

# **HOSTEL MANAGEMENT SYSTEM**

**A PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT  
OF REQUIREMENT  
FOR THE AWARD OF THE DEGREE**

**MASTER OF COMPUTER APPLICATIONS (MCA)**

**OF**

**MAHATMA GANDHI UNIVERSITY, KOTTAYAM**

**BY**

**AKHIL A S**

**Reg. No:22PMC103**



**MARIAN COLLEGE  
KUTTIKKANAM**

**(AUTONOMOUS)**

**MAKING COMPLETE**

**Marian College Kuttikkanam Autonomous**

**Peermade, Kerala – 685 531**

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**Under the guidance of**

**Ms. Satheesh kumar S**

**Assistant Professor**

**PG Department of Computer Applications**

**Marian College Kuttikkanam Autonomous**



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**PG DEPARTMENT OF COMPUTER APPLICATIONS**

**Marian College Kuttikkanam Autonomous**

**MAHATMA GANDHI UNIVERSITY, KOTTAYAM**

**KUTTIKKANAM – 685 531, KERALA.**

**CERTIFICATE**

This is to certify that the project work entitled

**“HOSTEL MANAGEMENT SYSTEM”**

is a bonafide record of work done by

**AKHIL AS**

**Reg. No:22PMC103**

In partial fulfilment of the requirements for the award of Degree of

**MASTER OF COMPUTER APPLICATIONS [MCA]**

During the academic year 2022-2023

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## **Acknowledgements**

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First of all, I am extremely grateful to “God Almighty”, without whose blessing I could not have been able to successfully complete this project.

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Finally, I express my deep appreciation to all our friends and family members for the moral support and encouragement they have given to complete this project successfully.

AKHIL A S

## **ABSTRACT HOSTEL MANAGEMENT SYSTEM**

Hostel Management is a web application that is created for booking hostels for individuals. This will limit manual work and also make hostel allocation so much easier for students and hostel administrators. It manages data in the database and retrieves it whenever required. We design this system at the request of the hostel management, through this they cannot require people to handle and calculate things. The developed system overcomes the drawbacks of manual hostel management it's said to be more user-friendly.

Current situation of hostel administration framework is all the work is done physically. Various information or record copies of the hostel and student data are kept in various divisions. Room is distributed by as per requirement of the student. Hostel offices and other data are altogether kept in a booklet or is shown on notice board. Student's data, staff data, student registration, room, status, complaints are kept in registers and requires manual entry.

This project is aimed at developing a system for keeping records and showing information about a hostel. This system will provide full information about a student in the hostel. It will show rooms and total number of people in a particular room. Hostel management system is designed to manage all hostel activities like hostel admissions, fees, room, mess allotment & generates related reports for smooth transactions.

The modules are Registration, Room Allocation, Report. This software Online Hotel Management is developed using Python, Sqlite. Here, Python and Sqlite as back-end and HTML and CSS as front end. The software tools here is Microsoft SQL Server, here any web browser can be used. The development tool used here is pycharm.

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# **1.INTRODUCTION**



### **1.1 PROBLEM STATEMENT**

Current situation of hostel administration framework is all the work is done physically. Various information or record copies of the hostel and student data are kept in various divisions. Room is distributed by the room necessities and as per requested by the student. Hostel offices and other data are altogether kept in a booklet or is shown on notice board. Student's data, staff data, student registration, room, status, complaints are kept in registers and requires manual entry

- Less efficient.
- Involves a lot of human efforts.
- Time consuming
- Effective information is not obtained

### **1.2 PROPOSED SYSTEM**

This project is aimed at developing a system for keeping records and showing information about a hostel. This system will provide full information about a student in the hostel. It will show rooms ,rents and number of people in a particular room. Hostel management system is designed to manage all hostel activities like hostel admissions, fees, room, mess allotment & generates related reports for smooth transactions.

#### ***USER FUNCTION***

Student can enter application and he/she will be provided with username and password which helps him/her to direct into the page where he/she can access the information about the institution and also the available courses

**ADMIN FUNCTION**

The administrator has all the authority on the Student in the App. The admin can only provide the username and passwords of student. A permitted Student is allowed to enter in the page and access data. Admin can control the web application in efficient manner. The admin also enjoys the facility to make necessary update to the data. The advantage of proposed system are following

- It is very users friendly.
- Effective information is obtained
- Involves a less of human efforts.
- Time consuming is less

**1.3 FEATURES OF PROPOSED SYSTEM**

- Enhance the information about hostel and facilities
- Updating information regularly
- Improve the efficiency and effectiveness
- Improve user-accessibility and time flexibility to engage learners in the learning process

## **2 .FUNCTIONAL REQUIREMENT**

## **REQUIREMENTS**

- Registration & login
- Admin can manage hostel room
- Admin can manage students
- Admin can manage courses
- Report generation
- User can edit profile
- User can change password
- User can Book hostel

### ***Registration & Login***

Users can register to the hostel. User enters the required fields provided and its mandatory. This section provides an online form to the students which can be filled by them

### ***Student Management:***

Admin can manage student information by adding, editing, and deleting student profiles.

Student profiles can include personal details like name, contact information, and emergency contacts.

Admin can track the status of students, such as their enrollment, current room assignment, and fees paid.

### ***Room Management:***

The admin can manage hostel rooms, including adding new rooms, modifying room details, and assigning rooms to students. This module allows the admin to track room occupancy and availability

***Course Management:***

Admin can manage course details by adding, editing, and deleting courses offered by the institution.

Course information can include the course name, code, duration, and other relevant details.

***Report Modules:***

The system generates reports automatically for both admins and users.

Reports can include information related to fees, room allocations, personal details, course enrollment, etc.

Admins can access comprehensive reports to monitor hostel occupancy, fee payment status, and other relevant data.

***User Profile Editing:***

Users, such as students, can log in to the system with their credentials.

Users have the ability to edit their personal profile information, including contact details, emergency contacts, and other relevant data.

***Password Change:***

User can change their current password

***Room Booking:***

Users can search for available hostel rooms based on their preferences, select a room, and proceed with the booking. The system should display room availability, provide detailed information about the rooms,

# **3. NON-FUNCTIONAL REQUIREMENT**

- **Performance Requirement**

System Should be Error-free.

Large amount of data should be handled easily.

- **Safety Requirement**

Backups can be done regularly.

- **Security Requirement**

A password is given to the SQL server. Administrator and the end user, who have their own user name and password. have only the right to open the software.

- **Availability**

Since this application is a web-based application, it will be available to users 24x7 with the exception during server maintenance or upon site updates.

- **Maintainability**

Since it is a web-based application, live maintenance can be performed at ease without hindering the user experience and user data.

## **4. FEATURE ENHANCEMENT**



## FEATURES

- System provides administrative features where the admin can managed hostel rooms, add or update room details such as room types and availability
- Amin can manage student records, including their personal information, contact details, and any additional details relevant to the hostel.
- Main reason for launching this website reduces the complexities related with the program arrangements and reduces the workload of the user.
- The system allows the admin to manage courses if the hostel is associated with an educational institution.
- Admin or owner can sign up.
- User can view available room
- The system generate various report about student personal details and their preferences.

Users, such as students can book hostel room through the system.

The most important source information is the end users of the current system, who are often also the potential users of the new system. They may range from novices to highly skilled individuals. The information gathered from end users will be crucial during the analysis and design phases. Later, the analyst will also discuss technical aspects of the system with programmers, network engineers and other technical staff.

A secondary source of information for the analyst can be found in the existing paper work or document within the organization. Documents represent the formal information flow through the current system. The analyst must collect sample copies of all relevant documents, e.g. input forms, output document, report, invoices etc. to understand how data flows and is used in the current system. This information can be important in the subsequent design of files for the new system. This analyst will use a range of techniques to gather information about the current system. The most important are interviewing, questioners and observation.

In this project I have used observation as a technique for gathering information.

Observation is a technique used to gather information by observing student performing various aspect of their booking

The modules are Registration, Room Allocation, Report. This software Online Hotel Management is developed using Python, Sqlite. Here, Python and Sqlite as back-end and HTML and CSS as front end. The software tools here is Microsoft SQL Server, here any web browser can be used. The development tool used here is pycharm.

This will limit manual work and also make hostel allocation so much easier for students and hostel administrators. It manages data in the database and retrieves it whenever required. We design this system at the request of the hostel management, through this they cannot require people to handle and calculate things. The developed system overcomes the drawbacks of manual hostel management it's said to be more user-friendly. This will limit manual work and also make hostel allocation so much easier for students and hostel administrators. It manages data in the database and retrieves it whenever required. We design this system at the request of the hostel management, through this they cannot require people to handle and calculate things. The developed system overcomes the drawbacks of manual hostel management it's said to be more user-friendly.

## **5. TECHNICAL ASPECTS**

## ARCHITECTURE OF PROJECT

### **1. *Presentation Layer***

Templates: HTML templates are used to define the structure and layout of the user interface. Django's template engine allows you to dynamically populate the templates with data.

### **2. *Application Layer***

Controllers: In Django, controllers are implemented as views, which handle the request/response flow and control the overall behavior of the application.

### **3. *Business Logic Layer***

Models: Django's models define the data structure and business logic of the application. Models represent entities like users, bookings, flights, hotels, etc. They handle database operations, such as querying, inserting, updating, and deleting data. Models can also include methods to perform complex business logic.

### **4. *Jazmin***

Django Jazmin is a customizable and modern admin interface for Django applications. It provides an alternative user interface for the Django admin site with a more visually appealing design and additional features. Jazmin aims to enhance the user experience and improve the productivity of developers working with Django. By installing and configuring django-jazzmin in your Django project, you can customize the admin interface by changing themes, layouts, icons, and other visual elements. It offers features such as responsive design, drag-and-drop sorting, inline editing, and support for various third-party Django packages. To use Django Jazzmin, you typically need to install it using a package manager like pip, add it to your Django project's settings, and configure it according to your preferences.

Here's a basic example of how to install Django Jazzmin using pip:

```
pip install django-jazzmin
```

Once installed, you would need to add 'jazzmin' to the INSTALLED\_APPS list in your Django project's settings.py file:

```
INSTALLED_APPS = [
```

```
... 'jazzmin',
```

```
...
```

```
]
```

Afterwards you can customize Django Jazzmin by modifying the settings in your Django project's settings.py file.

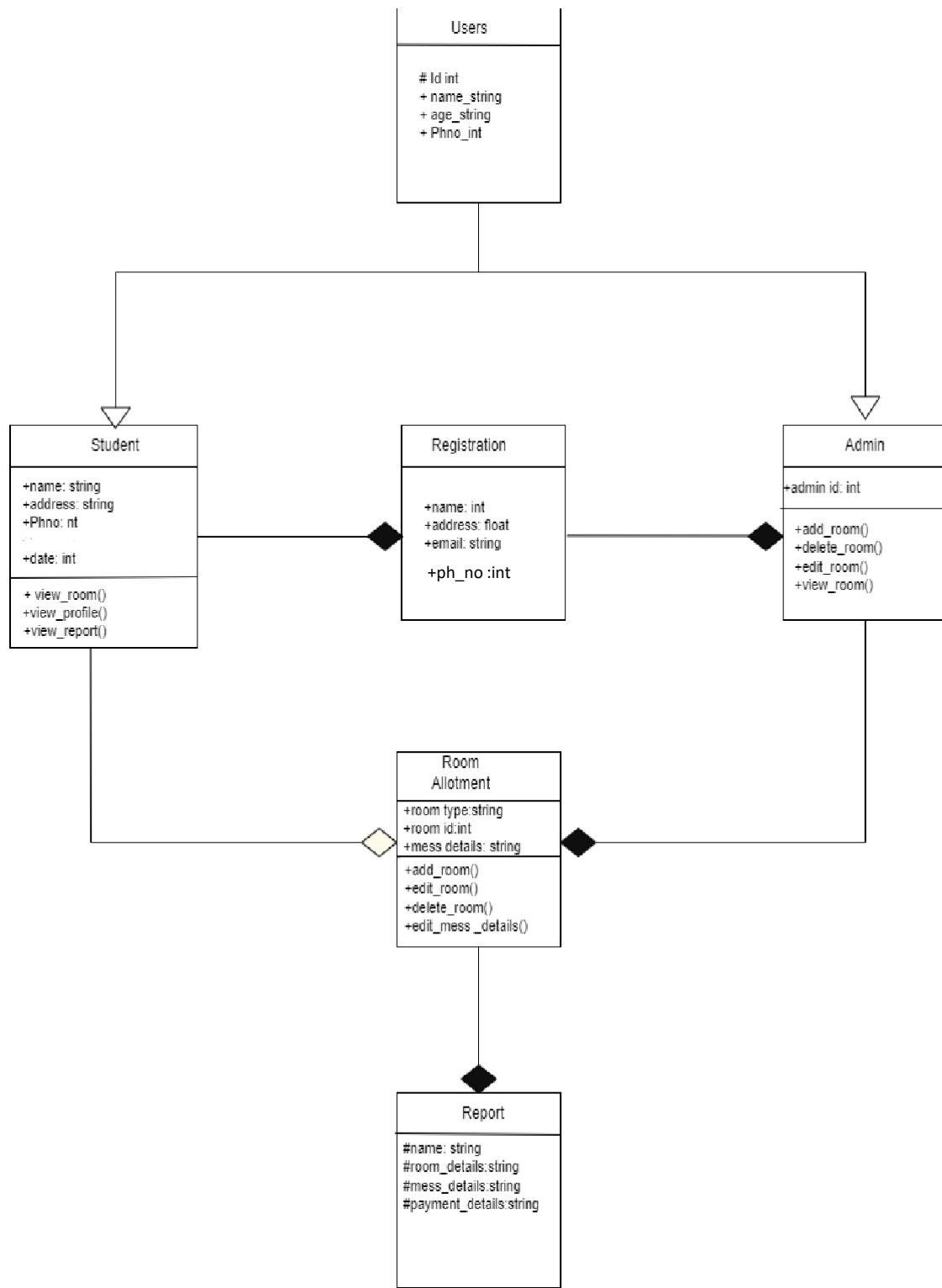
### **5. Data Access Layer**

Database: Django integrates with various databases, allowing you to define and manage the application's data schema. You can use Django's Object-Relational Mapping(ORM) to interact with the database and perform CRUD operations.

### **6. Database Models**

Django's models serve as both business logic entities and database models. They define the structure of the database tables and provide an abstraction layer for interacting with the database .

## CLASS DIAGRAM



## **6. CHALLENGES**

### ***1. User Experience and Design***

Designing an intuitive and user-friendly interface for users and administrators is crucial. Ensuring a smooth user experience, from search and booking to manage details can be challenging, particularly dealing with complex workflows and large data sets.

### ***2. Real-time Availability and Pricing***

Fetching real-time availability and pricing information for real estate services from external providers can be challenging. Dealing with rate limits, handling concurrency, and caching strategies are considerations for ensuring timely and accurate information.

### ***3. User Authentication and Authorization***

Hostel Management software typically requires user registration, login, and role-based access control. Implementing secure authentication and authorization mechanisms can be complex, especially when dealing with user roles and permissions.

### ***4. Validation Mechanisms***

Implementing validation mechanisms helps ensure that user input is accurate and consistent. You need to validate user data at various stages, such as during registration, booking, or updating information. Validation can include for checking validation in email, phone number, password, pin number etc.

### ***5. Database Management***

Designing an efficient database schema and managing the database operations can be complex. You need to carefully plan the structure of your database, define relationships between entities handle data integrity, and optimize queries for performance.



## 7. FUTURE ENHANCEMENT

A hostel management system is a software solution designed to streamline and automate the administrative tasks involved in managing a hostel or similar accommodation facility. Some common features of a hostel management system include:

***Reservation Management:*** The system allows hostel staff to manage and track reservations, including checking availability, creating new bookings, modifying or canceling existing reservations, and assigning rooms to guests.

***Room and Bed Management:*** Hostel managers can maintain a comprehensive inventory of rooms and beds, including details such as room types, bed capacities, and availability. The system helps in assigning beds to guests and tracking their occupancy status.

***Guest Check-In and Check-Out:*** The system facilitates smooth check-in and check-out processes, capturing guest details, passport information, and other necessary

***Billing and Invoicing:*** The system automates the billing process, calculating room charges, additional services, and any applicable taxes. It generates invoices for guests and tracks payment status, allowing for integration with payment gateways or accounting systems.

***Room Maintenance and Housekeeping:*** The system assists in managing room maintenance and housekeeping tasks. It enables staff to track and schedule cleaning activities, maintenance requests, and inventory management for housekeeping supplies.

***Reporting and Analytics:*** The system generates various reports, such as occupancy rates, revenue analysis, guest demographics, and financial summaries. These reports help managers make informed decisions and assess the overall performance of the hostel.

***Guest Communication and Notifications:*** The system may include features for automated email or SMS notifications, sending confirmation messages, pre-arrival instructions, payment reminders, and post-stay feedback requests to guests.

***Security and Access Control:*** Hostel management systems often incorporate security measures, such as user access controls, to ensure that only authorized staff can access

sensitive information. It may also include features like key card access systems or integration with electronic door locks.

**Integration and Scalability:** Hostel management systems can integrate with other software solutions like accounting systems, property management systems, or online review platforms. They should be scalable to accommodate the growth and changing needs of the hostel.

These features may vary depending on the specific software provider and the requirements of the hostel. It's essential to choose a system that aligns with the hostel's size, operational needs, and budget.

## **8. INPUT DESIGN AND OUTPUT DESIGN**

## INPUT DESIGN

In the input design, the user oriented inputs are converted into computer recognizable format. The collection of input data is the most expensive part of the system in terms of equipment used, time and number of users involved. Input design is the processes of converting user oriented inputs to a computer based format. The goal of designing input data is to make data entry as easy, logical and free from errors as possible.

- Registration Form- Here the customer creates their accounts using the relevant details asked to fill for and it is stored to the database and used whenever it is needed.
- Login Form- The admin, the customer login to the website, to their account using their particular username and password.
- Add Course Form- The institution add the courses to the website using this form filling the relevant information such as course name, description, number of seats etc..
- Exam details form The admin add the exams to the website using this form filling the relevant information such as exam name, category, date.

## OUTPUT DESIGN

The goal of the output design is to capture the output and get the data into format suitable for the computer. One of the important features of an information system for users is the output it produces. Output is the information delivers to the users through the information system. Without quality output the entire system appears to be unnecessary that users will avoid using it. The output design is the key to the success of any system because it is the system relationship with the user, we must determine the information is present and arrange the information in the acceptable format that is when to display the information.

- Booking Hostel. This button helps the user to view the Registration Form
- Profile . This button helps the user can view the profile
- Logout- The button that helps the customer to logout from the website.

- Login- The button helps to log in to the website to get the information about courses and exams.
- Register- The button that allows the customer to register for their account to get the information about courses and exams.

## **9. CONCLUSION**

Conclusion is the summing up of arguments described in this article. This software provides a user-friendly approach towards the system. This system has been well developed and when implemented, is bound to satisfy all of the requirements. Pains taking efforts have been taken to make the software impeccable and upgradeable. There is a hope that this software will be utilized to its maximum and will do a good job in the long run. With blessings of God, the exertions are hoped to bear fruit. The program for carrying out various activities have been run and successfully tested to ensure that the software developed meets the needs satisfactorily. The user registration module makes up the proposed system. The registered user has access to and the ability to get the information about courses, institution and additional exam details. To prevent any misunderstandings, the user's information will be kept private. This website aims to consolidate resources and give users information in a more convenient, impressive, and appealing manner.

The project is developed as a model for manual system, which will surely help if it is kept in act. The drawbacks of the system were analysed and carefully studies. The new system was designed and its reusability checked at later stage. System has been successfully tested and implemented with running on different computers and it is seen that the system has high degree of accuracy and user friendliness. The system is a user-friendly system and further changes can be incorporated into the system easily.



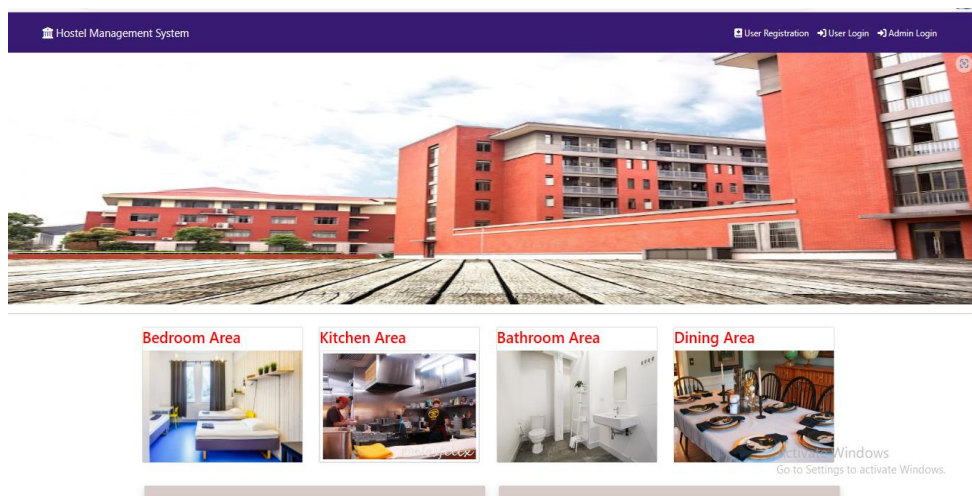
## **10. REFERENCES**

1. <https://youtu.be/YZvRrldjf1Y>
2. <https://youtu.be/tUqUdu0Sjyc>
3. <https://youtube.com/playlist?list=PL-51WBLyFTg2vW-6XBoUpE7vpmoR3ztO>
4. <https://docs.djangoproject.com/en/4.1/intro/tutorial01/>

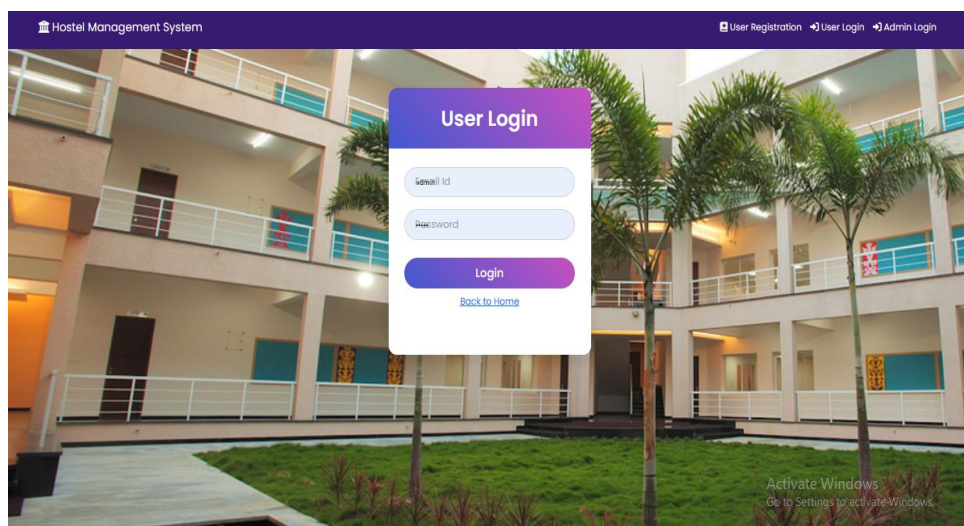
# **11. ANNEXURE**

## A .SCREENSHOTS

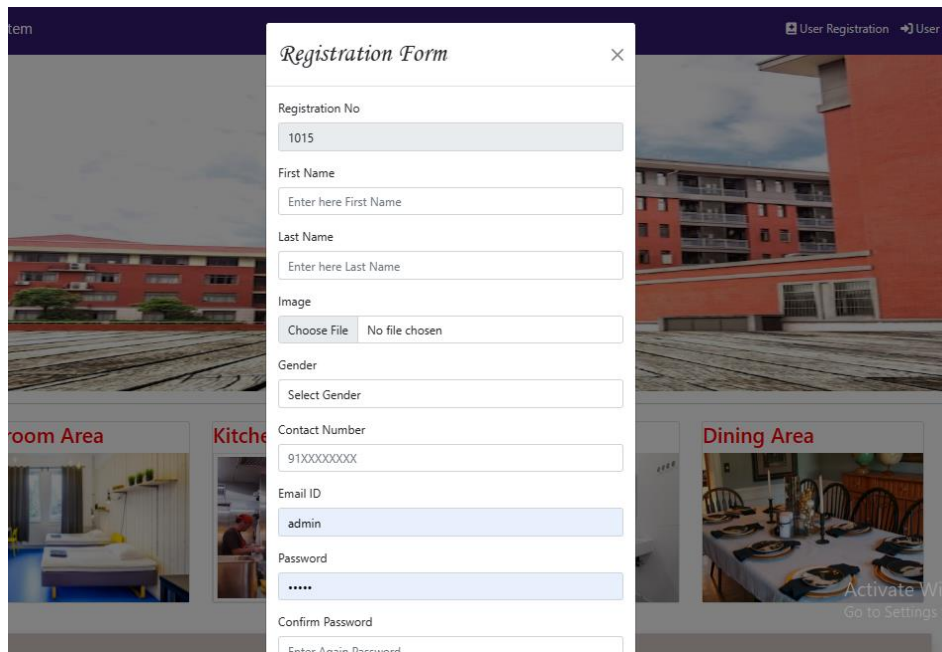
### *Home page*



### *Login page*



## REGISTRATION PAGE

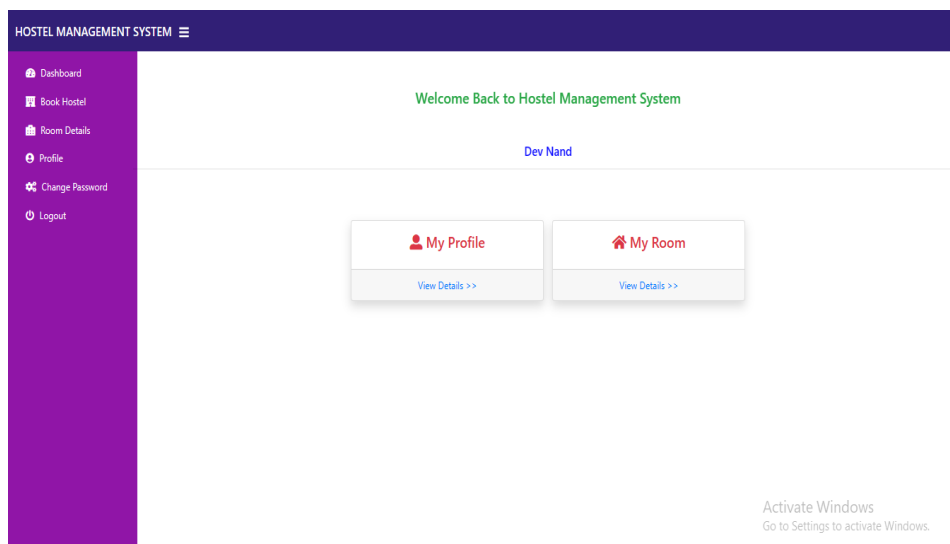


The registration form is titled "Registration Form" and is displayed as a modal overlay. It contains the following fields:

- Registration No: 1015
- First Name: Enter here First Name
- Last Name: Enter here Last Name
- Image: Choose File (No file chosen)
- Gender: Select Gender
- Contact Number: 91XXXXXXX
- Email ID: admin
- Password: \*\*\*\*\*
- Confirm Password: Enter Again Password

The background of the page shows a hostel building and a dining area. A watermark "Activate Windows" is visible in the bottom right corner.

## USER HOME



The user home dashboard is titled "HOSTEL MANAGEMENT SYSTEM" and features a sidebar menu with the following options:

- Dashboard
- Book Hostel
- Room Details
- Profile
- Change Password
- Logout

The main content area displays a welcome message: "Welcome Back to Hostel Management System" by "Dev Nand". Below this, there are two buttons:

- My Profile** (with a user icon) - View Details >>
- My Room** (with a house icon) - View Details >>

A watermark "Activate Windows" is visible in the bottom right corner.

## Booking Hostel

HOSTEL MANAGEMENT SYSTEM

Dashboard  
Book Hostel  
Room Details  
Profile  
Change Password  
Logout

Room No.  
Select Room

Food Status ☒ Without Food ☐ With Food(Rs 2000.00 Per Month Extra)

Stay From  
dd/mm/yyyy

Duration  
Select Duration in Month

Personal information :

course  
Select Course

Registration No :  
1014

First Name :  
dev

Last Name :  
nand

Gender  
Male

Activate Windows  
Go to Settings to activate Windows.

## View profile

HOSTEL MANAGEMENT SYSTEM

Dashboard  
Book Hostel  
Room Details  
Profile  
Change Password  
Logout

PROFILE

Image

Registration No. 1014

Full Name Dev Nand

Gender Male

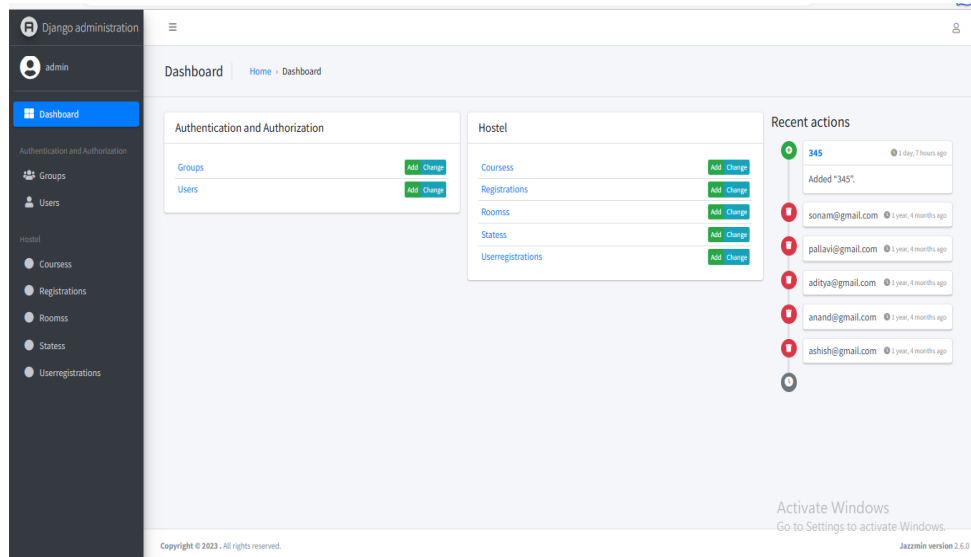
Contact Number 07894561231

Email ID Dev@gmail.Com

Edit Profile

Activate Windows  
Go to Settings to activate Windows.

## Admin Home



## Add Rooms

