CHAPTER 1

INTRODUCTION

1.1 Introduction to DBMS

Database is a collection of related data. DBMS came into existence in 1960 by Charles. Again in 1960 IBM brought IMS-Information management system. In 1970 Edgor Codd at IBM came with new database called RDBMS. In 1980 then came SQL Architecture-Structure Query

Language. In 1980 to 1990 there were advances in DBMS.

e.g.DB2,ORACLE.A database has the following implicit properties:

- A database represents some aspect of the real world, sometimes called the miniworld or the universe of discourse(UOD).Changes to the miniworld are reflected in database.
- A database is a logically coherent collection of data with some inherent meaning. A random assortment of data cannot correctly be referred to as a database.
- A database is designed, built, and populated with data for a specific purpose. It has an intended group of users and some preconceived applications in which these users are interested.

In other words, a database has some source from which data is derived, some degree of interaction with events in the real world, and an audience that is actively interested in its contents.

Metadata(meta data, or sometimes meta information) Is "data about data", of any sort in any media. An item of metadata may describe a collection of data including multiple content items and hierarchical levels, for example a database schema. In data processing, metadata is definitional data that provides information about or documentation of other data managed within an application or environment. The term should be used with caution as all data is about something, and is therefore metadata.

A database management system(DBMS)is a collection of programs that enables users to create and maintain database. The DBMS is a general purpose software system that facilitates the

that facilitates the process of defining, constructing, manipulating and sharing databases among various users and applications.

Defining a database specifying the database involves specifying the data types , constraints and structures of the data to be stored in the database.The descriptive information is also stored in the database in the form database catalogue or dictionary; It is called meta-data. Manipulating the data includes the querying the database to retrieve the specific data. An application program accesses the database by sending the queries or request for data to DBMS. The important function provided by the DBMS includes protecting the database and maintain the database.

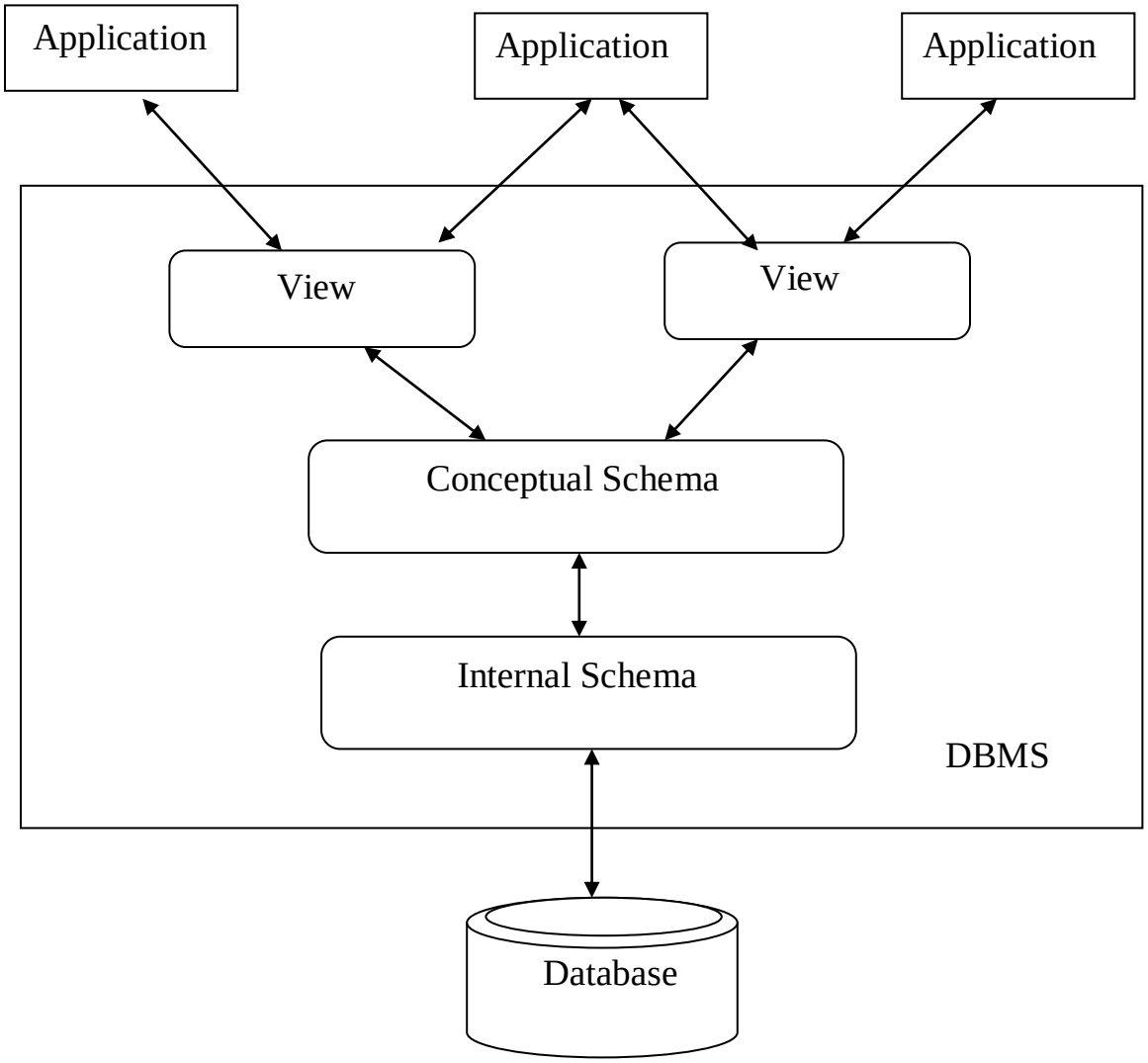

Figure 1.1:Three Schema Architecture

The figure 1.1 shows the Three schema architecture of Database Management System,The Three schema architecture consists of three levels of the architecture:

- **External Level:**

The external level Is the view that the individual user of the database has. This view is often a restricted view of the database and the same database may provide a number of different views for different classes of users. In general, the end usersand even the application programmers are only interested in a subset of thedatabase.

- **Conceptual Level**:

The conceptual view is the information model of the enterprise and contains the view of the whole enterprise without any concern for the physical implementation. The conceptual view is the overall community view of the database and it includes all the information that is going to be represented in the database.

- **Internal Level:**

The internal view is the view about the actual physical storage of data. It describes what data is stored in database and how.

1.2 Overview of the project

The Hostel Database Management System is developed for automating the activities of hostel. This software will help Warden in case of registering and searching the information about students and rooms. This will help by providing faster access to data and allowing addition, upgradation, modification and deletion ofdata in a very systematic and reliable manner.

1.2.1 Problem statement:

To maintain and manipulate the data stored in hostel database management system.

1.2.2 Objectives of the project:

1. The main objective behind this mini project is to allot the student their rooms in hostel.

2. The Hostel Management System gives the information about student details , room details and booking details.

4. This mini project is built at administrative end and thus only the administrator is allowed access.

5. The main purpose of this mini project is to reduce manual work while allotting student a room in the hostel and to keep track of all allotments.

CHAPTER 2

SYSTEM DESIGN AND METHODOLOGY

2.1 System Architecture

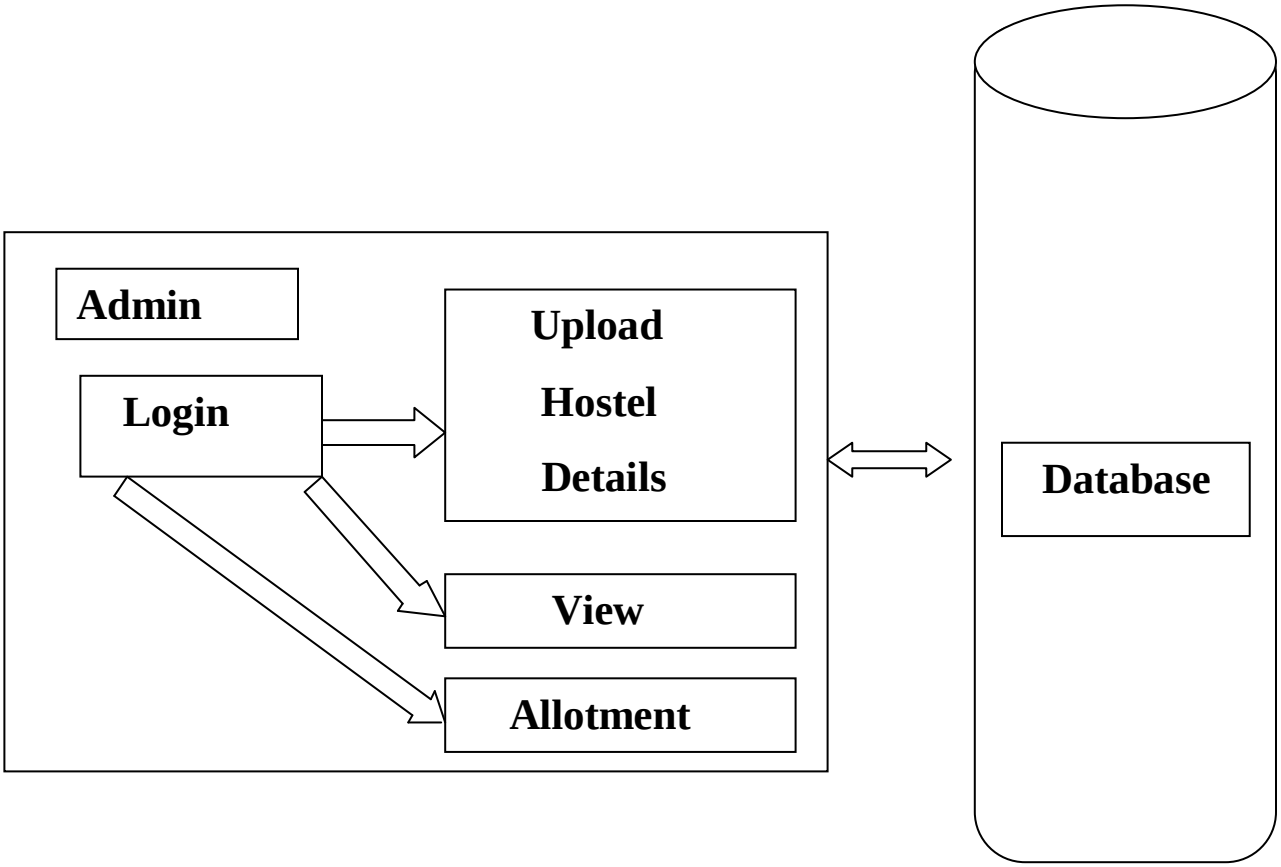

Figure 2.1:System Architecture of Hostel management system

The Figure 2.1 describes the System Architecture of a Hostel Management System .The architecture consists of a centralized database, which will be accessed by user. Administrative access is required for the login, which is implemented through login module with which the user can login with their registered username and password. Once login is successful, the user can manage the hostel details like, the room details can be stored, student details can be stored, the bookings of all rooms can be viewed.

Suppose the user fails to login, the user will be asked to enter the username and password again or he can go to forgot password page to get his password.

To view the details of the room allotments , the user can access then database to fetch and to display the information of room bookings.

2.2 ER Diagram

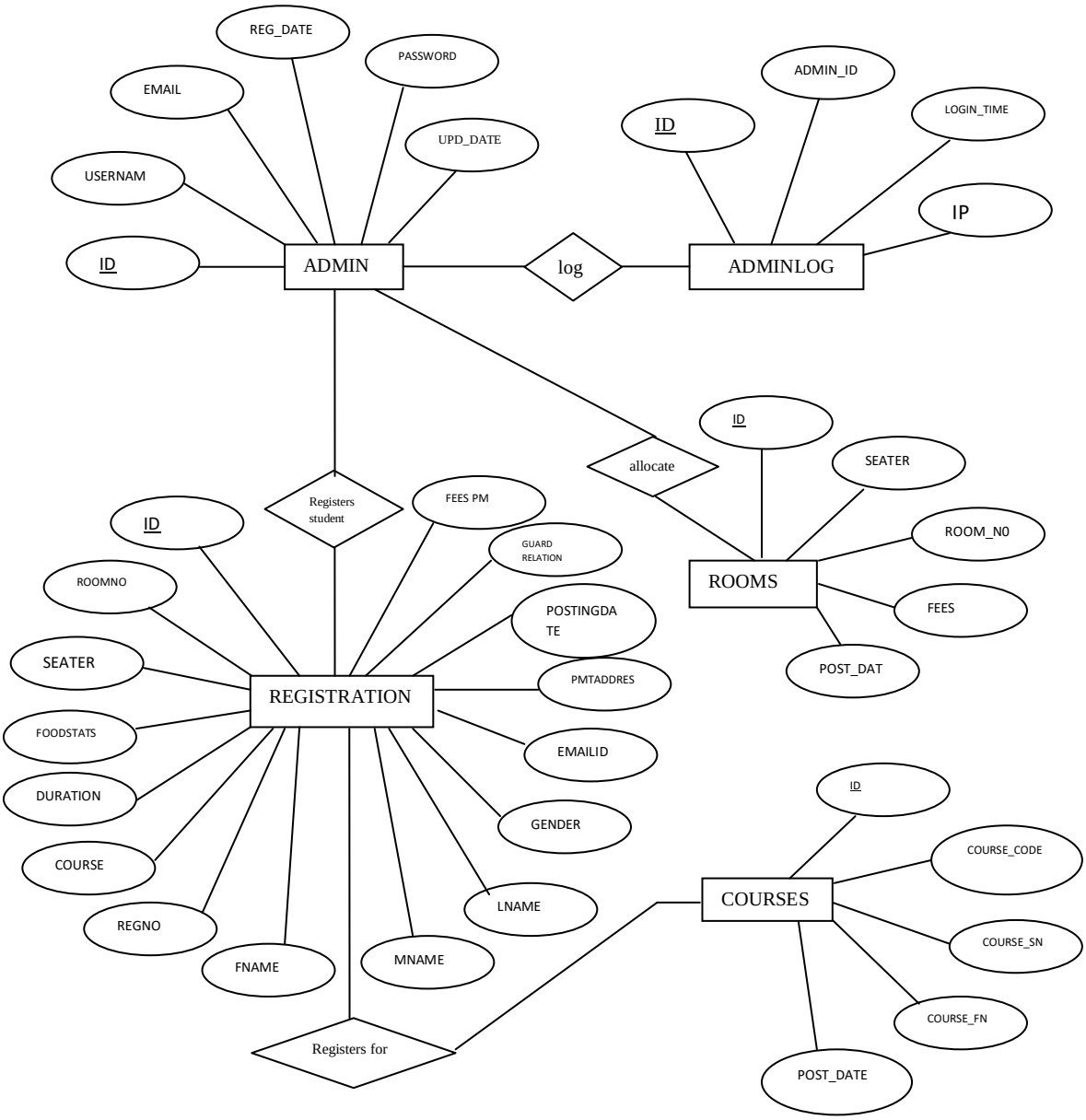

Figure 2.2: ER Diagram

The Figure 2.2 describes the relationship diagram between different entities constituting a database system.

An Entity-Relationship Diagram (ERD) is a data modelling technique that graphically illustrates an information system's entities and the relationships between those entities. An ERD is a conceptual and representational model of the data used to represent the entity framework infrastructure.

The ER Diagram shown in figure 2.2 consists of 5 attributes namely

1.ADMIN

2.ADMINLOG

3.COURSES

4.REGISTRATION

5.ROOMS

The **ADMIN** consists of the following attributes:

ID, USERNSME, EMAIL, PASSWORD, REG_DATE, UPDATION_DATE in which id is the primary key.

The **ADMINLOG** consists of the following attributes:

ID, ADMINID, IP, LOGINTIME in which ID is the primary key.

The **COURSES** consists of the following attribute:

ID , COURSE_CODE , COURSE_SN , COURSE_FN , POSTING_DATE in which ID is the primary key.

The **REGISTRATION** consists of the following attributes:

ID , ROOMNO , SEATER , FEESPM , FOODSTATUS , STAYFROM , DURATION , COURSE , REGNO , FIRSTNAME , MIDDLENAME , LASTNAME , GENDER ,

CONTACTNO , EMAILID , EGYCONTACTNO , GUARDIANNAME , POSTINGDATE, GUARDIANRELATION, GUARDIANCONTACTNO, CORRESADDRESS, CORRESCITY, CORRESSTATE, CORRESPINCODE, PMNTADDRESS, PMNTCITY, PMNATETSTATE , PMNTPINCODE, UPDATIONDATE in which ID is primary key.

The **ROOMS** consists of the following attributes:

ID,SEATER,ROOM_NO,FEES,POSTING_DATE in which ID is the primary key.

Schema Diagram

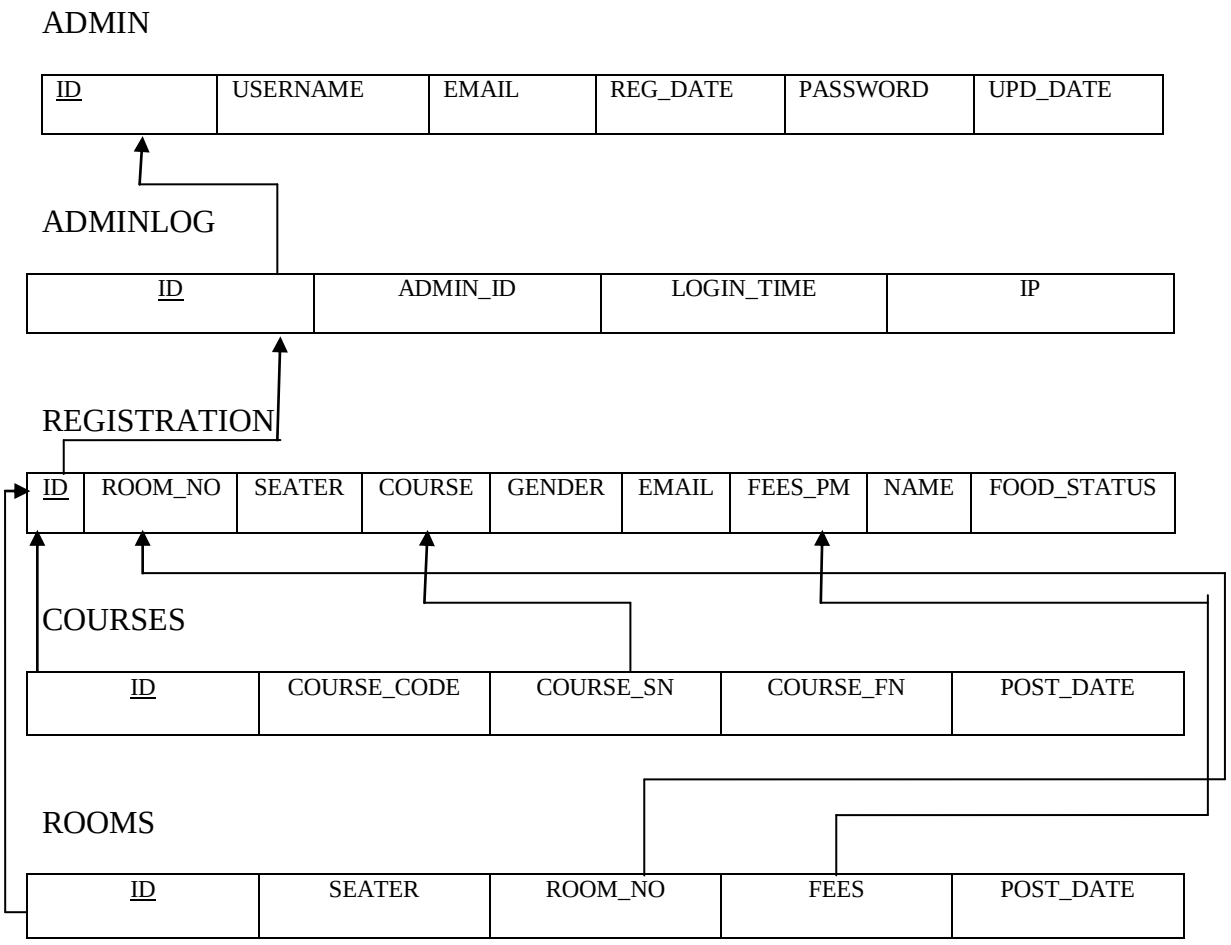

Figure 2.3: Schema Diagram

The Figure 2.3 describes the relationship in a schematic diagram along with each entity attributes relation with different entity attributes.

The logical mapping of ER diagram to a relational model is as shown in the fig 2.3

2.4. Algorithms

Store procedure

Step 1:<BEGIN >

Step 2: DECLARE PROCEDURE 'printId()'

Step 3:SELECT UserName, Name, Password ,Security Question, Answer from signup

where UserName=uid

Step 4: END

Description: The stored procedure basically stores the function which does the gives us

the UserName ,Name, Password, Answer from the registration table

when the username is entered.

Trigger

Step 1: BEGIN

Step 2: AFTER INSERT/DELETE into 'details'

Step3: INSERT INTO REGISTRATION VALUES (null, NEW.RegNo, NEW.name, NEW.Course,NEW.Email, NEW.roomno, NEW.Fees_PM, "Action", now())

Step 4: END

Description: The trigger keeps track of all the action performed on the details of room

allotment record. It can be either insertion of a new record or deletion of an already

stored record. The result is stored in a booking record which keeps track of the operations.

CHAPTER 3

Module Implementation

To implement this mini project, MYSQL is used for backend and HTML & CSS is used for frontend (GUI) creation.

Some of the features of HTML are:

- **Multimedia Support in HTML:** HTML5 supports both audio and video files to be played in a browser.
- **HMTL5 Input Element Types:** The input types help in receiving the input in a required format. In HTML5 some new input types have been added. A few of the existing input types are password, file, etc.
- **HTML5 Custom Data Attributes:** HTML5 now allows you to add valid data attributes, which helps in storing the data without affecting the web page UI.
- **Editable Contents in HTML5:** This is a nice feature, which allows the end users to edit the HTML control's content. This kind of feature allows the developers to build web pages that include sections like notes, HTML editor etc.
- **HTML5 Autofocus and Placeholder Attributes:** The autofocus feature is achieved by adding the autofocus attribute. This allows the control to have the focus automatically on page load.
- **Required Field and Range Validators in HTML5:** Required field functionality is achieved using the attribute named "required" on the input controls. This makes sure that the form will not be posted until the value is entered for the input control.
- **Web Workers**: Certain web applications use heavy scripts to perform functions. Web Workers use separate background threads for processing and it does not effect the performance of a web page.
- **Video**: You can embed video without third-party proprietary plug-ins or codec. Video becomes as easy as embedding an image.

Some of the features of CSS are:

- **Backgrounds:** With multiple backgrounds, designers can achieve very interesting effects. They can stack different images as backgrounds of the same element. Each image (or layer) can be moved and animated independently, like you can see in the demo below (try hovering over the image with your mouse).

- **Media Queries:** Media queries are an absolute must if you are serious about web design. They have been around for a while, but are worth a mention, because they have transformed the way we build websites. It used to be that you had a regular website, wide enough to fit the smallest monitor resolution used at the time, and a separate mobile website. These days, we build sites that are responsive and which adapt to the type of device, orientation and resolution.

- **Box Sizing**: The single biggest cause for headaches for CSS beginners is the box model The standardization bodies have probably had their reasons, but it doesn't feel at all intuitive to have the CSS width and height of an element affected by its padding and borders. This little (mis) feature breaks layouts and wreaks havoc, but finally there is a way to restore our sanity by using the box-sizing rule. You can set it to border-box, which makes elements behave exactly the way you expect.

- **Webfont:** It is hard to believe, given that today we have services like Google Fonts and typekit, which let you embed beautiful fonts by simply including a stylesheet in your page. There are even icon fonts like fontawesome, which contain pretty vector icons, instead of letters or numbers. This was all made possible by the code>@font-face rule, which lets you define the name, characteristics and source files for fonts, which you can later refer in your font/font-family declarations

3.1 MODULE DESCRIPTIONS

1. ADMİN LOGIN

Input:

Username and Password.

Output:

A Successful logins shall take Admin to the home page. On entering wrong details an error message will be displayed.

Description:

Front end is designed using HTML5,CSS & PHP .On logging in to the home window ,the admin has full access over the software and can add a room, add a Student, Update the room or student information, allot rooms to a student and view the log of allotments already made.

2. USER LOGIN

Input:

Username and Password.

Output:

A Successful logins shall take User to the user home page. On entering wrong details an error message will be displayed.

Description:

Front end is designed using HTML5,CSS & PHP .On logging in to the home window , the user has access over his profile and can view all the information associated with him.

3. REGISTRATION PAGE

Input:

Registration No, First Name, Middle Name, Last Name, Gender, Contact No, Email Id, Password, Confirm Password.

Output:

Student successfully registered.

Description:

When the user will fill all the fields which are specified above in input he will be successfully registered.

CHAPTER 4

Results and Screenshots

4.1.1 Login

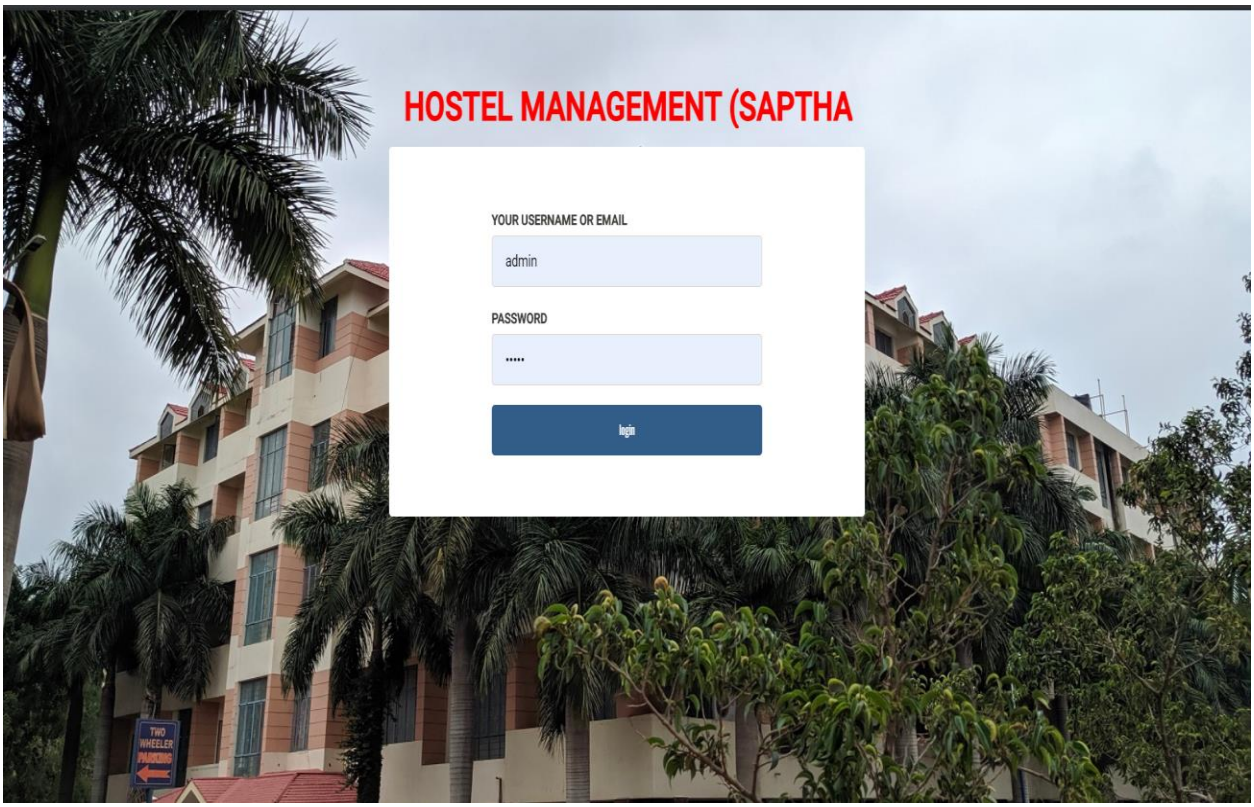

Figure 4.1:Login Page

The above figure 4.1 represents the Login Page where the registered admin can login.

4.2.Registration Page

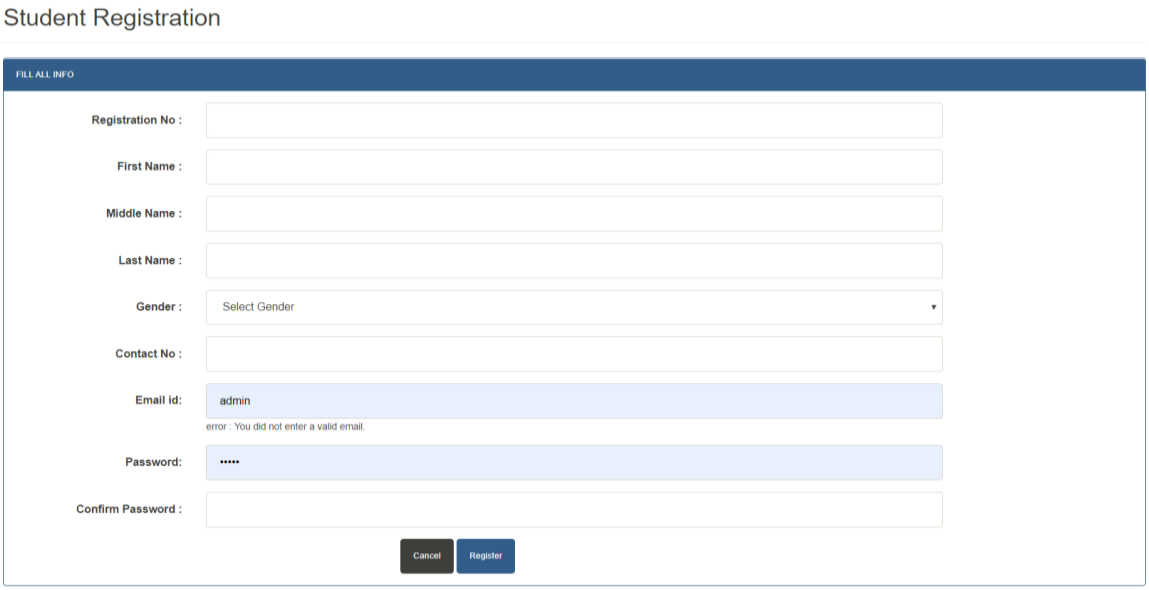

Figure 4.2:Registration Page

The above figure 4.2 represents the signup registration page where the user can register themselves.

4.3.Change Password

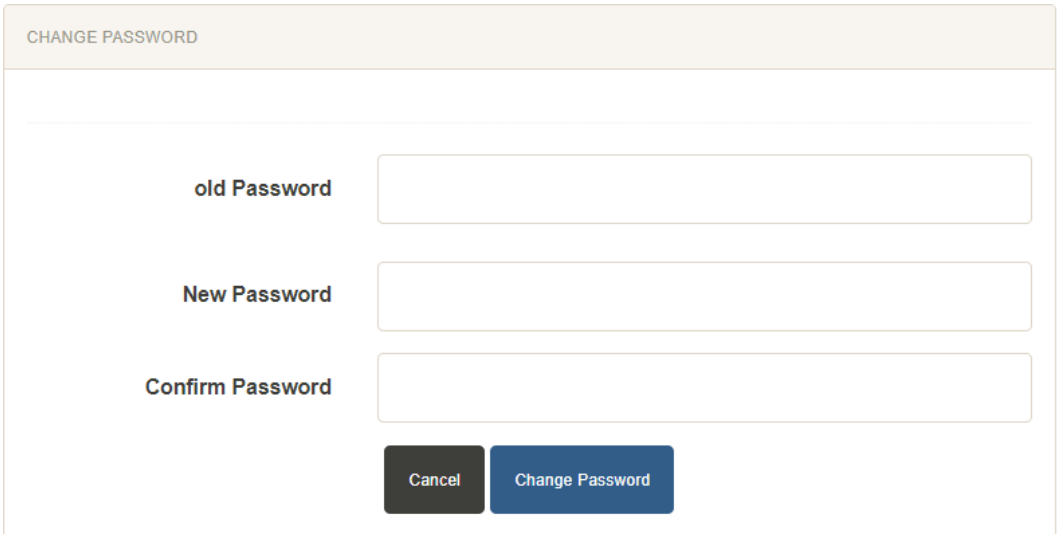

Figure 4.3 :Change password

The above figure 4.3 is change password page where user can change their password.

4.4.Home Page

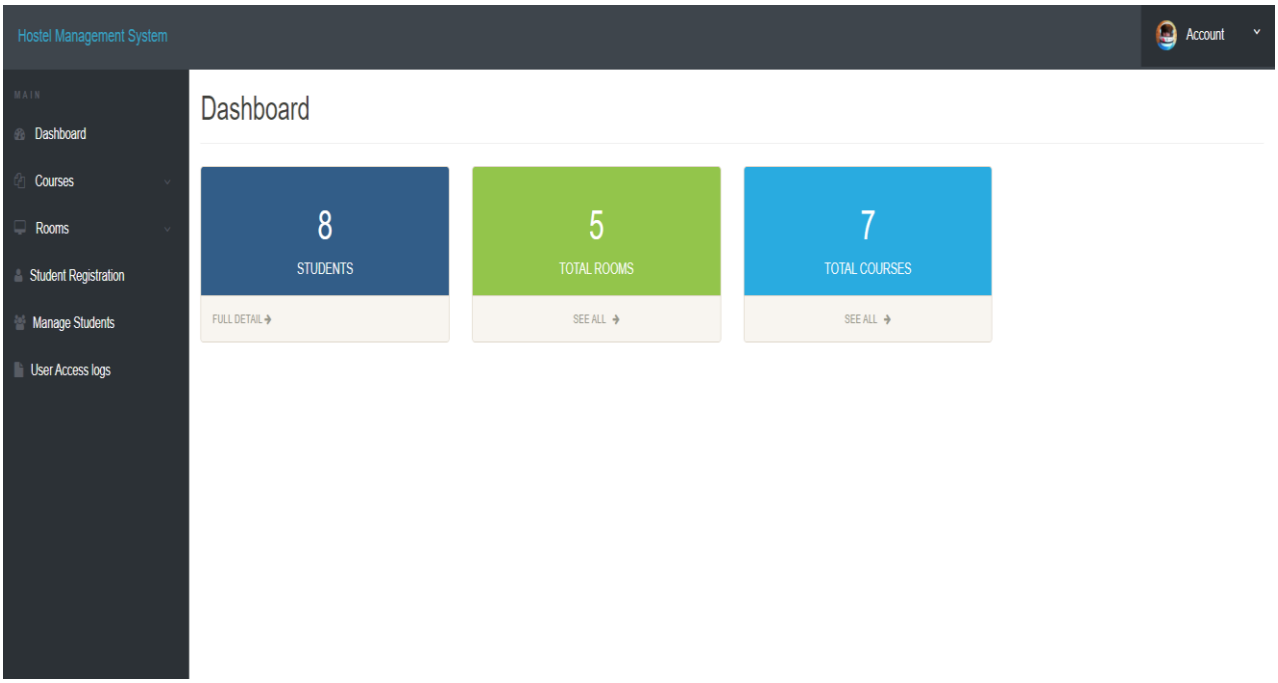

Figure 4.4:Home page

The above figure 4.4 home page is the main window which the user sees after logging in.

4.5.Add Room

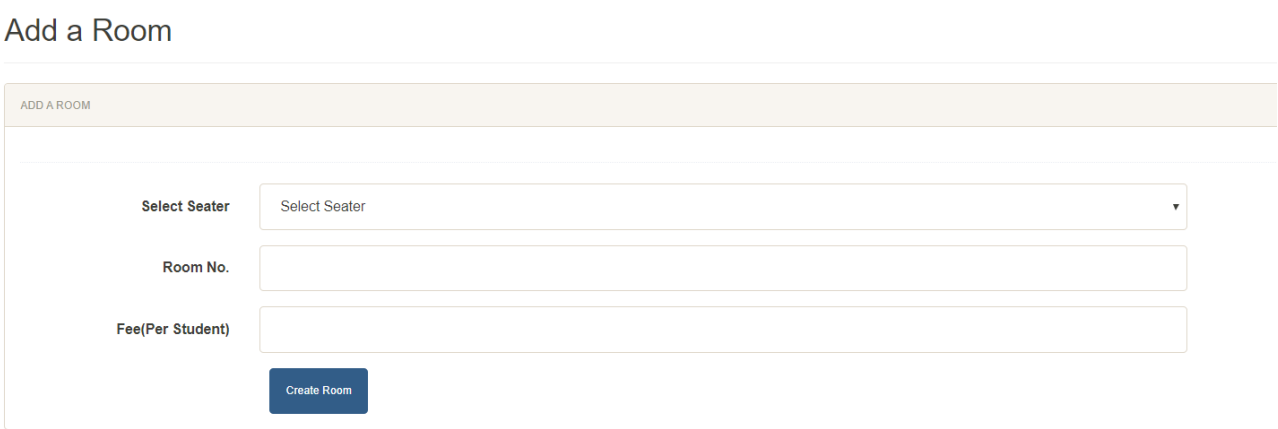

Figure 4.5:Add room

The above figure 4.5 Add room page is used for adding a room to the database.

4.6.User Login

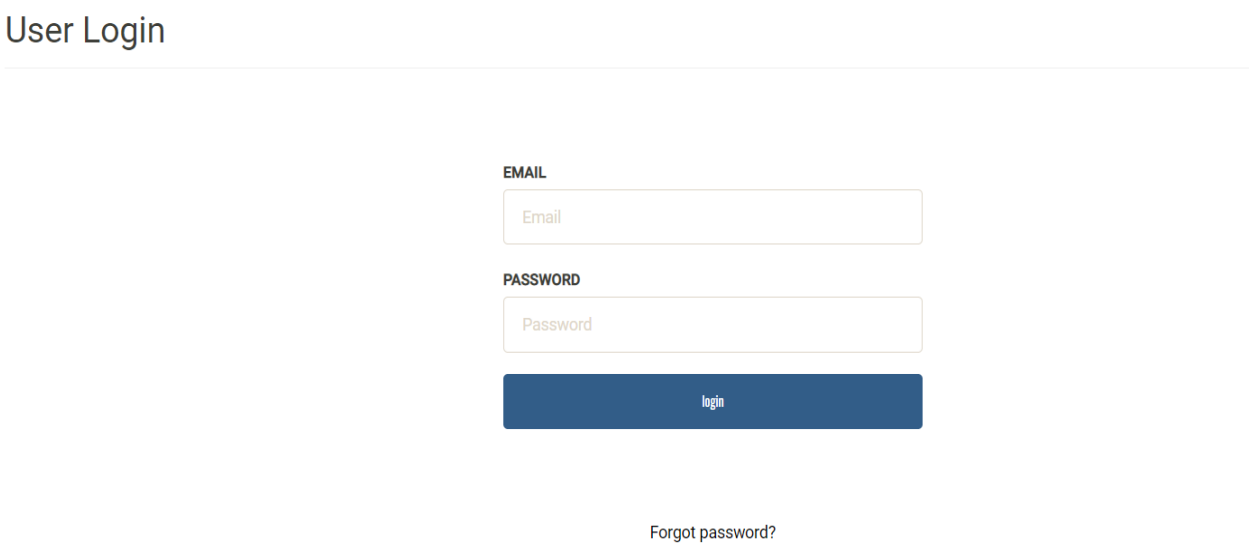

Figure 4.6:User Login

The above figure 4.6 represents the Login Page where the registered users can login.

4.7.Add Student

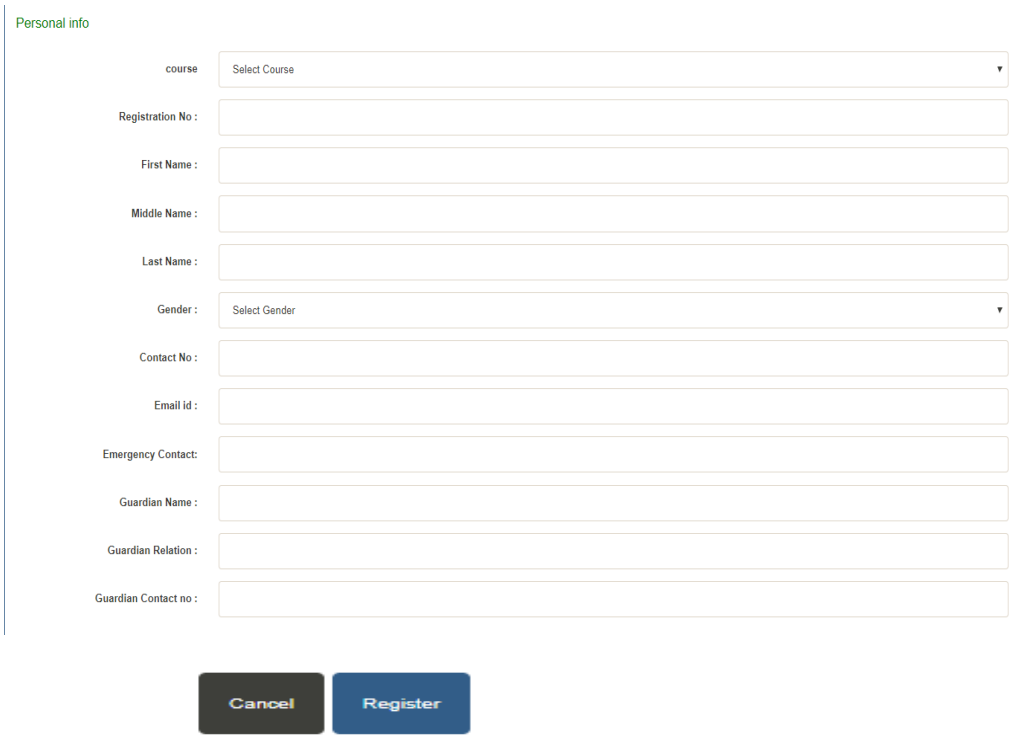

Figure 4.7:Add Student

The figure 4.7 represents add students page through which you can add a new student to the database.

4.8.Student List

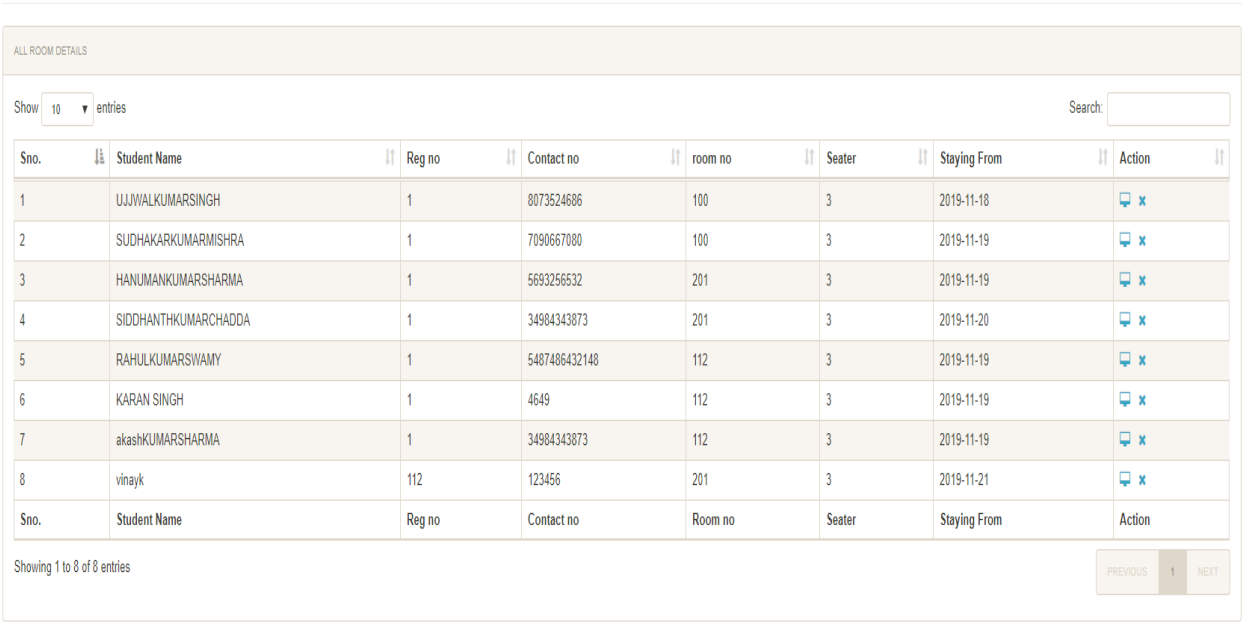

Figure 4.8 Student List

The above figure 4.8 represents the student list page which keeps a list of all the students already made and allows the updation of student properties or deletion of students.

4.9.Allot Room

Figure 4.9:Allot Room

The figure 4.9 represents the allot room page where you can allot student rooms in the hostel.

4.10.Access Log

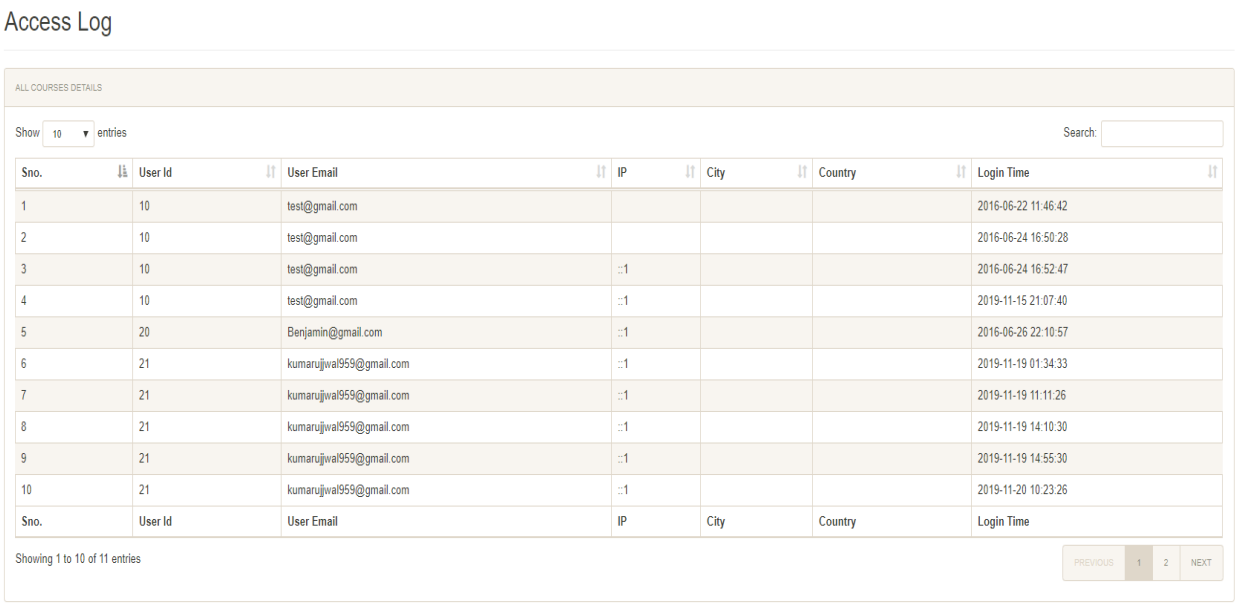

Figure 4.10:Access Log

The above figure 4.10 represents the access log which keeps log of login user email & time.

4.11.Room Report

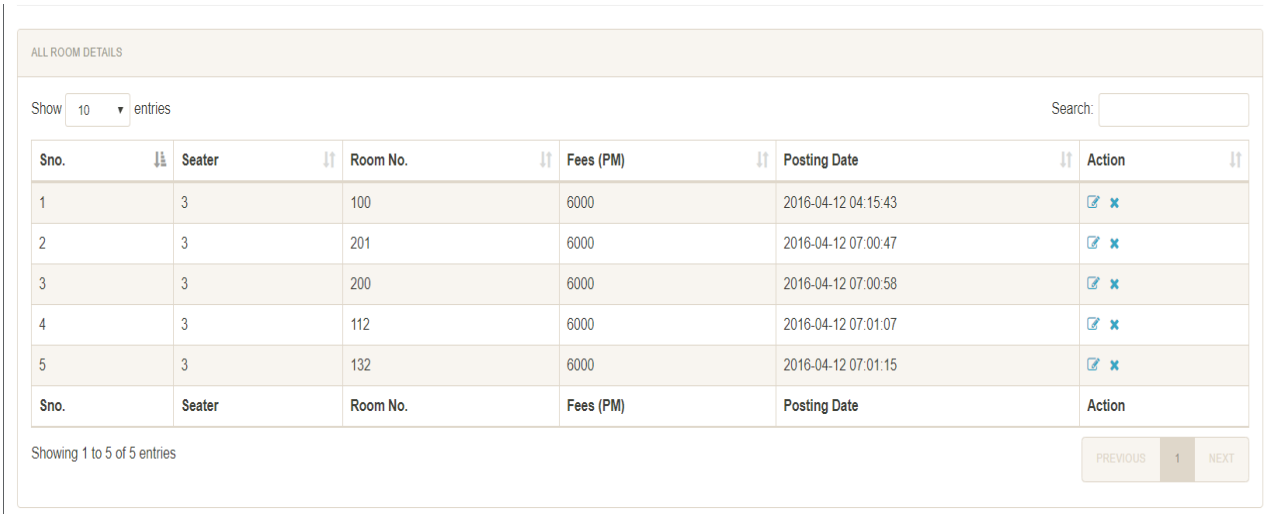

Figure 4.6:Room Report

The figure 4.6 Room Report page keeps a list of all the rooms already made and allows the updation of room properties or deletion of rooms.

CHAPTER 5

Conclusion and Future Works

An application has been developed using MySQL development and PHP database programming connectivity via Apache server so as to meet the requirement of hostel management , thereby ensuring quality performance. The data can be accessed, manipulated and retrieved very easily.

Future Works:

- The mini project shall host the platform on online servers to make it accessible worldwide.
- The mini project shall integrate multiple load balancers to distribute load on system.
- The mini project shall include a master slave database structure to reduce overload on databases on regular basis on different servers.

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