ISLAMIC UNIVERSITY OF TECHNOLOGY

ORGANISATION OF ISLAMIC COOPERATION

DHAKA BANGLADESH

WEBSITE FOR THE NATIONAL HAJJ COMMITTEE OF CAMEROOM

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OCTOBER 2013

Dedication

To the Muslim Community

Acknowledgement

All the praises and thanks be to Allah, the Lord of the Alamin (mankind, jinn and all that exists). Qur'an (V. 1:2).

First and foremost we thank the Almighty Allah (SWT) for blessing us with this beautiful project and for giving us the knowledge, strength, determination, spirit of team work and for accompanying us throughout the successful development of this project.

Our special thanks goes to Mr Shaikh Jeeshan Kabeer, our project supervisor, who endlessly directed and supported us throughout the successful completion of this project.

We express our sincere gratitude and thanks to Prof. Dr. M. A. Mottalib, head of the Computer Science and Engineering Department of the Islamic University of Technology and the entire staff of the department for the work and efforts they are doing to teach us the knowledge of computer science and engineering.

Contents

Abstract

This report describes the design and implementation of a management website for the National Hajj Committee of the Republic of Cameroon. It provides an online system where pilgrims can register for Hajj or Umra directly online thereby saving a lot of time and procedures for the pilgrims. It also provides management features for the National Hajj Committee where they can get the statistics of the present and past pilgrimages and then use these statistics in their decision making. Hajj operators also have a section dedicated to them on this system with features that enable them to easily handle and take care of pilgrims who have registered under them. Islamic education is also incorporated especially that related to the performance of Hajj and Umra. This system will benefit both the National Hajj Committee as well as the pilgrims. It helps save time for both parties as well as provides a national platform for the National Hajj Committee to easily perform its activities of preparing pilgrim to go for Hajj or Umra.

1. Introduction

Our system is basically going to be used to help Muslim brothers and sisters who reside in Cameroon to prepare for their journey to the house of the Almighty ALLAH during the month of Hajj. This system is going to be used by the Government committee in charge of Hajj (COMNAHAJJ) and by the various authorized operators or people assigned to take care of pilgrims in their respective regions.

1.1 What is the COMMISSION NATIONAL DU HAJJ?

The commission National du Hajj, known as National Hajj Committee in English is a Government's committee in charge of preparing pilgrims who live in Cameroon in order for them to perform their Hajj or Umra. It is registered under the Cameroon Ministry of Territorial Administration and Decentralisation and under the Chairmanship of the Minister. They work in collaboration with the Embassy of the Kingdom of Saudi Arabia in Cameroon for all the necessary documents and processes needed by pilgrims. They are also in charge of booking travelling tickets for the journey of the pilgrims mainly by renting planes that will transport the all the Muslims who live in Cameroon and are going for Hajj. They also take care of booking hotels and transportation vehicle in Saudi Arabia for the pilgrims.

1.2 Description of Current System used by COMNAHAJJ

The system currently used by the committee is still a manual system. From pilgrimage registration to communication with the pilgrims and operators, everything is done manually. That is there is no common platform or technological system that is used by this committee to aid them in their very important activity.

1.3 Problems related to the current System

Given the fact that the system is manual here are some of the problems faced by the system. These are based mainly on our observations.

Accessibility to updated information

As defined above, we see that the committee mainly functions with statistics to perform its various activities. This implies that it needs accurate and updated information concerning the pilgrims in terms of the number of pilgrims, availability of their necessary documents and the overall national statistics. This kind of real time availability of information cannot be possible with a manual system.

Also, on the side of pilgrims and the Hajj operators, they need to be updated also with the information regarding their journey and the status of their registration in a timely manner. This is really difficult as the committee cannot get access to more than 4000 pilgrims at the same time. Most announcements are passed over the radio or publish at the ministry in Yaounde and it is impossible for everybody to get these announcements at their exact time.

Knowing the authorised Hajj operators.

The committee works with operators in various cities to help accompany pilgrims to Hajj. The pilgrims face difficulties in identifying a reliable and authorised operator under which to register for Hajj. This is partly because information about the authorised operator is not readily available to the pilgrims. The information is mostly published at the ministry.

Suggestions and problems faced by the pilgrims and the Muslim community in general

It is difficult to get all the complaints about the problems faced by the pilgrims as seminars are mostly carried out regionally and not all the pilgrims can be present at the seminars.

No flexibility in registration

With the current system, a pilgrim can only register when he is in his city where his operator is found. In order words, a pilgrim cannot register from anywhere and at any time.

Administrative procedures

A lot of administrative procedures are used in the current system, which we think can be reduced with the use of today's IT technology.

2. Proposed System

2.1 Project Scope

This project is designed to be used by the National Hajj Committee of the Republic of Cameroon to facilitate their activities which involves the management and preparation of pilgrims for their ultimate and important journey to the House of Allah in the Kingdom of Saudi Arabia.

2.2 Objectives

Given the above problems faced by the system, we set up some objectives that will be implemented in our proposed system to help reduced the problems and ease the activities of the committee as well as that of the pilgrims. Below are some of our objectives

Internet based system

We propose an Internet base system to be used by the National Hajj Committee to carry out all its activities as well as to be used by the Hajj operators and the pilgrims. This will readily proved updated and accurate information to all parties.

Online registration system

Our proposed system uses an online registration procedure for pilgrim going for Hajj and Umra. This will enable pilgrims to register from anywhere in the world and at any time provided they which to travel from Cameroon to Saudi Arabia for their pilgrimage. They will only need to be there during the departure or when their presence is absolutely needed.

Tracking of Registration Status

Our system will enable the pilgrims to track the status of their registration and take immediate action thereof. This helps the pilgrim know his registration level and whether his documents have been forwarded to authority in time.

Discussion platform for authorities, operators and pilgrims

Our system also incorporates a discussion platform where the Hajj authorities, Hajj operators and pilgrims will discuss their problems as well as share their Hajj experience with other pilgrims. It will also enable pilgrims and the Muslim community as a whole to get answers to their frequently asked question concerning the Hajj Committee as well as the pilgrimage in general.

Statistics and archives

Past and current statistics are very important for us to make decisions about the present and future. So we propose a system that will make available all the past and current statistics regarding Hajj in Cameroon as well as the archives of the activities of the committee.

Islamic Education

Acquiring Islamic knowledge is of prime importance to each and every Muslim and before going for pilgrimage you must have the necessary knowledge need to perform Hajj or Umra. Our system also considered this and it incorporates a section dedicated to learning how to perform Hajj and Umra as well as discussing Islamic education in general.

News

Information in general such as News is very important and our system incorporate a section dedicated to providing daily National News as well as some highlights of world news especially the ones concerning Islam.

2.3   Motivation

Being in an Islamic University and being sent here by our Government to acquire knowledge and help in the development of our respective countries, we thought of doing something useful for the Muslim community and to our country. That is where the Almighty ALLAH blessed use with this idea of developing a system for the National Hajj Committee that will help the Cameroon government to smoothly carry out its activities of helping Muslims residing in Cameroon to prepare and travel for Hajj as well as help reduce the tasks needed on the side of the pilgrims for their registration and preparation for Hajj.

3 Feasibility of our proposed system

3.1 Economical Feasibility

Economically, our system is feasible. This is because the cost of developing an Internet based system nowadays is relatively low as compared to the past. The decrease in the prices of computers used to run these applications and also the drop in the cost of the Internet makes our system economically feasible for the Hajj Committee as well as for the pilgrims. Also the cost of making information available to the pilgrims will be low with an Internet based system.

3.2 Technical Feasibility

On the technical side, our system is also feasible because the Internet is available everywhere in the country and also many households today now own a personal computer with an Internet connection. Also the committee can provide servers on which the system will be running as well as computers for use by the system administrators.

3.3 Behavioural Feasibility

Finally, our system is also behaviourally feasible because many Muslims will like to save some of their time by using the system to register and track their registration status anywhere and at any time. The commission will also be happy to get relieved from the huge manual work of processing the pilgrimage registration.

4   Information gathering

Information gathering is one of the problems we are facing in the development of our system. This is mostly because the system we are studying is in Cameroon. Notwithstanding we used the following sources

Communication through phone and mail

By communicating with our brothers and sisters at home, we are able to obtain some information concerning the National Hajj Committee as well as the procedure needed to register for Hajj when residing in Cameroon.

The Website of the Ministry of Territorial Administration and Decentralisation

From this website, we can read ministerial decrees, orders and announcements pertaining to the activities of the National Hajj Committee. We have to mention here that the National Hajj Committee is registered under the ministry of Territorial Administration and Decentralisation

News Article on Cameroon Daily News Websites

We also obtain information by reading news articles concerning the activities of the Hajj committee such as seminars and registration periods which are always published by these site such as www.cameroon-info.net and www.camer.be just to mention a few.

5 System Users and Activities

We now give a detail description of our system. We describe the features provided by our system as well as the implementation of our system and the technologies used to implement this system.

The system supports three main types of users excluding the ordinary site visitors. The makes the system to be divided into three main sections according to the type of user and user privileges. These are the administrator, operator and pilgrim. A description of each user and their interaction with the system is follows.

5.1 The Administrator

This is an authority from the National Hajj Commission. He has the overall control of the system. He can perform among others the following functions.

He accesses the central management section to perform the activities of the National Hajj Committee.

He is responsible for establishing Hajj registration periods on the system. That is he creates the registrations sessions for the Hajj year according to the Islamic Calendar as well as according to the National Hajj Committee's calendar of activities. He provides a start date for registration and a registration deadline. This enables registration for Hajj to be opened online for the Muslim community. He also provides the maximum number of pilgrims expected from the Republic of Cameroon as assigned by the Kingdom of Saudi Arabia. This is used by the system to automatically closed registration once the number of pilgrims is attained.

He also create establishes registration periods for the Umra packages offered by the National Hajj Committee for that year. He provides registration start date and deadline for registration. He can create registration sessions for different packages in advance but choose to keep then inactivated until the opening date.

The administrator has access to up to date statistics of Pilgrimage registration for the current year as well as for the past year. He can then generate reports and use this real time statistics for the planning of logistics and other activities.

Through the system, the administrator has the capability of managing the authorised Operators or Groups that are accredited by the National Hajj Committee. He has the capability to create new Operators and activate their sections on the system so that the activated Operated can use his section to manage pilgrims registered under him. He also can deactivate and active operator on the system thus removing the Operator any rights of managing pilgrims.

Another function of the administrator is making information available to the public on the system. This information includes among others ministerial orders, announcements from the National Hajj Committee, guidelines for pilgrims and Operators as well as general information for the public. This Information is categorised according to the audience targeted by the administrator and only the proper target can view this information once logged on the system.

The administrator also maintains and controls the discussion forum provided on the system. He does this by creating discussion topics for the users to express their opinions as well as ensures that the discussion of the users remain within an underlying topic without any violations of the rules of the National Hajj Committee.

The Education section of the system is also managed by the administrator. He provides the education content for the users and regularly updates the content.

The FAQs (frequently asked questions) is also managed by the administrator. He provides the FAQs and their corresponding answers and has the control of activating or deactivating a FAQ depending on the situation.

The content of the photo gallery is also provided by the administrator and all this is done dynamically on the system.

These are just some of the functions that the administrator can perform and there are many others that will become clear as we move along.

It should be noted that the system is designed in such a way that there can be multiple administrators with one main administrator known as the super admin whose is in charge of creating and managing other administrators. Of course the number of active administrators will be determined by the authorities of the National Hajj Committee.

5.2 Pilgrimage Operator

We now discuss the functions of the pilgrimage operator or operator in short as the second type of user of our system. As we earlier defined the role of the Operator or Group for pilgrimage, he is in charge of managing pilgrims registered under him from their period of registration to performing the Hajj in the House of Allah and returning. We therefore offer him features that will facilitate his work as well as facilitate his communication or collaboration with the National Hajj Committee.

The Operator has a section accessible only to him provided his section is activated by the administrator, where he can perform the following

The Operator has a profile page created by the administrator. This page is filled by the Operator and contains information such as the Group Name, location (region and city), address, email, phone etc as well as a brief description of his Group. This page can only be

edited by the Operator. Users use this page to know more about the Operator or to have their contacts.

He has receives registration requests from pilgrims who wish to register under his group for Hajj or Umra. This is the preliminary registration.

The Operator has access to a list of preliminary registered pilgrims. After he receives complete registration documents as well as payment from a pilgrim, he then moves this pilgrim to the fully registered list of pilgrims under him. He then forwards the necessary document to the National Hajj Committee concerning the pilgrim. Part of this is done automatically by the system, except for the forwarding of hard copy document and payment.

He also has the opportunity to communicate with pilgrims registered under him by creating announcement that will be available on the system and accessible only to his group members. He has the ability of activating and deactivating the announcements to make them visible and not visible respectively depending on the situation.

He has access to past and present statistics which he can use for his daily decision making.

5.3   Registered Users

The third type of users of the system is registered users which is anybody who has an active account on the system. These are mostly pilgrims. The any fully registered user with the system can perform the following functions

The user has a profile page for managing his basic information. He can edit this information depending on the system settings.

One of the main activities of a user is online registration for Hajj or Umra. With an active account on the system, you have access to the online registration page where you can register and then complete you registration with chosen Operator by providing the hard copy document as well as paying your pilgrimage fees.

After registration, a user can track his registration status online. This helps the user to be of aware of the level of his registration and to take the necessary actions thereof.

The user has the opportunity to view all authorized Operators of the National Hajj Committee. He has access to the Operator's profile page where he can learn more about the Operator. Only operators activated by the administration can be viewed by the users.

To facilitate the listing of operators and search by users, the system provides some listing criteria such as listing operators by region.

The user can also search operators by using the searching mechanism of the system with its filtering criteria.

The users also can verity the authenticity of an operator by providing the operator's Identification numbers and the system will respond accordingly.

Another activity performed by registered users on the system is participating in the online forum. Registered users have the capability of taking part in the discussion topics created by the administrator. Here, the user has the opportunity to express his thoughts and share his Hajj and Islamic knowledge with other users. The user takes part in the forum where he discusses his problems as well as provides suggestions regarding the system as well as the National Hajj Committee.

Another major functionality for registered users is viewing and reading of announcements created by the administrators and the Operators. Registered users can view ministerial orders and other announcements that the National Hajj Committee supplies on the system. Also, a registered user who has registered for pilgrimage under an operator can view and read the announcements created by this operator. This allows the users or pilgrims to be updated with the activities of the National Hajj Committee as well as that of their Operators and it also helps keep all parties in touch.

5.4 Ordinary Site Visitors

The last type of users of the system not mentioned above is the ordinary site visitor. The activities we explained here apply to all the users mentioned above and are important for their activities on the system.

All the system users can have access to registration information concerning Hajj or Umra packages. The can see the registration periods established by the National Hajj Committee as well as the registration deadline.

They also have access to general information for the current Hajj year as well as the Umra packages. This includes information such as the possible start and end dates of the pilgrimage as established by the Islamic calendar, the requirements for taking part in the pilgrimage and other necessary information.

They also have access to the list of operators and their profile pages.

The education section of the system is accessible to all types of users. Users can read about Hajj, Umra and Islam in general. This helps users spend some time on the system to understand the principles and practice of Hajj as well as learn Islamic knowledge.

General site visitors can view and read the discussions going on in the forum but cannot take part in the discussion.

The photo gallery of the system is also accessible to all users and the users can view all the galleries of events uploaded by the National Hajj Committee.

Every system user also has access to their frequently asked question as well as their corresponding answers.

The users also have access to announcements created by the National Hajj Committee for the general public.

Finally, all users have access to the contact information of the National Hajj Committee as well as that of the Ministry of Territorial Administration and Decentralisation. They also have access to the useful links provided by the system such as links to Embassy websites and useful contacts.

That the description of the system on the perspective of the activities performed by the different types of system users.

6 System Design

We now focus on the system design. We discuss about the processes in the system as well as the interactions within and between these processes and the general flow of information within the system. We do this with the help of data flow diagrams, use case diagrams, process flow charts and other necessary tools used for designing and presenting system.

6.1 Dataflow diagram
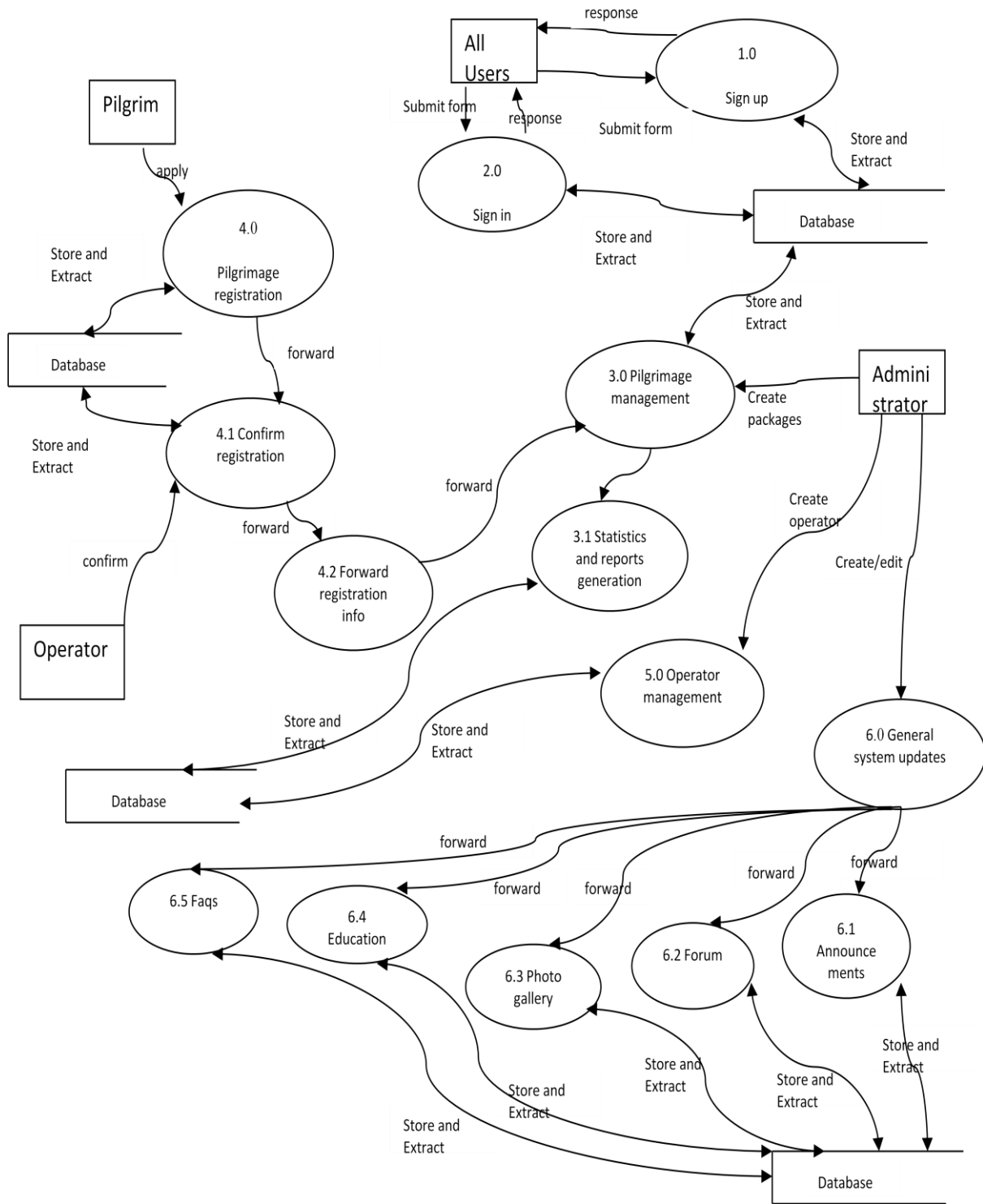
The dataflow diagram above shows the major processes of the system along with the flow of data through the system. A description of each process follows.

The Sign up process

The sign up process that is process 1.0 on the dataflow diagram above is the first process of our system. As the name suggests, this is the process with which users go through to obtain membership of the system. After completing this process successfully, the person becomes a registered user of the system. Information flows from the person to the sign up process for processing. After successful processing, information flows out of the sign up process into the system database as indicated with the arrows. Information supplied by the user for sign up include among others first name, last name, date of birth , country, city, religion, e-mail address, a system password for the user and some other details. The user also supplies a verification code otherwise called captcha to help fight spams. This information is then processed by the sign up process. The process first validates the user input by making sure that all information supplied are accurate and correspond to their required types such as valid e-mail address in email field, valid phone numbers and that the information passes all the validation and security rules imposed by the system. After the successful validation of user input, the sign up process queries the database to obtain more information for further processing of user input. This information together with that supplied by the user is used by the process to ensure single membership for each user. As we can see from the figure, information flow between the user and the process is bidirectional. This is because the sign up process communicates status information to the user as it is processing the user input. After completing its processing, the process finally reports the result of operation to the user.

The Sign In process

The Sign Process, process 2.0 is a simple process that enables a registered user to log into the system and have access to the features that correspond to his user type. Sign In information that is username and system password flows from the user into the system and status information such as successful or unsuccessful log in flow from the process to the user. Verification information also flows from the database into the sign in process. After successfully signing in, the user has access to all the system features pertaining to his user category.

The pilgrimage management process

Process 3.0 on the diagram, the pilgrimage management process is a very large process and one of the main processes of the system. This process models the core activities of the National Hajj Committee. This process has a child process, process 3.1.

Information flows from the administrator into the process and status information flows out of the process to the administrator. Information equally flows to and from the database into the process. Information also flows from process 4.2 into process 3.0. All these are the information required by the process to perform its tasks. One of the functions of the administrator as earlier stated is establishing registration periods for Hajj and Umra packages.

The administrator supplies this information such as the Hajj year, the registration opening date, registration deadline, Umra package etc to the process. The process uses this information together with information from the database to create the session on the system. The process then reports the result of the operation to the administrator.

Process 3.0 also receives registration information of confirmed pilgrims from process 4.2. This used by the administrator for further processing such as visa processing, flight ticket and other administrative procedure. It should be noted that some of these information are hard copy documents as earlier mentioned.

Statistics and reports process

This process denoted 3.1 is a child process of the pilgrimage management process. As the name suggests, it used to process and generate statistics and reports for the administrator. Information flows from the database into this process and it uses this information to the past and current statistics. These statistics are then utilized by the administrator for his activities.

Pilgrimage registration process

This is process 4.0 on the diagram. It is the system that models the process of registration for pilgrimage. It receives information from a pilgrim and also outputs status information to the pilgrim during execution. It also extracts information from the database to use in the registration process. Information supplied by the user includes his passport number, his chosen operator for the pilgrimage the Umra package in case the pilgrimage is Umra. After processing the registration, it reports the status to the pilgrim. It the registration is successful, this process forwards the registration information to process 4.1 for further processing.

Confirm registration process

This process it used to complete and confirm the pilgrim as fully registered for Hajj or Umra. Confirmation information flows from the Operator under whom the user registered for the pilgrimage into the process. Registration information from process 4.0 also flows into this process. After successfully registering the pilgrim and confirming his registration status, this information is forwarded to process 3.0 that is to the National Hajj Committee. Information is also forwarded in hard copy.

Operator management process

Process 5.0 on the diagram, Operator management is used by the administrator to create and manage pilgrimage operators. Information necessary to create a pilgrimage operator is supplied by the administrator to the process. This includes information such as the name of the operator, the region and city of location. This is then used by the system with

information from database to create the operator. The process also provides necessary information and statistics needed by the administrator to manage the operators. The system sends information to the database for storage.

General system update

This process denoted 6.0 is a combination of smaller processes concerned with general system activities. These activities are performed by the administrator.

Announcement process

Process 6.1 is used to create and process all the announcements or notifications on the system. The administrator supplies the information to be announced as well as the information to control the visibility and activation of the announcement. This is processed and information sent to the database for storage.

Forum process

Process 6.2 is concerned with the management of the forum. The administrator creates discussion topics on the forum from this process. Information flows from the administrator into this process and from the process to the database for storage.

Photo gallery Process

Process 6.3 is concerned with the photo gallery. The administrator creates gallery from this process. He supplies the pictures with the necessary descriptions and this information processed and stored in the database.

Education process

The education process, numbered 6.4 on the diagram is used by the administrator to create the Islamic content on the system. The administrator supplies the content which is processed and sent to the database for storage.

Faqs process

This process is used by the administrator to manage the frequently asked questions on the system. It equally stores the frequently asked questions to the database. This enables the creation of a dynamic rich content

6.2 Use case Diagram
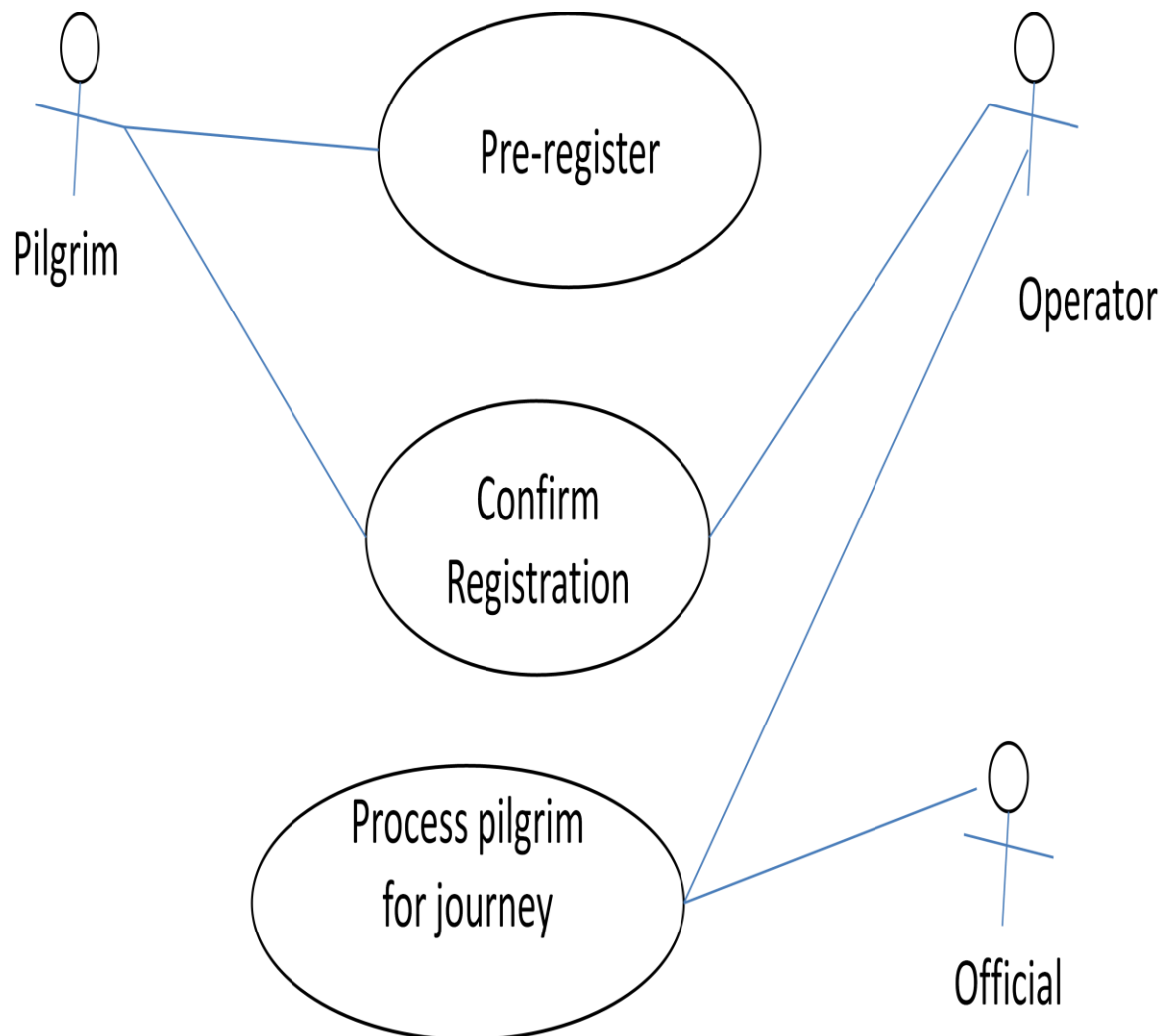
The use case diagram above describes the registration process for pilgrimage. It contains three use cases with three actors. The actors represent the 3 main types of users of the system.

The first use case, the pre-registration use case describes the registration process. The pilgrim is the only actor in this use case. The pilgrim requests registration for Hajj or Umra by filling the registration form. The submitted information is then processed. After a successful validation and processing, the information sent to the Hajj operator under whom the pilgrim has registered. The pilgrim then becomes a preliminary registered pilgrim for the said Hajj or Umra.

The second use case describes the functionality of confirming a pilgrim as fully registered for the Hajj or Umra. It actors are the concerned pilgrim and the operator chosen by the pilgrim. The pilgrim completes his registration requirement by supplying all the hard copy documents and pays his pilgrimage fee. The operator then uses this information together with the registration information to confirm the pilgrim as fully registered for the underlying Hajj or Umra. The operator then forwards all the pilgrimage information as well as his payment to the National Hajj Committee for further processing.

The third use case, describes the functionalities of the National Hajj Committee. The administrator works together with the operator to finalize all necessary document needed by to pilgrim to travel for pilgrimage in Makka. This includes obtaining his visa, flight ticket as well as his transportation and housing facilities in the kingdom of Saudi Arabia during the pilgrimage.

6.3 System Flowcharts

The Registration Process

Start

Pilgrim

Operator

Fully Registered

Logged In? — No

yes

Payment and documents Ok — No

yes

Request Registration

Confirm Registraion

Registered ? — yes — Show Registration Info

No

Pre-registered

Field Registration form

yes

Validation Ok — No

Successful?

No

yes

Submit and Process
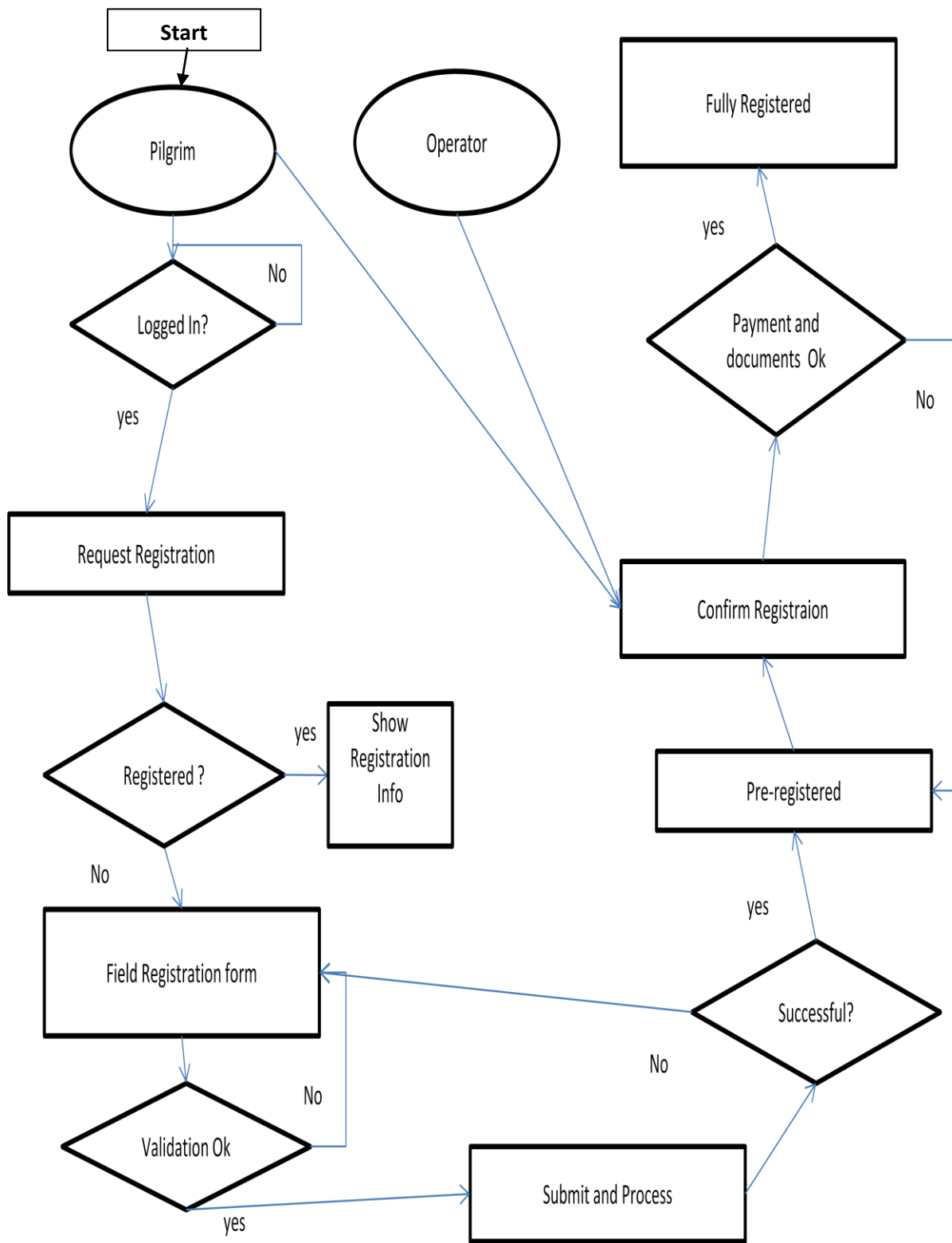
The flow chart above describes the pilgrimage registration process as implemented by the system.

The process starts with the pilgrim requesting the registration page. But before that, the user must be a member of system and must be logged into the system. The process first checks if the user is logged into the system in other words if the user is having an active session. If the user is not logged in, the system asks him to log in before proceeding. Otherwise if the user is logged in, then he can request the pilgrimage registration form. After the request, the system checks if the user has already registered for the current Hajj or if the user has registered for any of the Umra packages in case of Umra. If he has previously registered for the current Hajj, then the system displays his registration information with the status of his registration and stops there. If the pilgrimage is Umra and he has registered for any of the active Umra packages, then the system displays his registration information and asks whether the user wishes to register for a new Umra package. This checking is to ensure that one person registers only one time for a particular pilgrimage.

On the other hand, if the user has not previously registered for the pilgrimage, the registration form is displayed for him to fill. The user fills the required information for registration and submits the form to the system. After submission, the user input is validated for correctness and conformity with the rules of the system. If the validation fails, the user is requested to fill the form again. After a successful validation of the form, the user input is submitted and processed by the system. If the processing is unsuccessful, then the user is required to fill the form again. This is because the error by be due to incorrect user inputs that could not be caught by the validation process. After a successful processing, the pilgrim becomes a preregistered pilgrim for the said pilgrimage. The registration information is forwarded to the operator under whom the pilgrim has registered.

The operator together with the pilgrim then completes the registration procedure. The pilgrim supplies the entire hard copy documents and pays his fee. The operator then provides this information to the system. If the documents and payment are complete, then the pilgrim becomes a fully registered pilgrim and is ready to go for pilgrimage by the Grace of the Almighty Allah. If the documents and payment are not completed, he remains a preregistered pilgrim until he completes his registration requirements before the registration deadline.

7 Database Design

We now turn over to the database design. At the foundation of every management system lays a solid database. This database defines the type of information handled by the system and provides storage for this information. It also helps define the interfaces that will handle this information.

The database has been designed and implemented using the following technologies:

1. MySQL, version: 5.5.25a - MySQL Community Server (GPL)Structure Query Language, with storage engine MyISAM
2. Structure Query Language

Database basic Information

a. Name: comnahajjdb
b. Number of Table: 17

We now describe the design of the database using Entity Ralationship (ER) diagrams.

7.1 ER Diagram
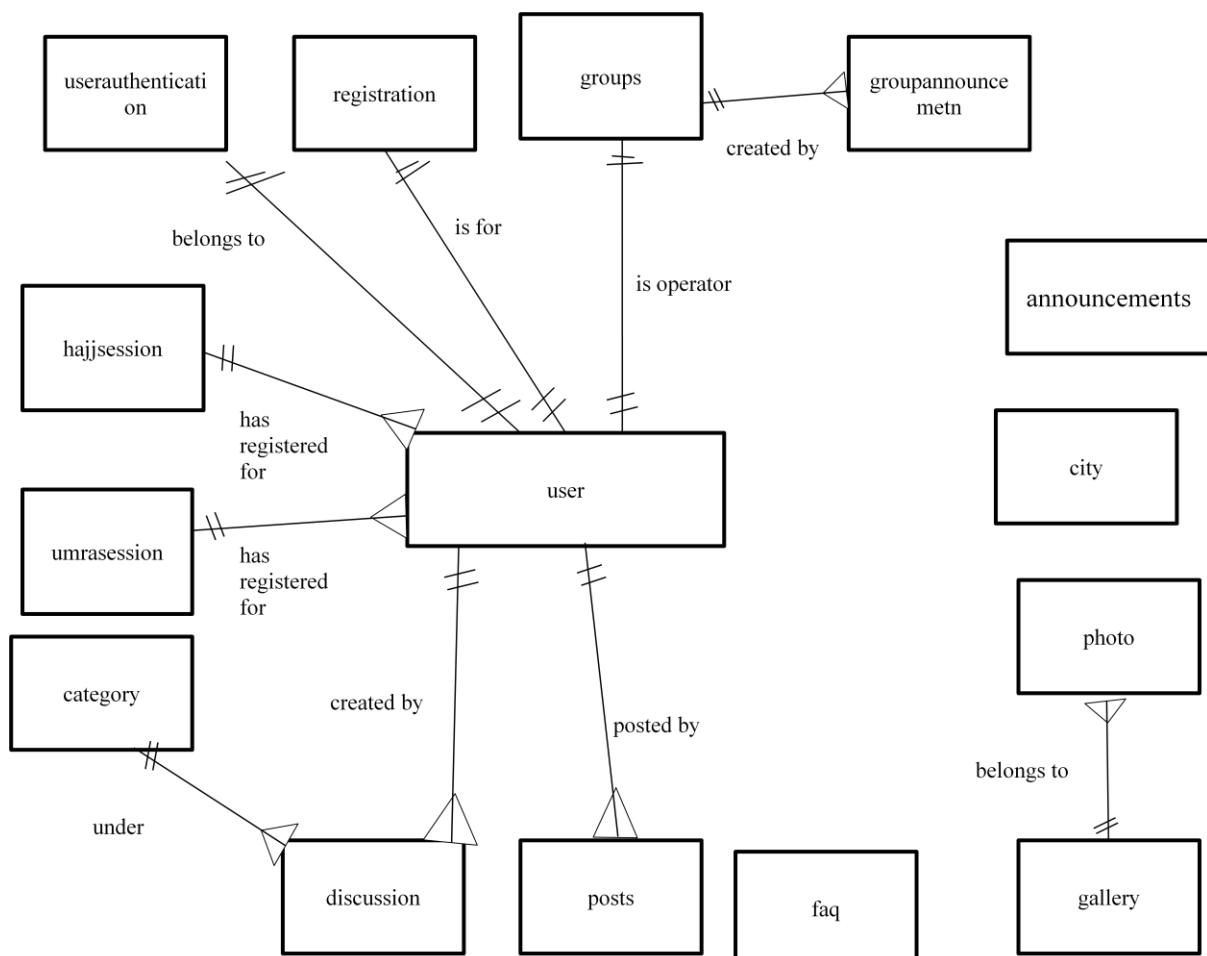
Below is the brief description of each table in our database

7.2 Database tables

Table Name: user

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
firstName	varchar(255)	No		
lastName	varchar(255)	Yes		
dateOfBirth	date	No	NULL	
gender	varchar(255)	No		
country	varchar(255)	No		
religion	varchar(255)	No		
email	varchar(255)	No		
Phone	int(11)	No		
type	varchar(1)	No	r	

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	51	A	No	
email	BTREE	Yes	No	email	51	A	No	

Description:

This table from the name stores the user information. It is the membership table used when a person signs up in the system. It has as primary key id and email. This is to ensure uniqueness of each table entry. The type field is used to differentiate the different type of system users described earlier. This can be 'o' for administrator or official, 'g' for operator or group owner and the default, 'r' is for registered users.

Table Name: userauthentication

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
login	varchar(255)	No		
password	varchar(255)	No		
lastModified	timestamp	No	CURRENT_TIMESTAMP	
lastLogin	timestamp	No	0000-00-00 00:00:00	

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	49	A	No	
Login	BTREE	Yes	No	login	49	A	No	
Login_2	BTREE	Yes	No	login	49	A	No	

Description:

The userauthentication table is used together with the user table during the sign up process. It contains the system authentication information of the user. This information is separated from the user table in order to enforce the security of the system. It has a one to one relationship with the user table through the login column which references the email column in the user table as well as through the id column with references the id column of the user table.

Table Name: hajjsession

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
hajjYear	Year(4)	No		
hajjStartDate	date	No		
hajjEndDate	date	No		
regOpenDate	date	No		
regCloseDate	date	No		
status	varchar(10)	No	nonactive	
message	text	No		

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	3	A	No	
hajjYear	BTREE	Yes	No	hajjYear	3	A	No	

Description:

This table stores information about the registration period of each Hajj year. It also stores the message to be passed to the public when the registration for Hajj is launched. It has as primary keys the hajjYear and the id columns.

Table Name: umrasession

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
umraYear	Year(4)	No		
session	varchar(30)	No		
umraStartDate	date	No		
umraEndDate	date	No		
regOpenDate	date	No		
regCloseDate	date	No		
message	text	No	NULL	
status	varchar(10)	No	nonactive	

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	5	A	No	

Description:

This table stores the registration information for each Umra package. It just like the hajjsession table described above but the difference is that there can be many Umra sessions in one year. So the primary key of this table is the id field. The status field indicates whether the Umra package is active. That is if it is opened for registration.

Table Name: registration

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
user	int(11)	No		
passport	varchar(255)	No		
bloodGroup	varchar(5)	No		
region	varchar(255)	No		
city	varchar(255)	No		
english	varchar(30)	No		
arabic	varchar(30)	No		
french	varchar(30)	No		

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	17	A	No	
user	BTREE	Yes	No	user	17	A	No	

Description:

The table store the information from the user during the pilgrimage registration process. It should be noted that after registering for a pilgrimage for the first time, the user does not need to supply this information again unless they have changed. This table has as primary key the id column. It is in a one to one relationship with the user table. The relationship is maintained by the foreign key user, which references the id column of the user table. This table is used for both Hajj and Umra registration.

Table Name: hajjpilgrim

Structure:

Column	Type	Null	Default	Comments
hajj	int(11)	No		
pilgrim	int(11)	No		
groupId	Varchar(255)	No		
confirmation	int(1)	No	0	

Description:
      This table is a relationship table that relates three tables, namely the registration table, hajjsession table and the groups table. It stores the hajj id for which the pilgrim has registered, the operator identification number under whom the pilgrim has registered and the reference to the pilgrim itself. It also has a field with determines the status of registration of this pilgrim.

Table Name: umrapilgrim

Structure:

Column	Type	Null	Default	Comments
umra	int(11)	No		
pilgrim	int(11)	No		
groupId	Varchar(255)	No		
confirmation	int(11)	No		

Description:
      This table serves the same purpose as the hajjpilgrim table described above. The only difference is that it is used the Umra registration.

Table Name: groups

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
groupId	varchar(255)	No		
groupLeader	int(11)	No		
assistant	int(11)	Yes	NULL	
groupName	varchar(255)	Yes	NULL	
region	varchar(255)	Yes	NULL	
city	varchar(255)	Yes	NULL	
phone	varchar(255)	Yes	NULL	
email	varchar(255)	Yes	NULL	
fax	varchar(255)	Yes	NULL	
address	text	Yes	NULL	
about	text	Yes	NULL	
creationDate	date	No		
createdBy	int(11)	No		
activation	int(1)	No	0	

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id		A	No	
				groupId	8	A	No	
groupId	BTREE	Yes	No	groupId	8	A	No	
groupLeader	BTREE	Yes	No	groupLeader	8	A	No	

Description:

This table stores the information of the different Hajj operators. It has as primary key the id column and the groupId which is the operator identification number that is automatically generated by the system. This id is hierarchical of the form REGCODE-IDNUM. Where REGCODE is a two letter code that denotes the region and IDNUM is the system assigned id. For example AD0001 stands for Adamaoua region, number 0001. The table is in a one to one relationship with the user table. This relationship is maintained by the groupLeader field with references the id column of the user table.

Table Name: announcements

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
title	varchar(255)	No		
section	varchar(255)	No		
visibility	varchar(1)	No		
message	text	No		
activition	int(1)	No	0	
creationDate	date	No		
lastModifiedBy	int(11)	No		
activitionDate	date	No		

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	10	A	No	

Description:

This table stores the various announcements and notification from the National Hajj Committee to its audience. The section field determines the section to which the announcement belongs. This includes Hajj, Umra or education. The visibility field is used to select the targeted audience. That is the specific system users who will be able to read the announcement as earlier described. The values correspond to the user types described in the user table.

Table Name: groupannouncement

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
groupId	varchar(255)	No		
title	varchar(255)	No		
message	text	No		
creationDate	date	No		
activation	int(1)	No		
activationDate	date	No		

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	10	A	No	

Description:

This table stores the announcements created by an operator for the pilgrims registered under him. It has a one to many relationship with the groups table.

Table Name: city

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
region	varchar(255)	No		
city	varchar(255)	No		

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	27	A	No	

Description:

      This table simple stores the region names and their corresponding city name.

Table Name: faq

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
question	varchar(255)	No		
answer	text	No		
status	varchar(255)	No	active	

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	5	A	No	

Description:

The faq table stores the frequently as question together with their corresponding answers.

Table Name: gallery

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
name	varchar(255)	No		
caption	varchar(255)	No		
c_Date	date	No		

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	7	A	No	

Description:

This table store the description and identification number of each gallery created by administrator as well as its creation date.

Table Name: photo

Structure:

Column	Type	Null	Default	Comments
id	int(11)	No		
name	varchar(255)	No		
gallery	int(11)	No		
caption	varchar(255)	Yes		
c_Date	date	No		

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	75	A	No	

Description:

   This table stores the reference name and caption of each picture that belongs to a gallery. It is in a many to one relationship with the gallery table.

The next tables we described are used together for the forum. They are used store the user discussions as well as the discussion categories created by the administrator.

Table Name: categories

Structure:

Column	Type	Null	Default	Comments
id	int(8)	No		
name	varchar(255)	No		
description	varchar(255)	No		

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	2	A	No	
Cat_name_unique	BTREE	Yes	No	id	2	A	No	

Description:

This table holds the categories of discussion created by the administrator together with their description.

Table Name: discussion

Structure:

Column	Type	Null	Default	Comments
id	int(8)	No		
subject	varchar(255)	No		
ddate	datetime			
cat	int(8)			
createdby	int(11)			

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	2	A	No	

Description:

The discussion table holds the various discussion topics created by the system users under the various categories defined by the administrator.

Table Name: posts

Structure:

Column	Type	Null	Default	Comments
id	int(8)	No		
content	text	No		
pdate	datetime	No		
topic	int(8)	No		
createdby	int(11)	No		

Indexes:

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	2	A	No	

Description:

The post table holds the posts or replies to the discussion topics created by different user. It has a many to one relationship with the discussion table. This is maintained by the foreign key topic that references the topic of discussion on the discussion table.

8 Interfaces

We now present some of the graphical user interfaces and forms of our proposed system together with brief descriptions of each interface.

8.1 System Home page
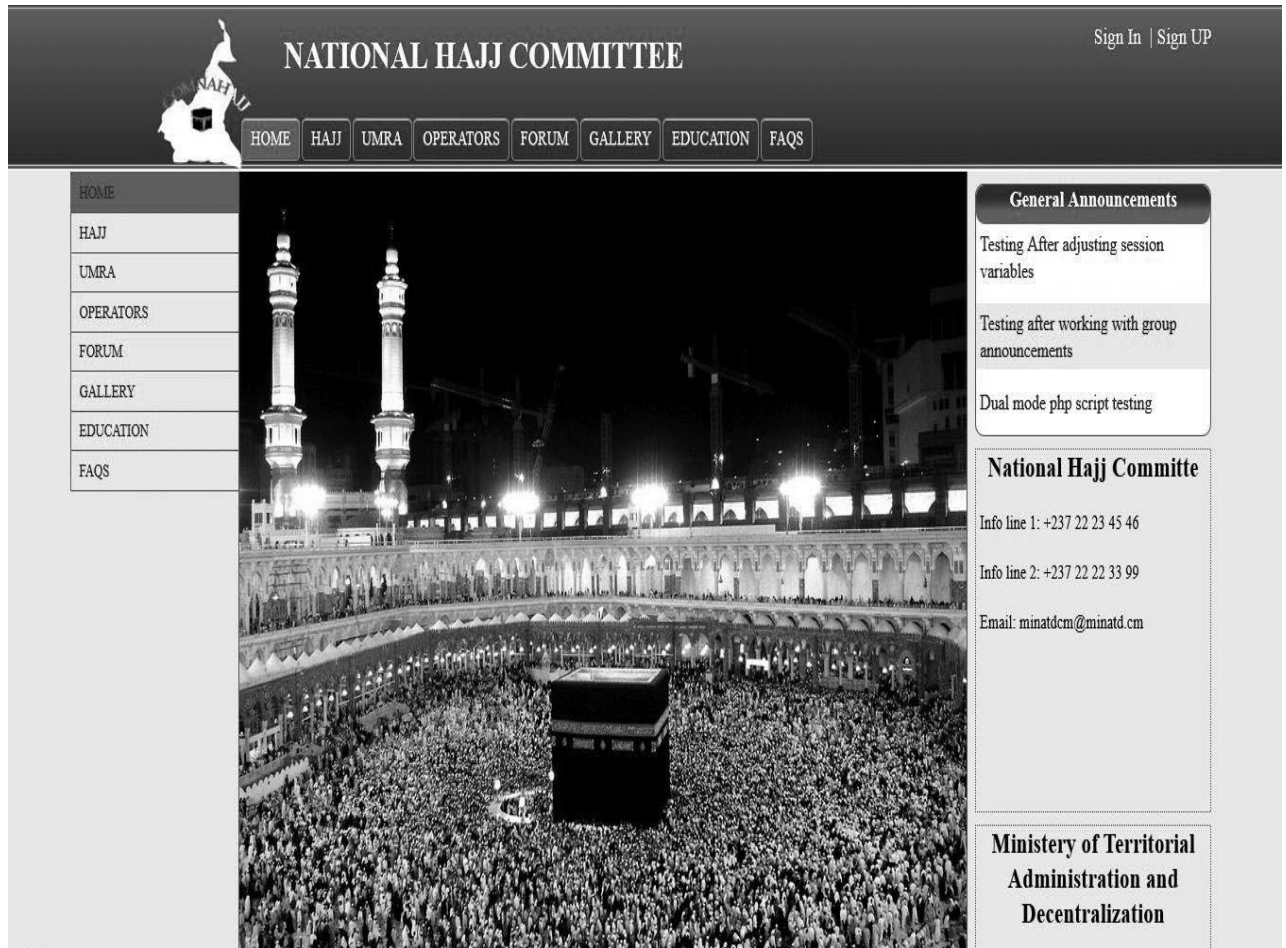
This figure shows the upper section of our home page. From the figure, we can see the main menu of the system that shows the various sections of the system. These sections are Home, Hajj, Umra, Operators, Forum, Gallery, Education and Faqs. We can equally identify the announcement pane on the right sight bar, with the contact information of the National Hajj Committee.

8.2 Sign up Form

This is the sign up form used by user to create an account on the system.

8.3 Administrator Section

This interface shows the management section of the system accessible to the administrator only. We can identify a new menu item called Management for the figure. This indicates that the user that is logged has administrator privileges. The menu on the left side bar shows the various activities that the administrator can perform.

8.4 Hajj Registration Form

The picture above shows the pilgrimage registration form. The registration form in this case in for Umra. The only difference with the Hajj registration form is the absence of the Umra session drop down list.

8.5 Operator Section

NATIONAL HAJJ COMMITTEE

Welcome **Abou Ben Hurairah** | Sign Out

HOME HAJJ UMRA OPERATORS FORUM GALLERY EDUCATION FAQS MY GROUP

PROFILE
PRE-REGISTERED
REGISTERED
ANNOUNCEMENTS

List Of Registered Pilgrims

Choose Hajj or Umra ◉ Hajj ○ Umra

Table 1: Registered Pilgrims

FIRST NAME	LAST NAME	DATE OF BIRTH	PASSPORT NUMBER	PHONE	REGION	CITY
Abou Ben	Hurairah	1990-01-10	15789521	2147483647	OU	Foumban
Sidick	Aboubakar	1989-09-14	14575223	1680672899	OU	Mbouda
Aicha	Ben Abou	1990-08-05	5698742	1236547899	NW	Bamenda
Mounibou	Aboudo	1999-11-11	12547834	11245663	OU	Foumban
Sounhati	Abodou	1995-08-13	12547839	1253324765	OU	Mbouda
Bahiya	Saliha	1996-09-10	12547839	10156424	OU	Bafoussan
Ahmed	Yussuf	1994-07-24	12847839	1763546512	OU	Foumban
salim	mohamed	1991-04-07	12547539	1254789635	OU	Dschang

Total Pilgrims: 8

General Announcements

Testing After adjusting session variables

Testing after working with group announcements

Dual mode php script testing

Users Announcements

Sample Testing of modification

Announcements For Operators

Testing the agencies

Announcements From Salam Group

Working with madi

Using operator's session variables

Creating from dual role form

National Hajj Committe

Info line 1: +237 22 23 45 46

The interface above shows the operator section of the page. We can identify a new menu item My Group. This is the section of the system dedicated to the operator only.

8.6 List of active Operators

This shows the list of authorized and active Hajj Operators.

9. Testing

A very important activity in software development is testing. We have performed some tests throughout the system development to make sure the system meets it functional and performance requirement.

We have performed unit tests on each module of the system to make sure the module functions as defined during the requirement analysis. These tests enabled us to correct any errors. After successfully implementing the modules and testing each module successfully, we then performed an integration testing. The enabled us to evaluate the performance of the system as a whole. This test proved successful with the current system environment. Finally, we performed a validation testing on the system, which evaluated the inputs and outputs of the system on a user viewpoint. These tests identified some errors on the system. These errors were corrected and we continue to test system in order to improve its quality and ensure that it meet the functional requirements as well as performance requirements.

10. Future work

This is the first release of the system and we have plans to incorporate more functionality as well as improve the system security, performance and user friendliness in general. In line with that, we plan to do the following in our future release of the system.

a. Incorporate an efficient online payment mechanism for the payment of pilgrimage fees.

b. Incorporate a News section to keep system users informed of what is happen in and around them

c. Improve our Educational section by incorporating video capabilities

d. Add a system messaging facility to facilitate communication between the different system users.

e. Improve and reinforce the system security as well as system performance.

11. Bibliography

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