Development of a Web-based Hajj Management System of a Hajj Organization

by

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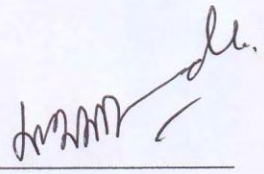

Md. Sultan Mahmud

Dedicated

to

My Parents and Family

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List of Abbreviations:

ERD	Entity Relationship Diagram
HMS	Hajj Management System
SRS	Software Requirements Specifications
CRUD	Create, Retrieve, Update and Delete
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
PHP	Personal Home Pages
MySQL	My Structured Query Language
UML	Unified Modeling Language
DBMS	Database Management System
SDLC	System Development Life Cycle
DFD	Data Flow Diagram

Acknowledgement

First of all, I would like to thank Almighty Allah for giving me the opportunity, strength and patience for carrying out this work and to complete this project.

I would also like to thank Dr. Md. Saiful Islam, Professor, Institute of Information and Communication Technology, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh for his valuable suggestions and constant encouragement throughout the entire period of the work, which encouraged and conducted me in each and every step of the project.

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Abstract

Hajj is one of the five pillars (central duties) of Islam. It is a set of acts of worship to be performed in and around Makkah at least once in a lifetime by every Muslim satisfying certain conditions[6]. At present, most of the hajj agencies are using paper based manual systems for managing pilgrims which is costly and time consuming. Hajj Management System, an online system whereby prospective hajj pilgrims will be able to register for hajj and manage their hajj procedures anytime and anywhere in the world. This project is initiated to facilitate managing hajj agencies, Pilgrims and related information and provide support to hajj offices at Dhaka and Kingdom of Saudi Arabia by effective use of Information Technology. The main objective is to smoother the hajj operation of the hajj agencies, reducing time in papers processing and managing their works such as online hajj registration and to speed up the hajj application procedures and providing better services to the pilgrims for Bangladesh. This system allows hajj agencies to sell its hajj and omrah packages that include hotel reservations, transportations and other services to its clients. This application will run on the company server and accessed from the Internet by customers using their web browser. The system can also be used to generate arrivals and departures reports. The system is packaged with a powerful financial module that allows recording daily financial transactions and accounting entries automatically and can be used to generate all financial reports such as income statements, balance sheets, and cost centre reports.

CHAPTER 1: INTRODUCTION

1.0 Introduction

The Hajj is the pilgrimage to Mecca is one of the five pillars of Islam and is obligatory for those with sufficient financial means, at least once in their lifetime [1]. It is the demonstration of the solidarity of the Muslim people, and their submission to Allah. Pilgrims would join processions of tens of thousands of people, who would simultaneously converge on Mecca for the week of the Hajj and perform a series of rituals [2].

The project is developed to relieve the burden of the group leaders as well as the hajj agencies that are deal with the annual pilgrimage for easy public management in their native country and the holy land. The annual pilgrimage has been drawing crowds of nearly 3 million people and managing the crowd requires systematic approach. In order to manage pilgrims properly, hajj agencies of 300 people are formed under a leader assign to help the pilgrims regarding the logistics, housing, transportation, sanitation, food, etc. These activities are being carried out manually and the project is intended to replace the manual job.

To provide hajj pilgrims in group that comprises of about 300 with information regarding bus schedules, movement from one point to another, and their welfare etc. is not an easy with manual process, their complains being processed quickly and they are kept up to date with the changes in schedules of the hajj.

During hajj, every Group leader deals with office through manual procedure. The group leader is responsible for everything that involves people in his group. He frequently contacts the office for their welfare, housing issue, bus and flight schedule etc. Thus processing the requests of hundreds of pilgrims manually is a tough job, takes a lot of time, is in efficient and lacks integrity in terms of serving every pilgrim properly. The hajj service office also face the same problem as they cannot serve the group leaders, in other words the hajj pilgrims.

Performing these functions is not easy for the group and meeting the demand of the group member is also very difficult due to the absence of system that will ease the work. Absence of system makes the job of group leaders, hajj service office very difficult.

1.1 Background and present state of the problem

Before the Web era various software development methodologies have been proposed for the development of software applications for different domains. The main objectives of

those methodologies were to meet user's requirements, find out means to suggest a systematic software development and reduce the maintenance cost of the developed software. On the emergence of the Web and to develop the web-based software systems, some existing methodologies have been extended. Also, new approaches (or informal methodologies) are introduced for the development of web-based systems because the development process for these systems is not considered as an extension of the classical software engineering, although both development processes for web-based systems and non web-based systems have the same basic objective which is software development [3].

Web Services technology is based on the concept of service-oriented computing. Web services are standards that integrate Web-based applications through connecting and sharing of business processes across the network where applications of different vendors, languages, and platforms communicate with each other and with clients. Web applications refer to applications accessed via Web browser over a network and developed using browser-supported languages (e.g., HTML, JavaScript) [4].

The WWW (World Wide Web) has become a popular platform for building web-based applications (web apps) and providing convenient and diverse services for users. One contributing factor in this rise in popularity its features that browser developers and to browsers [5]. Technically, the term Web-Based system refers to those applications or services that are resident on a server that is accessible using a Web browser and is therefore accessible from anywhere in the world via the web [6]. Web based applications have evolved significantly over recent years and with improvements in security and technology there are plenty of scenarios where traditional software based applications and systems could be improved by migrating them to a web based application [7]. Some of the core benefits of web based applications are cross platform compatibility, more manageable, highly deployable, secure live data, reduced costs and streamline business process [8]. For these reasons, many of the management systems are now being developed as web-based systems.

Providing the pilgrims with a 'usable' and 'useful' web site is crucial. A 'useful' web site is one in which customers are able to successfully perform the tasks they wanted to when they decided to visit the site. A 'usable' web site is one in which customers find its user interface design friendly and easy to use. The Hajj and Omrah web site should be intended for the users who are the pilgrims-to-be and not the designers. Designers must have this as the goal set forth before they jump into their colorful designs [9].

Hajj is a unique gathering of its kind and poses a challenge to its organizers. Management of the annual pilgrimage to Mecca is a very complex task. In order to improve the Hajj management, there are many aspects which present opportunities for in-depth study and research [10].

Hajj management system will be used to keep records of pilgrims and manage pilgrims of any particular hajj agencies. Most of the pilgrims of Bangladesh are dependent on different agencies for holly hajj and Omrah purposes. It is very difficult to manage the large number of pilgrims those are spread away all over the country and needs man power to maintain their jobs. Some of the hajj agencies are using desktop based software with limited functionality and they required complete low cost systems.

Most of the hajj agencies in our country have branches at different location in different places. Many of them maintain their own LAN either through permanent connections or through leased lines. They can use web-based hajj management software to maintain and collect information. So a web-based hajj management system need to developed that can address different issues related to hajj and omrah such as pilgrims information, accounts(loss/profit), hajj package, flight scheduling etc.

1.2 Objectives with specific aims and possible outcome

The main goal of this project is to developed an automated Hajj Management Systems. The specific outcomes of this project are as follows:

1. To facilitate digital form fill-up and submission for pilgrims intending to perform Hajj.
2. To provide information about Hajj package, VISA, Flight, Air Ticket, Medical, ID Card, Group, Accounts and Accommodation for pilgrims.
3. To provide appropriate interfaces to the administrator, the users and the group leaders.
4. To administer all sort of reports regarding Operation, Financial and employees.

1.3 Project Scope

The project is expected to covering services provided by the group leaders which they perform manually such as registration, schedule of movement from one place to another, date and time of event, accounts information of the pilgrims to the hajj agencies. Therefore, the system will be helpful to group leaders as well as staff in the hajj service office.

1.4 Target Audience

The target audiences are the Pilgrims, group leaders as well as staffs. The group leader and staffs will make use of the system to track attendant, get access to time table for trip and access accounts information and pilgrims report on daily basis.

1.5 Organization of the Project Report

Chapter 1: Introduction: The first chapter of project documentation includes with the introduction of web based Hajj Management System regarding existing system in our country. Objectives along with organization of the documentation also incorporated here.

Chapter 2: Requirement Analysis and Specification: In this chapter, we have discussed about the project requirement and specification. Moreover, the project is established according to the requirement and specification.

Chapter 3: Analysis and Design: In this chapter, methodology of the proposed system has been involved. Rapid Prototyping Software Development Life Cycle is used for developing this application. Besides, design part of the project which includes ERD, database design, Process model, UML diagram, activity diagram, package diagram, DFD diagram etc. are explained.

Chapter 4: Functionalities of the software: This chapter describes different functional pages and modules of the project. It also contains the results and decisions about the system.

Chapter 5: References: Finally the last chapter of project documentation describes the conclusions and recommendations for future work and ends with references.

1.6: Summary

In this chapter we have discussed about background and present stage of the HMS. We find out objectives with specific aims and possible outcome and described organization of the project report.

CHAPTER 2: REQUIREMENT ANALYSIS AND SPECIFICATION

2.0 Introduction

This project is aimed at developing a web-based system for the hajj agencies. This Software Requirement Analysis and Specification describes all functional and non-functional requirements of the proposed system. This document is intended that will implement and verify the correct functioning of the system.

2.1 Main Features of the projects

The main features of hajj management systems are describes below:

2.1.1 Pilgrim Registration:

Pilgrims will be able to register in HMS systems by simply fill up a registration form with username and password. After successful registration the administrator have to approved that user otherwise that user will not be able to login the systems. Also this system is secured by username name and password.

2.1.2 Pilgrim Management:

Administrator and stuffs will be able to update, edit pilgrims information. They will also manage pilgrims group, accounts, ticket, VISA, medical information etc.

2.1.3 Leader wise Pilgrim Management:

Most of the pilgrims are intend to go for hajj under the guidance of group leader. So their information kept in the systems by their group. Group leader could view the required information of his group. Administrator will group leader and provide him username and password. Group leader will login to the system using user name and password.

2.1.4 VISA Management:

VISA information will be managed by the administrator or stuffs. Group leader as well pilgrims will be able to view their VISA information by login to the systems.

2.1.5 Flight and Ticket Management:

Flight and ticket information will be managed by the administrator or stuffs. Group leader as well pilgrims will be able to view their ticket schedule and other necessary information by login to the systems.

2.1.6 Pilgrims Accounts Management:

Administrator and stuffs will be able to update, edit pilgrims package rate, income, expenses, dues information. These information will be view d by group leader and also pilgrim.

2.2 Design of the Project:

The design phase describes how the software is constructed so that it fulfills the specifications agreed upon in the requirements specification document. It explains required features and operations in detail, including database design, software design, screen layouts and other documentation. When the design is completed it is recorded in the design specification document. There are different types of design to develop this software like ERD, UML etc. Design stage is described in details in Chapter 3.

2.2.1 System Interfaces:

The Software is connected with company server database, thus no more connection with other systems is needed. No system interface is needed during the development of this project.

2.2.2 User Interfaces:

The Software shall be designed as a web based that has a main user interface. Format of main screen shall be standard and flexible. The system shall be user friendly designed. Pages shall be connected each other in a consistent way. Operations can be done with the system shall be repeatable. The design of the pages should allow users to do this.

2.2.3 Hardware Interfaces:

Now a days, every organizations have computer and printers. This system is developed for the organizations. So, there is no need of extra computer or internet connection. Printer is necessary for printing the documents generated from the system.

2.2.4 Software Interfaces:

In this project the following tools software are used:

Microsoft Internet Explorer	
Version number:	6 or later.
Source:	Microsoft Corporation.
Purpose:	To display the information on the website in a neat and organized way. And also to help one navigate around the web easily.
Definition of the Interface:	The Microsoft Internet Explorer is the software, which provides a flexible and reliable browsing experience with enhanced Web privacy features for all users.
PHP: Personal Home Pages	
Version number:	5.2.6.
Source:	PHP Group.
Purpose:	To build web pages, this works with MySQL database and Apache server.
Definition of the Interface:	PHP is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML.
Apache HTTP Server	
Version number:	2.0.5.5.
Source:	The Apache Software Foundation.
Purpose:	In order to execute the client site of this software, the web server specified above is required as the provider of the client software at the server site.

Definition of the Interface:	The Apache HTTP Server Project is an effort to develop and maintain an open-source HTTP server for modern operating systems including UNIX and Windows NT. The goal of this project is to provide a secure, efficient and extensible server that provides HTTP services in sync with the current HTTP standards.
Macromedia Dreamweaver MX	
Version number:	8.
Source:	Macromedia Inc.
Purpose:	The web development tool specified above is helpful for designing and coding the project.
Definition of the Interface:	Macromedia Dreamweaver is the industry-leading web development tool, enabling users to efficiently design, develop and maintain standard based websites and applications.
MySQL: My Structured Query Language	
Version number:	5.0.
Source:	MySQL.
Purpose:	Required as database server.
Definition of the Interface:	MySQL is the world's most popular open source database software. With superior speed, reliability, and ease of use, MySQL has become the preferred choice of corporate IT Managers because it eliminates the major problems associated with downtime, maintenance, administration and support.
JavaScript/ECMAScript	
Version number:	1.6.
Source:	ECMA organization.

Purpose:	For opening or popping up a new window, Validation of web form (input values to make sure that they will be accepted before they are submitted to the server) etc.
Definition of the Interface:	JavaScript is an object-oriented scripting language used to enable programmatic access to objects within both the client application and other applications. It is primarily used in the form of client-side JavaScript, implemented as an integrated component of the web browser, allowing the development of enhanced user interfaces and dynamic websites.
CSS: Cascading Style Sheets	
Version number:	CSS 2.1.
Source:	World Wide Web Consortium.
Purpose:	To enable the separation of document content from document presentation, including elements such as the colours, fonts, and layout.
Definition of the Interface:	Cascading Style Sheets (CSS) is a style sheet language used to describe the presentation semantics (that is, the look and formatting) of a document written in a markup language.

2.2.5 Communication Interfaces:

The default communication protocol for data transmission between server and the client is Transmission Control Protocol/ Internet Protocol (TCP/IP). At the upper level Hyper Text Transfer Protocol (HTTP, default port=80, default of apache port=8080) will be used for communication between the web server and client.

2.2.6 Memory Constraints:

There is not a specific memory constraint for this software.

2.2.7 Site Adoptions:

The Server has requirements to operate PHP scripts Apache Web server 2.3.10 with PHP 5.2.17

2.3 Software System Attributes:

a) Reliability

The software must operate 95% of the time. The maximum number of defect should not exceed 10 per function.

b) Availability

The software is available time if the internet connection of the client. Because the software is client-server related web-site, web-site shall be attainable all the time. In this software user have a user name and password for an account to use the system, if user does not have an account; for the availability of this software user should sign up or register to the system by clicking the create new registration link from the home page.

c) Security

The authorization mechanism of the system will block the unwanted attempts to the server and also let the system decide on which privileges may the user have. The system has different types of users so there are different levels of authorization. Data integrity for critical variables will also be checked.

d) Maintainability

The maintainability shall be easily done by integrating new modules and offering new software solutions for the system.

e) Portability

This Software is an online service. So, anyone can use the service. One and only the server of the system must have the required software including MySQL, Apache.

2.4 Architectural Overview

The basic functionality of the software involves hajj management systems over the internet at a minimal cost. The

fundamental requirement of the project is a web application built in Apache, MySQL and PHP. The basic architecture of web application is described Figure 2.4 bellow:

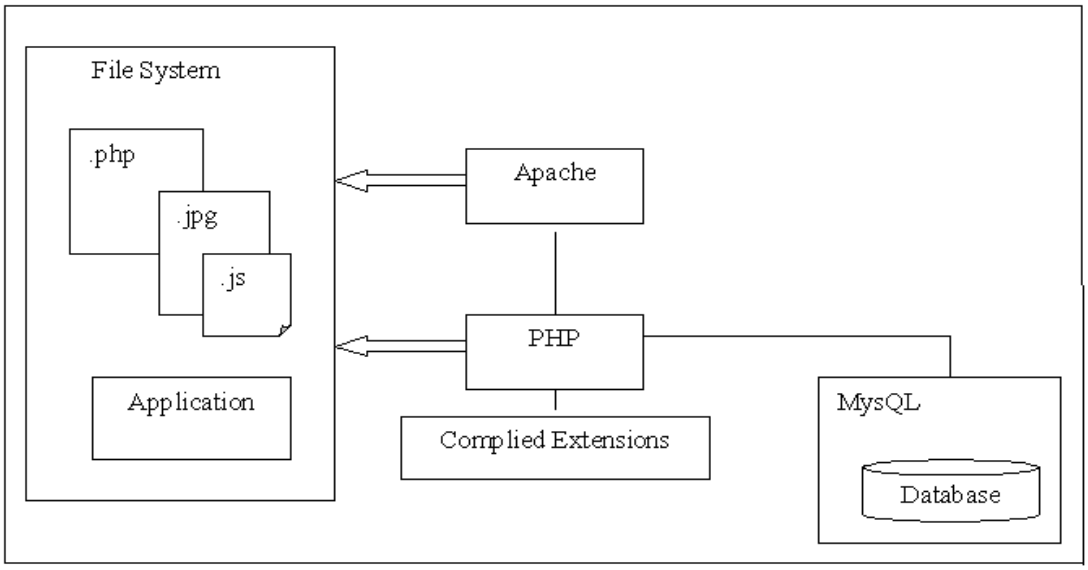


Figure 2.1: Architecture of Web Application

2.4.1 The Client Site

A client, i.e. the computer, laptop, mobile etc which requests the resources, through the internet with a user interface (typically a web browser) for presentation purposes.

2.4.2 The Admin Site

Admin also another client, i.e. the computer, laptop, mobile etc which requests the resources, through the internet with a user interface (typically a web browser) for Creating, Update and Delete information.

2.4.3 The Web Server

Almost all of the work of web application takes place on the server. A specific application, called a Web server, is responsible for authentication, authorization and secure communication channel with the browser. A relational-database server stores whatever information the application requires.

2.4.4 The Application Server/ Middleware

The application server are also called middleware, whose assignment it is to provide the requested resources, but by calling on another server. PHP belongs to a class of languages known as middleware. These languages work closely with the web server to interpret the requests made from the World Wide Web, process these requests, interact with other programs on the server to fulfill the requests, and then indicate to the web server exactly what to serve to the client's browser.

2.5 Assumptions and Dependences

a) The user must have the ability to browse the internet.
b) The user must have connected to the internet for use the system.
c) TCP/IP protocol must be installed to communicate through HTTP messages.
d) The accuracy of the information of users is the responsibility of all users.

2.5.1 Constraints:

a. Higher-order Language Functions: The PHP, HTML, and JS are used for developing the web pages with the help of Macromedia Dreamweaver. For the database information, MySQL shall be used.

b. Reliability Requirements: Total number of bugs in the system shall not exceed %1 of the total line number of code, except connection reliability which is out of our range.

c. Criticality of the Application: The server applications shall be available 365 days.

d. Safety and Security Considerations: The password and a valid username are the security issues. Data protection shall be satisfied by the backup process at the server side.

e. Regulatory Policies: There are no regulatory policies.

f. **Hardware Limitations:** There are no hardware limitations.

f. **Interfaces to other Applications:** There shall be no interfaces.

g. **Parallel Operations:** There are no parallel operations.

h. **Control Functions:** There shall be no control functions

i. **Signal Handshake Protocols:** This is no signal handshake protocols.

2.5.2 User Characteristics

The user types that would use this software are as follows:

1. **Pilgrims:**
    a. Login to the system through the first page of the application
    b. Change the password after login to the application
    c. Can see the details of their information.
    d. Can register for Hajj and Omrah
2. **Group Leader:**
    a. View package information
    b. View trip schedules
    c. View accounts status etc.
3. **Stuffs:**
    a. Manage Accounts for pilgrims
    b. Insert pilgrims information to the systems
    c. Generate reports etc,.
4. **Admin:**
    a. Create new admins
    b. Create/delete/update announcements
    c. Activate group leader accounts
    d. Create/Update/Delete trip schedules
    e. View Pilgrims information/activity/accounts etc.
5. **External Users/Guest:**
    a. External users are people who have not got any user account for the web site.
    b. They shall view the general information from the site.

2.6 Summary

In this chapter we have discussed about main feature of HMS and characteristics of different users. We also find out various interfaces such as system interface, hardware interface, software interface and user interface and design architecture overview.

CHAPTER 3: ANALYSIS AND DESIGN

3.0 Introduction

This chapter describes the logical and physical design of the proposed system. The logical design consists of the requirements of the system while the physical design illustrates the design stage and the interactions. It is very important to find the solution for the proposed system in order to create the system. Thus, it is important to know the appropriate methodology to implement the system development life cycle (SDLC). Additionally, this chapter will present the activity diagram that illustrates the overall flow of the system. The data flow diagram (DFD) explains the functions and data flow of the system to describe the business processes and data that passes among them. Finally, the entity relationship diagram (ERD) describes the structure of the system database.

3.1 Development Methodology

The methodology involves iterative development, and the construction of prototypes. Traditionally the rapid application development (RAD) approach involves in usability, features, and/or execution speed. It is described as a process through which the development cycle of an application is expedited. RAD thus enables quality products to be developed faster, saving valuable resources (James Martin, 1991).

Using rapid prototypes for early validation can accelerate product development in all phases of the development life cycle. The most obvious benefit is the ability to evaluate requirements for applicability and unanticipated errors early in the development life cycle. However, additional benefits can also be realized during the follow-on phases of the development life cycle. These benefits are often not considered as a part of the planning and decision making process regarding systems modeling tools. Using prototype model is cost effective. The stages involved in this project are listed below**:**

I. Project identification and planning.
II. Analysis.
III. Design.
IV. Implementation.
V. Maintenance.

3.1.1 Project Identification and planning

Generally plans are essential to the success of the entire project. The created plans are then reviewed and updated throughout the remaining project phases. The planning stage establishes a bird's eye view of the intended software product and uses this to establish the basic project structure, evaluate feasibility and risk associated with the project. The most critical section of the project plan is a listing of high level goals of the project and among these goals are delivering quality system which meet or exceed pilgrims expectations when promised. Also to build an efficient online based system instead of manual or traditional hajj management system. The system is good in case of saving group leader and staff time.

3.1.2 Analysis

During Requirements Analysis, the system is defined in more detail with regard to system inputs, processes, outputs, and interfaces**.** This stage of the system development life cycle (SDLC) hajj management system, what the system will do, and where and when it will be used. During this stage we develop and investigates any current system, identifies improvement opportunities and develops a concept for the new system**.** After reviewing the similar systems, the HMS will use some of the feature and functions that were used in the reviewed system like login function and logout function and so on, administrators (staff) and the group leaders (clients). The system is going to do online posting for pilgrim registration or a response and on the other hand the administrators will check if the submitted registration or responses posted appropriate and deal with these issues.

3.1.3 Design

The objective of design activities is to transform the detailed, defined requirements into complete and detailed specifications for the system to guide the work of development. The decisions made in this activity address, in detail, how the system will meet the defined functional, physical, interface, and data requirements. Design activities may be conducted in an iterative fashion, producing a general system design that emphasizes the functional features of the system, then a more detailed system design that expands the general design by providing all the technical detail. The physical characteristics of the system are designed during this activity. PHP and MySQL will be used to transport the logical design to physical design, at the same time the logical design will be presented using flow chart diagram and context diagram.

3.1.4 Implementation

This phase is initiated after the hajj management system has been tested and accepted by the clients and staff. In this phase, the system is installed to support the intended business functions. System performance is compared to performance objectives established during the planning phase. So after the users have verified that the initial production data load is correct and tested with satisfactory results, then the system can be implemented.

3.1.5 Maintenance

The hajj management system operation is ongoing. The system is monitored by the staff for continued performance in accordance with user requirements and changed system modifications are incorporated. Operations continue as long as the system can be effectively adapted to respond to the organization's needs. When modifications or changes are identified, the system may reenter the planning phase. The purpose of this phase is to determine when the system needs to be modernized, replaced, or retired. Conducting periodic assessments of the system is to ensure the functionality. So if there was any shortage in the system then maintenance will be conducted, also there is a regally maintenance for the hajj management system to avoid any shortages.

3.1.6 Project Stages in Diagram

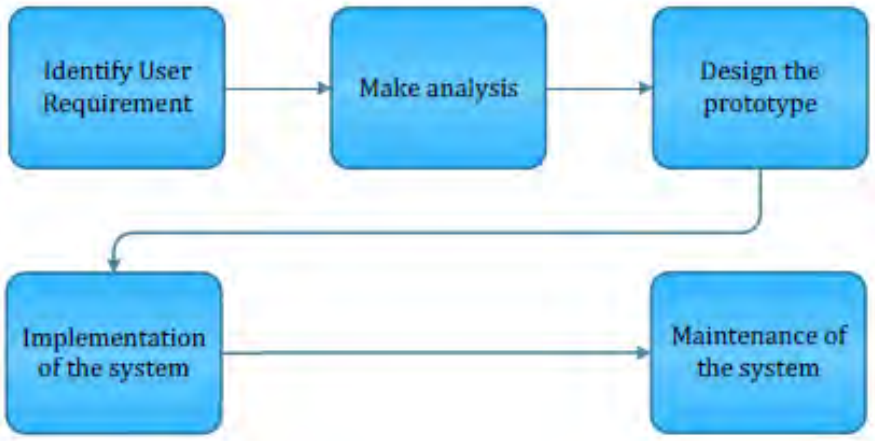


Figure 3.1: System Life Cycle

3.2 UML Diagram

Object oriented analysis and design are implemented during the software design. Different software tools are used for designing different part of the software. UML is used for high level design of the proposed system. Different diagrams are drowning using MS vision. These diagrams help in visualizing the whole development process.

The Unified Modeling Language (UML) is a standard language for specifying, visualizing, constructing, and documenting the artifact of software systems, as well as for business modeling and other non-software systems. The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems.

3.2.1 Activity Diagram

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams are intended to model both computational and organizational processes (i.e. workflows). Activity diagrams show the overall flow of control.

Activity diagrams are constructed from a limited number of shapes, connected with arrows. The most important shape types:

- rounded rectangles represent actions;
- diamonds represent decisions;
- bars represent the start (split) or end (join) of concurrent activities;
- a black circle represents the start (initial state) of the workflow;
- an encircled black circle represents the end (final state).

Arrows run from the start towards the end and represent the order in which activities happen.

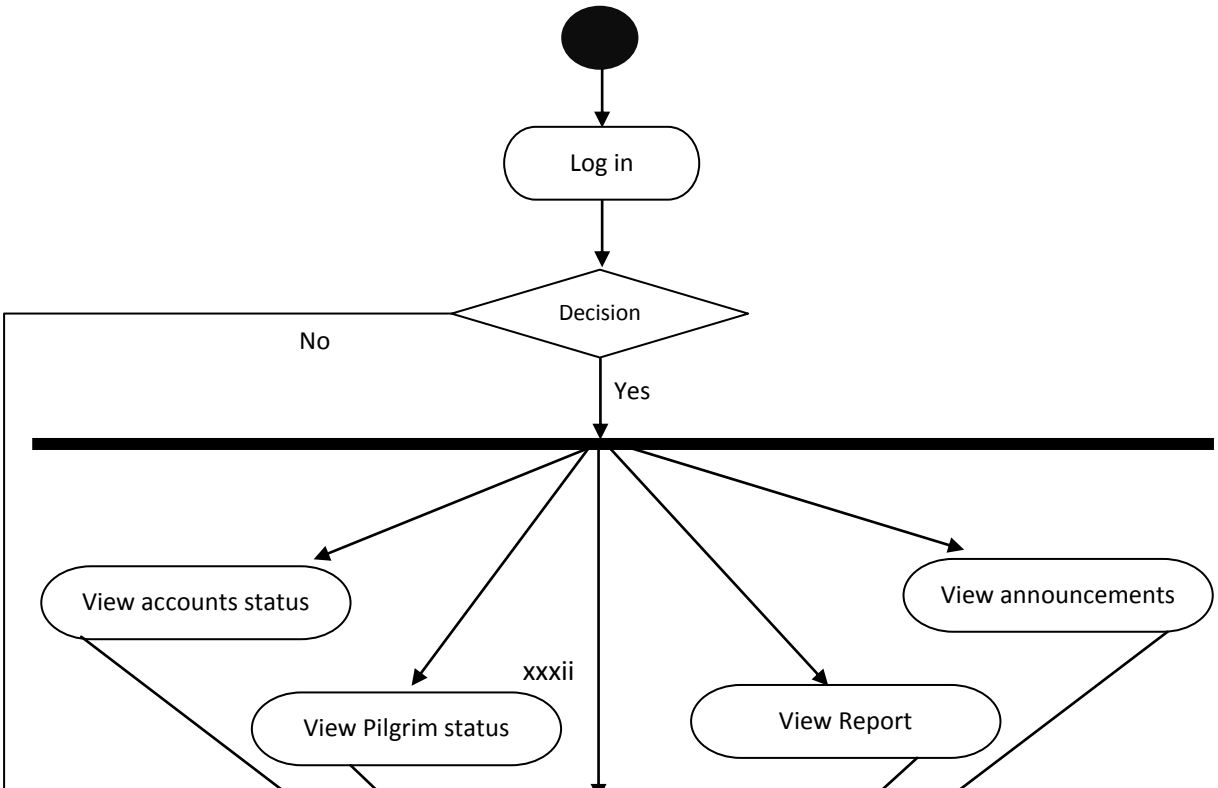


Figure 3.2: Activity Diagram for the Group Leader

Once the Group leader is logged in with his user name and password, he could view the account status, trip schedule, pilgrim of his group etc. The group leader can add / modify / delete pilgrim information.

In case, the group leader wants to logout, he could “Logout".

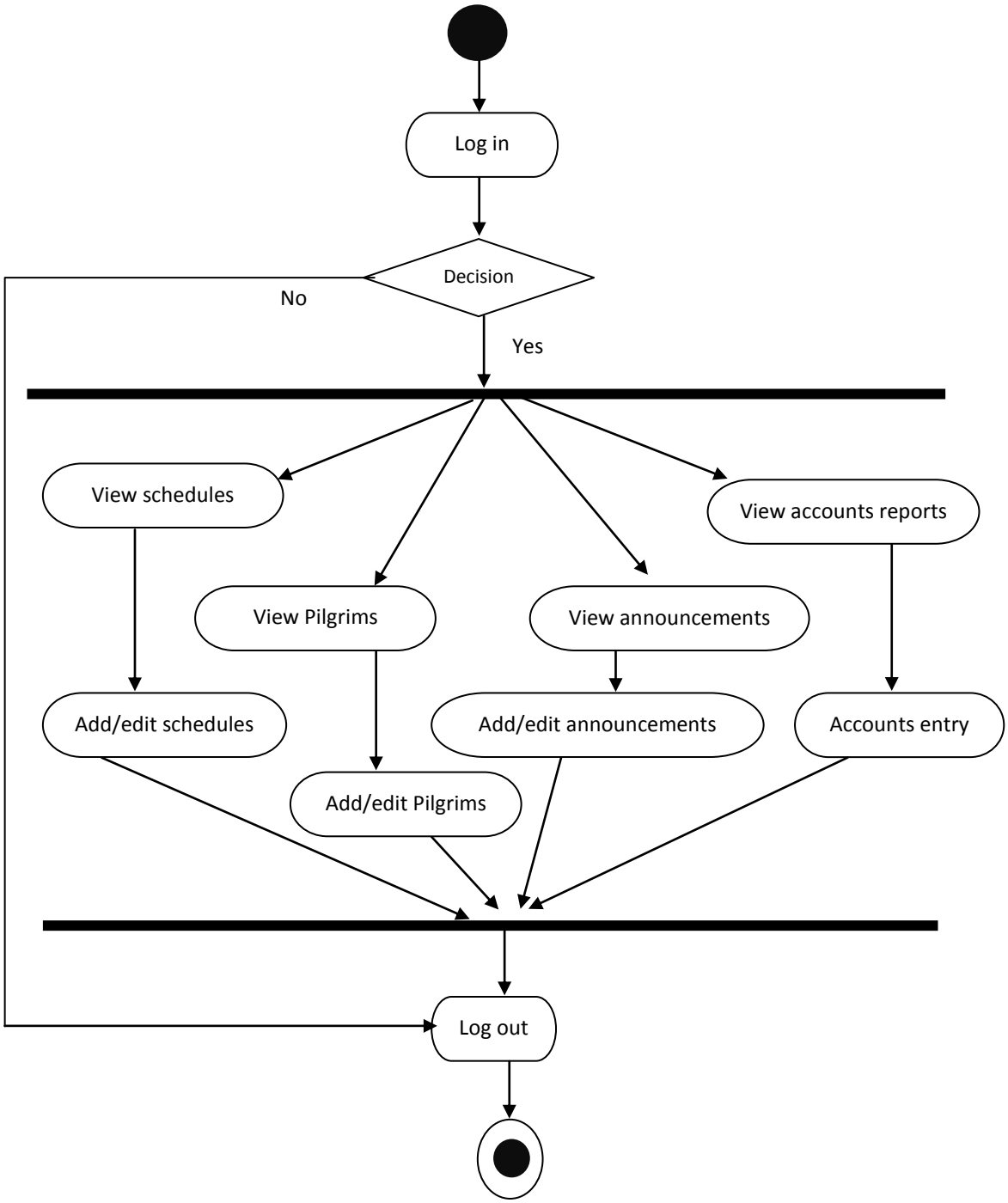

Log in
Decision
No
Yes
View schedules
View accounts reports
View Pilgrims
View announcements
Add/edit schedules
Add/edit announcements
Accounts entry
Add/edit Pilgrims
Log out

Figure 3.3: Activity Diagram for the Staff

The staff enters his credentials in the Username and Password text box in the Login design screen and enters the staff design page.

Here, he could add or edit package information, trip schedule, accounts information etc. In case, the Staff person wants to logout, he could “Logout".

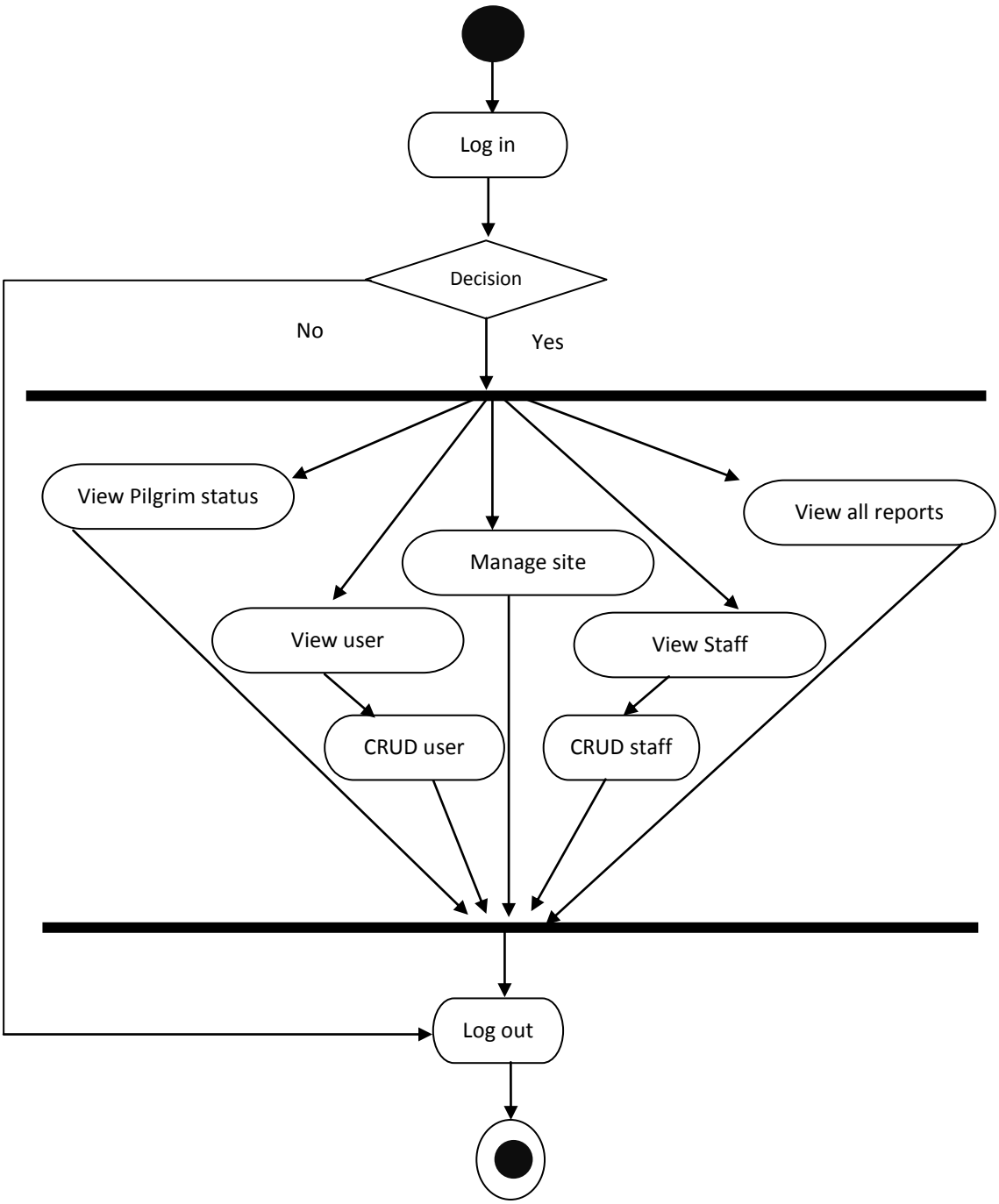

Log in
Decision
No
Yes
View Pilgrim status
Manage site
View all reports
View user
View Staff
CRUD user
CRUD staff
Log out

Figure 3.4: Activity Diagram for the Admin

The Admin person enters his credentials in the Username and Password text box in the Login design screen and login.

Here, he can add or edit staff, User Groups and manage the site.

In case, the Admin person wants to logout, he could “Logout”.

3.2.2 Use case Diagram:

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. It is a set of scenarios that describes an interaction between a user and a system. The two main components of a use case diagram are use cases and actors. It can be shown by the Figure 3.5.

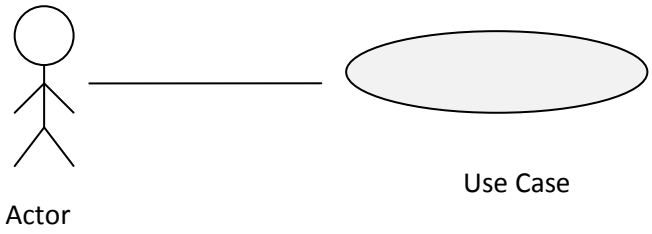


Figure 3.5: Actor and Use Case

An actor represents a person, organization, or external system that will interact with this system. The symbols of actors are drawn as stick figures. A use case is an external view of the system that represents some actions the user might perform in order to complete a task and is drawn as a horizontal ellipse. Lines are used to represent the relationships between these elements. The actors involved in this system are the group leaders, admins and staff.

The system functions involved are as shown in the diagram below and those are “Managing Users", “Managing Pilgrims", “Managing Accounts", “Managing Announcements", “Managing Trip scheduling" etc.

Group Leader Actions will be to view accounts status, announcements, reports etc. The admins can control everything in the site. They will perform all system operations without any restrictions. The staff will perform all system functionalities based on the access levels. They will not be able perform any actions on the accounts or the access levels of the admins.

Figure 3.6: below show the use cases for the group leader, staffs and admin.

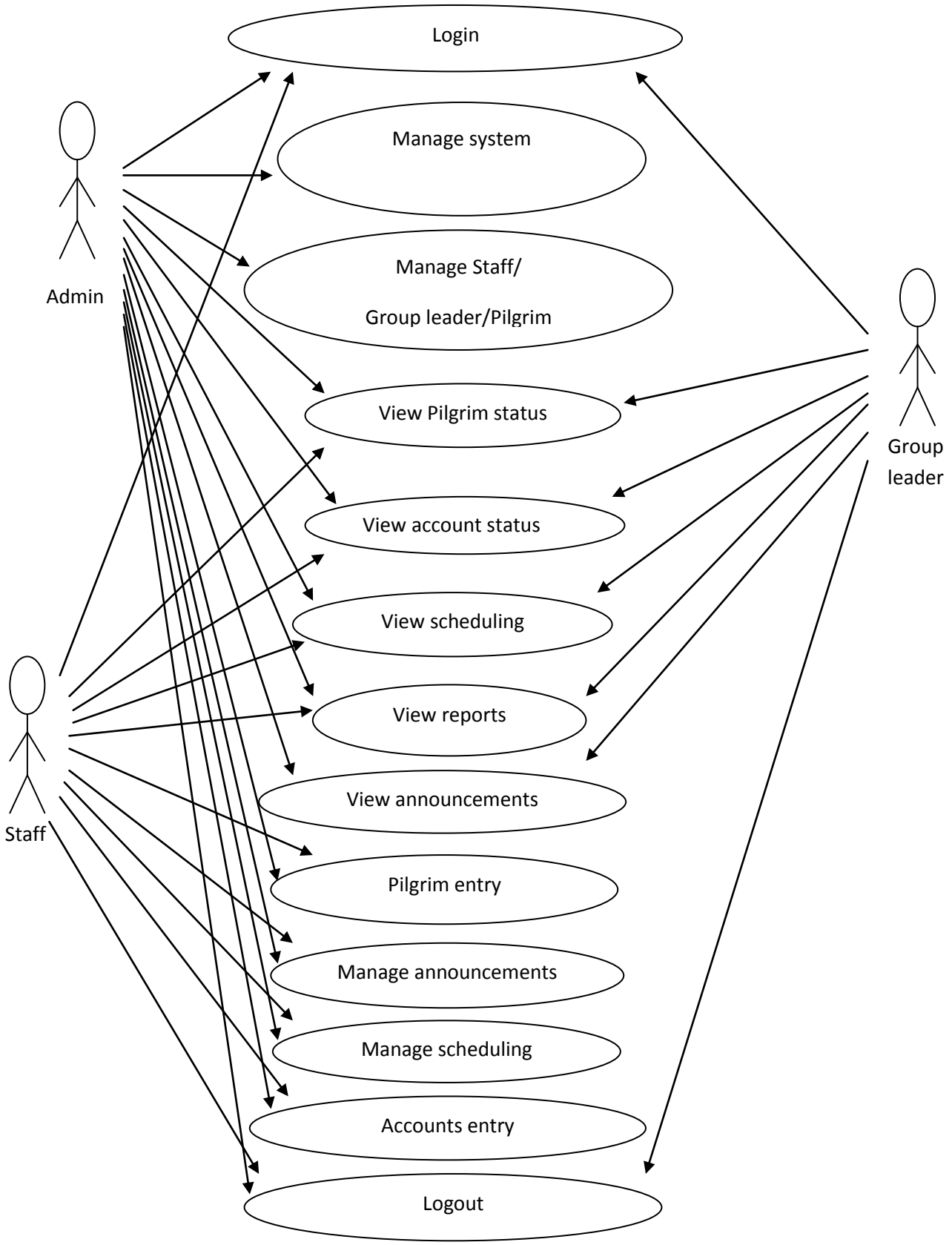

Login
Manage system
Manage Staff/
Group leader/Pilgrim
View Pilgrim status
View account status
View scheduling
View reports
View announcements
Pilgrim entry
Manage announcements
Manage scheduling
Accounts entry
Logout
Admin
Staff
Group
leader

Figure 3.6: Use Case Diagram

3.2.3 System Flowchart

System flowchart describes the data flow for a data processing system. It provides a logical diagram of how the system operates. It presents the flow of documents, the operations performed in data processing system. It also reflects the relationship between inputs, processing and outputs, illustrate the system flowchart of the project.

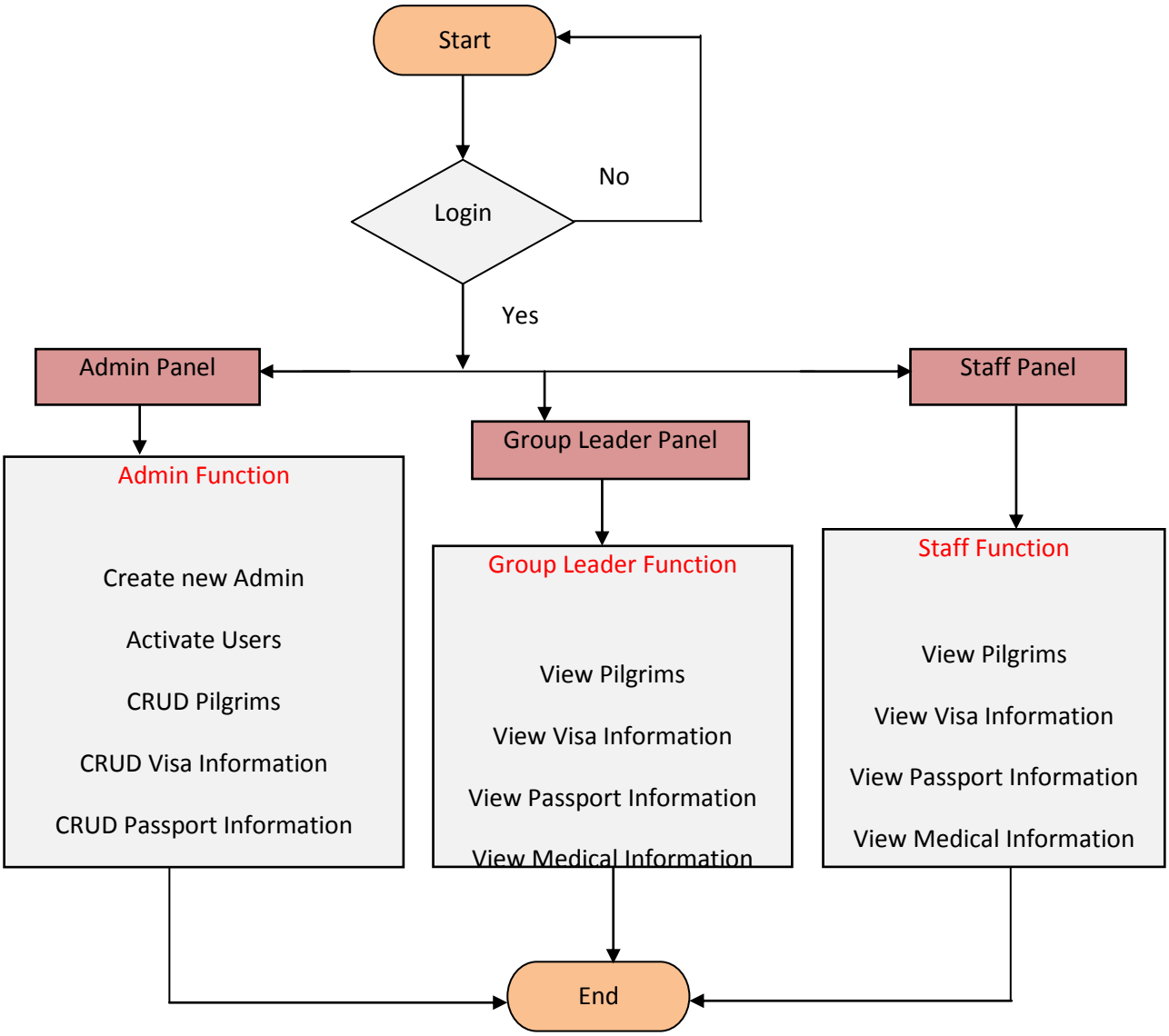


Figure 3.7: System Flowchart Diagram

The system starts with the authentication of the users. The authenticated users are taken to their respective panel based on their user level. If group leader then the user is taken to the group leader panel else use will be directed to the admin panel.

The group leader can perform the following operations:

1) View package information
2) View trip schedules
3) View accounts status etc,.

The admins can perform the following functions:

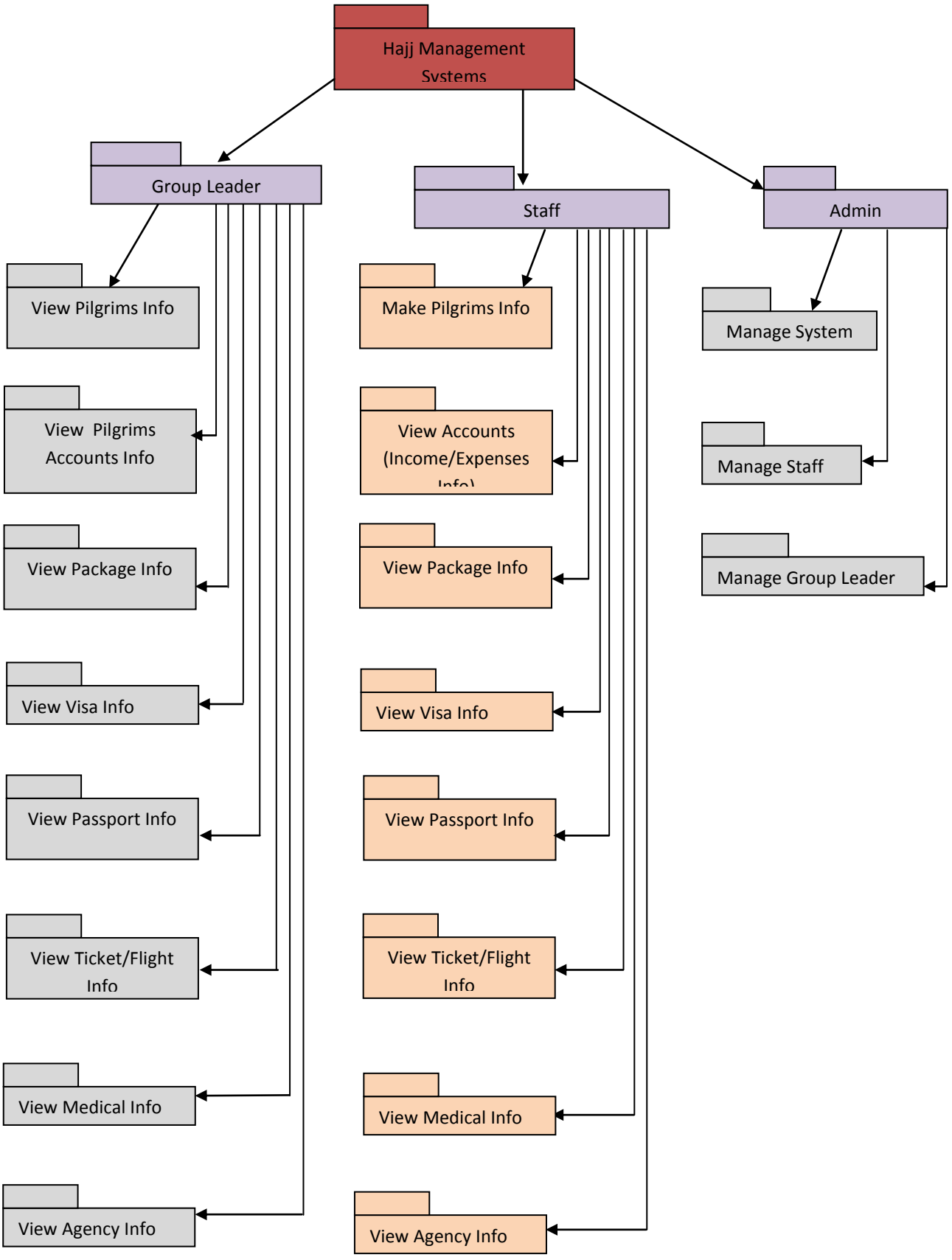
1) Create new admins
2) Create/delete/update announcements
3) Activate group leader accounts
4) Create/Update/Delete trip schedules
5) View Pilgrims information/activity/accounts etc.

After the users are done with their operations then they log out of the system destroying their system automatically logs out.

3.2.4 Package Diagram

Package is a general purpose mechanism for organizing model elements and diagrams into groups. It provides an encapsulated namespace within which all the names must be unique. It is used to group semantically related elements. It is a namespace as well as an element that can be contained in other package's namespaces. A package diagram in the Unified Modeling Language depicts the dependencies between the packages that make up a model.

The Figure 3.3.1.4 below shows the package diagram of hajj management system with three main actors, that is, the group leader, staff and Admin. These various actors have various functions that they serve to effectively manage this hajj management system. For instance, group leader is able to view accounts information conveyed by the staff, view schedules set by staff. The staff is responsible for create, retrieve, delete, update (CRUD) trip schedules, announcements etc. The third actor, Admin, serve the functions of managing the system, managing the staff and the group leader.


Hajj Management Systems
Group Leader
Staff
Admin
View Pilgrims Info
View Pilgrims Accounts Info
View Package Info
View Visa Info
View Passport Info
View Ticket/Flight Info
View Medical Info
View Agency Info
Make Pilgrims Info
View Accounts (Income/Expenses Info)
View Package Info
View Visa Info
View Passport Info
View Ticket/Flight Info
View Medical Info
View Agency Info
Manage System
Manage Staff
Manage Group Leader

`

Figure 3.8: Package Diagram for the System

3.3 Data Flow Diagram

The Data Flow Diagram (DFD) is a graphical representation of the flow of data through an information system. Data flow diagrams present the logical flow of information through a system in graphical or pictorial form. Data flow diagrams (DFDs) have only for symbols, which makes useful for communication between analysts and users. Data flow diagrams (DFDs) show the data used and provided by processes within a system. The following DFD shows all the processes that comprise the overall system, show how information moves from one process to other.

DFD Diagram

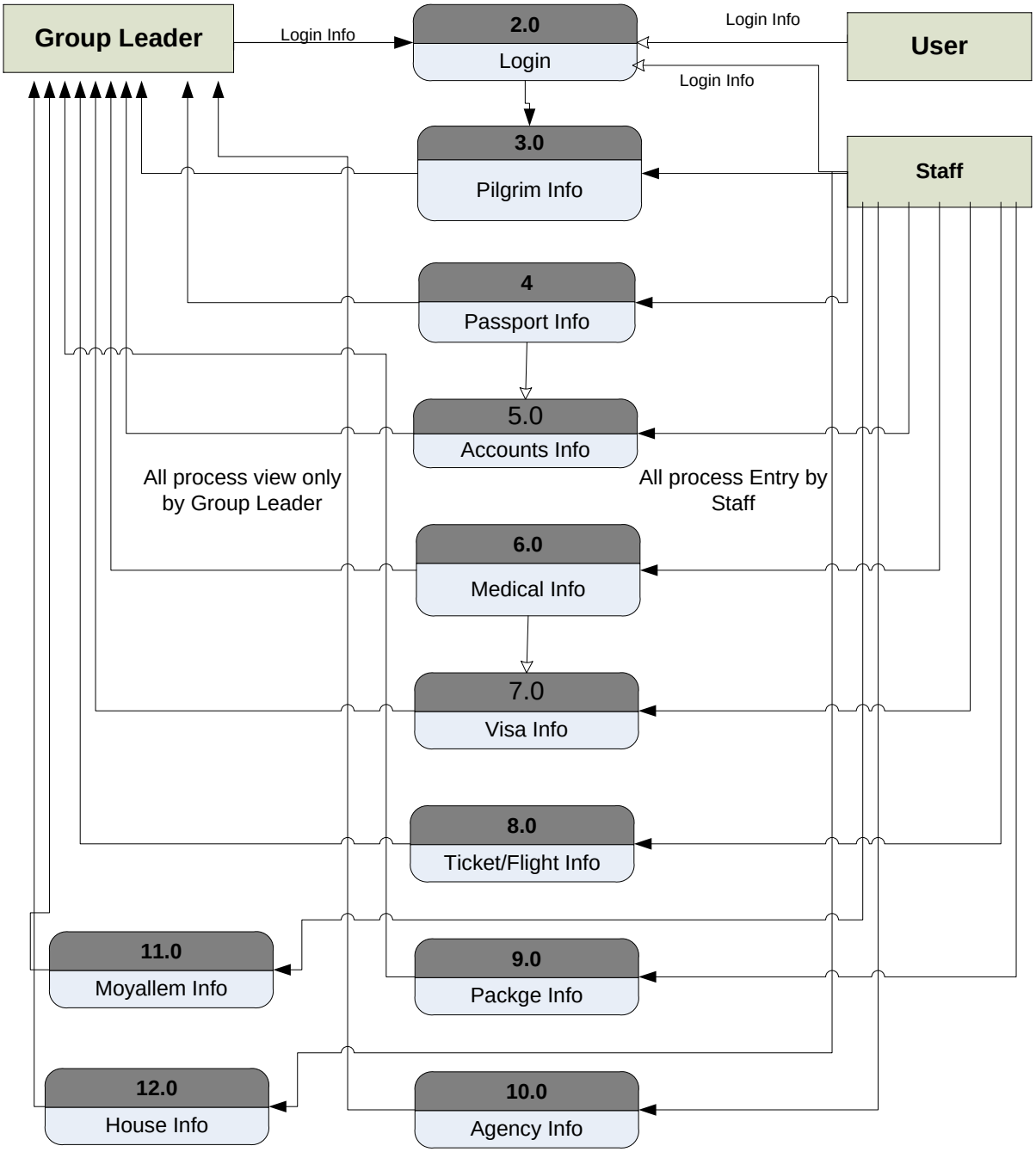


Figure 3.9: DFD Diagram

3.4 Database Design

A database is a collection of information, organized in such a way that a computer program can quickly select desired pieces of data. The computer program used to manage and query a database is known as a database management system (DBMS). Database design is the process of producing a detailed data model of a database. Databases are designed to offer an organized mechanism for storing, managing and retrieving information. This includes detailed specification of data elements, data types, indexing options and other parameters residing in the DBMS data dictionary. Many models and languages are used for design of the database. To design the database the Entity-Relationship (ER) Diagram is used.

3.4.1 E-R diagram:

An entity-relationship (E-R) diagram is a graphical representation of entities and their relationships to each other, typically used in computing in regard to the organization of data within databases or information systems.

Entity relationship diagram (E-R Diagram) can be translated into broad diversity of technical architecture data, such as relational, network, and hierarchical. An E-R data model evolves from project identification and selection throughout analysis as it becomes more precise and is validated by more detailed analysis of system needs. Several elements are to be included in order to draw the E-R diagram, such as entities, attributes, primary and foreign keys and identifiers. There are three basic elements in E-R diagram:

- Entities (tables) are the elements about which one seek information. Boxes are commonly used to represent entities.
- Attributes are the data one collect about the entities. Ovals are used to represent attributes.
- Relationships provide the structure needed to draw information from multiple entities. Diamonds are normally used to represent relationships.

The cardinality is the frequency of a relationship between two entities. The types of cardinality are

- **one to one** (1:1), every record in entity A matches exactly one record in entity B and every record in B matches exactly one record in A,
- **one to many** (1: M), every record in A matches zero or more records in B and every record in B matches exactly one record in A, and

- **many to many** (M: M), every record in A matches zero or more records in B and every record in B matches zero or more records in A.

The Figure 3.4.3 illustrates the ERD diagram of the project. The database that will be used in developing the system is MySQL.

MySQL is the world's most popular open source database, it's also become the database of choice for a new generation of applications built on the LAMP stack (Linux, Apache, MySQL, PHP / Perl / Python). MySQL runs on more than 20 platforms including Linux, Windows, OS/X, HP-UX, AIX, and Netware.

3.4.2 E-R Diagram of some important Entities

3.4.2.1 Attributes of Entity pilgrim_info

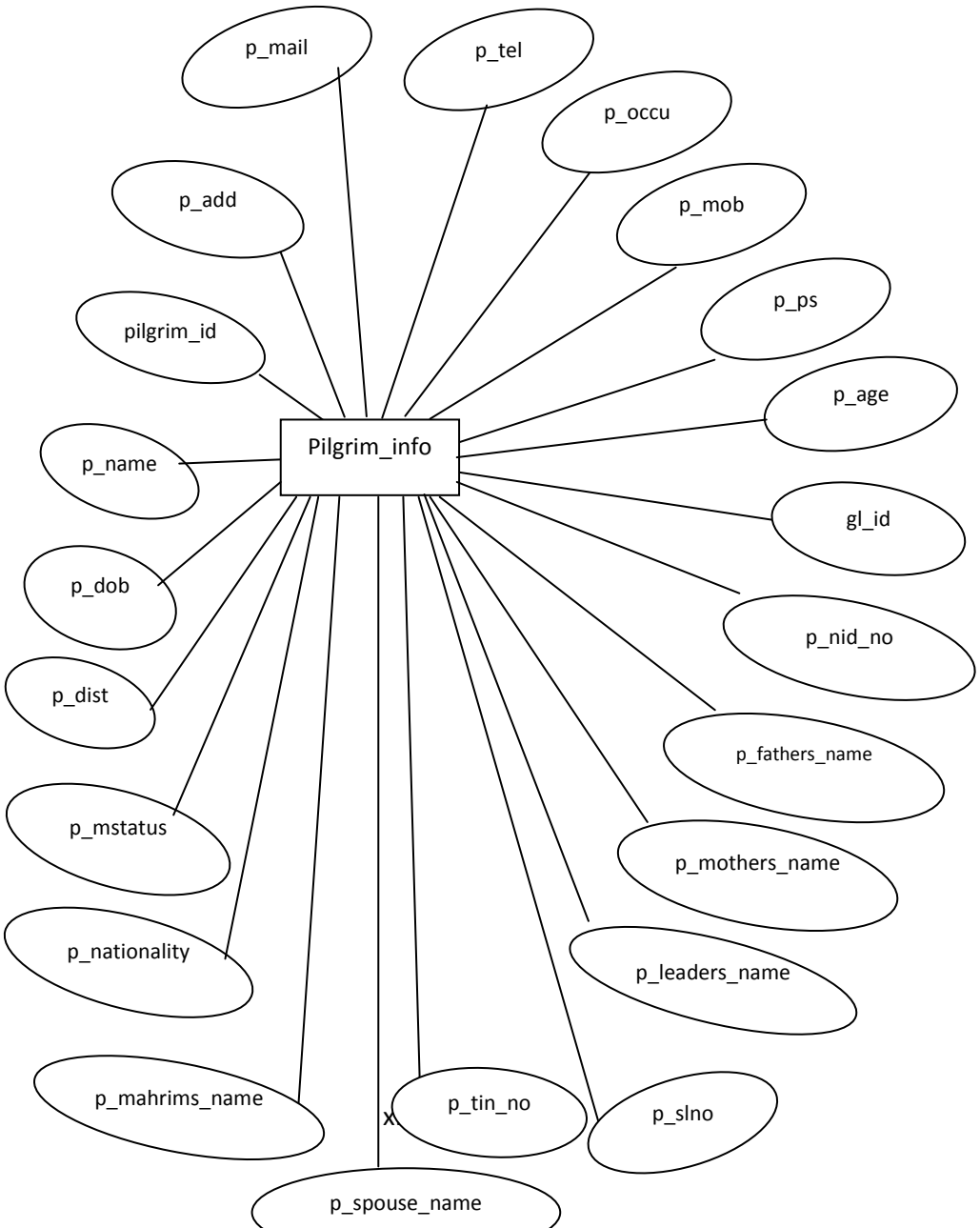


Figure 3.10: Attributes of Entity pilgrim_info

3.4.2.2 Attributes of Entity group_leader

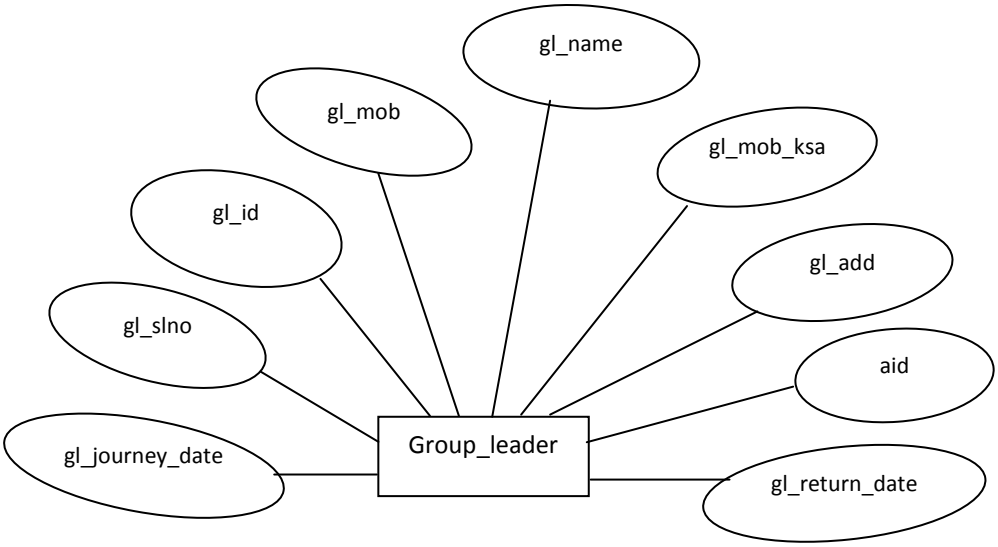


Figure 3.11: Attributes of Entity group_leader

3.4.2.3 Attributes of Entity passport_info

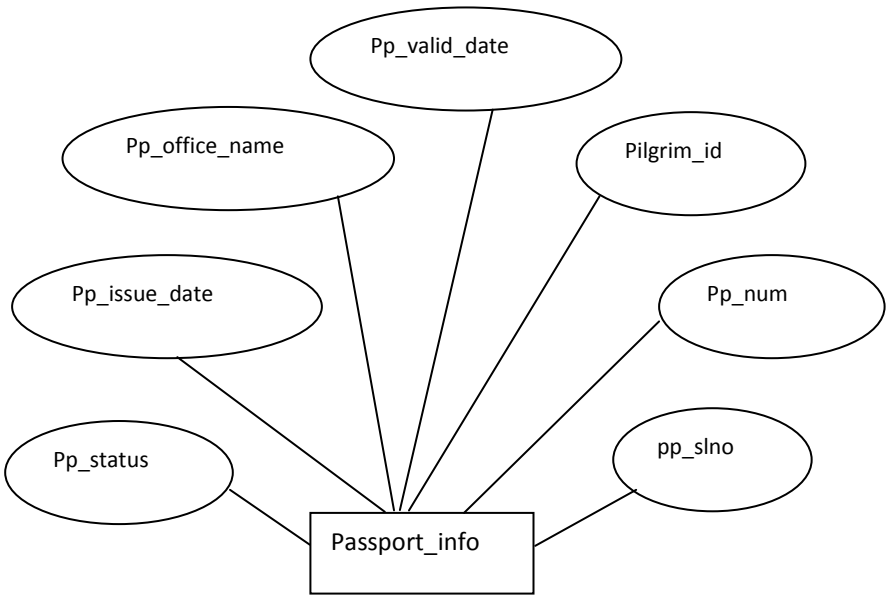


Figure 3.12: Attributes of Entity passport_info

3.4.2.4 Attributes of Entity accounts_head

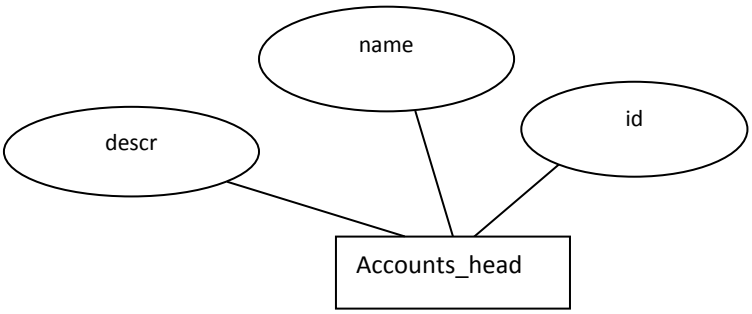


Figure 3.13: Attributes of Entity accounts_head

3.4.2.5 Attributes of Entity expenses

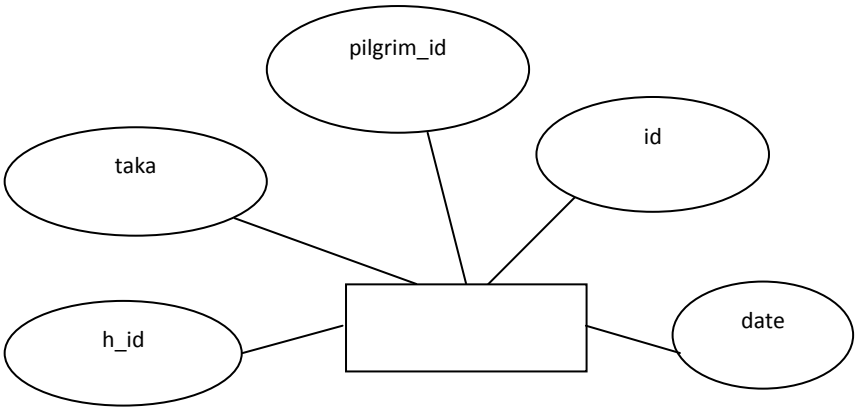


Figure 3.14: Attributes of Entity expenses

3.4.2.6 Attributes of Entity income

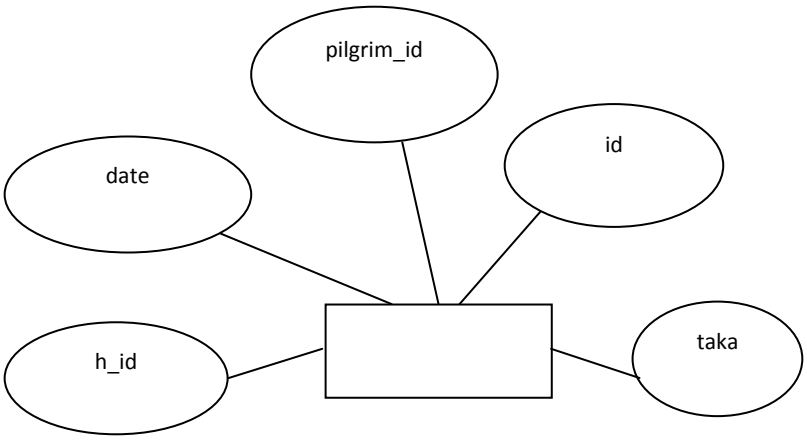
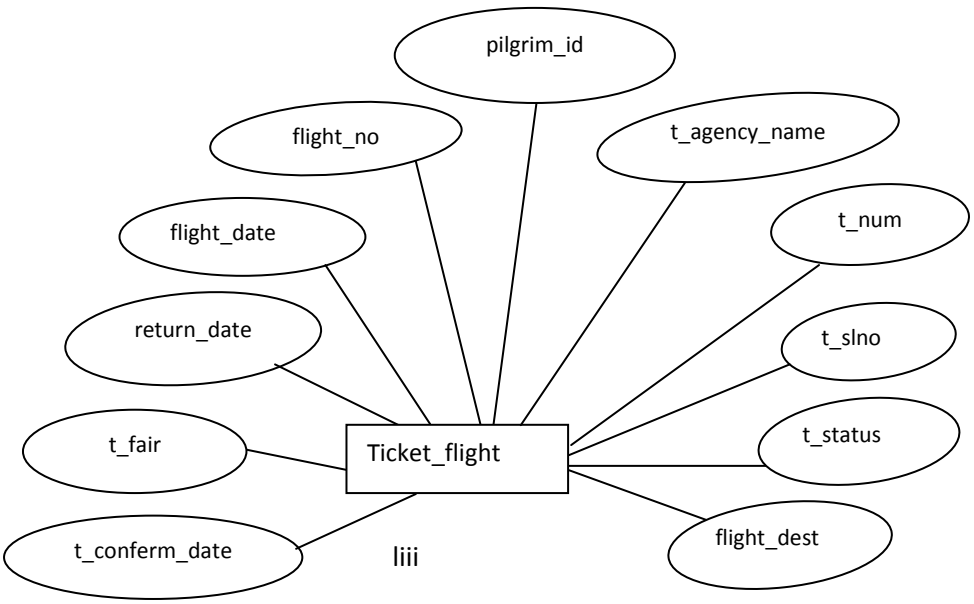


Figure 3.15: Attributes of Entity income

3.4.2.7 Attributes of Entity ticket_flight



liii

Figure 3.16: Attributes of Entity ticket_flight

3.4.2.8 Attributes of Entity visa_info

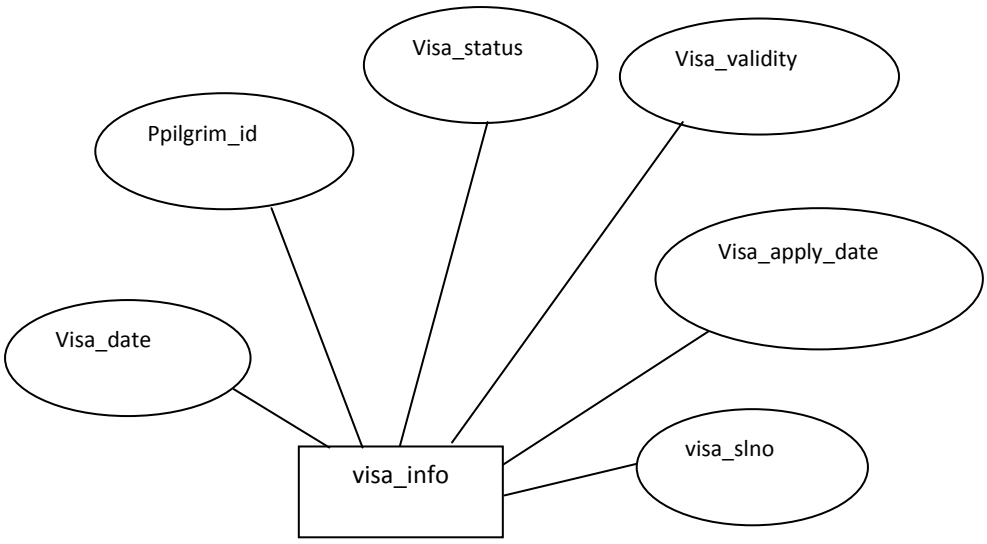


Figure 3.17: Attributes of Entity visa_info

3.4.2.9 Attributes of Entity user_admin

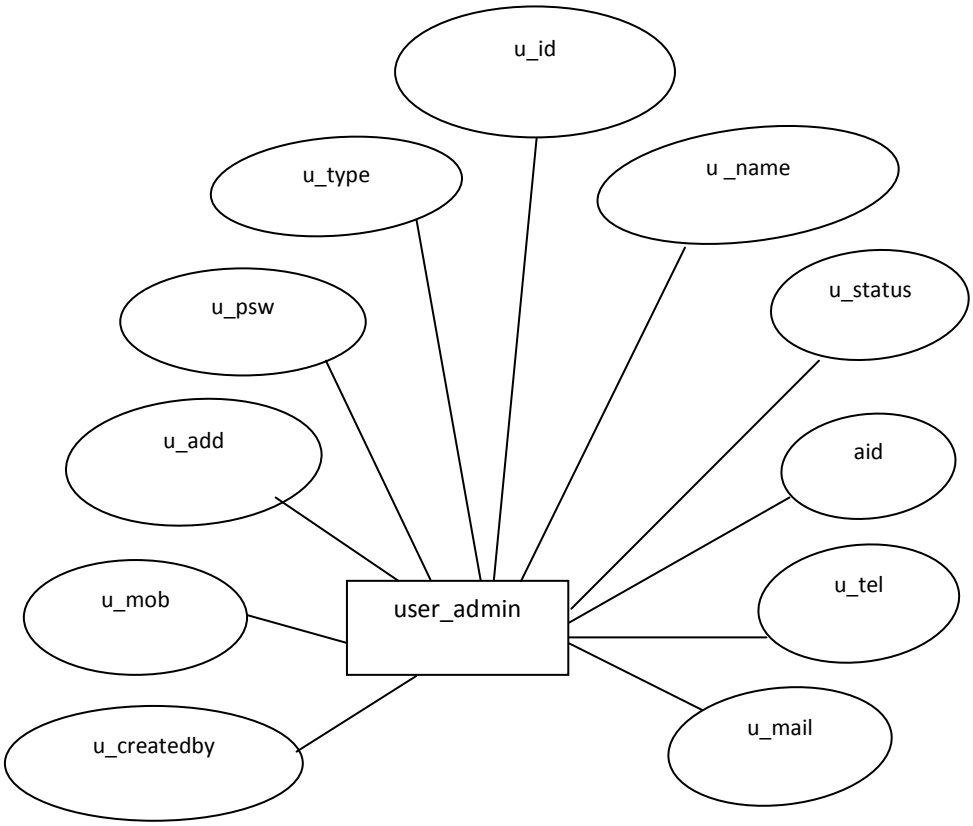


Figure 3.18: Attributes of Entity user_admin

3.4.3 Complete E-R Diagram of HMS

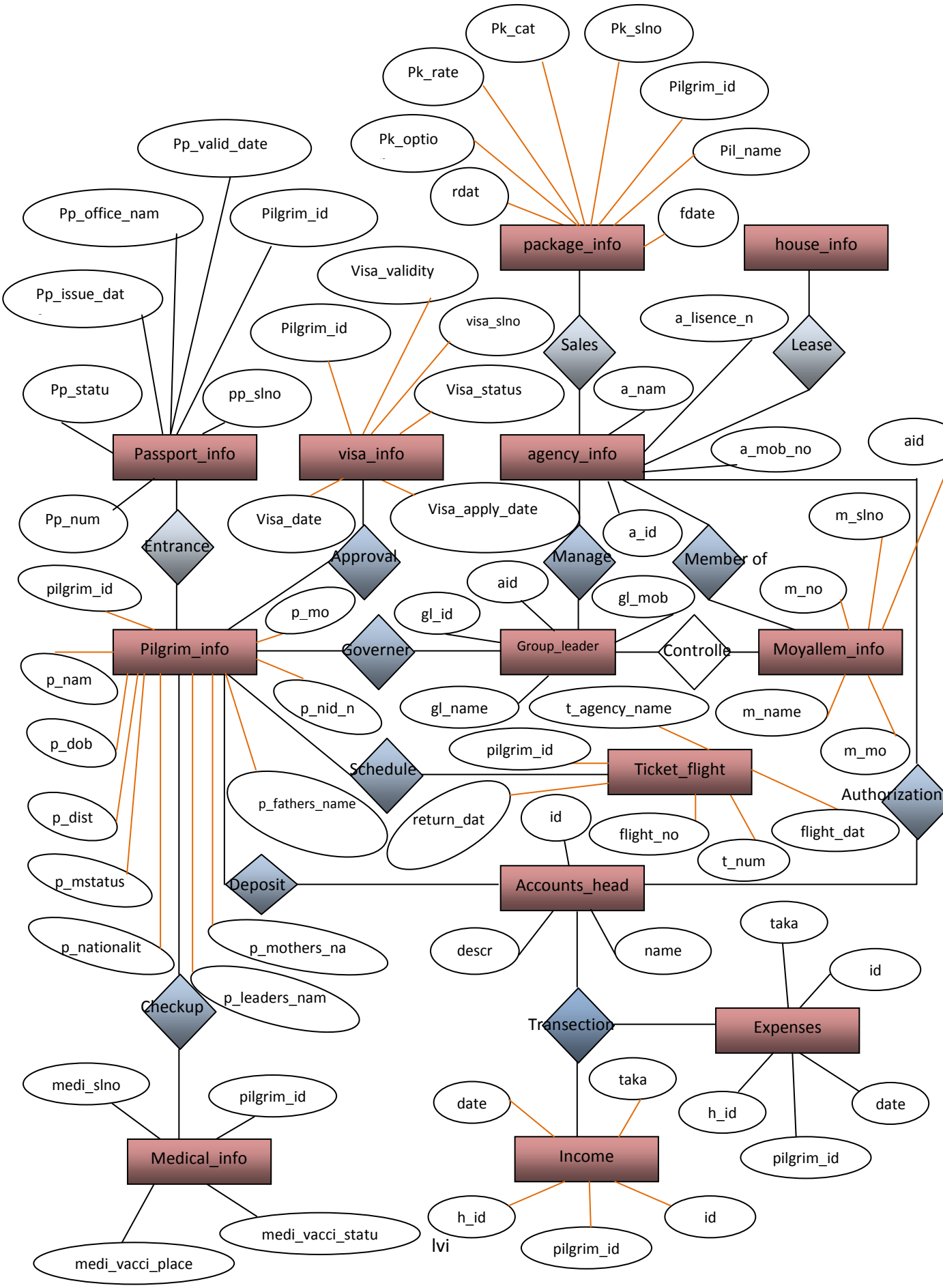


Figure 3.19: ERD of Hajj Management System

3.4.4 Mapping from E-R Diagram to Database Tables:

For implementation mapping is done for converting the E-R diagram into figure. Here we use relational model

Different tables used in the database of the project are described below:

1. **accounts_head**: Table 3.4.4.1 is regarding information about various accounts heads such as income, expenses, VISA fees, Moyallem fees etc,. It contains the id of the

accounts_head which is a unique or primary key. It also contains the name and description of items.

2. **expenses**: Table 3.4.4.2 is regarding information about expenses of the agency. It contains the id of the expenses which is a unique or primary key. It also contains date, taka, h_id, pilgrim_id where h_id and pilgrim_id are foreign key of accounts_head and pilgrim_info.

3. **income**: Table 3.4.4.3 is regarding information about income of the agency. It contains the id of the income which is a unique or primary key. It also contains date, taka, h_id, pilgrim_id where h_id and pilgrim_id are foreign key of accounts_head and pilgrim_info.

4. **medical_info**: Table 3.4.4.4 is regarding medical information of pilgrims. It contains the medi_slno which is a unique or primary key. It also contains pilgrim_id which is a foreign key of pilgrim_info, medi_vacci_place and medi_vacci_status.

5. **moyallem_info:** Table 3.4.4.5 is used to store the moyallem information of the agency. It stores m_no which is a unique or primary key, m_name, m_contact_person, m_tel, m-fax ect.

6. **package_info:** Table 3.4.4.6 is used to store the package information of the agency. It stores p_slno which is a unique or primary key, p_name, p_rate, p_cat. It also contains pilgrim_id which is a foreign key of pilgrim_info table.

7. **passport_info:** Table 3.4.4.7 is used to store the passport information of pilgrims. It stores pp_slno which is a unique or primary key, pp_num, pp_valid_date, pp_issue_date etc. It also contains pilgrim_id which is a foreign key of pilgrim_info table.

8. **pilgrim_info:** Table 3.4.4.8 is used to store the pilgrim information of agency. It stores pilgrim_id which is a unique or primary key, p_name, p_mob, p_tel, p_add, p_age, p_dob, p_dist, p_nid_no etc.

9. **group_leader:** Table 3.4.4.9 is used to store the group leader information of the agency. It stores gl_slno which is a unique or primary key, gl_id, gl_name, gl_mob ect.

10. **ticket_flight:** Table 3.4.4.10 is used to store the ticket and flight information of pilgrims. It stores t_slno which is a unique or primary key, t_status, flight_no, flight_date, return_date etc. It also contains pilgrim_id which is a foreign key of pilgrim_info table.

11. **visa_info:** Table 3.4.4.11 is used to store the visa information of pilgrims. It stores visa_slno which is a unique or primary key, visa_status, visa_date, visa_validity etc. It also contains pilgrim_id which is a foreign key of pilgrim_info table.

12. **user_admin:** Table 3.4.4.12 is used to store the user information of the agency. It contains u_id which is a unique or primary key, u_name, u_type, u_psw, u_add, u_status ect.

13. **agency_info:** Table 3.4.4.13 is used to store the information of the agency. It contains a_name, a_tel_no, a_add_bd, a_mail, a_fax ect.

3.4.5 System Tables

3.1 Table structure for table accounts_head

Field	Type	Constrains	Default
Id	int(11)	Yes	PK, NOT NULL
Name	varchar(255)	Yes	NULL
Desc	Text	Yes	NULL

3.2 Table structure for table expenses

Field	Type	Null	Default
Id	int(11)	Yes	PK, NOT NULL
h_id	int(11)	Yes	FOREIGN KEY
Date	Date	Yes	NULL
Taka	Float	Yes	NULL
pilgrim_id	int(13)	Yes	FOREIGN KEY

****** h_id and pilgrim_id are foreign key of accounts_head and pilgrim_info.

3.3 Table structure for table income

Field	Type	Null	Default
Id	int(11)	Yes	PK, NOT NULL
h_id	int(11)	Yes	FOREIGN KEY
Date	Date	Yes	NULL
Taka	decimal(10,0)	Yes	NULL

pilgrim_id	int(13)	Yes	FOREIGN KEY

****** h_id and pilgrim_id are foreign key of accounts_head and pilgrim_info.

3.4 Table structure for table medical_info

Field	Type	Null	Default
medi_slno	int(12)	Yes	PK, NOT NULL
pilgrim_id	int(12)	Yes	FOREIGN KEY
medi_vacci_place	varchar(20)	Yes	NULL
medi_vacci_status	varchar(22)	Yes	NULL

****** pilgrim_id is foreign key of pilgrim_info.

3.5 Table structure for table moyallem_info

Field	Type	Null	Default
m_name	varchar(55)	Yes	NULL
m_no	int(22)	Yes	PK, NOT NULL
m_contact_person	varchar(44)	Yes	NULL
m_mob	varchar(22)	Yes	NULL
m_tel	varchar(22)	Yes	NULL
m_fax	varchar(22)	Yes	NULL
m_mail	varchar(44)	Yes	NULL

3.6 Table structure for table package_info

Field	Type	Null	Default
p_slno	int(12)	Yes	PK, NOT NULL
pilgrim_id	int(12)	Yes	FOREIGN KEY
p_name	varchar(15)	Yes	NULL
p_rate	varchar(22)	Yes	NULL
p_cat	varchar(20)	Yes	NULL
p_option	varchar(22)	Yes	NULL

****** pilgrim_id is foreign key of pilgrim_info.

3.7 Table structure for table passport_info

Field	Type	Null	Default
pp_slno	int(11)	Yes	PK, NOT NULL

pilgrim_id	int(12)	Yes	FOREIGN KEY
pp_num	varchar(22)	Yes	NULL
pp_valid_date	Date	Yes	NULL
pp_issue_date	Date	Yes	NULL
pp_office_name	varchar(22)	Yes	NULL
pp_status	varchar(20)	Yes	NULL

****** pilgrim_id is foreign key of pilgrim_info.

3.8 Table structure for table pilgrim_info

Field	Type	Null	Default
p_slno	int(13)	Yes	PK, NOT NULL
pilgrim_id	int(14)	Yes	FOREIGN KEY
p_name	varchar(55)	Yes	NULL
p_mob	varchar(22)	Yes	NULL
p_tel	varchar(22)	Yes	NULL
p_mail	varchar(22)	Yes	NULL
p_add	varchar(100)	Yes	NULL
p_mstatus	varchar(22)	Yes	NULL
p_occu	varchar(22)	Yes	NULL
p_age	varchar(22)	Yes	NULL
p_dob	Date	Yes	NULL
p_pic	varchar(55)	Yes	NULL
p_ps	varchar(33)	Yes	NULL
p_dist	varchar(33)	Yes	NULL
p_fathers_name	varchar(66)	Yes	NULL
p_mothers_name	varchar(66)	Yes	NULL
p_spouse_name	varchar(66)	Yes	NULL
p_mahrims_name	varchar(66)	Yes	NULL
p_leaders_name	varchar(66)	Yes	NULL
p_family_members_name	varchar(66)	Yes	NULL
p_nid_no	int(11)	Yes	NULL
p_tin_no	int(11)	Yes	NULL
p_nationality	varchar(33)	Yes	NULL

** pilgrim_id is a foreign key of pilgrim_info

3.9 Table structure for table group_leader

Field	Type	Null	Default
gl_slno	int(12)	Yes	PK, NOT NULL
gl_id	int(12)	Yes	NULL
gl_name	varchar(44)	Yes	NULL
gl_mob	varchar(22)	Yes	NULL
gl_mob_ksa	varchar(22)	Yes	NULL
gl_add	varchar(66)	Yes	NULL
gl_journey_date	varchar(33)	Yes	NULL
gl_return_date	varchar(33)	Yes	NULL

3.10 Table structure for table ticket_flight

Field	Type	Null	Default
t_slno	int(12)	Yes	PK, NOT NULL
pilgrim_id	int(12)	Yes	FOREIGN KEY
t_status	varchar(12)	Yes	NULL
t_conferm_date	Date	Yes	NULL
flight_no	varchar(20)	Yes	NULL
flight_date	Date	Yes	NULL
return_date	Date	Yes	NULL
t_num	varchar(24)	Yes	NULL
t_agency_name	varchar(55)	Yes	NULL
t_fair	int(24)	Yes	NULL
flight_dest	varchar(33)	Yes	NULL

****** pilgrim_id is foreign key of pilgrim_info.

3.11 Table structure for table visa_info

Field	Type	Null	Default
visa_slno	int(16)	Yes	PK, NOT NULL
pilgrim_id	int(12)	Yes	FOREIGN KEY
visa_status	varchar(22)	Yes	NULL
visa_apply_date	Date	Yes	NULL
visa_date	Date	Yes	NULL
visa_validity	varchar(34)	Yes	NULL

****** pilgrim_id is foreign key of pilgrim_info.

3.12 Table structure for table user_admin

Field	Type	Null	Default
u_slno	int(14)	Yes	PK, NOT NULL
u_id	varchar(55)	Yes	NULL
u_name	varchar(22)	Yes	NULL
u_type	varchar(33)	Yes	NULL
u_psw	varchar(12)	Yes	NULL
u_mob	varchar(22)	Yes	NULL
u_tel	varchar(22)	Yes	NULL
u_add	varchar(22)	Yes	NULL

u_mail	varchar(22)	Yes	NULL
u_cat	varchar(13)	Yes	NULL
u_status	varchar(12)	Yes	NULL
u_createdby	varchar(22)	Yes	NULL
u_verified_by	varchar(22)	Yes	NULL
u_delete	varchar(33)	Yes	NULL
u_update_by	varchar(33)	Yes	NULL

3.13 Table structure for table agency_info

Field	Type	Null	Default
a_name	varchar(55)	Yes	NULL
a_lisence_no	int(15)	Yes	NULL
a_tel_no	varchar(22)	Yes	NULL
a_mob_no	varchar(16)	Yes	NULL
a_mail	varchar(34)	Yes	NULL
a_fax	varchar(23)	Yes	NULL
a_add_bd	varchar(200)	Yes	NULL
a_contact_person_bd	varchar(40)	Yes	NULL
a_contact_person-mob	varchar(20)	Yes	NULL
a_contact_person_tel	varchar(22)	Yes	NULL
a_contact_person_mail	varchar(44)	Yes	NULL
a_contact_person_add	varchar(200)	Yes	NULL
a_contact_person_ksa	varchar(55)	Yes	NULL
a_contact_person_ksa_mob	varchar(22)	Yes	NULL
a_contact_person_ksa_tel	varchar(22)	Yes	NULL
a_contact_person_ksa_mail	varchar(55)	Yes	NULL
a_contact_person_ksa_fax	varchar(22)	Yes	NULL
a_contact_person_ksa_add	varchar(200)	Yes	NULL
a_id	Int(11)	No	PK, NOT NULL

3.5 Schema Diagram

A schema is the structure behind data organization. It is a visual representation of how different table relationships enable the schema's underlying mission business rules for which the database is created. In a schema diagram, all database tables are designated with unique columns and special features, e.g., primary/foreign keys or not null, etc. Formats and symbols for expression are universally understood, eliminating the possibility

of confusion. The table relationships also are expressed via a parent table's primary key lines when joined with the child table's corresponding foreign keys.

3.5.1 Schema Diagram of Hajj Management Systems (HMS)

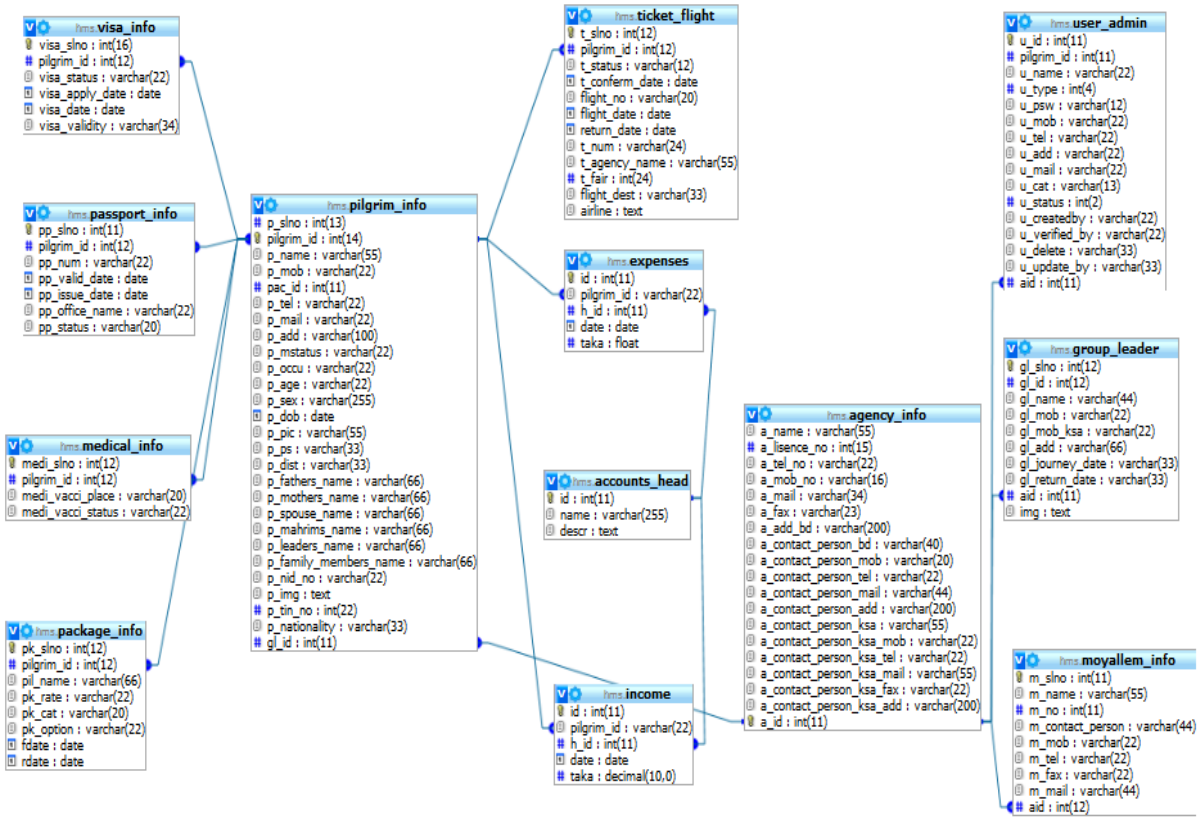


Figure 3.20: Schema Diagram of Hajj Management Systems(HMS)

3.6 Interface Design

This section shows the interface design for some important screen.

3.6.1 Home Page

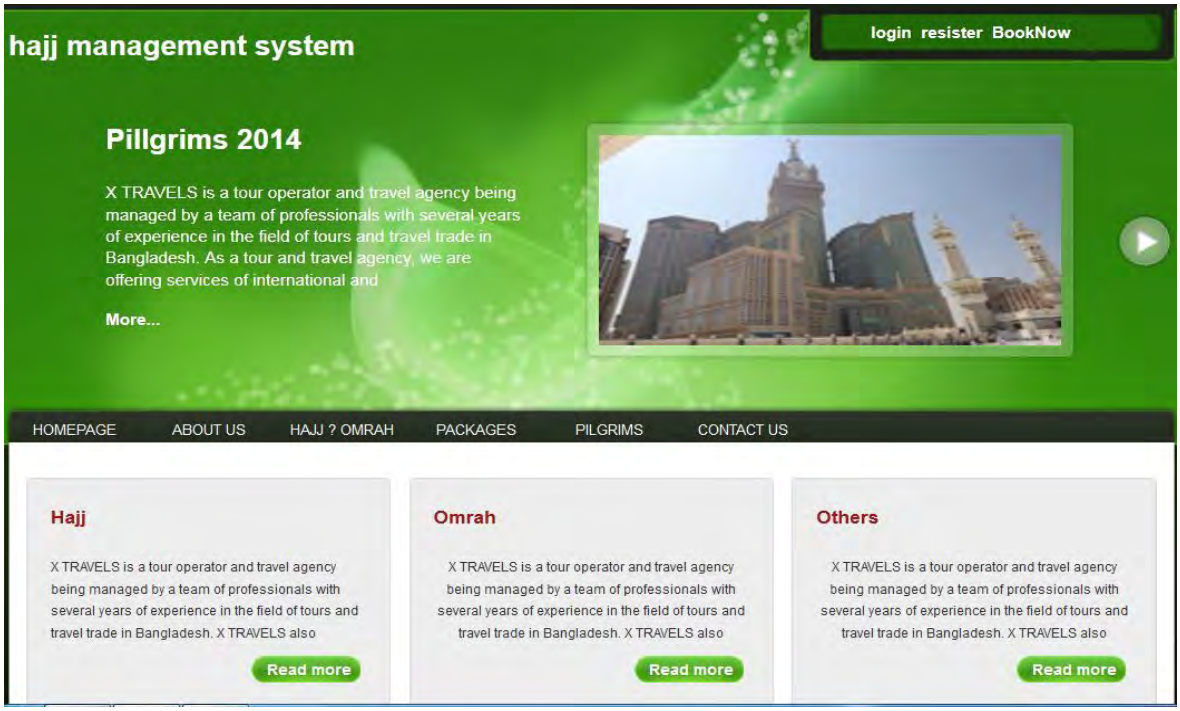


Figure 3.21: Home Page Design

Fig 3.21 is the Home page of the system. User will be able to Login / Registration from this page for Hajj. When a user/group leader/admin need to Login, He has to click on the "Login" button, but if he hasn't registered, he needs to get registered by clicking the "Register" button.

3.6.2 Login Page

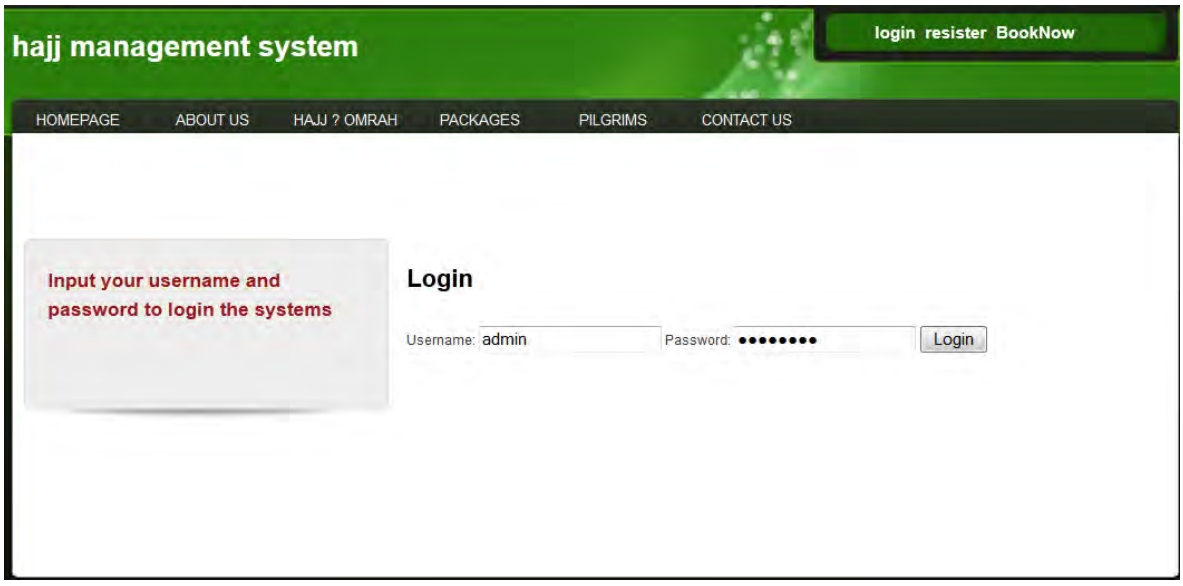


Figure 3.22: Login Page Design

Once the “Login” button is clicked, the above page will come and then the user/group leader/admin/staff has to enter his username and password in the respective text box and as to click the “login” button.

3.6.3: User Registration (sign up) Page

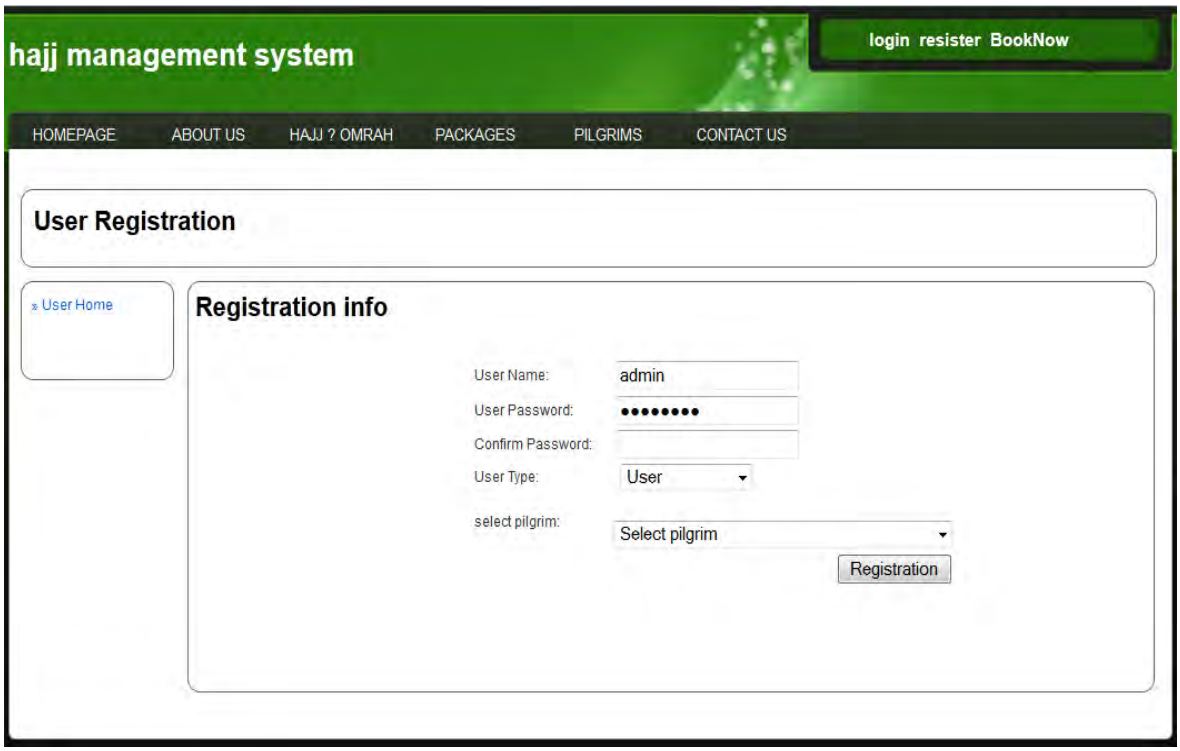


Figure 3.23: User Registration (sign up) Page Design

In case, where the user is not registered, the above “user registration design” screen is displayed (once the “Register” button is clicked on the login page) with the following fields:

1. Username
2. User type
3. User Password
4. Confirm Password.

After filling the above details, user needs to select the “Registration” button in the user registration design screen.

3.6.4 Admin Page

Figure 3.24: Admin Page Design

Fig 3.24 is the “Admin home page” of HMS. The above screen is displayed once the Admin person enters his credentials in the Username and Password text box in the Login design screen. From this page an admin can manage staff, User Groups. The Admin Dash Board is also displayed. In case, the Admin person wants to logout, he needs to select the button “Logout”, on the top of the page.

3.6.5 Group Leader View (user)

Once the Group leader is logged in with his credentials, the below group leader view design page is displayed, where he could view the groups, trip request, and trip schedule. The Group Leader Dash Board is also displayed. He could also view out the contacts.

In case, the person wants to logout, he needs to select the button “Logout” on the top right of the page.

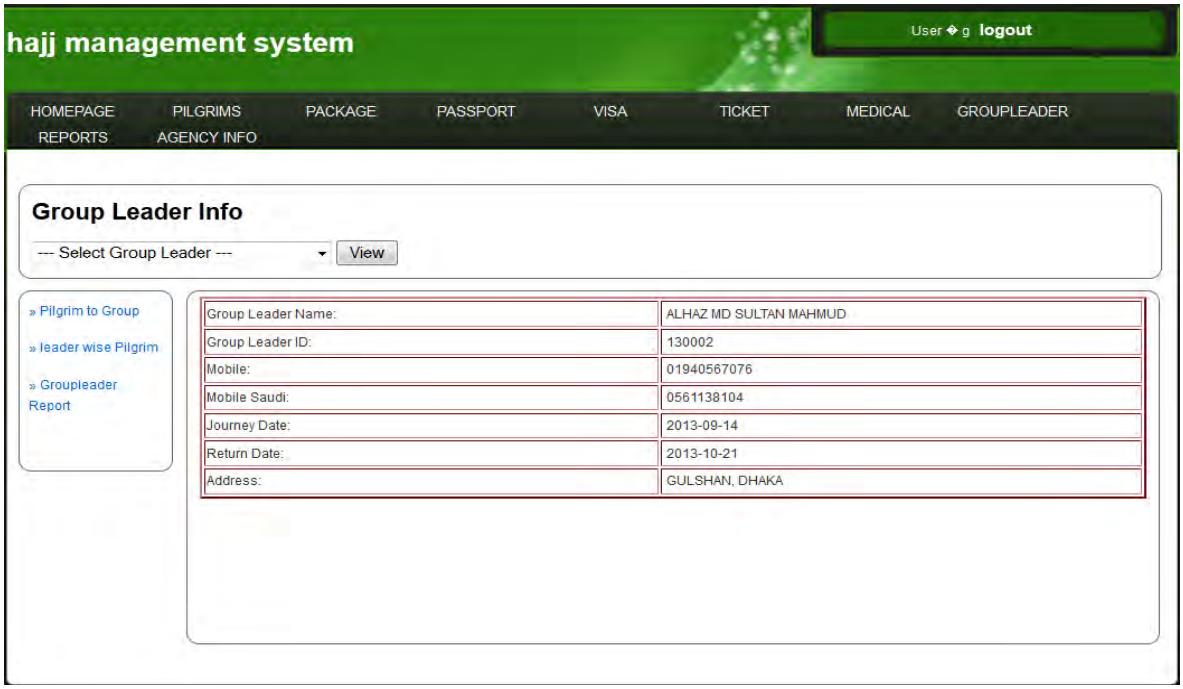


Figure 3.25: Group Leader View Design

3.6.6: Staff Page

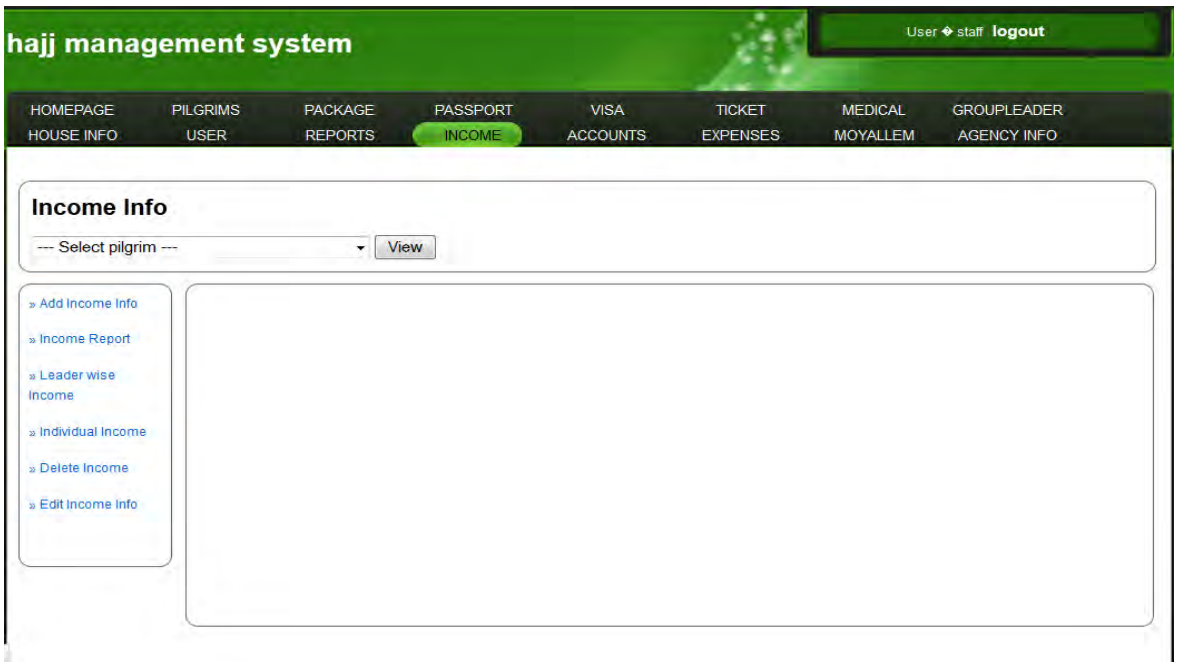


Figure 3.26: Staffs View Design

Fig 3.26 is the "Staff Home page View design" of Hajj Management System. The above screen is displayed once the staff person enters his credentials in the username and password text box in the login design screen. Here, he can manage packages, pilgrims, groups, accounts information of the agency etc. The staff dash board is also displayed. He could also view out the contacts. In case, the staff person wants to logout, he needs to select the button "Logout" on the right top of the page.

3.6.7: Pilgrim View Design

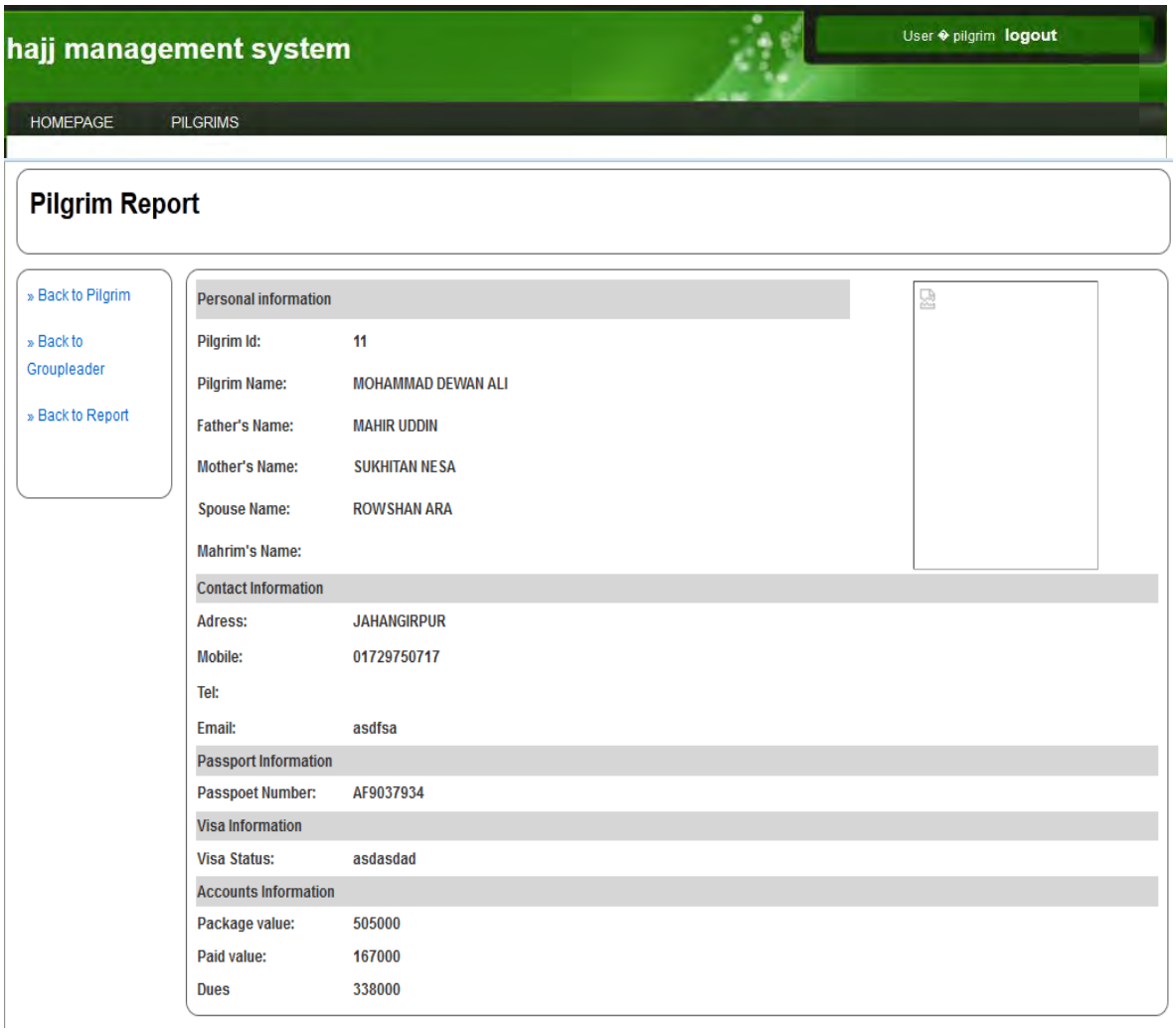


Figure 3.27: Pilgrim View Design

Once the Pilgrim is logged in with his user name and password, the above pilgrim view design page is displayed, where he could view his/her personal information, passport, VISA

accounts information. The Pilgrim could view only their own information but not others information. In case, the person wants to logout, he needs to select the button “Logout” on the top right of the page.

3.7 Test Data: For testing our hajj management system we have collected data from a hajj agency of Bangladesh name MUKTA TRAVELS LTD. They gave us hajj related data of the pilgrims those are intend to perform hajj in this year 2013.

3.7.1 Input Screen: To test our HMS we input previously collected data in the following screen.

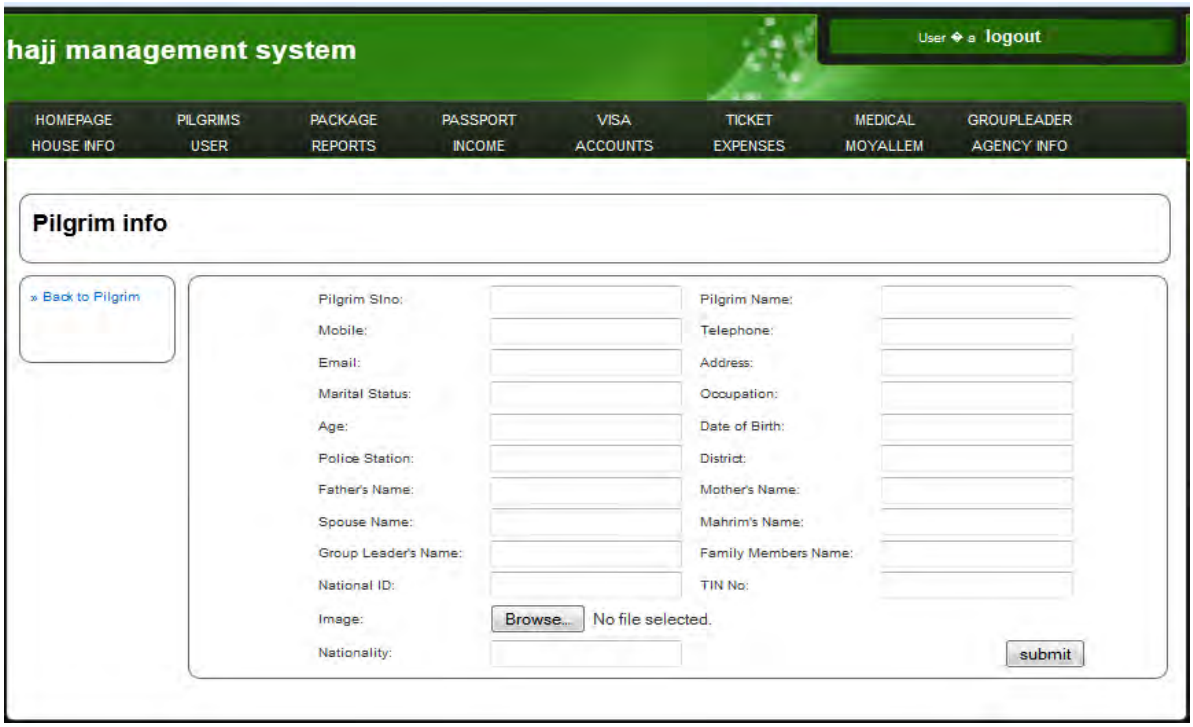


Figure 3.28: Pilgrims Input Information Page

3.7.2 Oulput Screen: Insert the sample to the HMS we get the following output result.

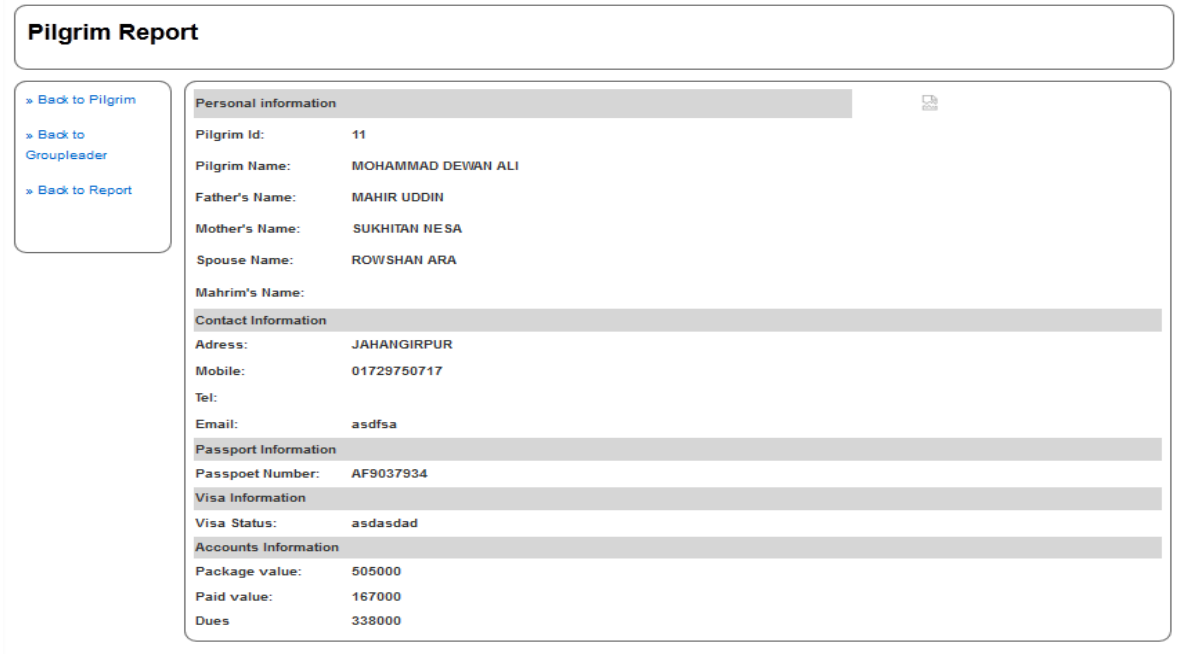


Figure 3.29: Pilgrims Output Information Page

3.7.3 Pilgrim Data: From the above figure 3.29 we conclude that our collected pilgrim data is properly working in the HMS database.

3.7.4 Populating Database with Sample Data: We have populated the database with our collected real life data from Mukta Travels. Total 77 Pilgrim details data were incorporate to test and verify different activities of our project.

3.8 Summary

The techniques discussed in this chapter for analysis and design of HMS according to SDLC. The structure imposed by this SDLC is specifically designed to maximize the probability of a successful software development effort. In this chapter we have discussed about development methodology. We have designed database which contains 13 tables and developed various interfaces for users. We also discussed UML diagram that help in visualizing the whole development process, DFD diagram which shows all the processes that comprise the overall system, E-R diagram which contents details entity, entity set, relationship between entities and key constraints so that the database become more easier and meaningful to everybody, schema

diagram, activity diagram that show the overall flow of control, package diagram that depicts the dependencies between the packages that make up a model, system flow chart diagram that provides a logical diagram of how the system operates etc. Finally, we have tested the database with real time data collected from Mukta Travels.

CHAPTER 4: IMPORTANT FUNCTIONALITIES AND REPORTS

4.0 Introduction

This chapter designates the important functionalities and reports of the proposed HMS.

Functionality: The actions (operations), capabilities and usefulness of something such as a software application.

Reports: A report or account is any informational work (usually of writing, speech, television, or film) made with the specific intention of relaying information or recounting certain events in a widely presentable form. Reports are often used to display the result of an experiment, investigation, or inquiry. Reports may refer to specific periods, events, occurrences, or subjects, and may be communicated or presented in oral or written form. Written reports are documents which present focused, salient content to a specific audience.

The developed HMS has different essential features codes. Screen shot of some of the main features and reports are explained below.

4.1.1 User Management Page for Admin

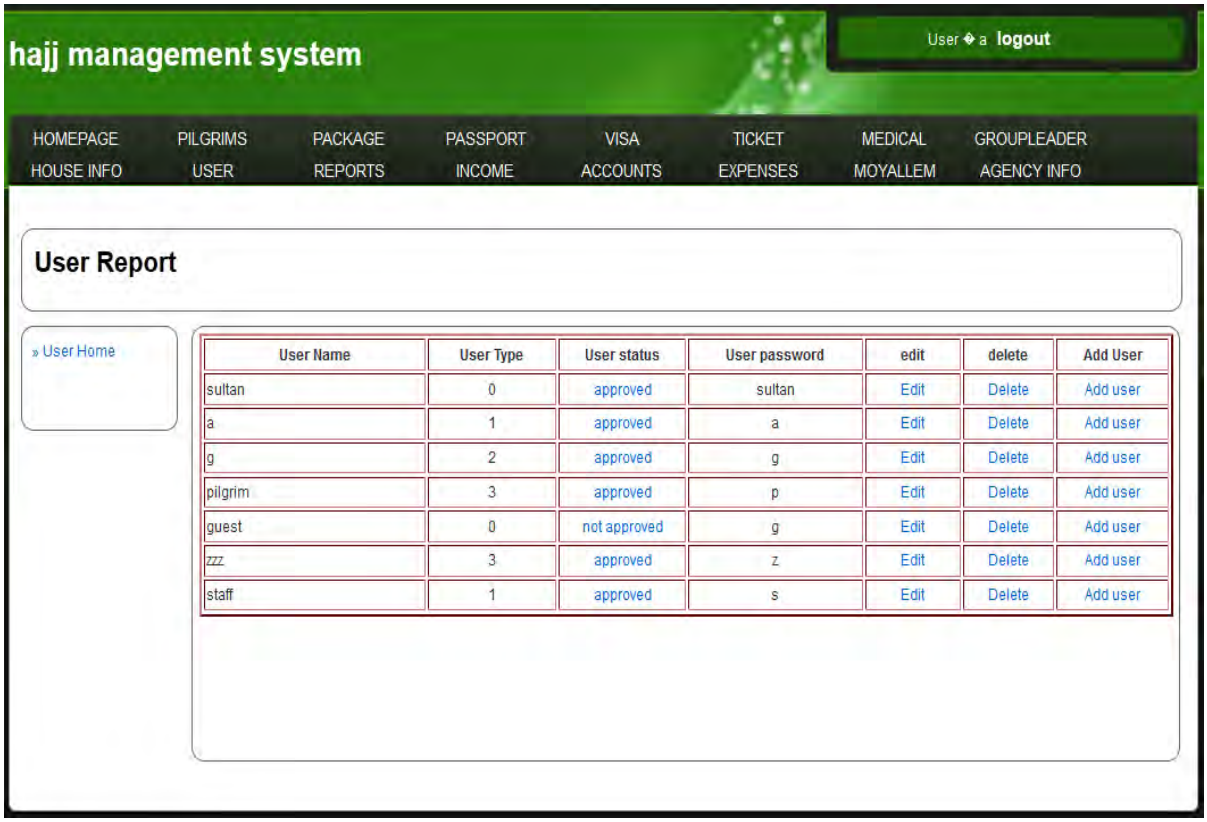


Fig 4.1: User Management Page for Admin

The Figure 4.1 above shows the user list of this web system. From this page admin can edit any information the users. He can delete or add new users as required. From this page admin can also approve the users or set not approved the users. If users status is not approved the users will not be able to perform any function in this systems.

4.1.2 Pilgrim Edit Page

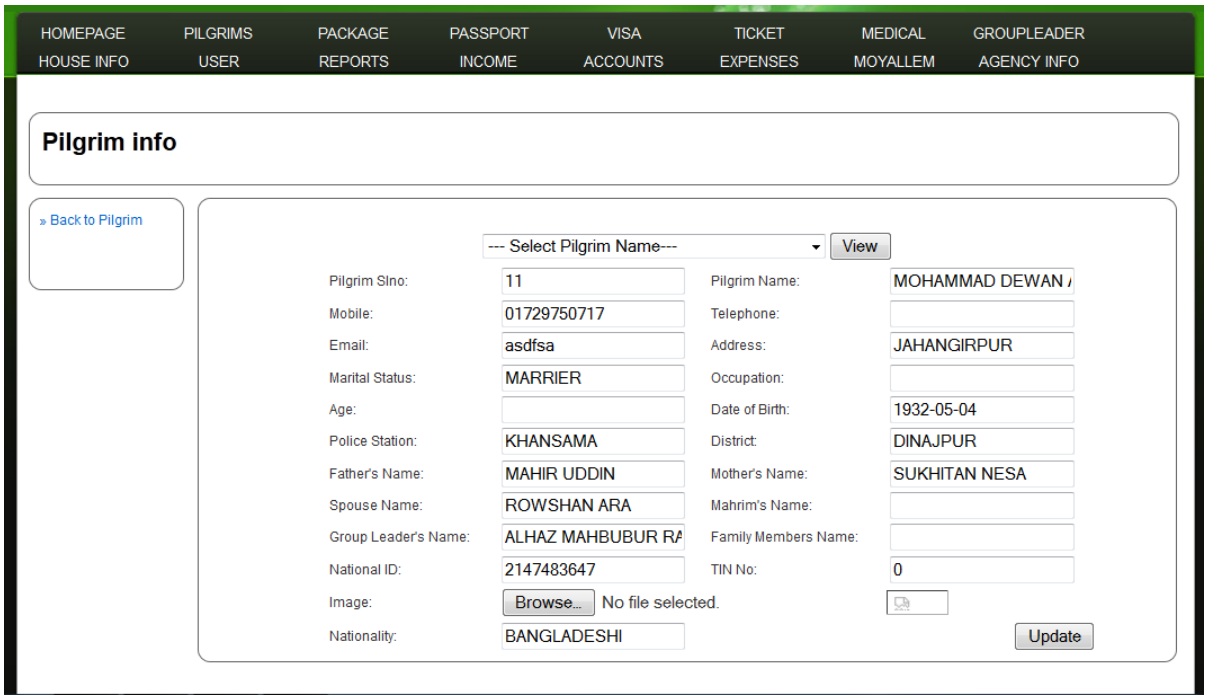


Fig 4.2: Pilgrim Edit Page

The above Figure 4.2 is Pilgrim edit page. From this page admin / staff can edit or modify Pilgrims information.

4.1.3 Add Passport Info for Pilgrims

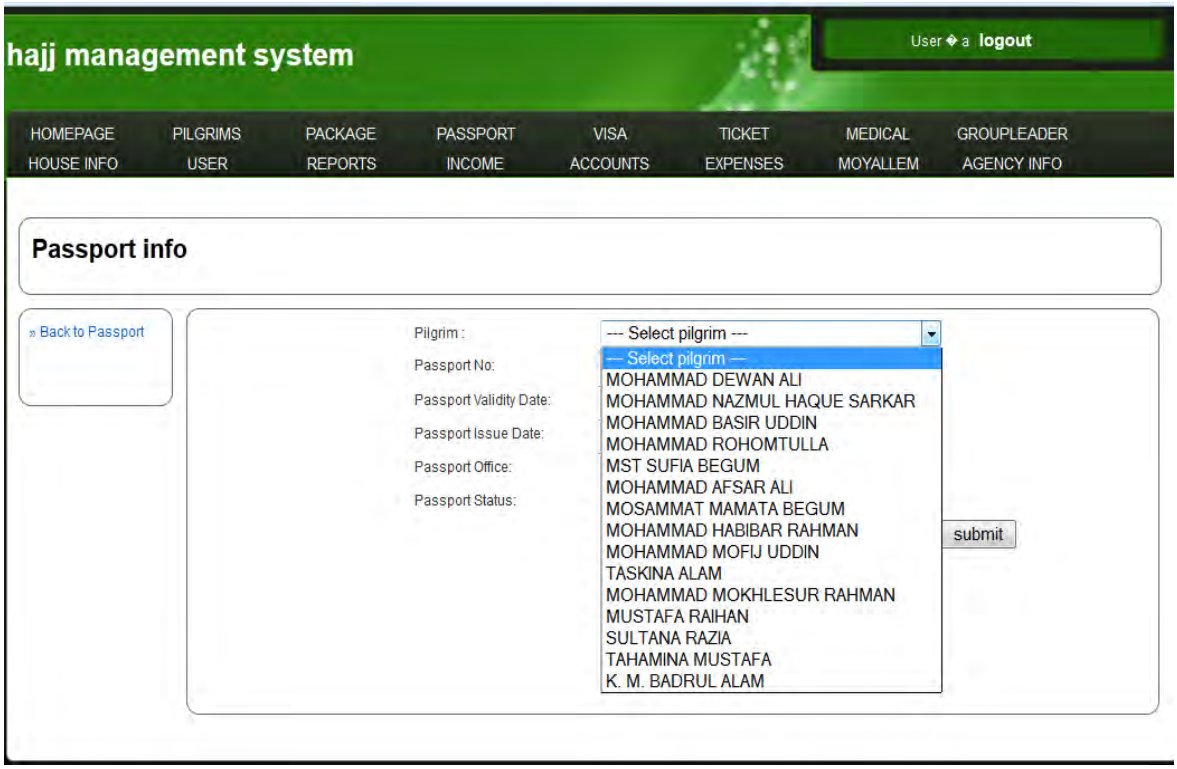


Fig 4.3: Add Passport Info Page for Pilgrims

The above Figure 4.3 shows the add passport page for Pilgrims. From this page admin / staff will be able to add passport information for Pilgrims.

4.1.4 Pilgrims Add Espenses Page

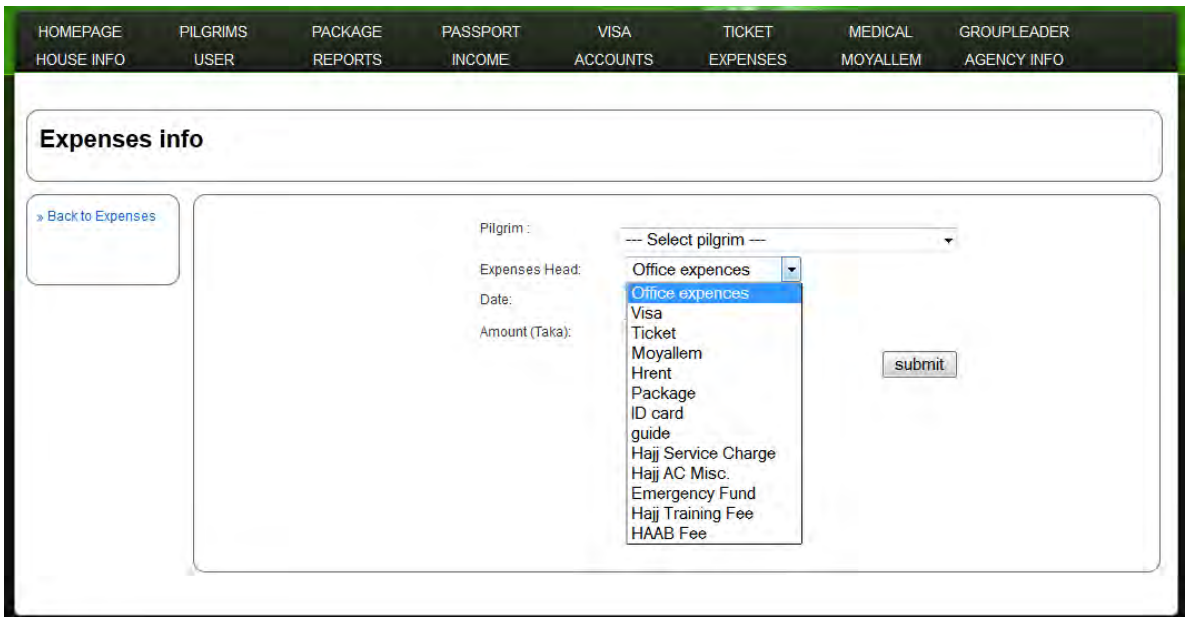


Fig 4.4: Pilgrim's Expenses Add Page

The above Figure 4.4 is the Pilgrims add expenses page. From this page admin / staffs will be able to add expenses information of Pilgrims.

4.1.5 Group Leader Registration Page

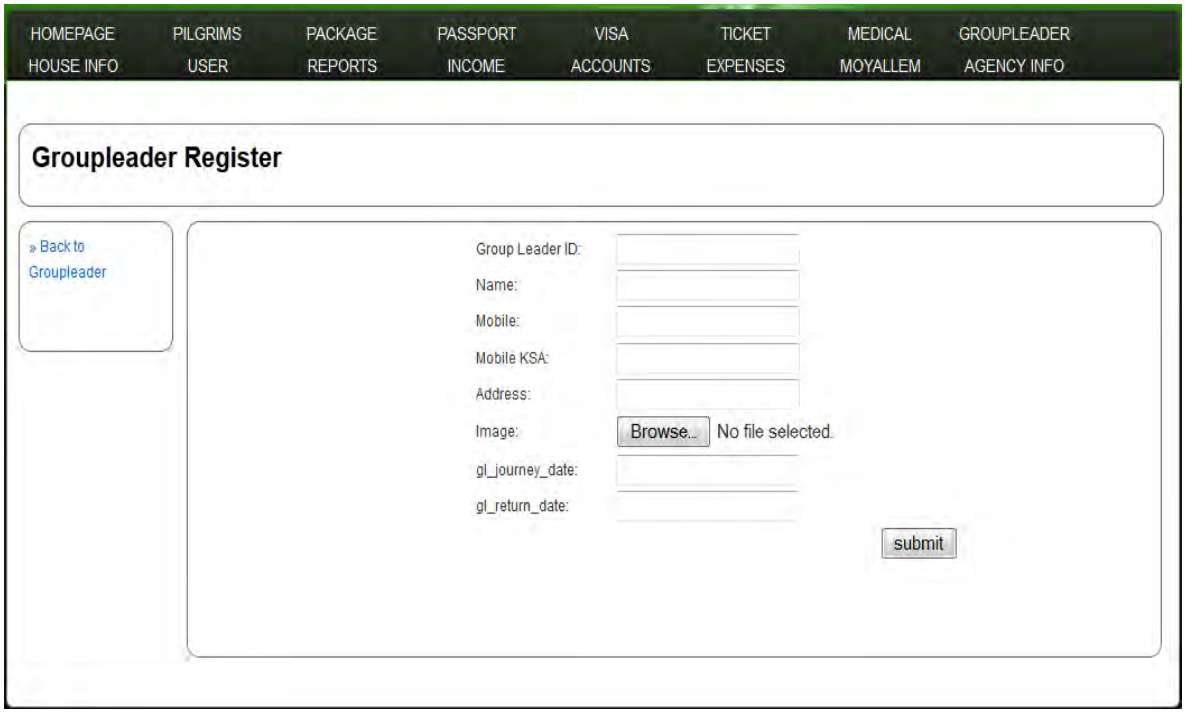


Figure 4.5: Group Leader Register Page

The Figure 4.5 above shows the registration page of this web system where the leader can register in to the system after he/she fill up this information. The page design is simple to avoid confusion to the leader. It also contains java script validation to let the user be aware of any mistakes that may occur during the registration process.

4.1.6 Add Pilgrim to Group Leader

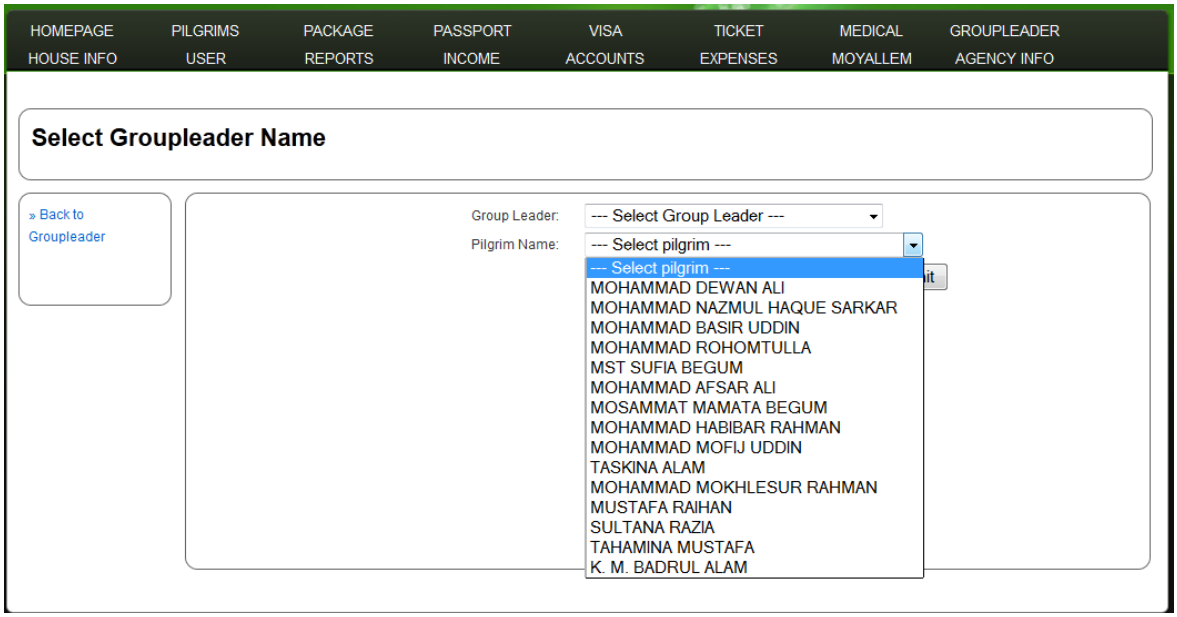


Fig 4.6: Add Pilgrim to Group Leader Page

The above Figure 4.6 is the add Pilgrim page to group leader. From this page admin / staffs will be able to add Pilgrims to Group Leader.

4.1.7 Report Page

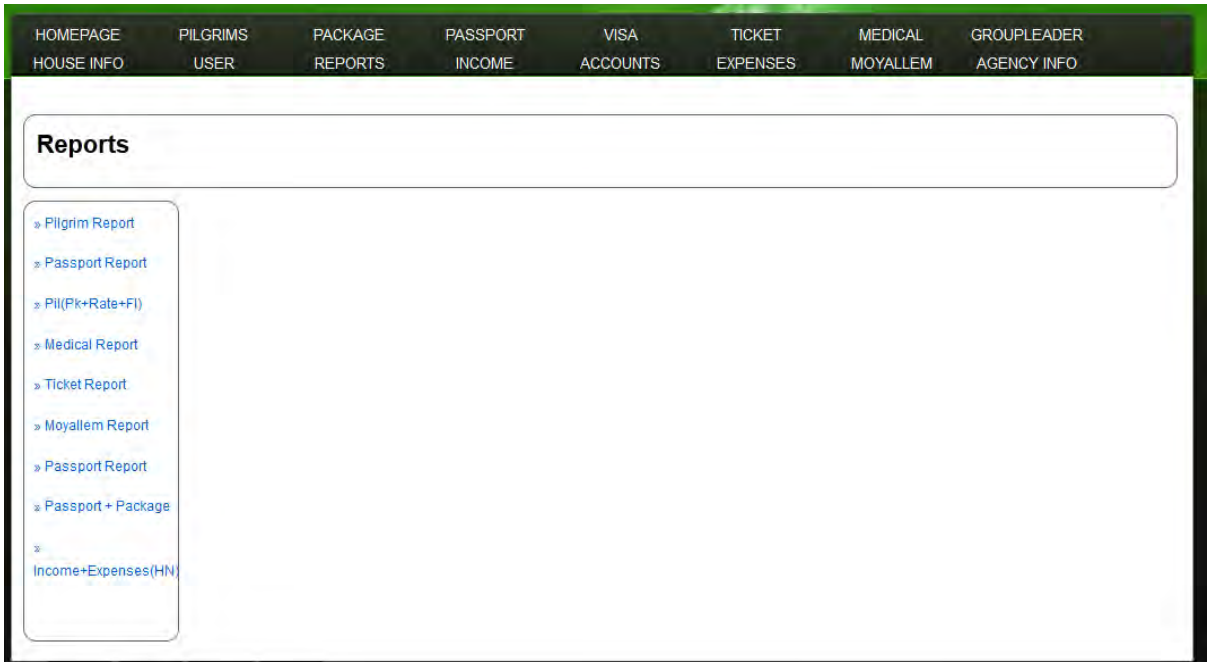


Fig 4.7: Report Home Page for Admin / Staff / Group Leader

The above Figure 4.7 is the report home page. From this page admin / staff / group leader will be able to view pilgrim report, passport report, medical report, ticket information of the pilgrims. Admin can also view accounts information of Pilgrims.

4.1.8 Pilgrim Report Page

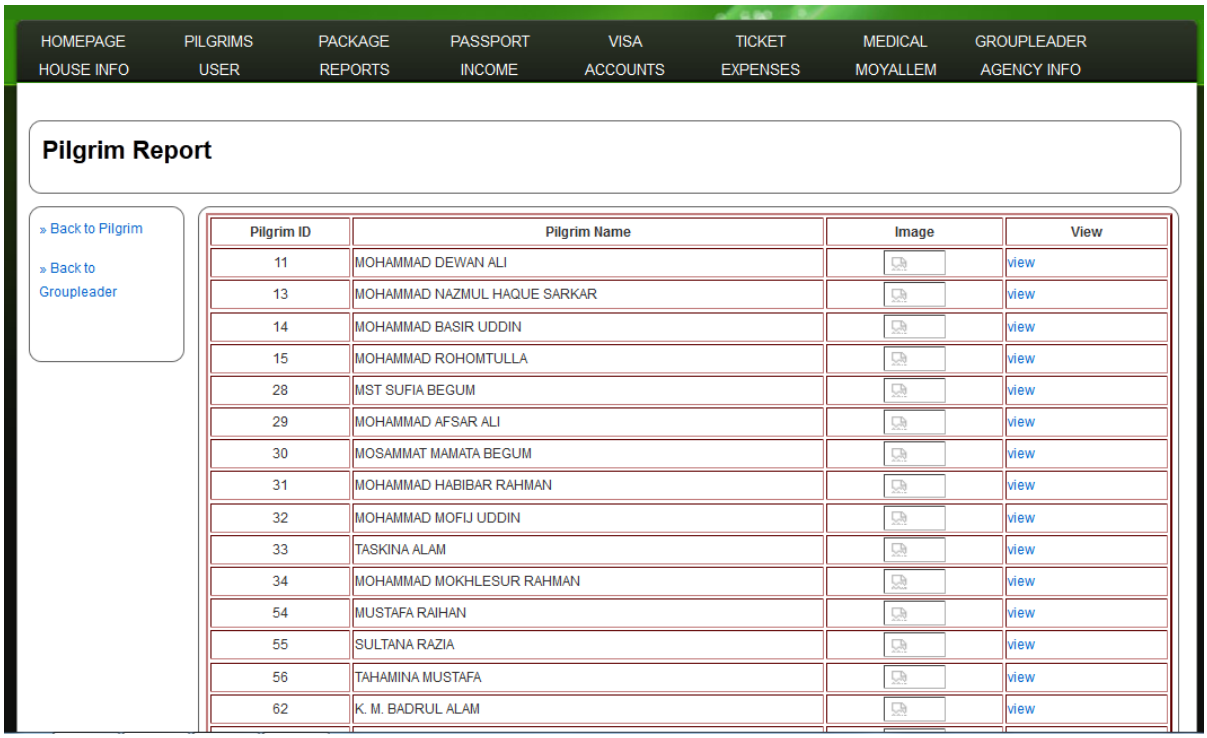


Fig 4.8: Pilgrim Report Page

The above Figure 4.8 is the Pilgrims total report page. From this page admin / staff / group leader will be able to view pilgrim report.

4.1.9 Group Leader wise Pilgrim Report

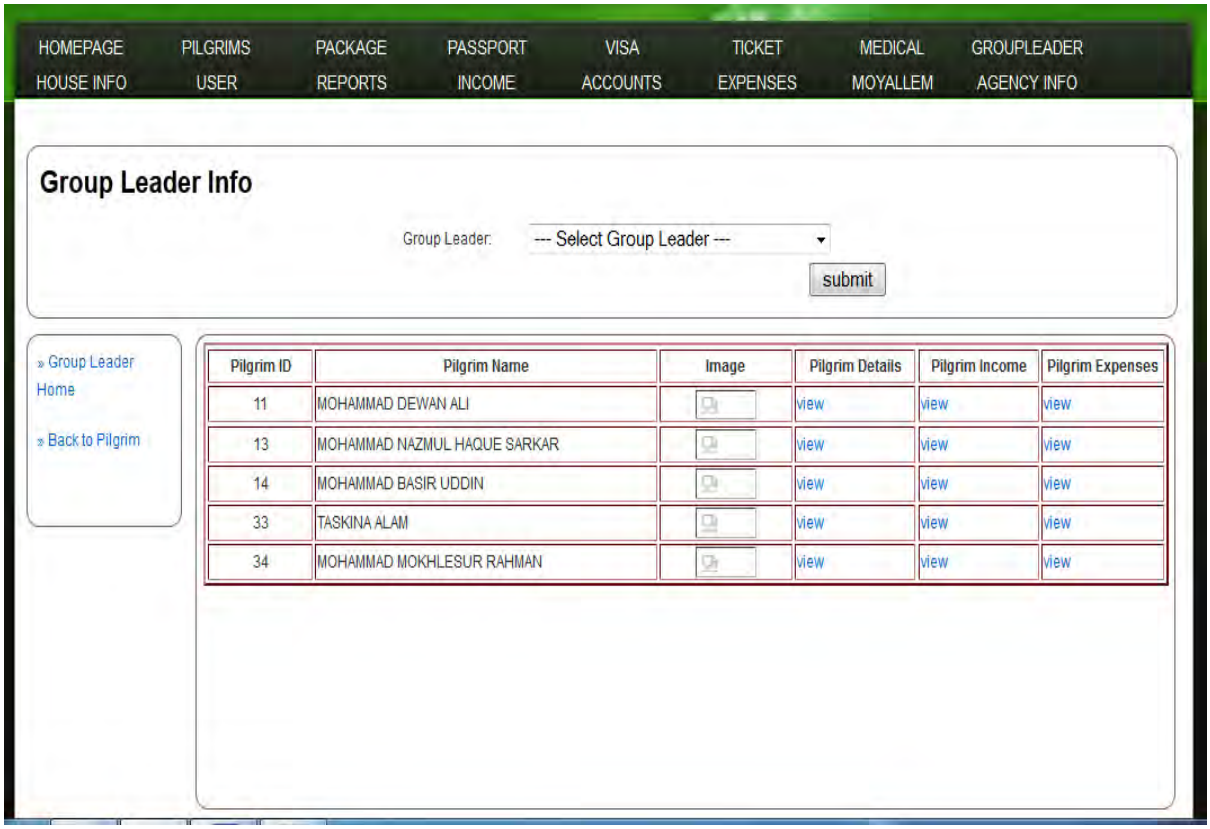
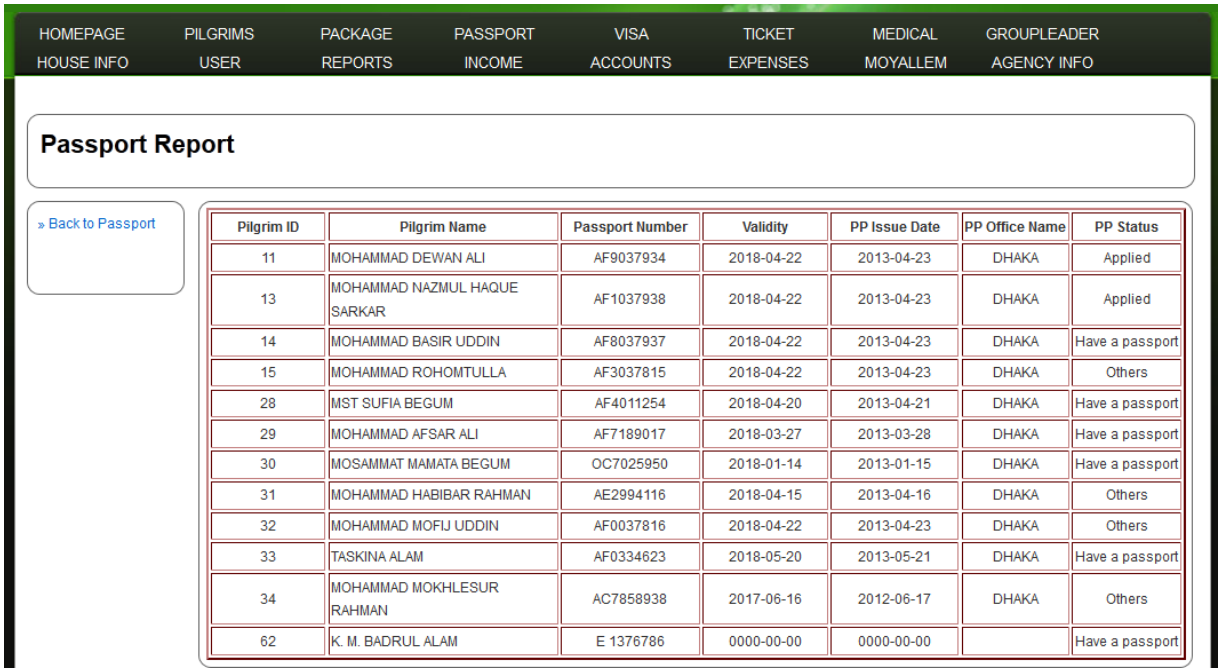


Fig 4.9 Group Leader wise Pilgrim Report

The above Figure 4.9 is the group leader wise Pilgrims report page. From this page group leader will be able to view his Pilgrim report, individual report of income and expenses.

4.1.10 Pilgrim's Passport Report Page



Pilgrim ID	Pilgrim Name	Passport Number	Validity	PP Issue Date	PP Office Name	PP Status
11	MOHAMMAD DEWAN ALI	AF9037934	2018-04-22	2013-04-23	DHAKA	Applied
13	MOHAMMAD NAZMUL HAQUE SARKAR	AF1037938	2018-04-22	2013-04-23	DHAKA	Applied
14	MOHAMMAD BASIR UDDIN	AF8037937	2018-04-22	2013-04-23	DHAKA	Have a passport
15	MOHAMMAD ROHOMTULLA	AF3037815	2018-04-22	2013-04-23	DHAKA	Others
28	MST SUFIA BEGUM	AF4011254	2018-04-20	2013-04-21	DHAKA	Have a passport
29	MOHAMMAD AFSAR ALI	AF7189017	2018-03-27	2013-03-28	DHAKA	Have a passport
30	MOSAMMAT MAMATA BEGUM	OC7025950	2018-01-14	2013-01-15	DHAKA	Have a passport
31	MOHAMMAD HABIBAR RAHMAN	AE2994116	2018-04-15	2013-04-16	DHAKA	Others
32	MOHAMMAD MOFIJ UDDIN	AF0037816	2018-04-22	2013-04-23	DHAKA	Others
33	TASKINA ALAM	AF0334623	2018-05-20	2013-05-21	DHAKA	Have a passport
34	MOHAMMAD MOKHLESUR RAHMAN	AC7858938	2017-06-16	2012-06-17	DHAKA	Others
62	K. M. BADRUL ALAM	E 1376786	0000-00-00	0000-00-00		Have a passport

Fig 4.10: Pilgrim's Passport Report Page

The above Figure 4.10 is the Pilgrims passport report page. From this page admins / staffs will be view the passport information of total Pilgrims.

4.1.11 Pilgrim's VISA Report Page

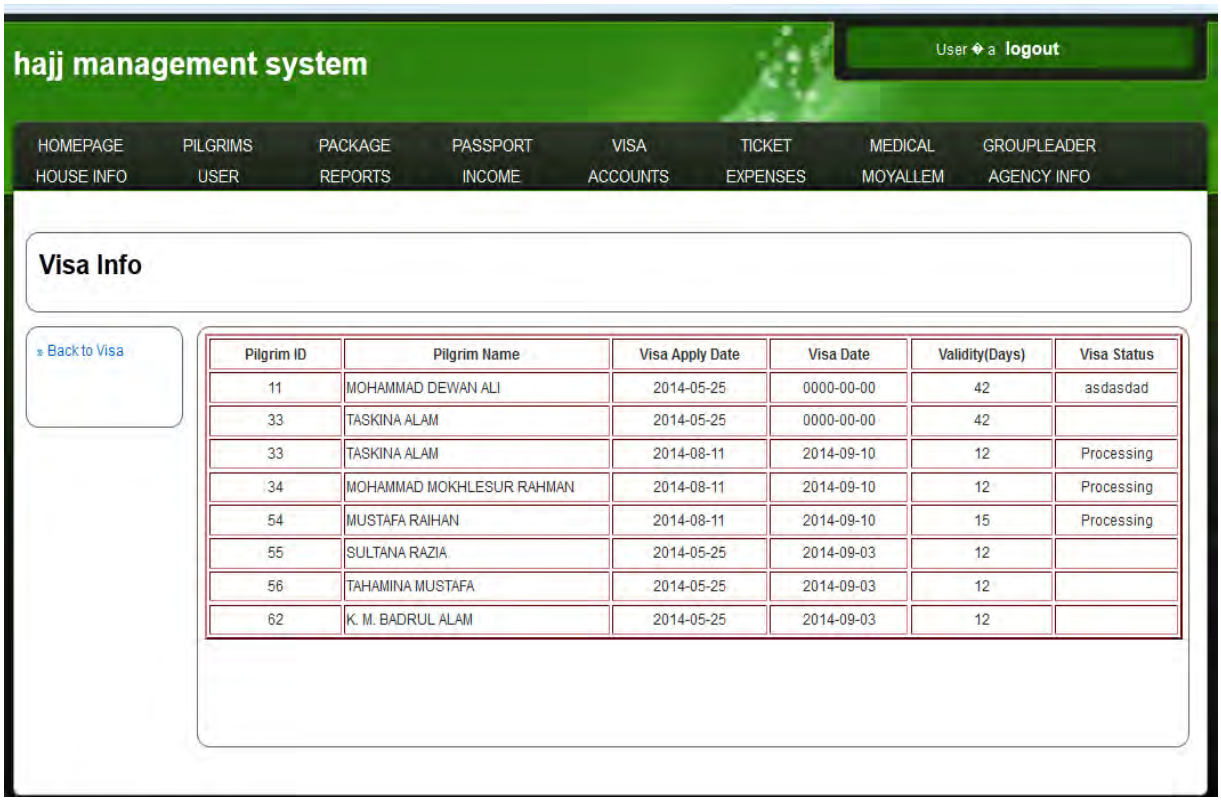


Fig 4.11: Pilgrim's VISA Report Page

The above Figure 4.11 is the Pilgrims VISA report page. From this page admins / staffs will be view VISA information of total Pilgrims.

4.1.12 Pilgrim's Income Report Page

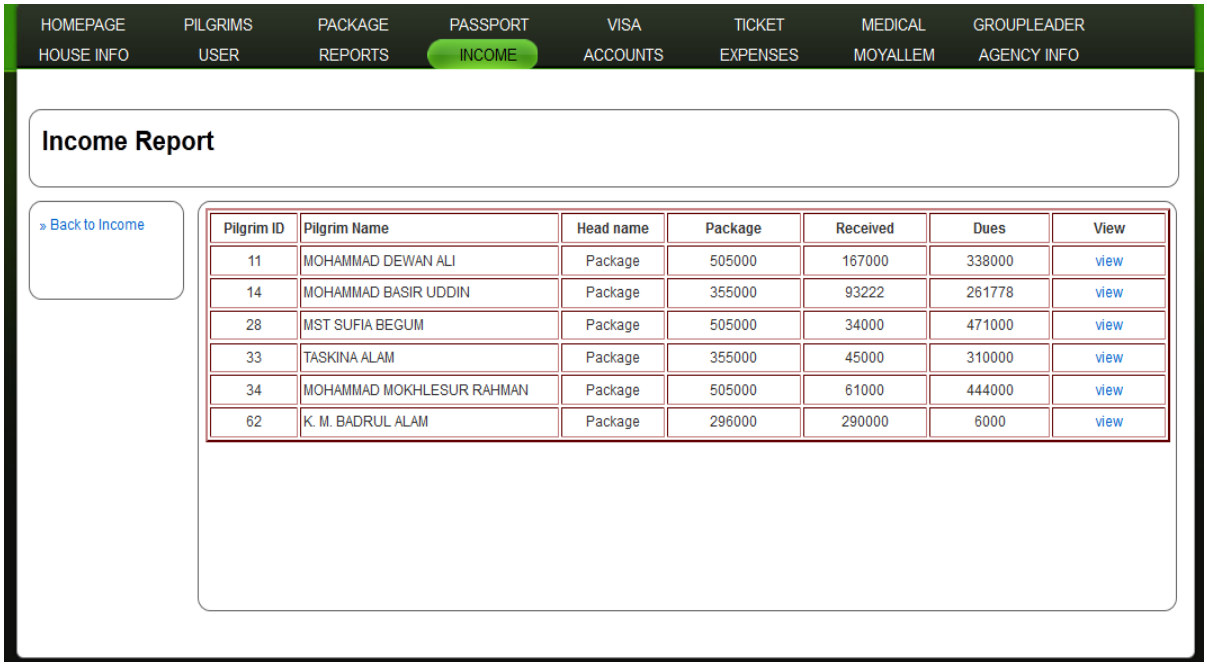


Fig 4.12: Pilgrim's Income Report Page

The above Figure 4.12 is the Pilgrims income report page. From this page admin / staffs will be view income information of Pilgrims.

4.1.13 Pilgrim's Individual Income Report Page

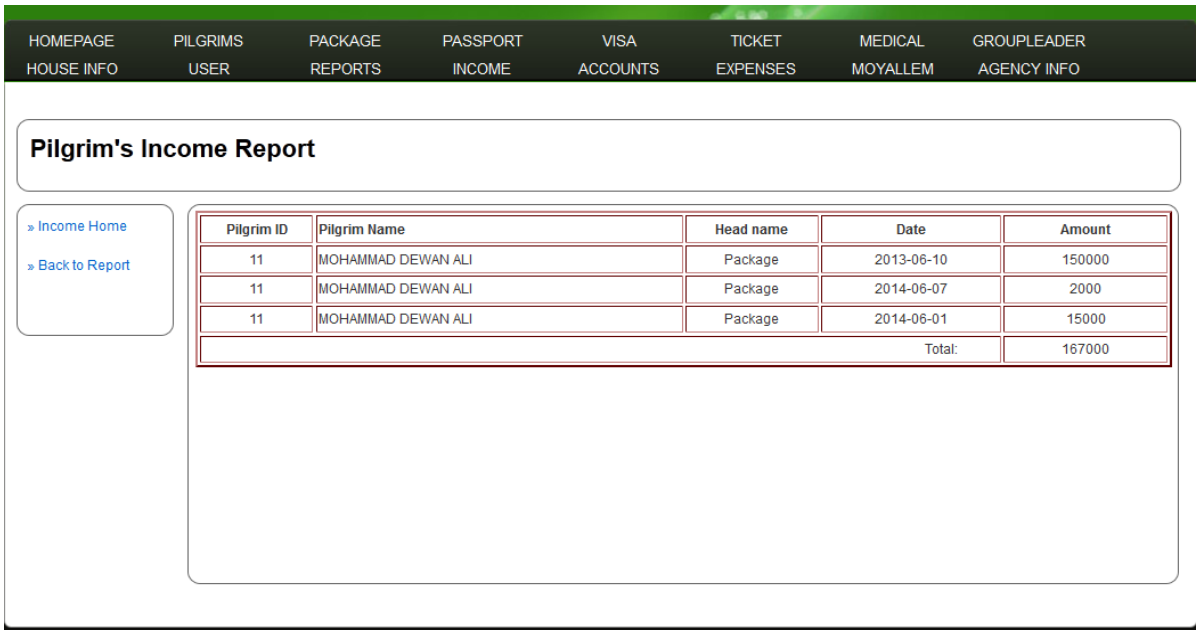
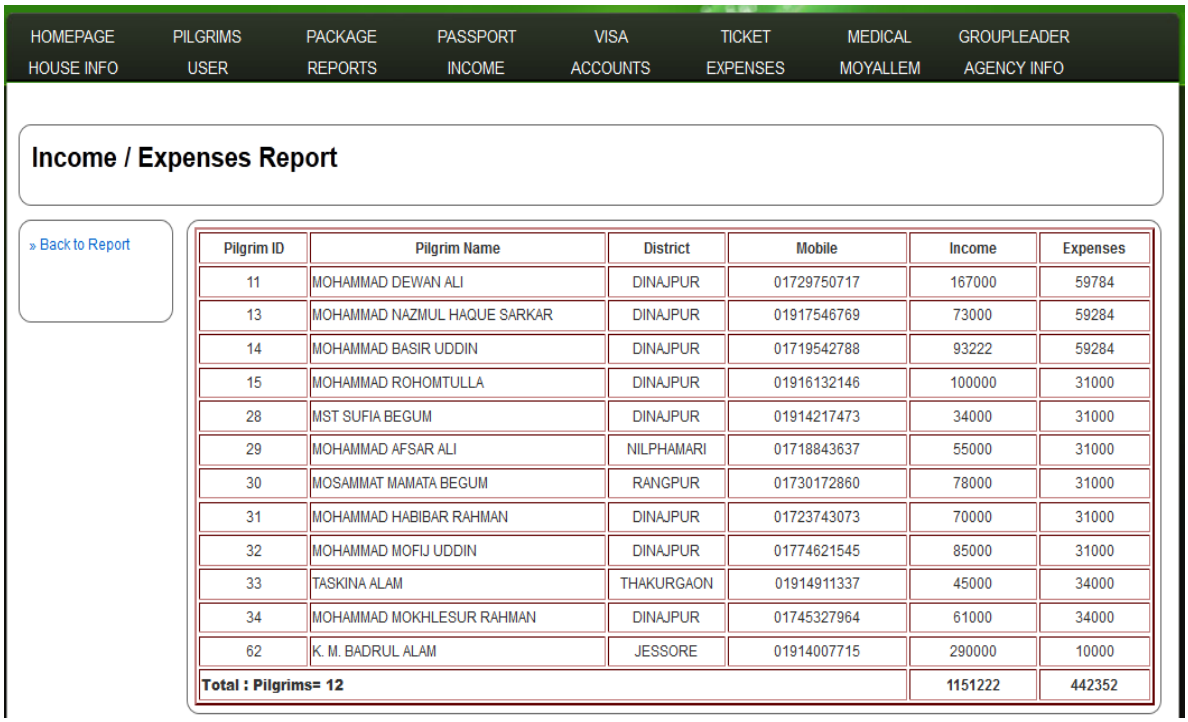


Fig 4.13: Pilgrim’s Individual Income Report Page

The above Figure 4.13 is the Pilgrims individual income report page. From this page admin / staffs will be view income information of Pilgrims.

4.1.14 Income / Expenses Report Page for Pilgrim's



Pilgrim ID	Pilgrim Name	District	Mobile	Income	Expenses
11	MOHAMMAD DEWAN ALI	DINAJPUR	01729750717	167000	59784
13	MOHAMMAD NAZMUL HAQUE SARKAR	DINAJPUR	01917546769	73000	59284
14	MOHAMMAD BASIR UDDIN	DINAJPUR	01719542788	93222	59284
15	MOHAMMAD ROHOMTULLA	DINAJPUR	01916132146	100000	31000
28	MST SUFIA BEGUM	DINAJPUR	01914217473	34000	31000
29	MOHAMMAD AFSAR ALI	NILPHAMARI	01718843637	55000	31000
30	MOSAMMAT MAMATA BEGUM	RANGPUR	01730172860	78000	31000
31	MOHAMMAD HABIBAR RAHMAN	DINAJPUR	01723743073	70000	31000
32	MOHAMMAD MOFIJ UDDIN	DINAJPUR	01774621545	85000	31000
33	TASKINA ALAM	THAKURGAON	01914911337	45000	34000
34	MOHAMMAD MOKHLESUR RAHMAN	DINAJPUR	01745327964	61000	34000
62	K. M. BADRUL ALAM	JESSORE	01914007715	290000	10000
Total : Pilgrims= 12				**1151222**	**442352**

Fig 4.14: Pilgrim's Income / Expenses Report Page

The above Figure 4.14 is the Pilgrims income / expenses report page. From this page admin / staffs will be view the income / expenses information of total Pilgrims.

4.1.15 Leader wise Pilgrim Accounts Report

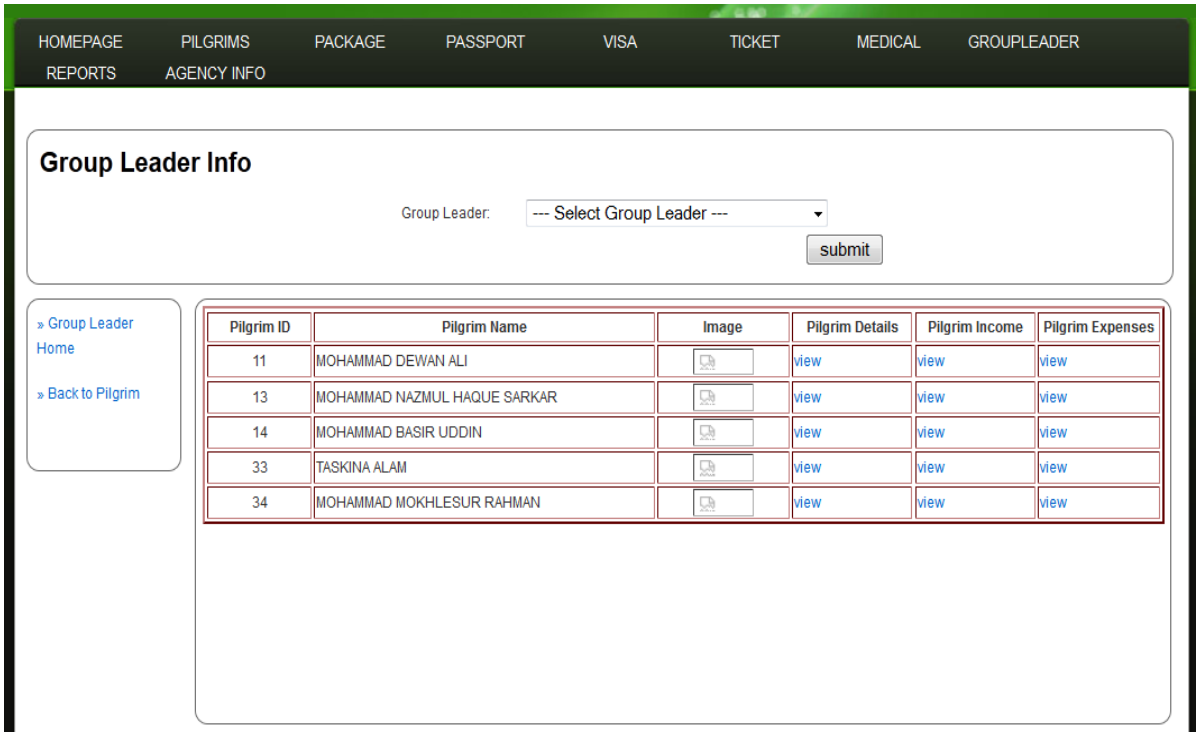


Fig 4.15: Leader wise Pilgrims Accounts Report Page

The above Figure 4.15 is the Pilgrims leader wise accounts report page. From this page group leader will be view income information of his Pilgrims.

4.2 Summary

In this chapter we have described about various important functionalities such as online, Pilgrim registration, Pilgrim information management, VISA, flight schedule management and Pilgrims account management. We have generate various reports like total Pilgrim report, Group Leader wise Pilgrim reports, Pilgrim details report, VISA report, accounts reports(individual / group report).

CHAPTER 5: CONCLUSION

5.0 Conclusion

HMS is a popular concept for hajj agencies of Bangladesh using modern technology. The objective of this project was to develop a web based low cost Hajj Management System with different types of features such as online pilgrims registration, VISA management, group leader management, ticket and flight management, accounts management etc. as in the system. This system is a multi-user system which can be used by a number of users simultaneously. Every user has their own user ID and Password so that they can get their personal information by using that id and password only. In HMS Personal information of the Pilgrims as well as group leaders can be accessed by the particular user only. It is more user friendly to the agencies, group leaders and their pilgrims due to different type of advanced features. The system is self-descriptive, users can easily access the system and browse the information they required. From HMS's agencies can easily identify the current position of pilgrims such as VISA status, flight and ticket information, accounts, passport information etc. Furthermore group leaders can see the status of his group pilgrims and Pilgrims can view their status like payment, ticket, VISA, schedule etc.This software also provides the information about the company and their contact details. The developed software can easily be implemented for any hajj agencies because it does not need hi-tech equipment but needs only hosting. This HMS is integrated with a dynamic company web site. Finally HMS provides all the functionalities that hajj agencies needed.

5.1 Future Work

The developed project can be enhanced in a variety of ways.

Firstly: By the law of Bangladesh Govt. only 300 Pilgrims can be sent to perform holy hajj using one license in a year. HMS presently designed for a particular hajj agency in one license but most of the agency sent more than 1000 pilgrims to perform hajj using different license. So this HMS should be enhanced for multiple hajj license of a particular agencies.

Secondly: Most of the hajj agencies also has travelling business. So they required to improve HMS to use both hajj and travelling purpose. HMS can be enhanced and some more new features can be added to facilitate their needs.

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