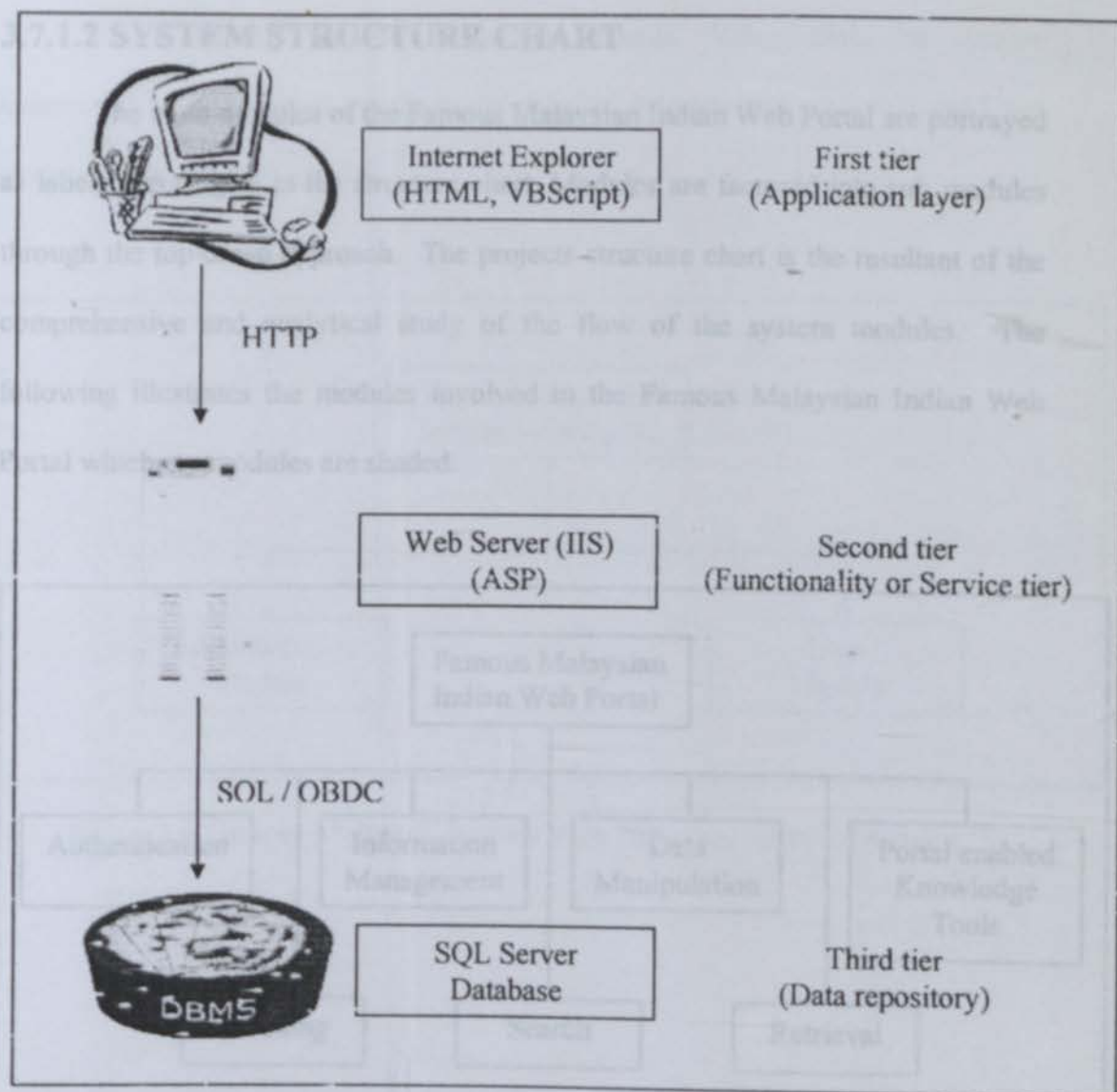


Figure 3.4: Overview of Famous Malaysian Indian Web Portal System Architecture

Figure 3.5: Structure Chart of Famous Malaysian Indian Web Portal

As shown in figure 3.4, the first layer and the second layer are communication using HTTP, through the network or internet. As the server receives the HTTP requests from the users, it will then retrieve the required information is then being constructed into a HTTP message containing the web page and send back to the client when the server's message arrives back as the requesting client, the browser recognizes the HTML file and displays the page on the screen.

3.7.1.2 SYSTEM STRUCTURE CHART

The main modules of the Famous Malaysian Indian Web Portal are portrayed as labeled rectangles in the structure chart. Modules are factored into sub modules through the top-down approach. The projects structure chart is the resultant of the comprehensive and analytical study of the flow of the system modules. The following illustrates the modules involved in the Famous Malaysian Indian Web Portal which my modules are shaded.

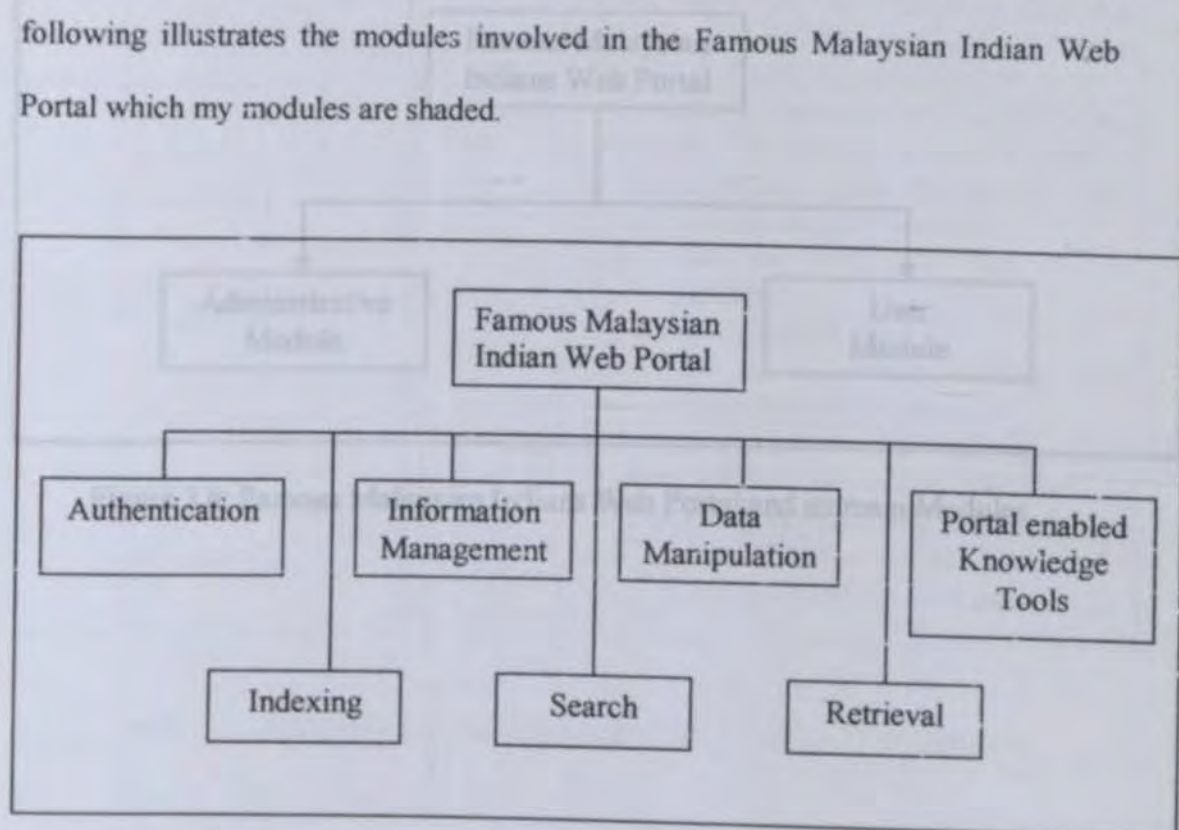


Figure 3.5: Structure Chat of Famous Malaysian Indian Web Portal

3.7.1.3 DATA FLOW DIAGRAM

Data flow diagram (DFD) is defined as a graphical representation of data processed throughput a system that illustrates the data flows through interconnected processes (Kendall & Kendall, 1999). The DFD approach uses four symbols to graphically represent the system process in a logical way. It is an approach that will eventually provide solid documentation of the system.

For the Famous Malaysian Indians Web Portal, the system architecture is divided into 2 main modules called Administrative Module and User Module, as shown in figure 3.6.

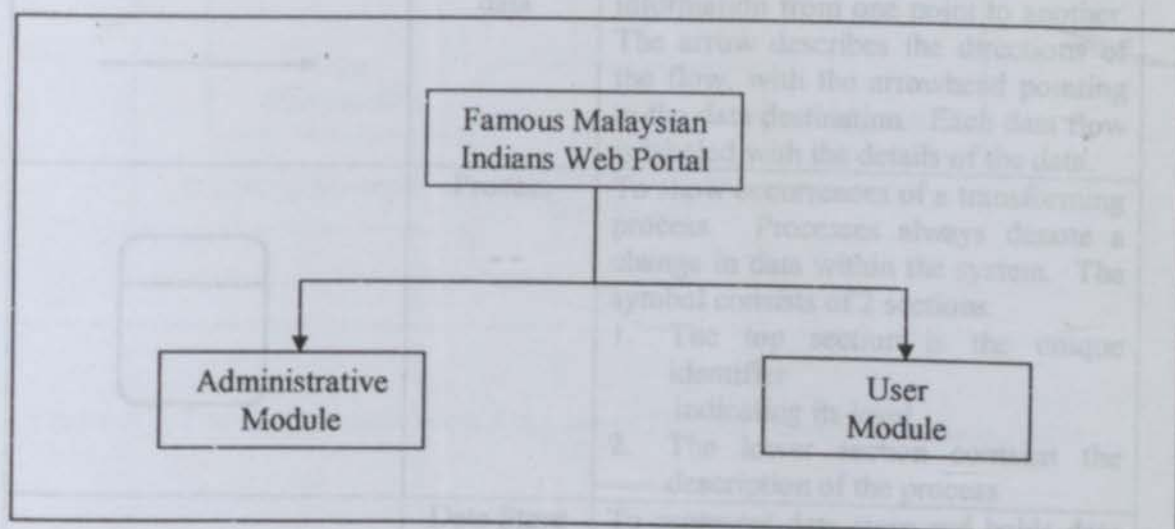


Figure 3.6: Famous Malaysian Indians Web Portal and its main Modules

Table 3.3, Descriptions of the conventions used in Data Flow Diagram.

Custom Data Flow Diagram

A custom data flow diagram (Whitten et al, 2002) defines the scope and boundary for the system and project. The custom diagram below is constructed to establish an overview of the initial project scope which includes basic inputs, the general system and outputs.

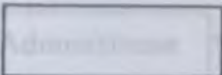


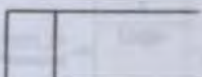
Symbol	Meaning	Description
	Entity	To depict an external entity that can send data to or receive data from the system. Also known as source or destination of data and considered beyond the boundaries of the system.
	Flow of data	To represent the flow of data or information from one point to another. The arrow describes the directions of the flow, with the arrowhead pointing to the data destination. Each data flow is labeled with the details of the data.
	Process	To show occurrences of a transforming process. Processes always denote a change in data within the system. The symbol consists of 2 sections: 1. The top section is the unique identifier indicating its level 2. The lower section contains the description of the process.
	Data Store	To represent data store and holds data for a given time within the system. The symbol consists of 2 section: 1. Identifier reference number 2. Description of the data stored

Table 3.3: Descriptions of the conventions used in Data Flow Diagram

Context Data Flow Diagram

A context data flow diagram (Whitten et al, 2002) defines the scope and boundary for the system and project. The context diagram below is constructed to establish an overview of the initial project scope which includes basic inputs, the general system and outputs.

Figure 3.3: CDD of Administration Module

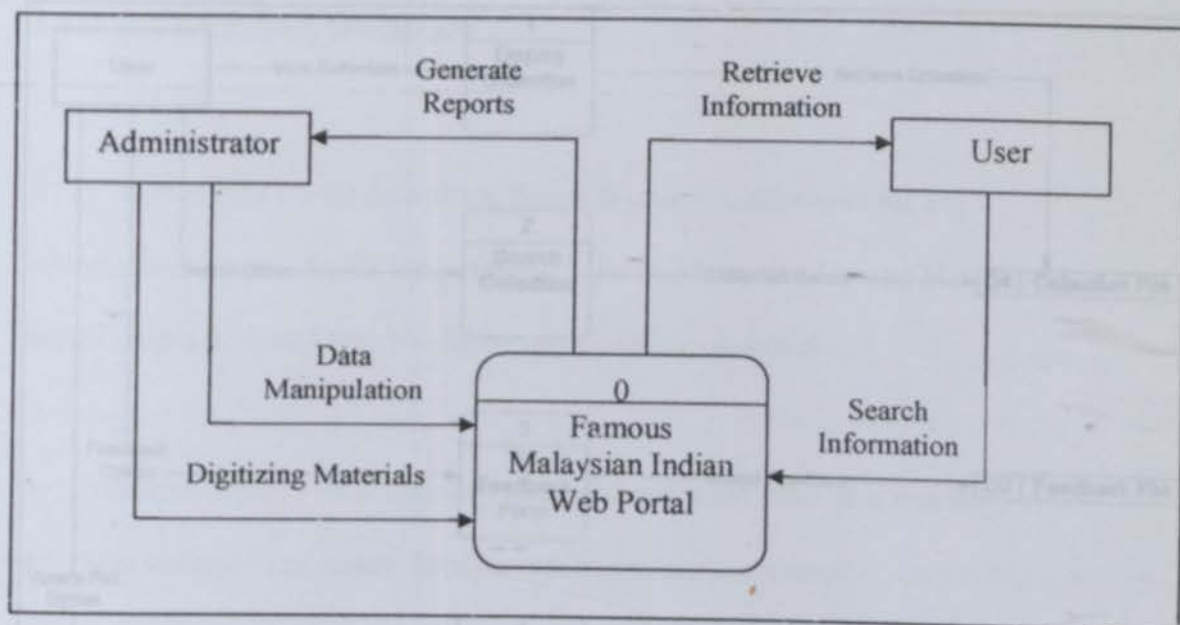


Figure 3.7: The Context Data Flow Diagram of Famous Malaysian Indians Portal

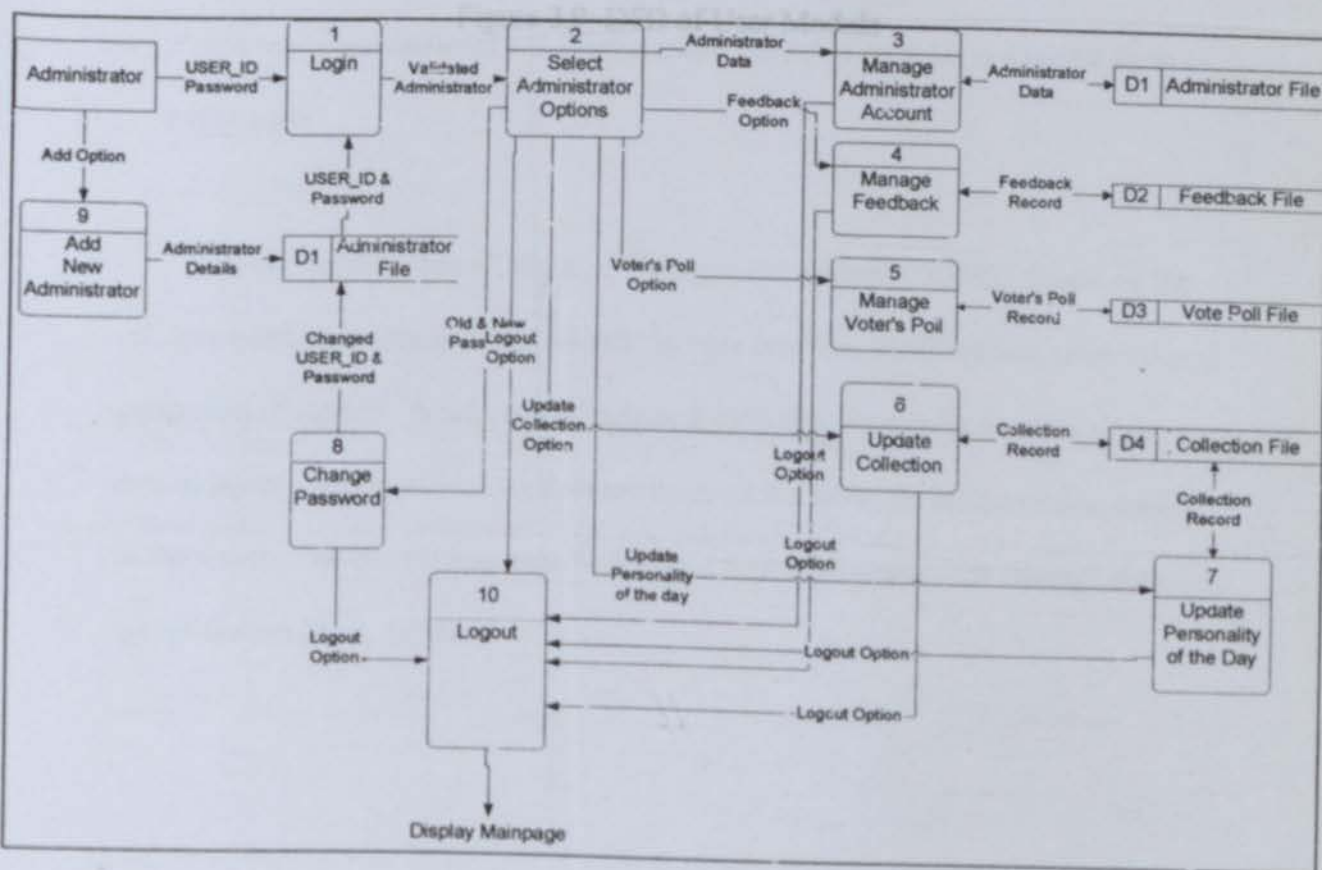


Figure 3.8: DFD of Administrative Module

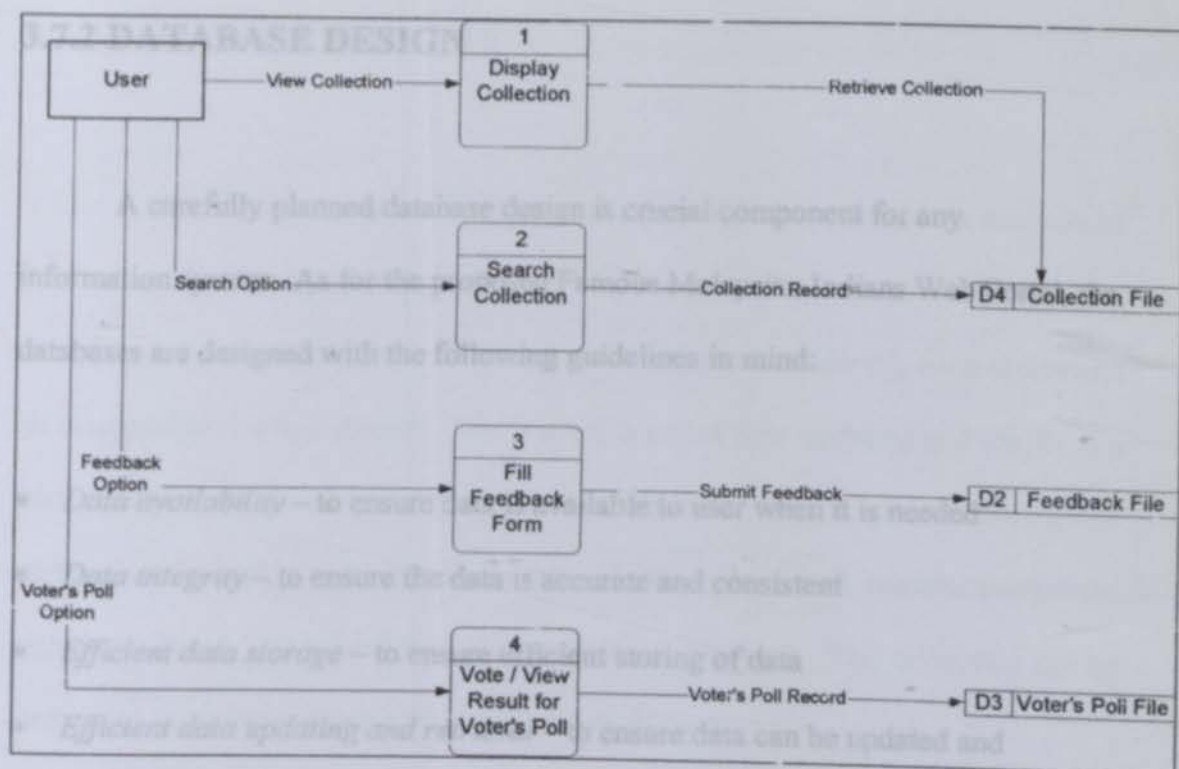


Figure 3.9: DFD of User Module

Every database has a Database Management System (DBMS), based on the relational database approach that allows the data creation, modification, retrieval and generation of reports. A relational database means that the database stores all its data in tables. All operations on data are done on the tables or produce other tables as the result. The correct approach to design a relational database is through data normalization (Post, 1999).

3.7.2 DATABASE DESIGN

A carefully planned database design is crucial component for any information system. As for the proposed Famous Malaysian Indians Web Portal, the databases are designed with the following guidelines in mind:

- *Data availability* – to ensure data is available to user when it is needed
- *Data integrity* – to ensure the data is accurate and consistent
- *Efficient data storage* – to ensure efficient storing of data
- *Efficient data updating and retrieval* – to ensure data can be updated and retrieved efficiently
- *Purposeful data retrieval* – the information retrieved must be in a useful form to assist users

Database Table

Every database has a Database Management System (DBMS), based on the relational database approach that allows the data creation, modification, retrieval and generation of reports. A relational database means that the database stores all its data in tables. All operations on data are done on the tables or produce other tables as the result. The correct approach to design a relational database is through data normalization (Post, 1999)

Field	Type	Length	Description
Author	Char	6	Person that created the object
Date	Datetime	8	Date object created
Type	Varchar	10	Type of object (document, image, audio, video)
Format	Varchar	4	File extension
Size	Float	8	Size of the object (kb)

3.7.2.1 DATA DICTIONARY

A data dictionary is a collection of the data objects or items in a data model for the benefit of programmers and other who need to refer to them. A first step in analyzing a system of objects with which users interact is to identify each object and its relationship to other objects. This process is called data modeling and results in a picture object relationship. After each data object or item is given a descriptive name, its relationship is described, the type of data is described, possible predefined values are listed, and a brief textual description is provided. This collection can be organized for reference into a book called data dictionary.

For my scope of project, few tables have been identified to keep the information. The tables and its definitions are as follows:

i. Digital Object Table

This table stores the main information of all digital objects in the system.

Field Name	Data Type	Field Size	Description
ObjectID	Int	4	ID of object
Title	Varchar	100	Title of object
Creator	Varchar	100	Creator of object
Subject	Varchar	100	Subject headings
Description	Varchar	300	Description of the object
A_ID	Char	6	Person that indexed the object
Date	Datetime	8	Date object created
Type	Varchar	10	Type of object (document, image, audio, video)
Format	Varchar	4	File extensions
Size	Float	8	Size of the object (kb)

Keywords	Varchar	300	Keywords to identify the object
Filename	Varchar	50	The name of the object
Filepath	Varchar	200	Location (URL) of the object
Thumbnailpath	Varchar	50	Location of the secondary or metafile of object
Collection	Varchar	50	Collection the object belongs to
Ranking	Int	4	Initial ranking value of the object
TempRank	Float	8	Ranking value generated from each search
Rights	Varchar	100	Description of rights

Table 3.4: The Digital Object Table Definition

ii. Image Table

This table stores the additional information for image objects.

Field Name	Data Type	Field Size	Description
ImageID	Int	4	ID of the image
ObjectID	Int	4	Object's ID
Imagewidth	Int	4	The width of the image (pixel)
Imageheight	Int	4	The height of the image (pixel)

Table 3.5: The Image Table Definition

iii. Audio Table

This table stores the additional information for audio objects.

Field Name	Data Type	Field Size	Description
AudioID	Int	4	ID of the audio
ObjectID	Int	4	Object's ID
FileLength	Varchar	5	Duration of the audio (mm:ss)
FileBitrate	Float	8	Bit rate of the audio (kbps)

Table 3.6: The Audio Table Definition

iv. Article Table

This table stores the additional information for newspaper objects.

Field Name	Data Type	Field Size	Description
ArticleID	Int	4	ID of the article
ObjectID	Int	4	Object's ID

Table 3.7: The Article Table Definition

v. Relation Table

This table keeps information of related objects to a particular object.

Field Name	Data Type	Field Size	Description
RelationID	Int	4	ID of the Relation
ObjectID	Int	4	Object's ID
RelatedObjectID	Int	4	ID of the related object
Relation	Varchar	100	Describe relationship to the related object

Table 3.8: The Relation Table Definition

vi. Collection Table

This table stores the information for the collection objects.

Field Name	Data Type	Field Size	Description
CollectionID	Int	4	ID of the Collection
Name	Int	100	The name of the personality
Paragraph1	Memo	No limit	The first Paragraph
Paragraph2	Memo	No limit	The second Paragraph
Paragraph3	Memo	No limit	The third Paragraph
Paragraph4	Memo	No limit	The fourth Paragraph
Paragraph5	Memo	No limit	The fifth Paragraph

Table 3.9: The Collection Table Definition

3.7.3 GUI DESIGN OF EXPECTED OUTCOME

In designing the interface, Graphic User Interface (GUI) is chosen to ease users. A picture says a thousand words. This saying shows how much a graphic can help in assisting users when they wish to enjoy the service. This can provide better guidance to users to prevent them from getting lost or confused. The basic emphases on GUI are:

- Simple but attractive and easy to understand
- Ease of browsing
- Guidance provided. Name of buttons are clearly stated and understood
- User friendly. Users will not face any problem when using the system.

A prototype of the homepage is prepared in Figure 3.10 as below:

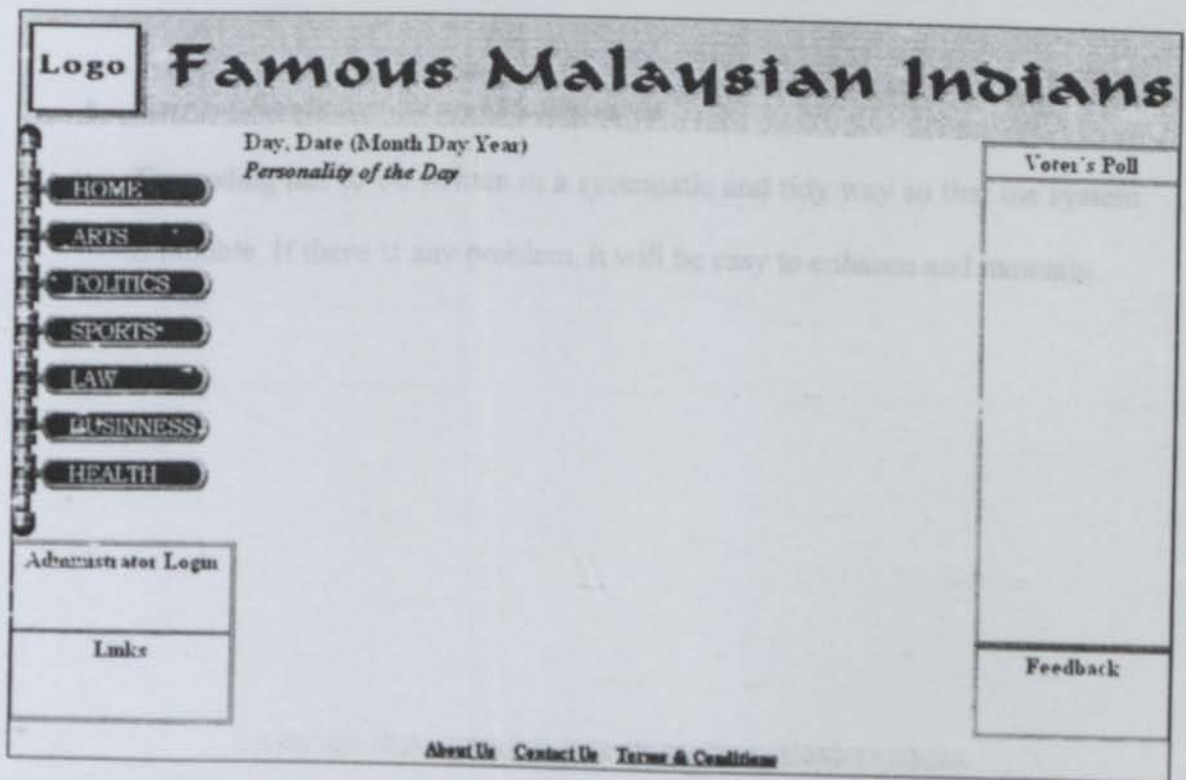


Figure 3.10: Interface design of Famous Malaysian Indians Web Portal Homepage

3.8 STATEMENT OF EXPECTED OUTCOME

This project is a web-based application which aims to provide gateway to wide source of information on famous Malaysian Indians in particular. The expected outcomes of this project are:

- *User Friendly*

The application must be easy to use and can be understood by users from any levels, in order to guide them in navigation and control of the web portal.

- *Attractive*

The graphical user interface (GUI) must be attractive and comfortable for the viewers to increase the interest of the application users.

- *Easy for Enhancement and Maintenance*

The coding has to be written in a systematic and tidy way so that the system is flexible. If there is any problem, it will be easy to enhance and maintain.

Introduction

System implementation is a process to convert system requirements into program codes. The initial stage of system implementation involves setting up the development environment. This includes setting up development tools to facilitate the system implementation. It can also be said that the system implementation is the material realization phase of system development. The conceptual and technical design from the system analysis are now being implemented as well as needed to become the physical working system.

4

Implementation

Introduction

System implementation is a process to convert system requirements into program codes. The initial stage of system implementation involves setting up the development environment. This includes setting up development tools to facilitate the system implementation. It can also be said that the system implementation is the material realization place of the system development. The conceptual and technical designs from the system analysis phase are interpreted as well as modeled to become the physical working system itself.

- Database Management System – Microsoft Access Database 2000
- Web Development Tool – Microsoft FrontPage

Coding Languages:

- User Interface – Hypertext Markup Language (HTML)
- Server Side Scripting – Active Server Pages (ASP), VBScript
- Client Side Scripting – JavaScript

Others:

- Graphic Creation – Adobe Photoshop 7.0
- Web Browser – Microsoft Internet Explorer
- Audio Recording – Microsoft Sound Recorder

4.1 Development Environment

Development environment has a momentous influence on the development of a system. System development can be paced up significantly by utilizing the appropriate hardware and software.

Microsoft Access Database is used as an alternative.

The following are the software tools utilized in the development of FMIWP:

- Operating System – Microsoft Windows XP
- Web Server – Microsoft Internet Information Service 5.0
- Database Management System – Microsoft Access Database 2000
- Web Development Tool – Microsoft FrontPage

Coding Languages:

- User Interface – Hypertext Markup Language (HTML)
- Server Side Scripting – Active Server Pages (ASP), VBScript
- Client Side Scripting – JavaScript

Others:

- Graphic Creation – Adobe Photoshop 7.0
- Web Browser – Microsoft Internet Explorer
- Audio Recording – Microsoft Sound Recorder

4.2 Database Implementation

The system database is created with Microsoft Access Database 2000. Initially Microsoft SQL Server was proposed as the system database but due to unable to create connection between the .asp files and Microsoft SQL Server 2000 and time constraint, Microsoft Access Database is used as an alternative.

4.3 Web pages/ Interface Implementation

The interface is divided into two categories. One is for the public users and one for the administrator. The interface will put together the selected information from the database. The designs of the web pages are done using Adobe Photoshop 7.0, Microsoft FrontPage with Hypertext Markup Language (HTML), VB Script, JavaScript and Active Server Pages (ASP).

4.4 System Coding

System coding is referred as converting the prior system design into a working and functional system. This mainly comprises software programming and preliminary testing. The files containing .asp files and .htm files in FMIWP are as follows:

ASP files	HTM files
AddArticle.asp	Add_Form.htm
AddAudio.asp	AddRandForm.htm
Added.asp	AdminChel.htm
AddedArticle.asp	
AddedAudio.asp	
AddRandom.asp	
Business.asp	
BusinessList.asp	
DeleteArticle.asp	
DeleteAudio.asp	
Display1.asp	
Display2.asp	
Display3.asp	
FindPersonality1.asp	
FindPersonality2.asp	
FindPersonality3.asp	
Health.asp	
HealthList.asp	
HomePage.asp	
List2.asp	
Search.asp	
Update_Form.asp	
Update_Random.asp	
Updated.asp	
UpdatedRand.asp	
UpdateNameList.asp	
UpdateRandList.asp	

Table 4.1: List of ASP and HTM files

Introduction

The main purpose of testing is to establish the presence of defects in a program and to judge whether the program is usable in real applications. Nevertheless, testing can only demonstrate the presence of errors. It cannot show that there is no error in the program. Therefore, some suitable approach must be chosen to reduce the possibility of errors in a program. Testing phase is the most important phase in the final system development. The assurance that all the modules do not produce errors and failure when the work has been completed.

Testing with different approach whereby intentional attempts are taken to make things go wrong to determine if things happen when they should not or things do not happen when they should.

5 Testing

Introduction

The main function of testing is to establish the presence of defects in a program and to judge whether the program is usable in real applicable. Nevertheless, testing can only demonstrate the presence of errors. It cannot show that there is no error in the program. Therefore, a more suitable approach must be chosen to reduce the possibility of errors in a program. The testing phase is the most important phase in the final system development. This is to ensure that all the modules do not produce errors and falter when the workload increases.

Testing is oriented with detection approach whereby intentional attempts are taken to make things go wrong to determine of things happen when they should not or things do not happen when they should

• Execution of Active Server Pages (ASP) Files

This method is faster compared to code review techniques and it is efficient in discovering errors. During the execution, the type of errors will be detected in a execution, the errors will be detected in a program and the error type as well as the line number in which the error occurs will be displayed.

5.1 Unit Testing

Unit testing is a process of individual component to ensure that they function properly. Each component is tested independently without interference from other system component. Unit testing is performed concurrently with the development process. Techniques used during the process of performing unit testing are as follows:

- **Code Review**
Before an .asp file is executed, codes are reviewed line by line to discover any syntax error as well as semantic error. If errors are discovered, they are corrected immediately.
- **Execution of Active Server Pages (ASP) Files**
This method is faster compared to code review techniques and it is efficient in discovering errors. During the execution, the type of errors will be detected in a execution, the errors will be detected in a program and the error type as well as the line number in which the error occurs will be displayed.

5.2 Integration Testing

Integration testing is needed when all modules are integrated. The main focus in integration test is to navigate the interface mismatch problem. Several important aspects are checked to ensure that the flow of the data in Famous Malaysian Indian Web Portal (FMIWP) is well organized and is user friendly to all users.

Tests will be mainly on whether the integration had any effect on each module. Each module should be able to function as it used to. Furthermore, integration testing also covers the security of the system as a whole, which is whether unauthorized access can be gained to a module through other modules.

The FMIWP system integration testing is based on the bottom up approach. This approach facilitates each component at the lowest level of the system hierarchy to be first test as individual component. Then, the next components to be tested are those that call the previously tested ones. This approach is followed repeatedly until all components are included in the testing. Figure 5.1 shows an example of a constructed component testing hierarchy.



Figure 5.2: The Bottom-Up Testing Approach

5.3 System Testing

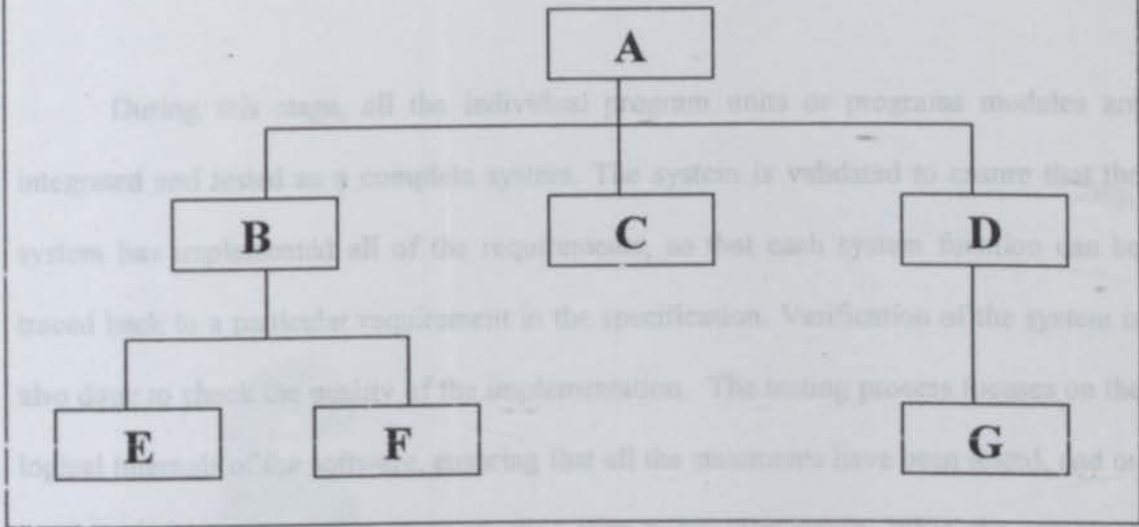


Figure 5.1: An Example of Component Testing Hierarchy

Figure 5.2 depicts the sequence of tests and their dependencies of bottom up testing approach in the above constructed component testing hierarchy.

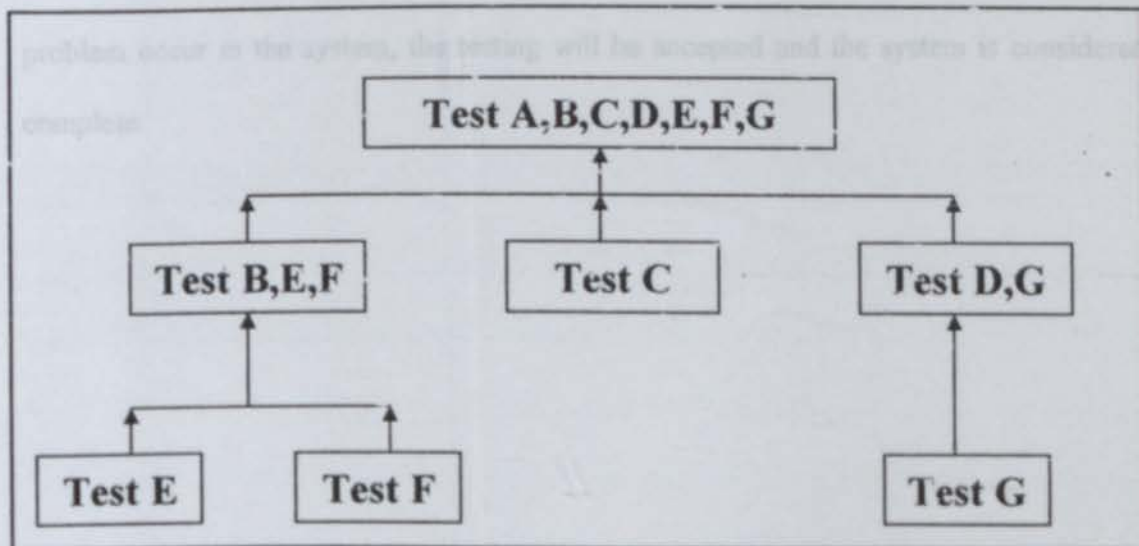


Figure 5.2: The Bottom-Up Testing Approach

5.3 System Testing

During this stage, all the individual program units or programs modules are integrated and tested as a complete system. The system is validated to ensure that the system has implemented all of the requirements, so that each system function can be traced back to a particular requirement in the specification. Verification of the system is also done to check the quality of the implementation. The testing process focuses on the logical internals of the software, ensuring that all the statements have been tested, and on the functional externals that is, conducting tests to uncover errors. When the combined programs are successfully tested, the software product is completed.

5.2 Acceptance Testing

When unit, integration and system testing have fully done and no errors or problem occur in the system, the testing will be accepted and the system is considered complete.

Evaluation is the ultimate phase of developing a system and an important phase before delivery of the system to the end users. Evaluation is related to user environment, attitudes, information priorities and several other concerns that are to be considered carefully before effectiveness can be concluded. At all phases of the system development, evaluation is a process that occurs continuously, drawing on a variety of sources and information.

6

Evaluation

1. User-Friendly and Interactive Graphical User Interface

FMWPT incorporates user-friendly and attractive graphical user interface. The interface is designed in a way that is easy to use and understand for the end users and the administrators. The interface is designed in a way that allows the users to change the way the portal looks to their preferences. The personalized effects connect with the users and encourage them to use the system.

2. Comprehensive and Structured Information Browsing

The main access point of Business and Health section in the FMWPT is through browsing. The web portal has provided information browsing interface that is user-friendly and has essential functionality. One of the advantages of the web portal's information browsing is that users can see the list or picture of the information available in the web portal. The information browsing interface in the web portal are

Evaluation is the ultimate phase of developing a system and an important phase before delivery of the system to the end users. Evaluation is related to user environment, attitudes, information priorities and several other concerns that are to be considered carefully before effectiveness can be concluded. At all phases of the system approaches, evaluation is a process that occurs continuously, drawing on a variety of sources and information.

The search function consists of Simple Search, Advanced Search and Personality System Strengths

1. User-friendly and Attractive Graphical User Interface

FMIWP incorporates user-friendly and attractive graphical user interface. The interface is designed in such a way that is suitable and applicable to anyone including the administrator. The interface is simple, organized and easy to use. This will allow the users to change the way the portal looks to their preference. The personalized effects connect with the users and encourage them to use the system.

2. Comprehensive and Structured Information Browsing

The main access point of Business and Health section in the FMIWP is through browsing. The web portal has provided information browsing interface that is user-friendly and has essential functionality. One of the advantages of the web portal's information browsing is that users can get the list or picture of the information available in the web portal. The information browsing interfaces in the web portal are

namely List of Personalities in Business, List of Personalities in Health and List of Audios and Articles.

1. Support of High Volume of Data

3. Efficient Search Functions

As an alternative, search functions that require the users to enter keyword are provided to narrow down the search of particular information or type of information.

The search function consists of Simple Search, Advanced Search and Personality

2. Search outside of Categories

The search function in the Business and Health categories only enables user to search

4. Easy and Functional Content Management as Sports, Law, Arts and Politics are built

The core of the portal is the content management, which is the integration of administration components. The administration menu is restricted to authoritative user.

This is where the administrator performs new entries and various data manipulation functions such as adding, updating and deleting information.

Limitations

1. Support of High Volume of Data

Famous Malaysian Indians Web Portal is deployed using Microsoft Access Database.

As there are limit to the amount of information contain in the database, FMIWP is unable to support large amount of data in future.

2. Search outside of Categories

The search function in the Business and Health categories only enables user to search within its categories as other section such as Sports, Law, Arts and Politics are built in a separate database. This is to reserve storage in the database for adding more information of the respective categories.

Future Enhancement**PROJECT SCHEDULE**

The recommendations for future enhancement of FMIWP module is the retrieving scheme. The retrieving scheme will apply the TFIDF (Term Frequency Inverse D Frequency) ranking system. This ranking system will retrieve information from the database as requested from the search function. The information will be displayed according to the closest to the search first.

Preferably, incorporate all the databases into one main database instead of several individual databases. This can be done by using the Microsoft SQL Server 2000, which is one of the most powerful database management systems that can support a large amount of data.

Figure 1/ The Famous Malaysian Indian Web Portal

PROJECT SCHEDULE

The Gantt chart below illustrates the project schedule of Famous Malaysian Indians Web Portal. It displays the distinct phases or tasks involve in developing of the web portal, when will theses tasks start and when will it end.

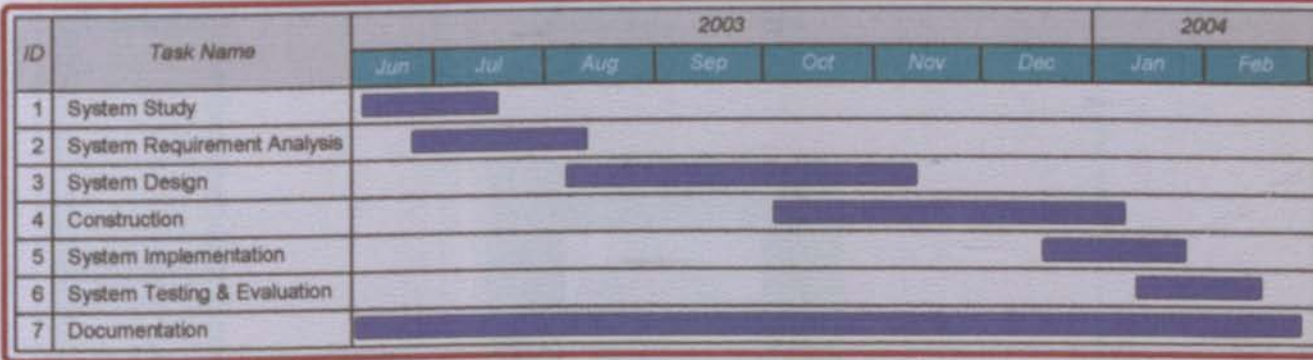


Figure 1: The Famous Malaysian Indians Web Portal

SCREEN SHOTS OF FAMOUS MALAYSIAN INDIAN WEB PORTAL (FMIWP)

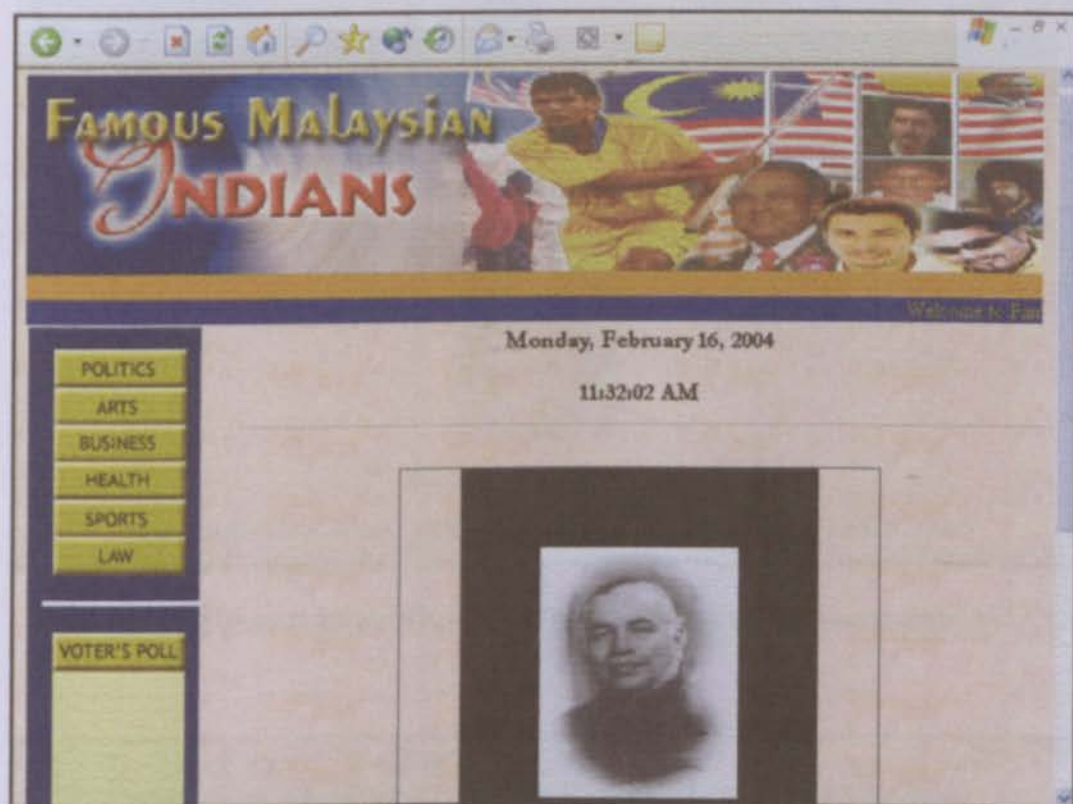


Figure 2: Screen Shot of FMIWP homepage (Homepage.asp)

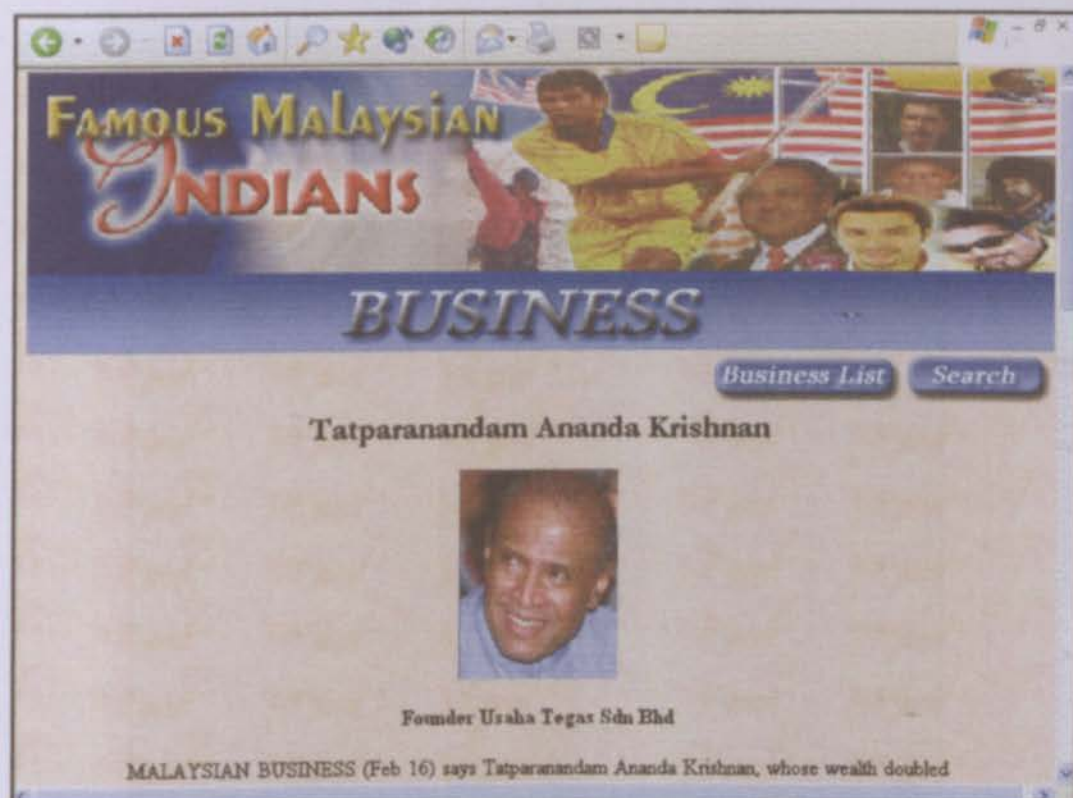


Figure 3: Screen Shot of FMIWP Business page (Business.asp)

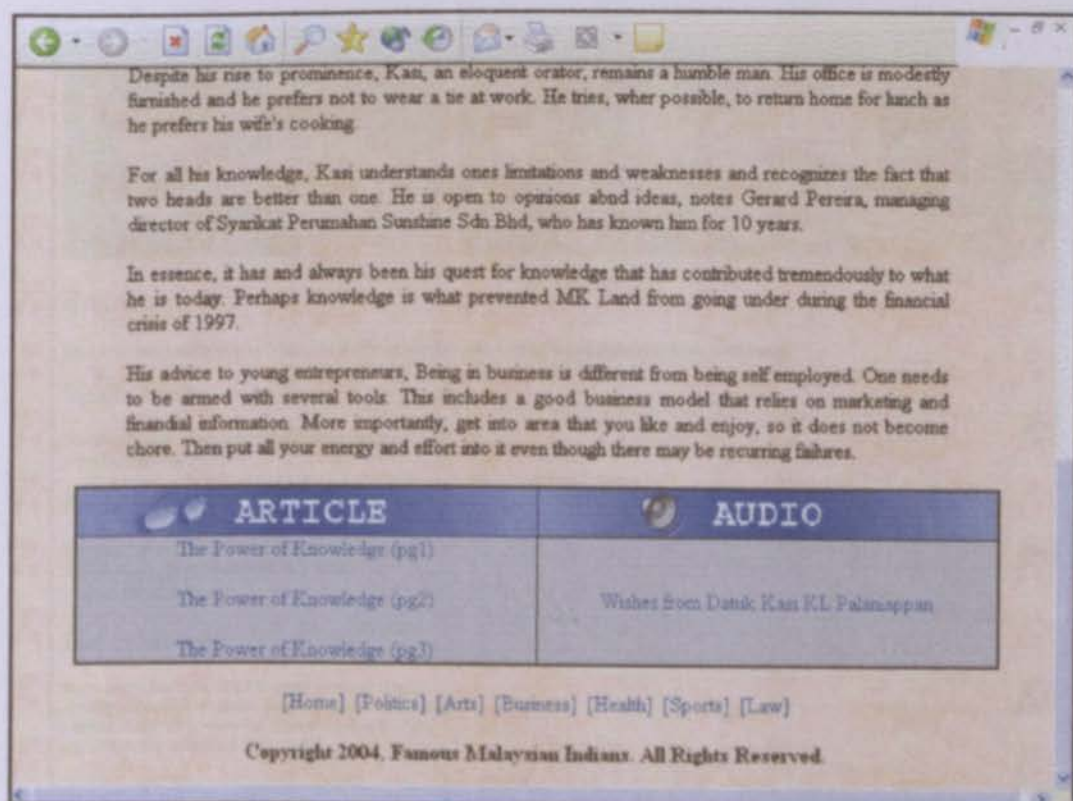


Figure 4: Continuation Screen Shot of FMIWP Business page (Business.asp)

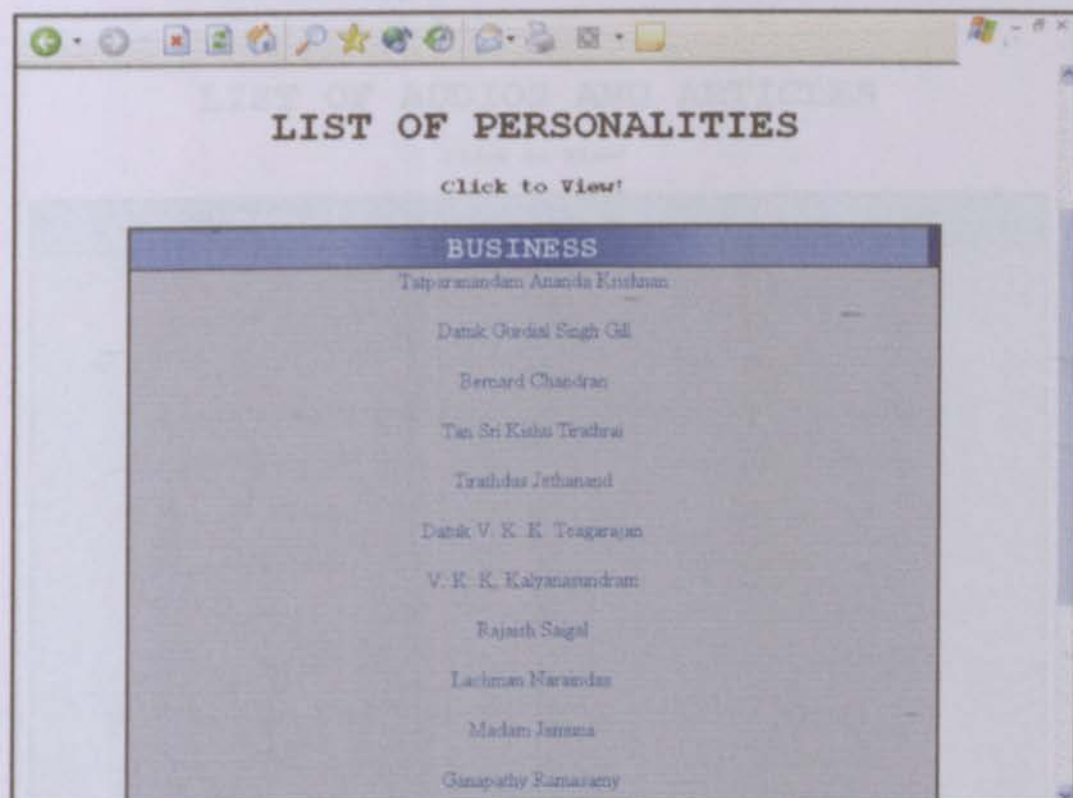


Figure 5: Screen Shot of FMIWP List of Personalities in Business page (BusinessList.asp)

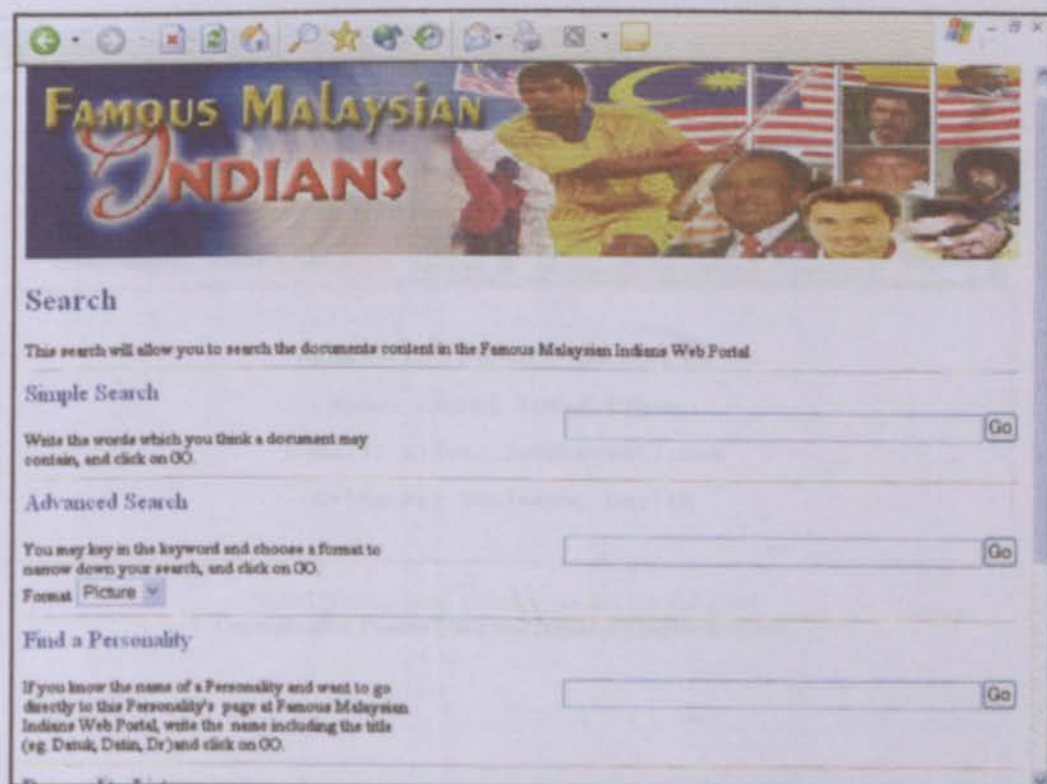


Figure 6: Screen Shot of FMIWP Search page (Search.asp)

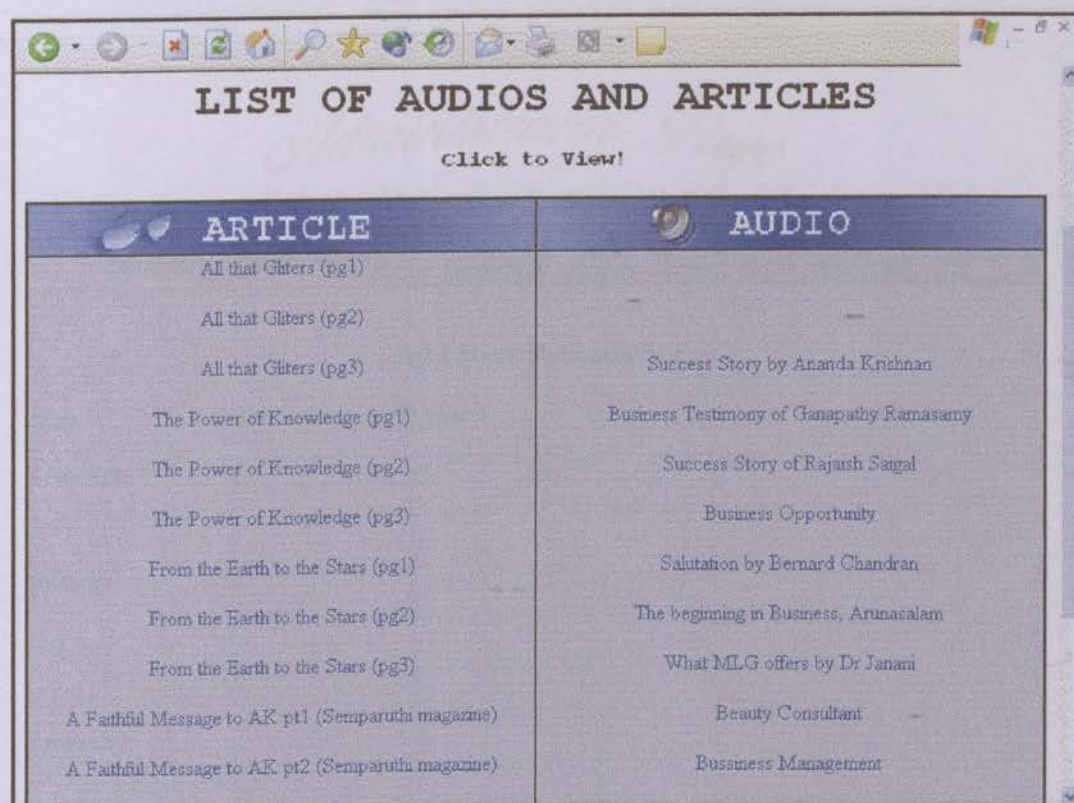


Figure 7: Screen Shot of FMIWP List of Audios & Articles page (List2.asp)

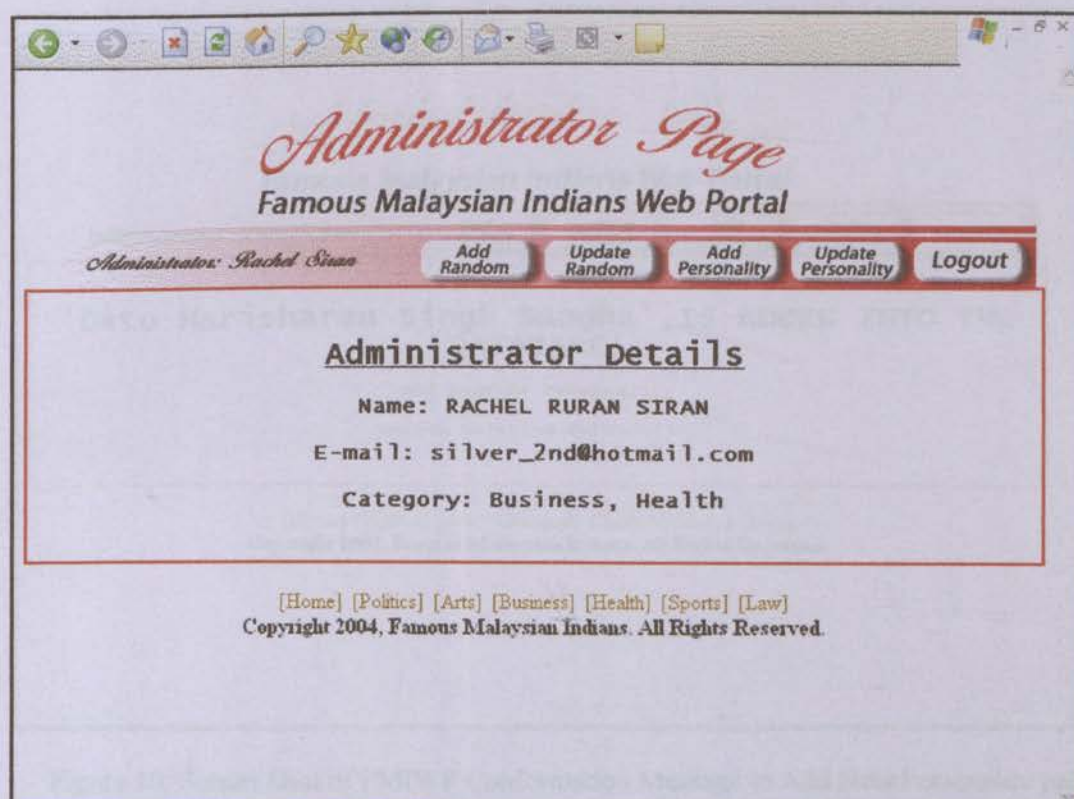


Figure 8: Screen Shot of FMIWP Administrator page (AdminChel.asp)

Administrator Page
Famous Malaysian Indians Web Portal

Administrator: Rachel Sivas [Add Random](#) [Update Random](#) [Add Personality](#) [Update Personality](#) [Logout](#)

Add New Personality

Name *:

Position/Title *:

Paragraph 1:

Paragraph 2:

Figure 9: Screen Shot of FMIWP Add New Personality Form page (AddForm.htm)

Administrator Page
Famous Malaysian Indians Web Portal

Administrator: Rachel Sivas [Add Random](#) [Update Random](#) [Add Personality](#) [Update Personality](#) [Logout](#)

'Dato Harisharan Singh Sangha', IS ADDED INTO THE DATABASE!

[Add Another Personality](#)
[update Existing Personality](#)

[Home] [Politics] [Arts] [Business] [Health] [Sports] [Law]
Copyright 2004, Famous Malaysian Indians. All Rights Reserved.

Figure 10: Screen Shot of FMIWP Conformation Message to Add New Personality page
(Added.asp)

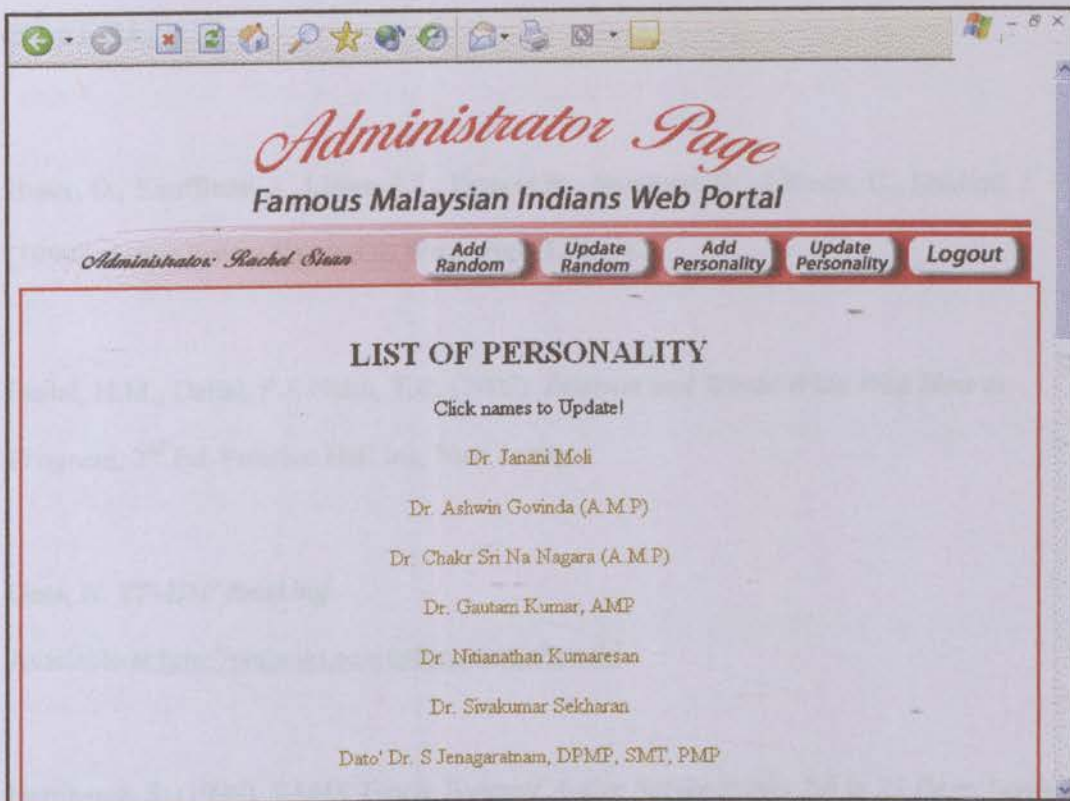


Figure 11: Screen Shot of FMIWP Update Personality List page (UpdateList.asp)

Administrator Page
Famous Malaysian Indians Web Portal

Administrator: Rachel Sivan

Add Random Update Random Add Personality Update Personality Logout

Personality Update

Name : Dr. Chakr Sri Na Nagara (A.M.P)

Position/Title : Obstetrician & Gynaecologist

Paragraph 1 : Born in Penang in 1940. Studied at the Anglo Chinese School Ipoh from 1946-1968. Graduated from King Edward VII - College Medicine, University of Malaya in Singapore in 1964.

Paragraph 2 : Housemanship at the General Hospital Ipoh from 1964-1965. Medical officer at the General Hospital Ipoh in 1965. Senior House Officer at West Middlesex Hospital, Isleworth, England from 1966-1968 and at St. Luke's Hospital, Guildford, Surrey, England from 1968-1969.

Figure 11: Screen Shot of FMIWP Update Personality Form page (UpdateForm.asp)

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