Islamic Economy thru Online Community Implementing Information Retrieval Capabilities

by

Maisarah Mohd Akil

Dissertation submitted in partial fulfillment of

the requirement for the

Bachelor of Technology (Hons)

(Business Information Systems)

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
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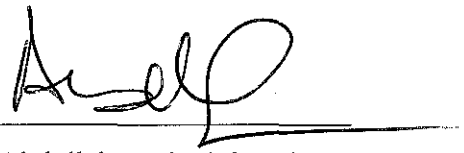
Approved:



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July 2007

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

Maisarah Mohd Akil

ABSTRACT

Knowledge Management has become more of a concern by the community around the world. Communities are more aware and concern of the sharing and transfer the knowledge. The rapid development of Web technology has made the World Wide Web an important and popular application platform for disseminating and searching for information as well as conducting business. As a huge information source, World Wide Web has allowed unprecedented sharing of ideas and information on a scale never seen before. The use of the Web and its exponential growth are now well known, and they are causing a revolution in the way people use computers and perform daily tasks. Islamic Economy thru Online Community - Implementing Information Retrieval Capabilities is discussed more advanced way by using the technology to motivate and encourage community to the knowledge sharing and transfer. The purpose of the web is to develop a platform that community can improve the economic growth and make their knowledge more effectively and facilitating circulation of community knowledge and collects community members' opinions as well. The target users of this website are consumers and business person. In developing the project, the methodology comprises of system conceptualization, system analysis, system design, system development and lastly system testing. The tools used are Macromedia Dreamweaver MX 2004, Joomla Open Source, APACHE Web Server and mySQL. The website focuses on the economic growth for consumer and business person, so that community can make a right decision in such situation. It allows users to search the needed information on the specific area and allows users to store their information as well, so that the community can share their knowledge and experience with others.

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In the name of God, the most gracious and the most merciful, I would like to thank Him for giving me the strength, skills, knowledge, patience and good health in completing my research and Final Year Project. The success of this work depends on the contribution of many people. Therefore, I would like to take this opportunity to acknowledge and recognize the contributions of these individuals.

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ABBREVIATION AND NOMENCLATURES

FYP	Final Year Project
UTP	University Technology PETRONAS
FYP	Final Year Project
WWW	World Wide Web
IR	Information Retrieval
WBS	Work Break Structure
DBMS	Database Management System
KM	Knowledge Management
HTML	Hypertext Markup Language
LSI	Latent Semantic Indexing
DB	Database
PHP	Pre Processor Hypertext
SQL	Structured Query Language
CPU	Central Processor Unit
MB	Megabytes
UAT	User Acceptance Test
URL	Uniform Resource Locator

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CHAPTER 1

INTRODUCTION

1.1. Background of Study

The advent of the Internet has removed temporal and spatial constrains on communication and brought about network communities formed and maintain on the information network. The community knowledge constructed by community members spontaneously and cooperatively is an important asset of any network, and it comprises not only share the knowledge, but also collective decisions, consensus, and share beliefs and viewpoints. A network community is called a knowledge sharing community if it explicitly or implicitly emphasizes the creation and maintenance of community knowledge. Typical examples of knowledge communities sharing and exchanging specialized knowledge among knowledge workers can be found in education and business. Muslim and people in other domain are learning each other. There are the members of knowledge communities.

Wikipedia Encyclopedia defines a community is a tight formation of members that share common ground in a variety of real or abstract areas. Most sociologists agree that a society, while much larger in size, lacks the structure provided by the sense of community exhibited in a community. From a psychological perspective, an individual's success and happiness can be affected by their social interaction with others. Community portal on the Web provide an access gateway to the World Wide Web. The web brings together local information and offer services like email and discussion forums to extend community activity and interaction. They integrate various information sources and services, such as search engines and directories, and

usually enable users to customize the content, layout and navigation to suit their needs.

1.2. Problem Statement

Communities are more concern on knowledge sharing nowadays. Limited of time makes them have not enough time to communicate well with others. This makes the lack of communication among the consumer and business person. Another reason of lack in knowledge sharing between the communities is because of no appropriate platform to share the knowledge. Based on the problem above, the system will be the right platform for the communities to communicate, discuss and to share their knowledge, on the Muslim economic perspective. With the right platform such as the proposed system, all of the information needed can be stored and retrieve to users by using the tool of information storage and information retrieval. The problem statements are summarizing as below:

- No avenue for Muslim community to acquire relevant information relating to economic development;
- Lack of communication among the consumers and Muslim businesses;
- The need for efficient knowledge extraction system to support pressing need in finding solutions to problems.

1.2.1. Significant of the Project

Islamic Economy thru Online Community - Issue on Information Retrieval basically contributes a lot of information and idea to Malaysia's community. By exchanging the idea and experience, this website hopefully will encourage the users to practice a good life with forward thinking and knowledgeable. The rich of information provided in the database will helps the Muslims to gain valuable knowledge and grow stronger in the economic and business area.

1.3. Objective and Scope of Study

1.3.1. Objective

The main objective of the research is:

- To share the information, experience, and business ideas by focusing on developing Islamic economy;
- To propagate Islamic business concepts, values and principle to Muslims communities;
- To provide efficient information retrieval that will allow users efficiently find answers to their problems.

1.3.2. Scope of Study

The scope of study for the project is focusing on the:

i) Knowledge Management

Systemic and organizationally specified process for acquiring, organizing, and communicating knowledge of community so that other community may make use of it to be more effective and productive in their daily life.

ii) Information Retrieval

In order to come out with accurate output, which is the information is within the he user, IR concept is apply in order to generate relevance to the user.

iii) Ontology

Ontology is used together with IR in order to generate accurate output of the searching activity. The ontologies are adapted to the document space within multi-disciplinary domains where different terminology is used.

1.3.3. The Relevancy of the Project

With the increasing awareness among our community about circulating the knowledge sharing, the opportunity of implementing this system will be on a rise and since in Malaysia itself there is lack of similar website that wholly discussed about Islamic economy. This can be seen in Table 1, which shows many website only provide a portion of their website on knowledge sharing.

1.3.4. Feasibility of the Project within Scope and Time Frame

Work Break Structure (WBS) is developed in providing the basis for deciding how to do work as well as creating the project schedule. There are several phases that can be implemented to the Work Break Structure (WBS) process such as planning, executing, analysis and design, implementation and presentation phases. (See Appendix).

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Islamic Economy thru Online Community – Implementing Information Retrieval Capabilities is about to understand and to develop platform to users, which is focusing on the Islamic community to strengthen the business collaboration among consumers and businessmen, to search and find the information related to the scope which can improve the economic growth among the communities. It also aims to facilitating circulation of community knowledge, and collects community members' opinions and experience, business idea and opportunity, so that community knowledge are more efficient and effectively. Unlike the conventional database management in which data models and schemas are defined, the Web community, which is a set of Web based objects (documents and users) that has its own logical structures, is another effective and efficient approach to reorganize Web-based objects, support information retrieval and implement various applications. According to the practical requirements and concerned situations, the Web community would appear as different formats. An increasing number of recent information retrieval systems make use of ontology to help the users clarify their information needs and come up with semantic representations of documents.

2.2 Community Portal on the Web

Wikipedia Encyclopedia defines a community is a tight formation of members that share common ground in a variety of real or abstract areas. Most sociologists agree that a society, while much larger in size, lacks the structure provided by the sense of community exhibited in a community. From a psychological perspective, an individual's success and happiness can be affected by their social interaction with others. Community portal on the Web provide an access gateway to the World Wide Web. Portals bring together local information and offer services like email and discussion forums to extend community activity and interaction. They integrate various information sources and services, such as search engines and directories, and usually enable users to customize the content, layout and navigation to suit their needs. Local needs and interests are central to community portals. Table 2 shows the shows the list of the similar available websites in Malaysia and the nature of it's content.

Organization	Website Address	Content
1. Department of Islamic Development Malaysia (JAKIM) PORTAL	**http://www.islam.gov.**	• Official website for the department • Assist in the creation of a progressive and morally upright ummah
2. Islamic Da'wah Foundation Malaysia	**http://www.yadim.com.**	• Official website for the company • A section with news that supports the other Islamic organization
3. World Islamic Economic Forum Foundation	**http://wief.org.my.**	• Building a bridge between civilization • Bring together Government and Business discuss ideas of Muslim business community • Information on WEIF activities and events

Table 1: Islamic Community Portal Website Available In Malaysia

		Account Creation	Email	Blog	Forum	Chat	Links	Search	Submit Post	Feedback
GOV	IAKIM Portal		✓							
	YaPEIM	✓			✓		✓			
	AEIM	✓								
	PERKIM				✓					✓
NON GOV	Islamic Da'wah Foundation Malaysia		✓				✓			✓
	World Islamic Economic Forum Foundation	✓	✓	✓	✓		✓			

Table 2: Functions Available for Similar Website Available in Malaysia

2.3 Web Community

As Web-based data management systems are a kind of information system, there is much work trying to use traditional strategies and techniques to establish databases and manage the Web-based data. For example, many data models and schemas have been proposed for managing Web data (Papakonstantinou et al. 1995; McHugh et al. 1997; Bourret et al. 2000; Laender et al. 2000; Sha et al. 2000; Surjanto et al. 2000; Yoon and Raghavan 2000). Some of them tried to define schemas, which are similar to the conventional database schemas, for Web data, and use the conventional DBMS methods to manage Web data. Others tried other ways of establishing flexible data structures, such as trees and graphs, to organize Web data and proposed corresponding retrieval languages. However, since the Web data is dynamic, which is significantly different from the conventional data in database systems, using relative fixed data schemas or structures to manage the Web data could not reflect the nature of the Web data (McHugh et al. 1997).

On the other hand, the mapping of Web data into a predefined schema or structure would break down the contents of the Web data (text, hyperlinks, images, tags etc.) into separated information pieces, and intrinsic semantic relationship within a Web page and among the Web pages would be lost. In other words, Web databases alone could not provide the flexibility to reflect the dynamics of the Web data and effectively support various Web-based applications. Unlike the conventional database management in which data models and schemas are defined, the Web community, which is a set of Web-based objects (documents and users) that has its own logical structures, is another effective and efficient approach to reorganize Web-based objects, support information retrieval and implement various applications. According to the practical requirements and concerned situations, Web community would appear as different formats.

In this system, we focus on Web community approach, i.e. establishing good Web page communities, to support Web-based data management and information retrieval. A *Web page (data) community* is a set of Web pages that has its own logical and semantic structures. For example, a Web page set with clusters in it is a community; Web pages in a set that are related to a given Web page also form a community. This system reorganizes the scientific literature on the Web and improves the search efficiency and effectiveness. The Web page community is flexible in reflecting the Web data nature, such as dynamics and heterogeneity. Further more, Web page communities could be solely used by various applications or be embedded in Web based databases retrieval and application support. Therefore, database & community centered Web data management systems provid emore capabilities than database-centered ones in Web-based data management.

2.4 What is Knowledge?

Knowledge is a complex concept and a number of factors determine the nature of knowledge creation, management, and sharing (Nonaka 1994). Drawing from prior discussions, we distinguish knowledge from data and information and view knowledge as "*fluid mix of framed experience, values, contextual information and expert insight that provide a framework for evaluation and incorporating new experiences and information*" (Davenport and Prusak 1997, p. 5). Prior research suggests the existence of different *types* of knowledge. Knowledge can be either *tacit* or *explicit* (Polanyi 1967), this attribute is also expressed as the distinction between *knowing* and *knowledge* (Brown and Duguid 1998; Cook and Brown 1999). Tacit knowledge refers to the knowledge that has a personal quality that makes it hard to articulate or communicate or, analogously, the knowing or the deeply rooted *know-how* that emerges from action in a particular context. In contrast, explicit knowledge refers to the codifiable component that can be disembodied and transmitted, a notion analogous to knowledge, the *know-what,* which can be extracted from the knowledge holder and shared with other individuals. Further, knowledge can be conceived as existing at multiple levels, not only at the individual level but also at the group and organizational levels. Organizational knowledge is created through cycles of combination, internalization, socialization and externalization that transform knowledge between tacit and explicit modes (Nonaka 1994). In light of this dynamic process of knowledge creation, linkages between individuals and groups sharing similar tasks, the *communities* of practice (Brown and Duguid 1991), play an important role in communicating and sharing knowledge. However, communities have their own unique and context-specific vocabularies that, while facilitating knowledge exchange within the community, impede communication between them. The overlapping of understanding provided by boundary objects spanning multiple communities (Boland and Tenkasi 1995) provides a basis for communicating, sharing, resolving, and combining disparate perspectives.

2.5 Knowledge Management in Malaysia - Why Slow Adoption?

Knowledge management is the systemic and organizationally specified process for acquiring, organizing, and communicating knowledge of community so that other community may make use of it to be more effective and productive in their daily life. (Alavi and Leidner 1999). Knowledge management in Malaysia is in infant stage. Very few Malaysian companies have initiated any KM programs. A sharing culture is an essential key success factor of an effective knowledge management program also has profound implications for KM practitioners in Malaysia, and perhaps throughout the developing world at large. Generally, KM models are formulated in the context of a Western-centric framework in which freedom of expression and individualism are both accepted social norms. Within such a context, KM initiatives can automatically focus on determining a suitable framework to be implemented and procuring the correct infrastructure.

Community will always be conscious of the appropriateness of their contributions; superiors on the other hand would be cautious to ensure that their comments do not reveal their lack of familiarity of the subject. The result is a very sterilized; and possibility superficial exchange that betrays the whole idea of knowledge-sharing. According to some researchers, Malaysian companies need to develop a strategic perspective when viewing knowledge. Companies should also analyze the corporate culture and focus on openness and sharing of knowledge without any fear of being panelized.

2.6 Site Search Engine Issues

The search engine is the application which searches the data and returns the results to the client. This usually means creating an HTML page in the specified format. Most search engines search within an index, created by an Indexer application. A few just search the files in real-time, but that can get very slow. To send a search to the search engine, most systems include forms. The site visitor enters their search terms in a text field, and may select appropriate settings in the form. When they click the Submit button, the server passes that data to the search engine application.

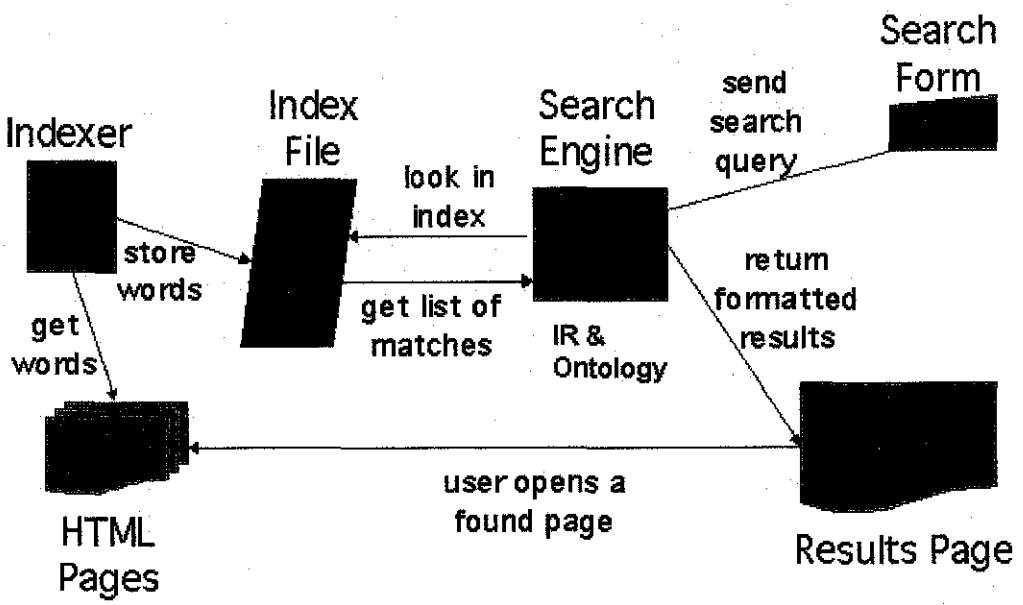

Figure 1: Search Engine Path

2.7 Intelligent Agent to Enhance Search Engine Performance

Online retrieval systems are powerful and efficient at locating matching terms and phrases. They are also currently dumb, passive systems that require resourceful, active, intelligent human users to produce acceptable results. Some have suggested that the solution to information retrieval problems is to better index the Web documents and database records with items such as more key terms and conceptual indexing. Enhancing millions of web pages, documents and records

would be extremely costly; therefore, creating better search and retrieval engines provides a more realistic solution to the existing problems. For example, users currently employ various search techniques to fulfill their information retrieval needs. These techniques include obtaining information from footnotes and references in journals and books, identifying core journals in a discipline, searching for known authors and subjects, and browsing the materials that are physically collocated with materials located earlier in a search. These techniques play important roles in the information-seeking activities of users. A solution is for the search and retrieval engines to take advantage of the information in these search techniques that aid the user in locating the needed information.

2.8 Information Retrieval

Wikipedia Encyclopedia defines Information Retrieval as searching for information in documents, searching for documents themselves, searching for metadata which describe documents, or searching within databases, whether relational stand-alone databases or hypertextually-networked databases such as the World Wide Web. The documents that contain information of interest are relevant and the other documents are not. A document can be a page of text, an article, a Web site, etc.

There are three major information retrieval paradigms, which is *statistical, semantic,* and *contextual.*

- **Statistical**

Statistical emphasizes statistical correlations of word counts in documents and document collections. Salton describes the use of statistical schemes such as vector space models for document representation and retrieval. The Smart system is an example of a text processing and retrieval system based on the vector processing model. Another example is Latent Semantic Indexing (LSI), which captures the term associations in documents.

- **Semantic**

The semantic approach to information retrieval views documents and queries as representing some underlying meaning. It emphasizes natural language processing or the use of artificial intelligence queries.

- **Contextual**

Contextual takes advantage of the structural and contextual information typically available in retrieval systems. For example, this could involve the use of a thesaurus and encoded relationships among terms. One could also take advantage of context and structure generally available from the document terms. Salton has shown, however, that this approach does not necessarily improve retrieval performance.

There are other views of evaluating performance. Information retrieval is almost always part of some larger process of information use. One can evaluate systems based on their support of these larger processes. Sense making is building an interpretation of the situation or queries to understand the information. Design is building an artifact from the information. Decision making is building a decision and its rationale based on the information. Response tasks are finding information to answer a query.

2.8.1 Information Retrieval versus Data Retrieval

Data Retrieval, in the context of IR system, consists mainly of determining which documents of a collection contain the keywords on the user query which most frequently, is not satisfy the user information need. In fact, the user of an IR system is concerned more with retrieving information about a subject than with retrieving all objects with satisfy clearly defined conditions such as those in a regular expression or in relational algebra expression. Thus, for data retrieval system, a single erroneous object among a thousand retrieved objects means total failure. For an information

retrieval system, however, the retrieved objects might be inaccurate and small errors are likely to go unnoticed. The main reason for this difference is that information retrieval usually deals with natural language text which is not always well structured and could be semantically ambiguous. On the other hand, a data retrieval system (such as a relational database) deals with data that has a well defined structure and semantics,

Data retrieval, while providing a solution to the user of the database system, does not solve the problem of retrieving information about a subject or topic. To be effective in its attempt to satisfy the user information need, the IR system must somehow 'interpret' the contents of the information items or documents in a collection and rank them according to a degree of relevance to the user query. This 'interpretation' of document contents involves extracting syntactic and semantic information form the document text and using this information to match the user information need. The difficulty is not only knowing how to extract this information but also knowing how to use it to decide relevance. Thus, the notion of relevance is at the center if information retrieval. In fact, the primary goal of an IR system is to retrieve all the documents which are relevant to a user query while retrieving as few non-relevant documents as possible.

There are some differences between Data Retrieval (DR) and Information Retrieval (IR). Table below have listed the distinguishing properties of DR and IR.

	Data Retrieval (DR)	Information Retrieval (IR)
Matching	Exact match	Partial match, best match
Inference	Deduction	Induction
Model	Deterministic	Probabilistic
Classification	Monothethic	Polythetic
Query Language	Artificial	Natural
Query Specification	Complete	Incomplete
Items wanted	Matching	Relevant
Error response	Sensitive	Insensitive

Table 3: Data Retrieval and Information Retrieval

2.8.2 Information Retrieval System

The objective of Information Retrieval System is to minimize the overhead of user locating needed information. Overhead can be expressed as the time user spends in all the steps leading to reading an item containing the needed information. The success of an information system is very subjective, based upon what information is needed and the willingness of a user to accept overhead. Under some circumstances, needed information can be defined as all information that is in the system that relates to a user's need. In other case it may be defined as sufficient information in the system to complete a task, allowing for missed data. A system that supports reasonable retrieval requires fewer features than one which requires comprehensive retrieval. In information retrieval the term "relevant" item is used to represent an item containing the needed information. From a system perspective, information could be relevant to a search statement which is the matching criteria of the search statement.

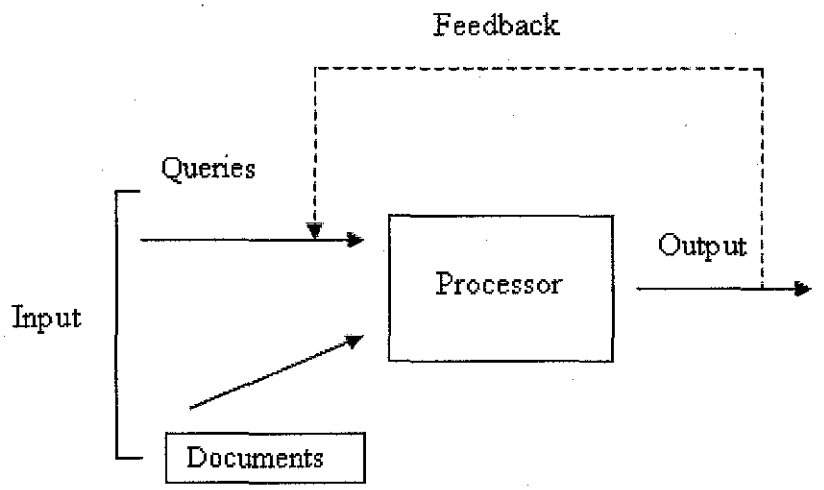

Figure 2: Information Retrieval System

The diagram shows three components: input, processor and output. The details of each the components as follows:

i) Input

Most computer-based retrieval systems store only a representation of the document (or query) which means that the text of a document is lost once it has been processed for the purpose of generating its representation. A *document representative* could, for example, be a list of extracted words considered to be significant. Rather than have the computer process the natural language, an alternative approach is to have an artificial language within which all queries and documents can be formulated. There is some evidence to show that this can be effective (Barber *et al.[6]*).

ii) Processor

The part of the retrieval system concerned with the retrieval process. The process may involve structuring the information in some appropriate way, such as classifying it. It will also involve performing the actual retrieval function, which is, executing the search strategy in response to a query. In the diagram, the documents have been placed in a separate box to emphasize the fact that they are not just input but can be

used during the retrieval process in such a way that their structure is more correctly seen as part of the retrieval process.

iii) Output

Finally, the output is the result of the query, which is usually a set of citations or document numbers. In an operational system, the store ends here.

2.8.3 The Retrieval Process

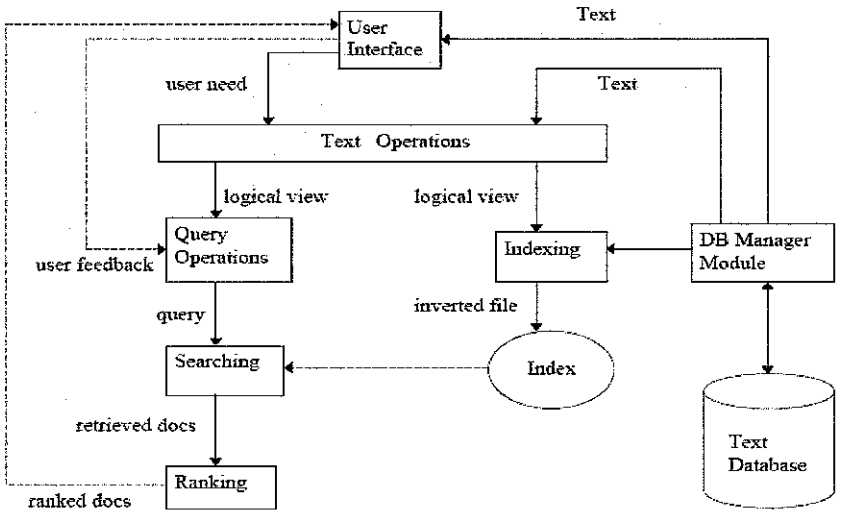

Figure 3: The Process of Retrieval Information

Figure above shows the architecture of retrieval process. First of all, before the retrieval process can be initiated, it is necessary to define the text database. This is usually done by the manager of the database, which specifies the following:

a) The documents to be used;

b) The operations to be performed on the text;

c) The text model (i.e., the text structure and what elements can be retrieved).

The text operations transform the original documents and generate a logical view of them. Once the logical view of the documents is defined, the database manager which is using DB Manager Module builds an index of the text. An index is a critical data structure because it allows fast searching over large volumes of data. Different index structures might be used, but the most popular one is the inverted file as indicate in the figure. The resources which are time and storage space spent on defining the text database and building the index are amortized by querying the retrieval system many times.

Given that the document database indexed, the retrieval process can be initiated. The user first specifies a user need which is then parsed and transform by the same text operations applied to the next. Then, query operations might be applied before the actual query, which provides a system representation for the user need, is generated. The query is then processed to obtain the retrieved documents. Fast query processing is made possible by the index structure previously built.
Before been sent to the user, the retrieved documents are ranked accordingly to a likelihood of relevance. The user then examines the set of ranked documents in the search for useful information. At this point, they might pinpoint a subset of the documents seen as definitely of interest and initiate a user feedback cycle. In such a cycle, the system uses the documents selected by the user to change the query formulation. Hopefully, this modified query is better representation of the real user need.

2.9 Ontology

In both computer science and information science, ontology is a data model that represents relationships between a set of concepts within a domain. It is used to reason about the objects within that domain. Ontologies are used in artificial intelligence, the semantic web, software engineering, biomedical informatics and information architecture as a form of knowledge representation about the world or some part of it. Ontologies generally describe:

- **Individuals**: the basic or "ground level" objects
- **Classes**: sets, collections, or types of objects
- **Attributes**: properties, features, characteristics, or parameters that objects can have and share
- **Relations**: ways that objects can be related to one another
- **Events**: the changing of attributes or relations.

2.9.1 Research on Ontology-Driven Information Retrieval

A problem with traditional information retrieval (IR) systems is that they typically retrieve information without an explicitly defined domain of interest to the user. Consequently, the system presents a lot of information that is of no relevance to the user. The research presented in this paper examines how ontologies can be efficiently utilized for traditional vector-space IR systems. The ontologies are adapted to the document space within multi-disciplinary domains where different terminology is used. The objective is to enhance the user-experience by improvement of search result quality for large-scale search systems.

One of the reasons for why IR systems do not have an explicitly defined domain of interest to the user is that most users tend to use very few terms (3 or less) in their search queries. As a result, the systems cannot *understand* the context of the user's query, which results in lower precision. By adding more relevant terms to the query, the domain of interest can, to some extent, be identified. However, adding both *correct* and *distinctive* terms is not always trivial, since the user needs knowledge about the terminology used in that particular domain to find those *correct* terms.

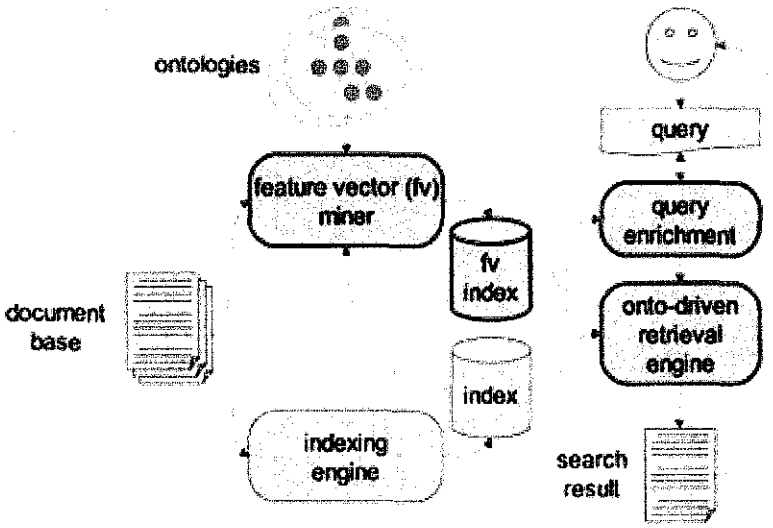

Figure 4: The overall architecture of the ontology-driven information retrieval system.

Figure 4 illustrates the overall architecture of the ontology-driven information retrieval system. The nontransparent objects illustrate the components of the system. The outlined components illustrate those components being the contribution of this work to typically existing IR systems.

a) Feature vector miner:

This component extracts the terms from the document collection and associates them with relevant concepts from the ontologies. The *fv index* is created offline equal to the *index* of the search engine.

b) Indexing engine:

The main task of this component is to index the document collection.

c) Query enrichment:

This component handles the query specified by the user. The query can initially consist of concepts and/or ordinary terms (keywords). The concepts will be replaced by corresponding *fv*s. Each concept or term can be individually weighted.

d) Onto-driven retrieval engine:

This component performs the search and post processing of the retrieved results. The ontologies and their corresponding *fv*s are used when post-processing the retrieved documents before presented to the user.

2.10 Economic and Social Factors

As is the case in the everyday lives of people the world over, economic factors play an incredibly important role in virtually all of the nation cultural conflicts. The very nature of the modern economy means that some people will always benefit at the expense of others. Typically economic factors can be described in one or more of the following ways. From the factors, it shown that it is very important for the community to play their roles in order to increase the economic growth.

2.10.1 General Economic Problems:

In much of the developing world, poor economic conditions are a constant barrier to the development of modern and stable democratic government. The negative aspects of poor economic conditions are generally exacerbated in nations that contain contentious ethnic groups. Slow growth, unemployment, and a scarcity of even basic resources can trigger deep divisions within a population (Tharoor 1999, 5). Add the problem of multiple ethnicities, and the potential for conflict increases dramatically.

- **Economic Discrimination:**

In many nations the most obvious signs of ethnic division can be found in the economic realm. Discrimination of one group by another is a very common method of oppression and control (Taras 1998, 24). For the oppressed, economic discrimination is often the most painful kind and that most likely to strengthen feelings of ethnic identity, from which violent action is a common result. Even

economic growth may add to the problem, as oppressed peoples find themselves falling farther and farther behind those who control the economy of a nation (Brown 1998, 186).

- **Changes in the Structure of Modern Economies:**

Several trends have emerged, particularly in the past decade that have helped to increase the degree of ethnic tension world wide. Large scale migration from the countryside to urban areas has brought people in closer proximinity to each other, and increased competition for resources and employment. Urbanization has placed greater strains on social programs and a general decline in living standards (Taras 1998, 14).

2.10.2 Social Value

A social value is created from Islamic Economy thru Online Community is on the business transaction of the community. It generates economic development in non-monetary ways, such as creating new ideas of business opportunity and supporting social enterprise growth. Other than that, it also to leverage existing purchasing power to expand business opportunities for suppliers who provide added social value to their community.

Businesses participating in the Islamic Economy thru Online Community as suppliers of goods and services gain access to a pool of potential new customers and the opportunity to participate in to grow their business, also increase the service quality, attracting more customers and potentially increasing profits. It enables consumers and suppliers to inject social value into their buying decisions and provides a direct and meaningful way to practice corporate social responsibility.

CHAPTER 3

METHODOLOGY / PROJECT WORK

3.1 Procedure Identification

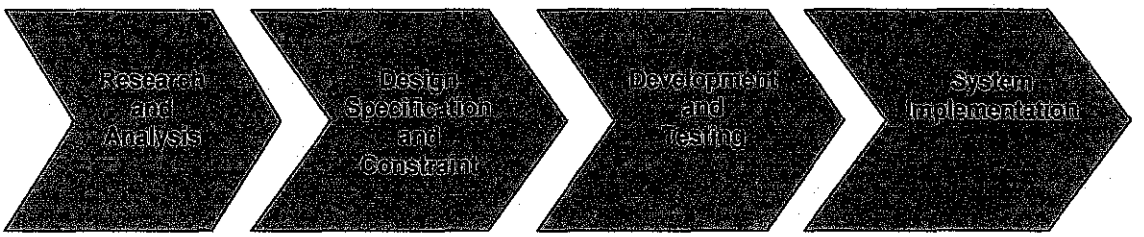

Figure 5: Project Methodology Diagram

3.1.1 System Research and Analysis

The second stage is determines how it will be designed. System Architecture and Use Case Diagram were designed during this phase. Several knowledge model and framework from different domain were analyzed as a guide fir conceptual framework to be created later. System limitations and constraints are identified and time was also allocated to familiarize the software to be used during development.

3.1.2 System Design Specification and Constraint

The first phase of this project is to capture what the system will do. Here, comprehensive research has been done to study the basic concept, technology available and existing application that can be made as guides to develop the system. During this stage, the problem definition and problem statement of web design for economic community have been started.

3.1.2.1 Analysis Model

a) Use Case Diagram

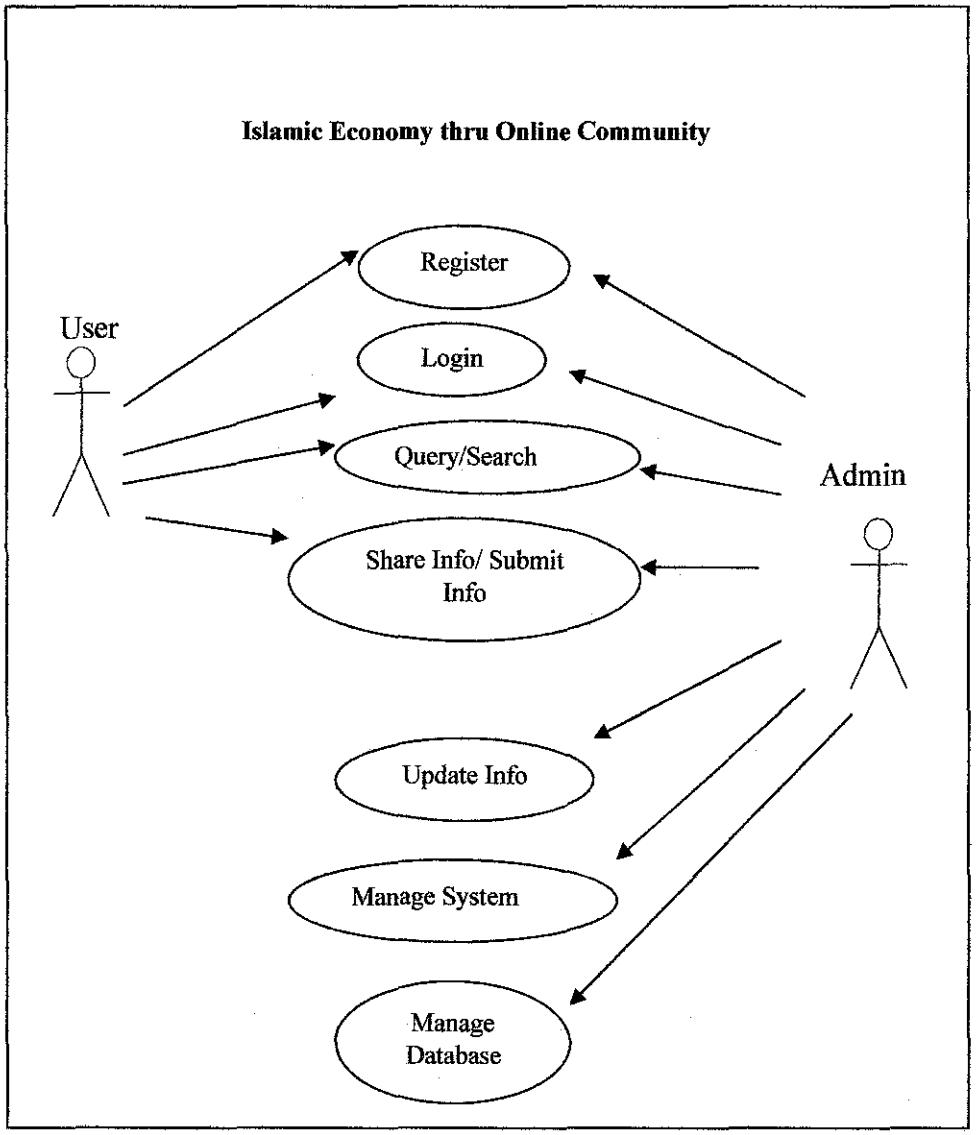

Figure 6: Use Case Diagram

b) System Architecture

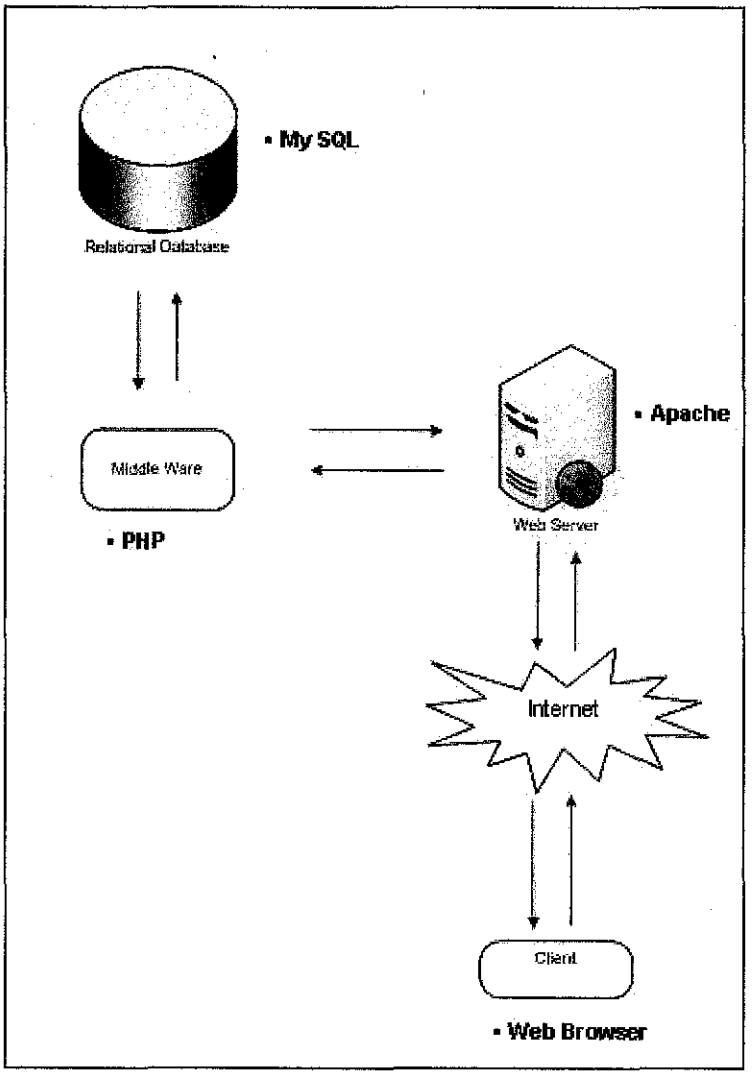

Figure 7: System Architecture

3.1.3 System Development and Testing

This stage is where the development of the system starts. Here, the appropriate software and hardware tools as mentioned below are being applied in order to facilitate the project development process. In order to come out with good system, some observation has collected by distributing the questioners to the users. Using all the information collected from the observation and detail research, a conceptual framework for developing the system was produce. Information gathered also used together with the framework to finalize the functionalities of the system. After all the functions are developed, the system need to undergone the system integration testing, where the system are tested to ensure its compatibility. Here the developed system will be used by the users to voice out their response on whether the system is applicable for them; the conventional way. The acceptance testing which is also known as the acceptance testing will be done to ensure that users can accept the system. A sample of questionnaire which will be used on the testing phased are attached in the appendices section. (See Appendix).

3.1.4 System Implementation

The final phase is focused on implementation tasks such as go-live and documentation. Here, the system is ready to use and the documentation is being prepared to conclude on the overall research and experiment.

3.2 Tools

3.2.1 Software

The software tools that can be used to implement the web application are as below:

Software	Minimum Requirement
Operating System	Window XP Service Pack 2
Supporting Software	Macromedia Dreamweaver MX 2004 Joomla Open Source PHPMyAdmin APACHE stand alone webserver
Scripting Language	PHP mySQL

Table 4: Software Tools

3.2.2 Hardware

The hardware used for the development of the system is a personal computer as the following specifications:

Hardware	Model	Reason of usage
Central Processor Unit (CPU)	AMD Turion 64	Compatible and stable
Main Memory	512 Megabytes(MB) or above	To support the Operating System and to improve server's performance

Table 5: Hardware Tools

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Data Gathering and Analysis

By using Islamic Economy thru Online Community, users can share their experience and knowledge with other online users. By exchanging the knowledge, users can build up relationships with other users, thus forming communities of shared their interests. It also allows the user to see the other peers currently on-line, their areas of interest, knowledge or articles they are contributing, as well as their relationships within particular communities of interest. An analysis is conducted in order to gather the data from the users. An analysis is on the getting the users view on the functionalities of the system.

The source of data gathering is by doing a survey. The survey was carried out onto 18 people who are identified as the potential user for the system. The results are of the survey are as below.

4.2 Results and Discussion

4.2.1 Pre-Test Survey

The objective of the questionnaires is to collect and gather information regarding the system functionalities. There are two sets of surveys:

4.2.1.1 Pre-Test Questionnaires

a) System Overall

No.	Questions	Disagree	Neither Agree Nor Disagree	Agree
1.	The Islamic Economy thru Online Community will be convenient for the Muslims.			
2.	If the system is ready and running, you consider using the system to search the information through the internet rather than manual system (library, book store, etc)			
3.	Islamic Economy thru Online Community can help Muslims to gain huge of information and knowledge.			

Table 6: System Overall Question (Pre-Test)

Results:

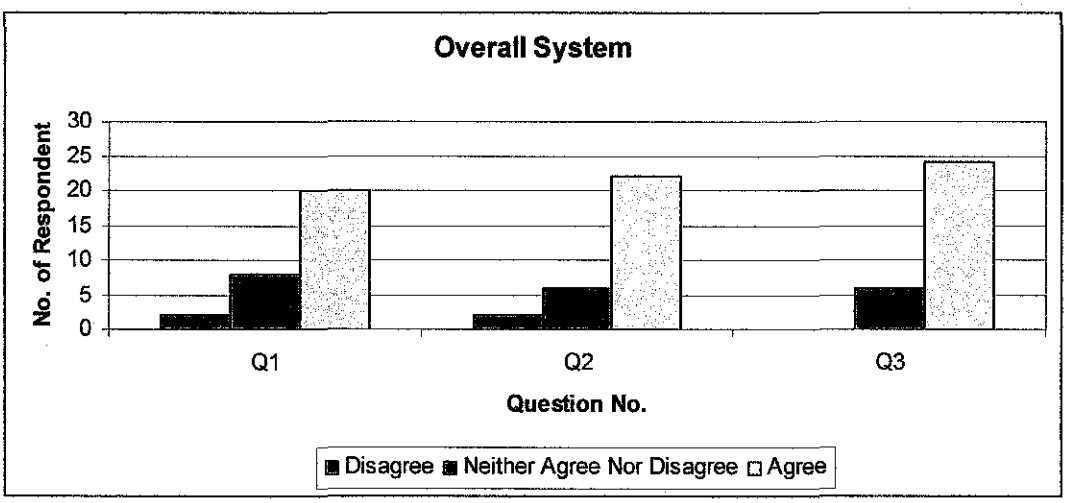

Figure 8: Bar Chart for Overall System (Pre-Test) Survey Rating

1. **The Islamic Economy thru Online Community will be convenient for the Muslims.**

20 out of 30 respondents agreed that the Online Community will be convenient for them. This is because maybe this is the right platform for them to communicate with others to discuss about the Muslim economic and etc. 8 respondents are neither agree nor agree and 2 respondents disagree to the question. They are afraid that information posted were false since the users itself can post any news on the web. This is one of the problems that the system could face when implementing it.

2. **If the system is ready and running, you consider using the system to search the information through the internet rather than manual system (library, book store, etc)**

Most of the respondents of the surveys agreed to use the system when it ready. They are consider finding and searching the information through the system rather than go to the library or buy at the book store. This is because the system is free for the users and they can use it any of time. The total of this respondent is 22 out of 30. 6 out of 30 respondents neither agreed nor agreed and 2 respondents are disagreeing.

3. **Islamic Economy thru Online Community can help Muslims to gain huge of information and knowledge.**

Most of the respondents agreed that the system will helps the Muslims to gain the knowledge and information. Since the system is providing the information, they believe they can gain something beneficial. The other 6 respondents neither agreed nor agreed. This maybe because they not sure the ability of the system that can provide the users sufficient information.

b) System Functionalities

No.	Questions	Scores				
1.	Islamic Economy thru Online Community needs to be divided the Search function according to categories.	1	2	3	4	5
2.	Islamic Economy thru Online Community must include a scheme to attract people to contribute an idea to the system.	1	2	3	4	5
3.	The navigation around the system must be direct and also user-friendly.	1	2	3	4	5
4.	There must be an announcement section in the website where the Administration can post the latest update on the website.	1	2	3	4	5
5.	This website will benefit the community.	1	2	3	4	5

Table 7: System Functionalities Question

Results:

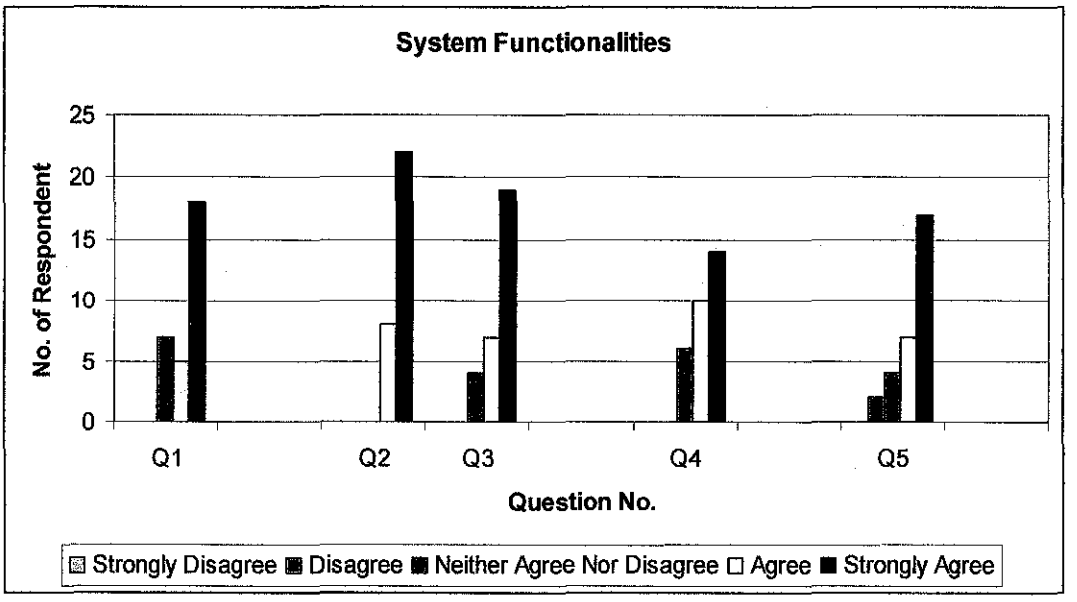

Figure 9: Bar Chart for System Functionalities Survey Rating

1. **Islamic Economy thru Online Community needs to be divided the Search function according to categories.**

18 respondents out of 30 strongly agreed that the Search function need to be divided according the categories. This is to make the search function is more easy and accurate. 5 respondents agreed and 7 respondents neither agreed nor agreed. These respondents may prefer to get the variety format of search results.

2. **Islamic Economy thru Online Community must include a scheme to attract people to contribute an idea to the system.**

Most of the respondents agreed the system need to have a good design to attract the users. The color and the way it present is important to keep the users visit the site.

3. **The navigation around the system must be direct and also user-friendly.**

19 and 7 out of 30 respondents strongly agreed ad agreed that the system navigation should be direct and user-friendly. This will easier to the users to find the information needed and to get some additional information from the web. 4 respondents neither agree nor agree.

4. **There must be an announcement section in the website where the Administration can post the latest update on the website.**

The users absolutely agreed to have the section where they can get the news and latest announcement from the administration. This is because they can update if any important news that they need to know. 6 respondents neither agreed nor agreed.

5. **This website will benefit the community.**

17 out of 30 respondents strongly agreed that the web will be benefit to them 7 respondents is agreed. They might need some new platform for them to gain or share the information among themselves. 4 respondents are neither agree nor agree and 2

respondents are disagreeing. This may because of they fell the information are not comes from the professional person.

4.2.2 Post-Test Survey

User Acceptance Test (UAT) survey, which is for users to verify the portal, testing the portal and become familiar with how the work flows of the system, to ensure the system is free from errors and accept by the real users as well as to give the feedback of the system to the developer.

- The method of UAT are:
  1. Questionnaire was given to the tester to allow them to browse and read the questionnaire.
  2. Tester was given 15 minutes to test the system. During the testing period, testers are given a brief introduction on the portal such as the objective and the purpose of developing the portal.
  3. After testing done, testers were answering the questionnaires given.

4.2.2.1 Post-Test Questionnaires

a) System Overall

No.	Questions	Rating		
1.	The system application is easy to use.	1	2	3
2.	The system flow is easy to follow.	1	2	3
3.	The content of the system is understandable.	1	2	3
4.	The system application is valuable and important to people.	1	2	3

Table 8: System Overall Question (Post-Test)

Results:

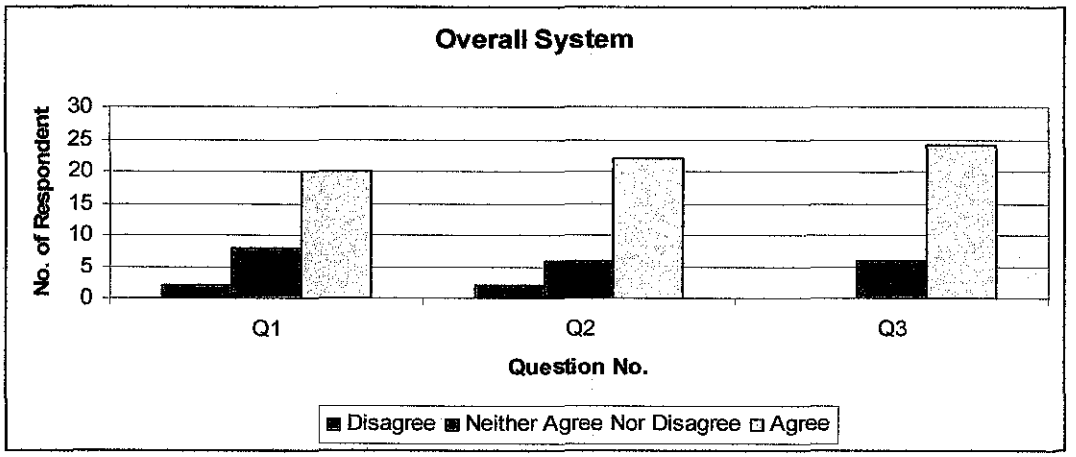

Figure 10: Bar Chart for Overall System (Post-Test) Survey Rating

b) Search Functionality

No.	Questions	Rating		
1.	The Search function is easy to use.	1	2	3
2.	The search result is precise in retrieved the information	1	2	3
3.	The content of the search result is relevant to the query.	1	2	3
4.	The search function is valuable and important to the system.	1	2	3

Table 9: Search Functionality Questionnaires

Results:

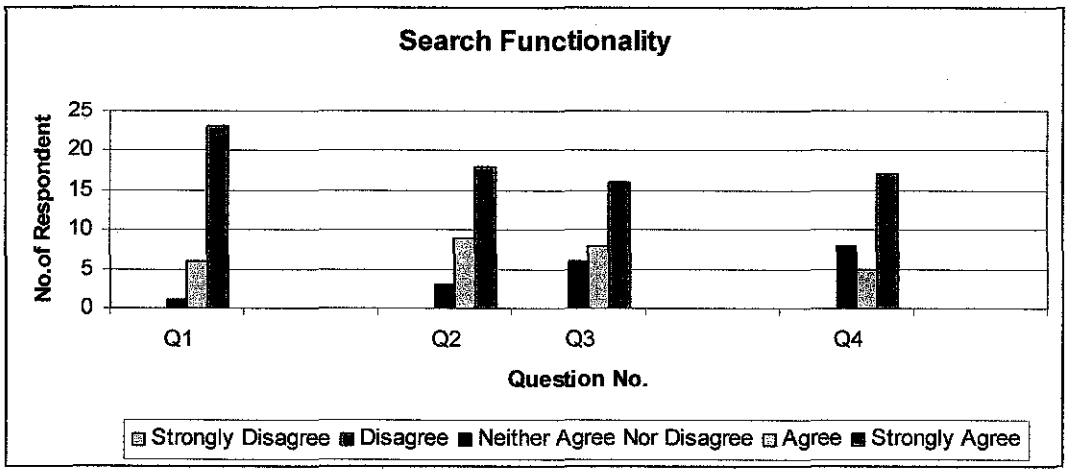

Figure 11: Bar Chart for Search Functionality Survey Rating

1. The Search function is easy to use.

Majority of the respondents strongly agreed that the search function is easy to use. There are three level of searching the information, which is by All Words, Any Words, and Exact Phrase. In order to get the accurate information, user need to choose Exact Phrase. Only 1 respondent is neither agreed nor disagreed.

2. The search result is precise in retrieved the information.

18 respondents strongly agreed that the search result is precise in retrieve the information. This is because the system can retrieved the information that they query with in the scope of Islamic economy.

3. The content of the search result is relevant to the query.

Majority of the respondents strongly agreed that the system is generating the relevant result to the query. The number of respondent is 16 people, the rest 8 and 6 person is agreed and neither disagreed nor agreed. They may didn't get their result accurately.

4. The search function is valuable and important to the system.

Since the system is more on the knowledge sharing, the search function is valuable and important to the users. This is where the user fined the information that has been store in the database. 17 of the respondents strongly agreed that it is valuable, 5 respondents are agreed and 8 respondents are neither disagreed not agree.

4.2.3 System Screenshots

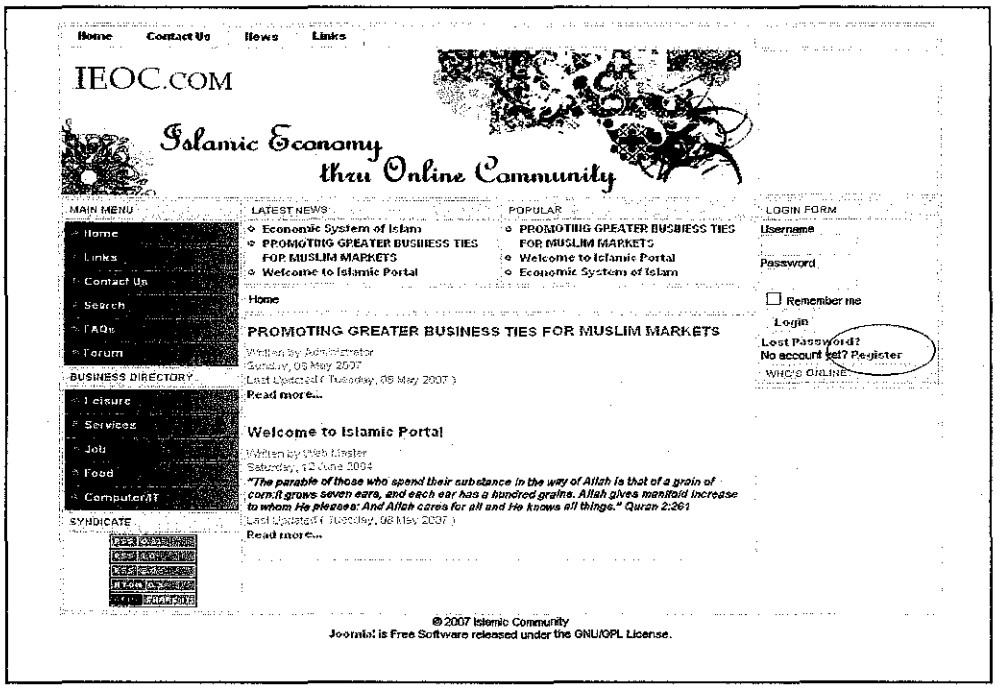

Figure 12: Snap Shot of the Website Front Screen

A figure shows the main page of the Islamic Economy thru Online Community. New users that have not registered yet need to register under the Register link under the Login Form section. The Main Menu and Business Directory is free access to any one even they are not login yet. Once the user successfully login to the system, they will have additional function which is User Menu.

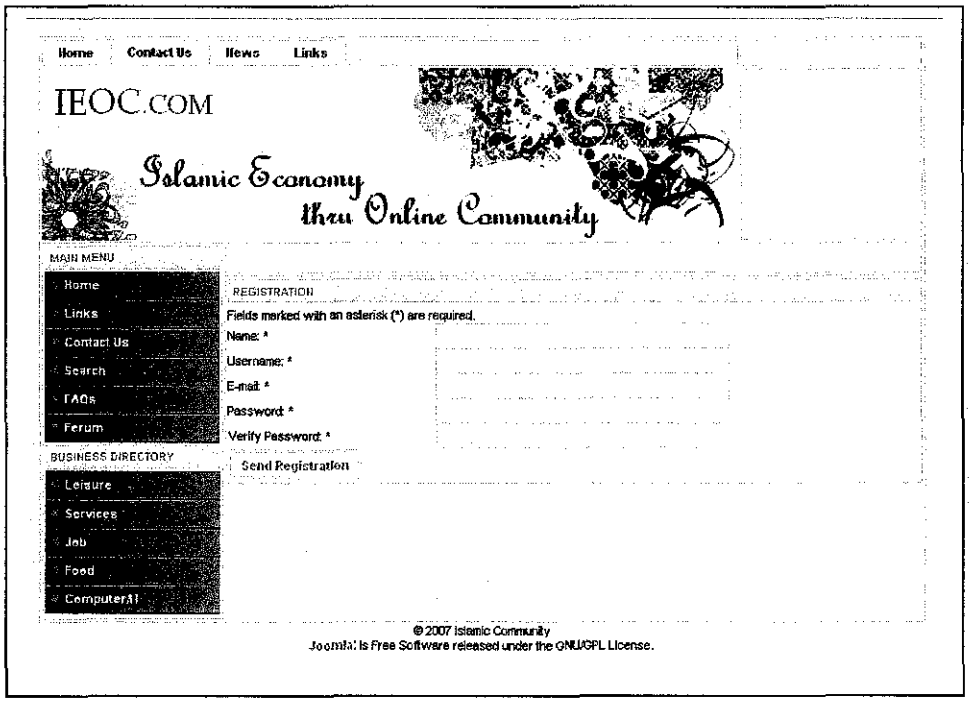

Figure 13: Snap Shot of User Registration

The snap shot above in the registration page for user log-in. This page is where user has to fill in their details. However the registration is only optional to users whether they want an account in the website. The log-in will allow users to access the web where they can have their own User Menu, where the users have the access to get more functionality such as Search, submit News, review news, submit Web Link and review the Web Link.

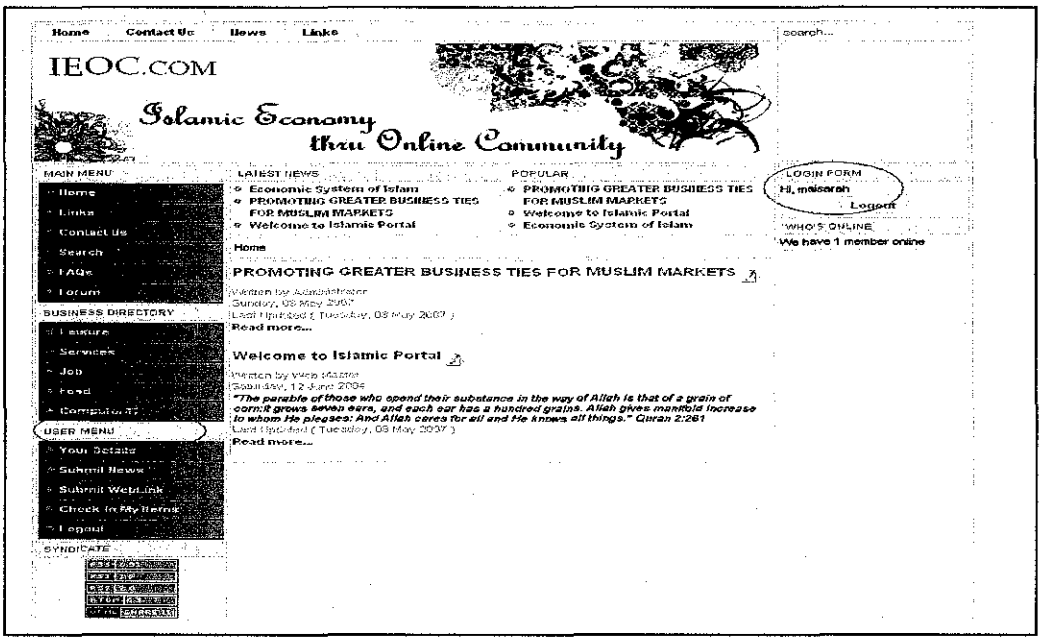

Figure 14: Snapshot of User Logon

Registered users that successful logon into the system will have their User Menu on the bottom left. Users have additional menu such as Search, submit News and submit Web Link. Submitted news by the users will appear into the system once the administrator approves the particular news. It will display at the latest news once the news are accepted. Registered users also are allowed to display the news submitted by the other users and as well as review the Web Link. Other than that, the users also have the access to join the Forum.

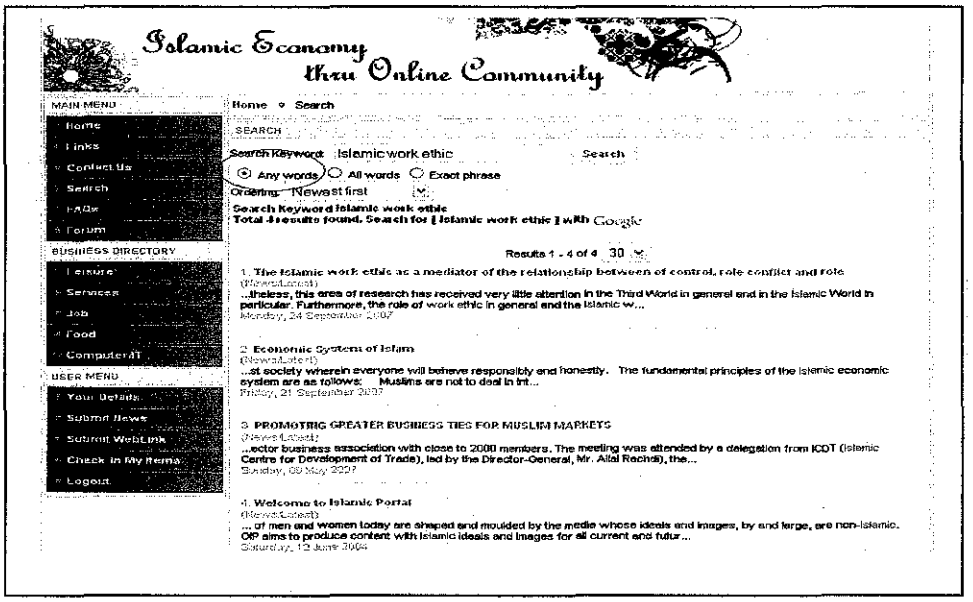

Figure 15: Snapshot of Search Result: Any words

The Search function is allowing users to find the information that stored in the database. The figures show the user is entered the Any words to the search the information. The result of the query is generated by the words that entered by the users. For example, the user entered 'Islamic work ethic' as the search keyword, the system will find all words which are 'islamic', 'work' and 'ethic' to search the result of the query. The system will search all the related articles that have all three words just now.

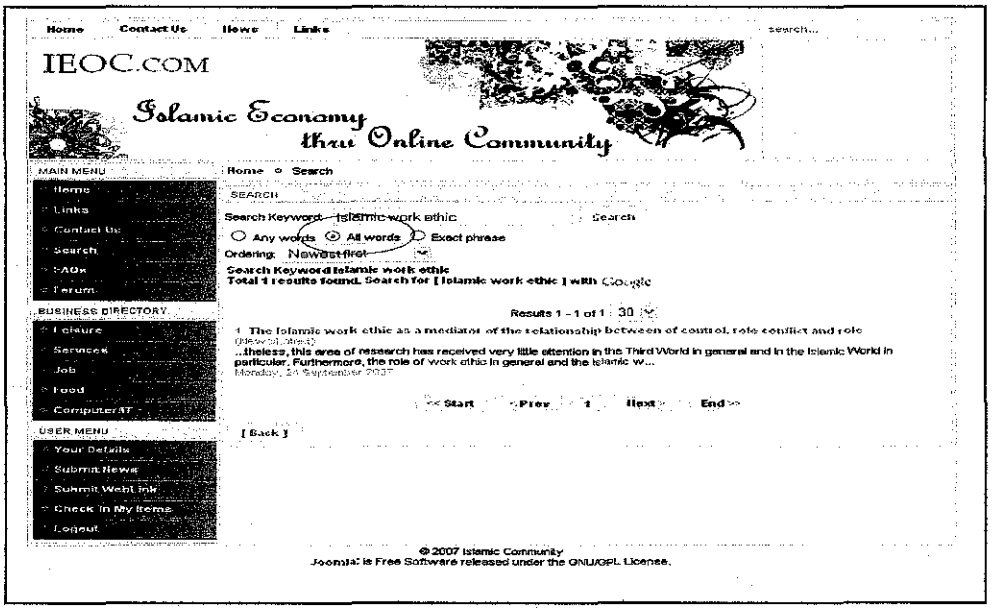

Figure 16: Snapshot of Search Result: All words

The figure shows the user selected is All words, and the result of the query is only at the related article that have the words entered by the user. The system will search the articles that contain the words that entered by the user.

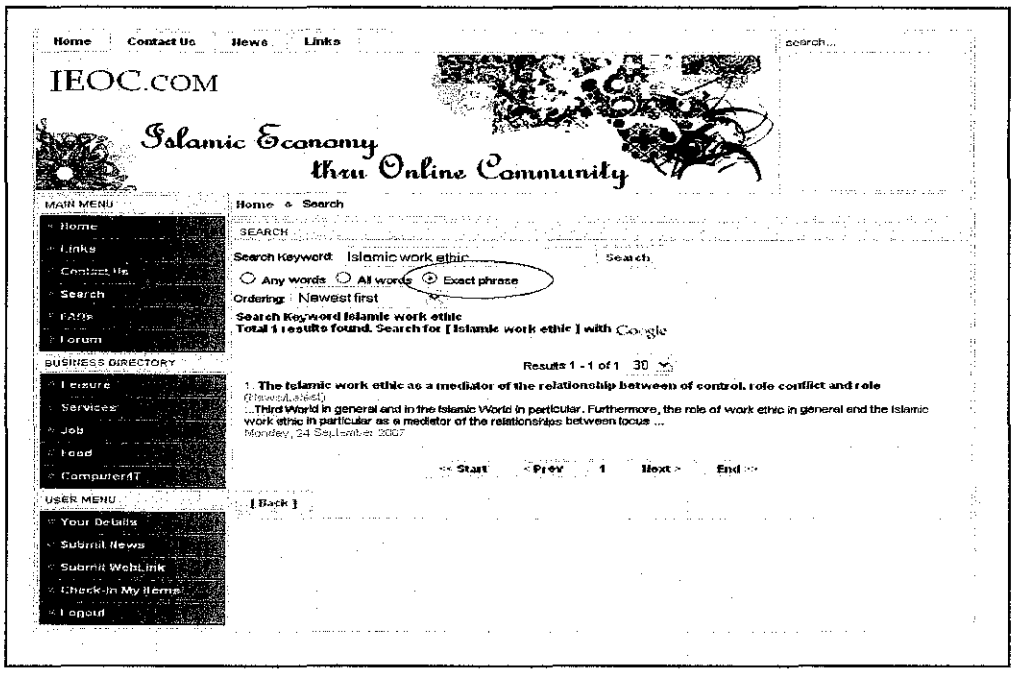

Figure 17: Snapshot of Search Result: Exact Phrase

The third one is Exact phrase will display only the exact word that entered by the user. For example, the screenshot shows the search keyword is 'Islamic work ethic', and the system will find only the exact words. The system is only search for the exact phase in the database to match the result with the query.

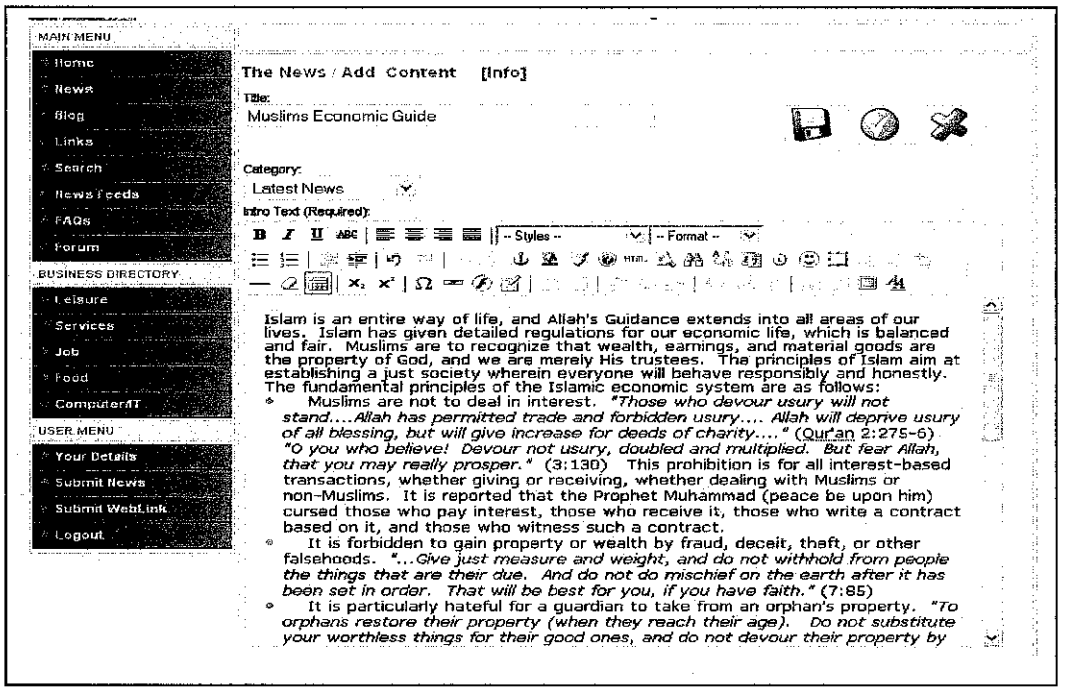

Figure 18: Snapshot of Submit News Page

Figure shows the page for users to submit the News on the web. Registered users who are willing to share the articles or news can use this function to share with other users. Once the submitted news is approved or accepted by the administrator, the news will displays on the main page and can be review by the other users as well.

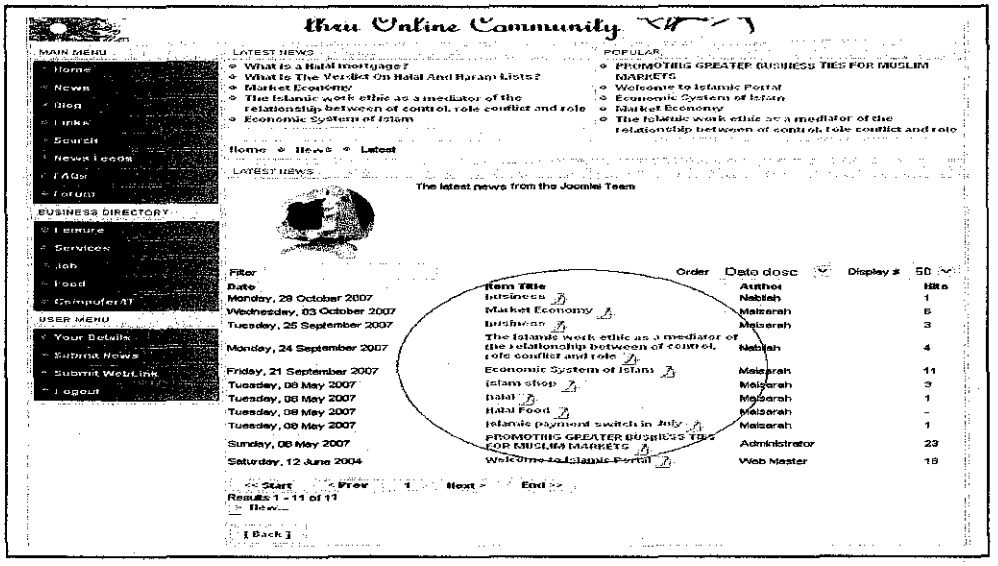

Figure 19: Snapshot of News Posted by the User

Figure above shows the posted news displayed on the News page. All news that posted by users will approved first by the administrator and displays to the users on the web portal. Registered users have access to view all the News.

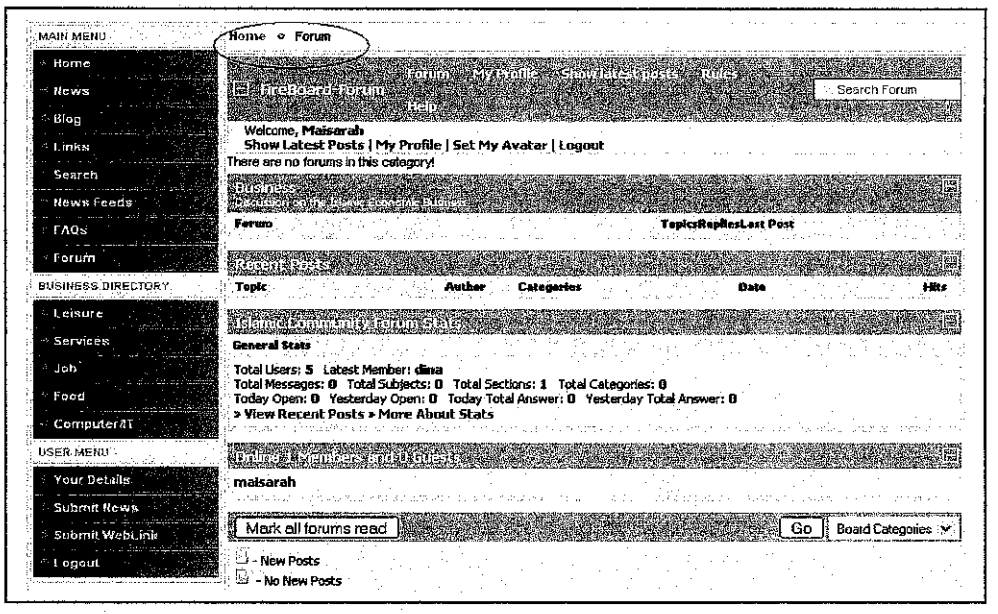

Figure 20: Snapshot of Forum Page

Figure 19 shows the Forum page where the users can post their views and opinion to the portal and other users can immediately reply the post as their feedback. Forum is a good platform for users to have a discussion on the specific topic or area, so that they can share their thought and knowledge.

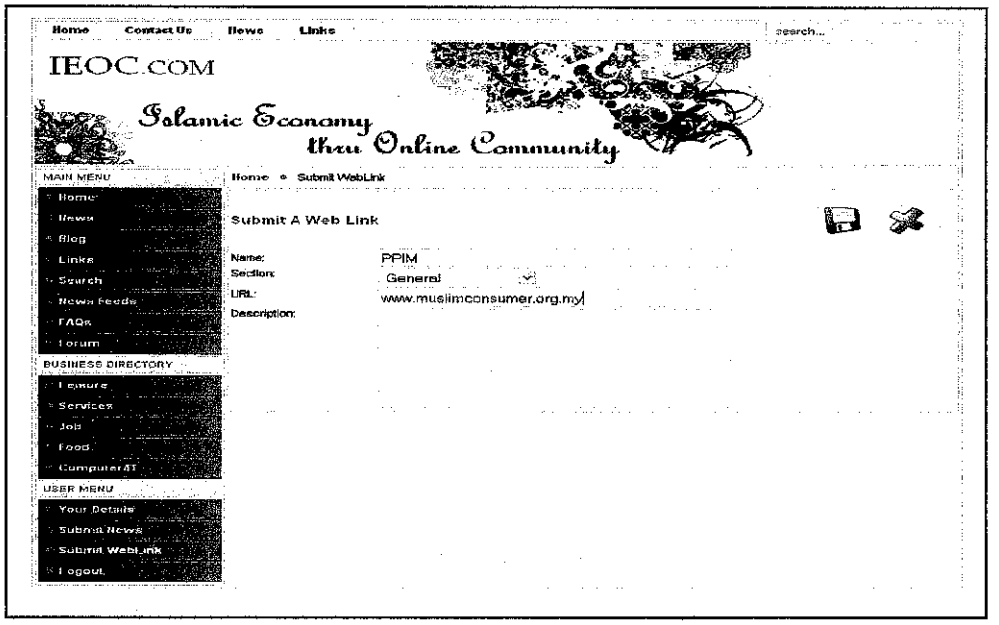

Figure 21: Submit Web Link

Figure above shows the page where the users can submit the Web Link into the portal. The users need to fill in the name of the web, and the URL. After the submitted link approved by the administrator, the link can be view by the registered users and once the user click on the link, it will automatically go to the link website.

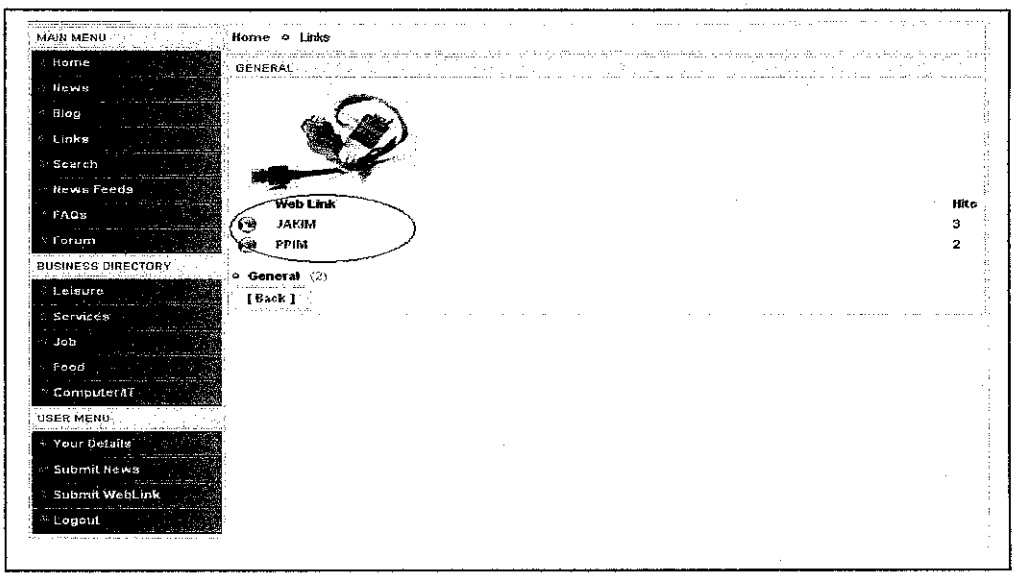

Figure 22: Web Link Page

Figures shows the web link that posted by the users or administrator. By having the Web link function, users can acknowledge on the related web that may give them new information or idea. The link will direct automatically to selected web once the users click on that link.

CONCLUSION AND RECOMMENDATION

The project is for supporting the knowledge transfer and sharing in the community, concentrating on Islamic economic scope. It is very important to encourage people on the sharing activities, and transfer their knowledge into the correct source. It is very useful for individual that really hunt for the information that might owned by the other individual. That is what we called knowledge sharing. By implementing the Online Islamic Economy thru Online Community, Muslims are expected to understand the important of the knowledge transfer and knowledge sharing among them and practice it as much as they can.

Besides that, there are some advantages that users can get via the proposed system. One of the advantage is that user can save time when dealing with the online system. There is no hassle like traffic congestion. Information can be obtained right from home or the office. Another advantage is that user can answer their question in "real-time". With the provided searching function, user does not have to wait for a long time to get the results from the website.

In conclusion, there are many ways to develop the Islamic portal website. Thus, there are some ways to handle the problem effectively. By generating the result correctly, which by implementing ontology and information retrieval, the results can be more accurate and effectively. The solution of the problems can be implemented efficiently in order to get the better result in encouraging users to practice knowledge sharing and transfer concept.

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APPENDICES

APPENDIX I

WORK BREAK DOWN STRUCTURE

For the planning phase, the project activity is to prepare project timeline which is consists of three parts of planning such as identify task, determine task dependencies and finalize timeline. For analysis and design part, the activities are such as prepare conceptual data modeling, web design as well as database development. Next, for executing phase part, the projects activities involve are such as information gathering and facts finding, search for relevant journal and article and search for suitable tools and development method. Other than that, it also involve about preparation of preliminary report which is consists of background of study, identify problem, significant of the project, objective and scope of study, methodology/project work, conclusion, prepare abstract, finalize preliminary report and submit preliminary report. Besides that there is the implementation part which involves the installation of development tools and develop prototype. Finally, the last phase is presentation phase. In this phase, the project's activities are such as prepare presentation material, revise and practice for presentation and submission final report.

APPENDIX II

GANTT CHART - Project Timeline and Milestone (FYP Part A)

#	Detail\Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	**Selection of project title**	■	■	■											
	i) Research on interested topic														
	ii) Submission of Project Proposal														
	iii) Topic approval and supervisor assigned														
2	**Requirement analysis and definition**				■	■	■	■	■						
	i) Project background identification														
	ii) Literature Review														
	iii) Project relevancy analysis (survey)														
3	**Submission of Preliminary Report**														
4	**System Design**									■	■	■	■	■	■
	i) System architecture														
	ii) Database Design														
	iii) Storyboard design														
5	**Submission of Interim Report**														
6	**System and Website Development**											■	■	■	■
	i) Web server installation														
	ii) Database server installation														
	iii) Interface design														
7	**Oral presentation**														

■ **PROCESS** **MILESTONE**

APPENDIX III

GANTT CHART - Project Timeline and Milestone (FYP Part B)

#	Detail\Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	**System and Website Development**														
	i) Programming and coding														
	ii) Database Management														
2	**Submission of Progress Report**														
3	**Implementation and testing**														
	i) Set-up system														
4	**Maintenance**														
	i) Correcting error														
5	**Submission of Final Draft**														
6	**Seminar**														
7	**Submission of Final Report**														
8	**Pre-EDX (Exhibition)**														
9	**Oral Presentation**														
10	**Submission of Dissertation**														

PROCESS **MILESTONE**

APPENDIX IV

EVALUATION PRE-TEST

Introduction:

The survey is to gather data for the Islamic Economy thru Online Community implementation. The Muslims users to sharing and exchanging specialized knowledge, experience, and views about the daily routine problem, facilitating circulation of community knowledge and collects community members' opinions. This survey is to determine whether the portal could benefit community.

For Overall System:

For the following questions, please thick the answer in the appropriate box. (Yes or No)

No.	Questions	Disagree	Neither Disagree Nor Agree	Agree
1.	The Islamic Economy thru Online Community will be convenient for the Muslims.			
2.	If the system is ready and running, you consider using the system to search the information through the internet rather than manual system (library, book store, etc)			
3.	Islamic Economy thru Online Community can help Muslims to gain huge of information and knowledge.			

System Functionalities

For the following questions, please circle the answer with the range 1 (strongly disagree) to 5 (strongly agree).

No.	Questions	Scores				
1.	Islamic Economy thru Online Community needs to be divided the Search according to categories.	1	2	3	4	5
2.	Islamic Economy thru Online Community needs to be divided the information according to types of documentation (journal, article, books, and forum).	1	2	3	4	5
3.	Islamic Economy thru Online Community must include a scheme to attract people to contribute an idea to the system.	1	2	3	4	5
4.	The navigation around the system must be direct and also user-friendly.	1	2	3	4	5
5.	There must be an announcement section in the website where the Administration can post the latest update on the website.	1	2	3	4	5
6.	This website will benefit the community.	1	2	3	4	5

Respondent Feedback

No.	Respondent Information
1.	**Gender** a) Male b) Female
2.	**Age** a) <20 b) 20-30 c) 31-40 d) 41-50

Thank you.

APPENDIX V

EVALUATION POST-TEST

Introduction:

The survey is to gather data for the Islamic Economy thru Online Community implementation. The Muslims users to sharing and exchanging specialized knowledge, experience, and views about the daily routine problem, facilitating circulation of community knowledge and collects community members' opinions. This survey is to determine whether the portal could benefit community.

For Overall System:

For the following questions, please circle the answer with the range 1 (strongly disagree) to 5 (strongly agree).

No.	Questions	Rating		
1.	The system application is easy to use.	1	2	3
2.	The system flow is easy to follow.	1	2	3
3.	The content of the system is understandable.	1	2	3
4.	The system application is valuable and important to people.	1	2	3

For Search Function:

No.	Questions	Rating		
1.	The Search function is easy to use.	1	2	3
2.	The search result is precise in retrieved the information	1	2	3
3.	The content of the search result is relevant to the query.	1	2	3

4.	The search function is valuable and important to the system.	1	2	3

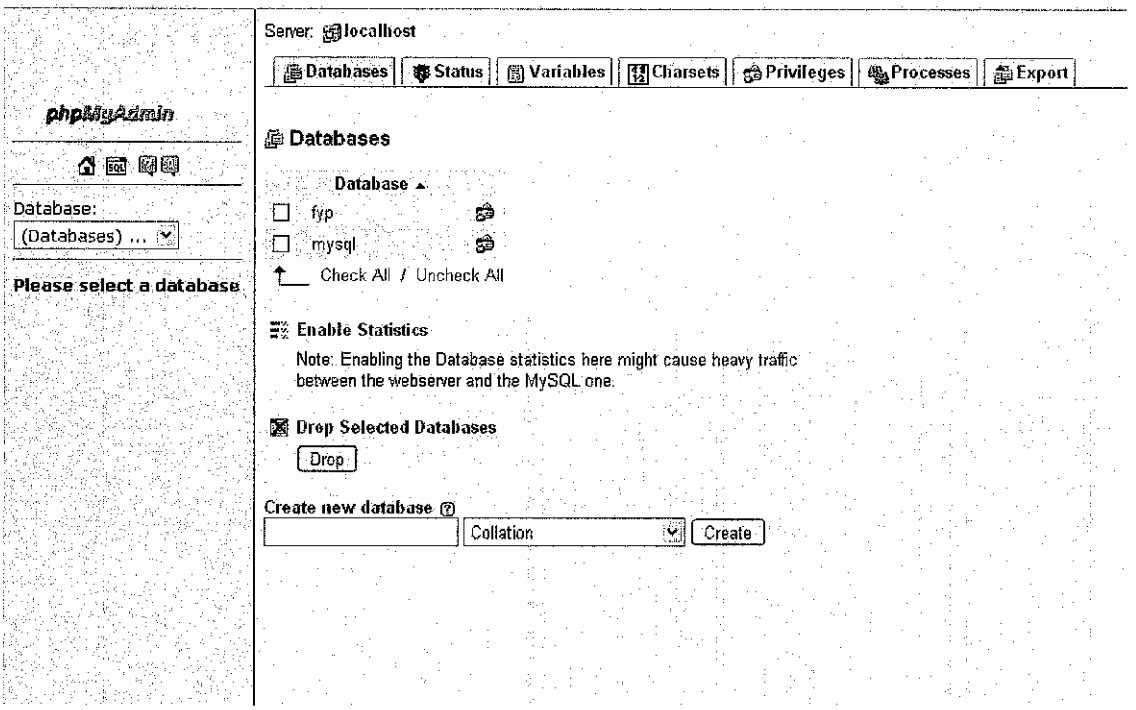
Respondent Feedback

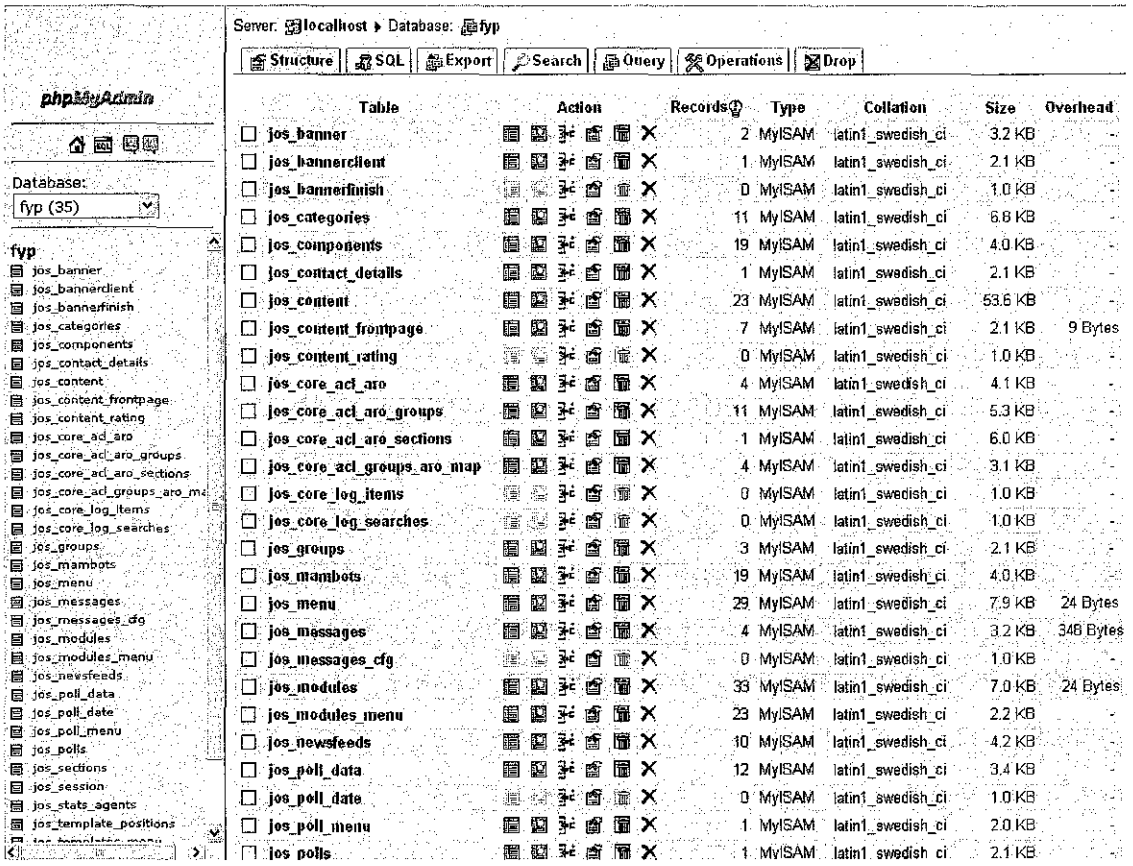
No.	Respondent Information
1.	**Gender** c) Male d) Female
2.	**Age** ▪ <20 ▪ 20-30 ▪ 31-40 ▪ 41-50

Thank you.

APPENDIX VI

SYSTEM DATABASE




phpMyAdmin
Database:
fyp (35)
fyp
jos_banner
jos_bannerclient
jos_bannerfinish
jos_categories
jos_components
jos_contact_details
jos_content
jos_content_frontpage
jos_content_rating
jos_core_acl_aro
jos_core_acl_aro_groups
jos_core_acl_aro_sections
jos_core_log_items
jos_core_log_searches
jos_groups
jos_mambots
jos_menu
jos_messages
jos_messages_cfg
jos_modules
jos_modules_menu
jos_newsfeeds
jos_poll_data
jos_poll_date
jos_poll_menu
jos_polls
jos_sections
jos_session
jos_stats_agents
jos_template_positions
Server: localhost ▸ Database: fyp
Structure
SQL
Export
Search
Query
Operations
Drop
Table
Action
Records
Type
Collation
Size
Overhead
jos_banner 2 MyISAM latin1_swedish_ci 3.2 KB -
jos_bannerclient 1 MyISAM latin1_swedish_ci 2.1 KB -
jos_bannerfinish 0 MyISAM latin1_swedish_ci 1.0 KB -
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jos_components 19 MyISAM latin1_swedish_ci 4.0 KB -
jos_contact_details 1 MyISAM latin1_swedish_ci 2.1 KB -
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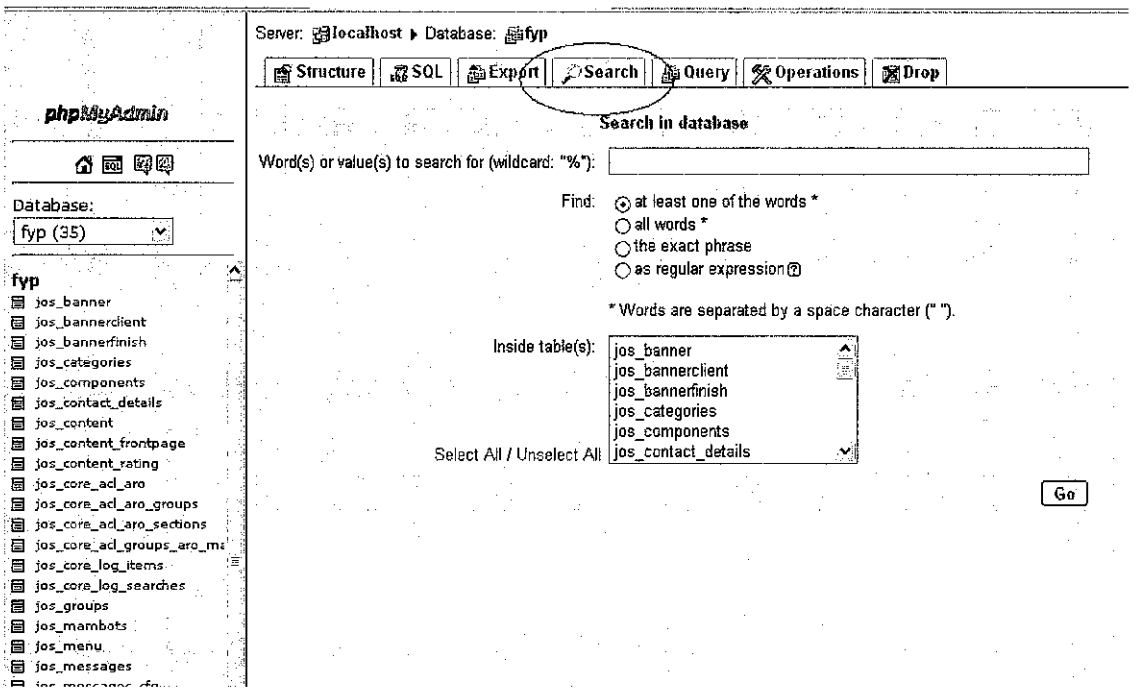
jos_poll_menu 1 MyISAM latin1_swedish_ci 2.0 KB -
jos_polls 1 MyISAM latin1_swedish_ci 2.1 KB -


phpMyAdmin
Database:
fyp (35)
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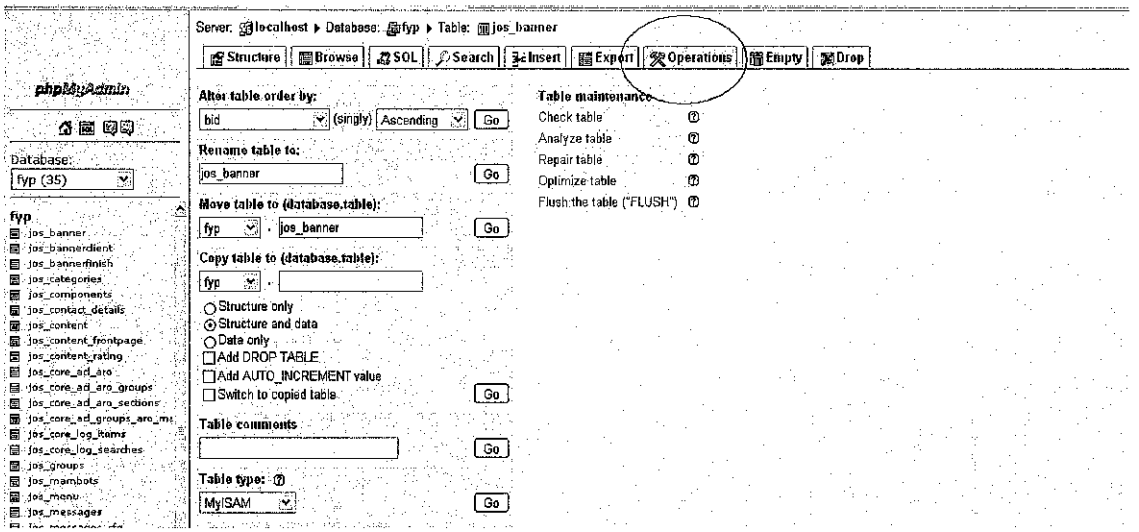
jos_core_acl_aro_sections
jos_core_log_items
jos_core_log_searches
jos_groups
jos_mambots
jos_menu
jos_messages
Server: localhost ▸ Database: fyp
Structure
SQL
Export
Search
Query
Operations
Drop
Search in database
Word(s) or value(s) to search for (wildcard: "%"):
Find:
at least one of the words *
all words *
the exact phrase
as regular expression
* Words are separated by a space character (" ").
Inside table(s):
jos_banner
jos_bannerclient
jos_bannerfinish
jos_categories
jos_components
jos_contact_details
Select All / Unselect All
Go


Server: localhost ▸ Database: fyp ▸ Table: jos_banner
Structure
Browse
SQL
Search
Insert
Export
Operations
Empty
Drop
phpMyAdmin
Database:
fyp (35)
fyp
jos_banner
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jos_core_log_searches
jos_groups
jos_mambots
jos_menu
jos_messages
Alter table order by:
bid
(singly)
Ascending
Go
Rename table to:
jos_banner
Go
Move table to (database.table):
fyp
jos_banner
Go
Copy table to (database.table):
fyp
Structure only
Structure and data
Data only
Add DROP TABLE
Add AUTO_INCREMENT value
Switch to copied table
Go
Table comments:
Go
Table type:
MyISAM
Go
Table maintenance
Check table
Analyze table
Repair table
Optimize table
Flush the table ("FLUSH")