## DEVELOPMENT OF A WEB BASED HOSTEL ALLOCATION SYSTEM

**BY**

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**BEING A BSC PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF A BACHELOR’S DEGREE IN COMPUTER SCIENCE OF**

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**JULY, 2018**

## CERTIFICATION

I hereby declare that the work presented herein was done by me, and not by third party. Should I be convicted of having cheated in this work, I shall accept the verdict of the university

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## APPROVAL

This is to certify that this research work titled **AWEB BASED HOSTELALLOCATION SYSTEM** was carried out by **ANEKE STELLA CHINYERE** registration number **U14/NAS/CSC/049** of the department of computer science partial fulfilment of the requirement for the award of bachelor of science in computer science

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**Mrs Ezugorie M.O date**

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**Dr.(Mrs) Monica Agu date** **DEDICATION**

I dedicate my work first to the Almighty God my creator my defender ,

Also to my lovely family ANEKE FAMILY for their support and for never giving up on me.

And my lovely friends Chimaobi and Mathew for always being and inspiration to me all the time even when am down.

## ACKNOWLEDGEMENT

I am grateful to God almighty for his love and guidance upon me and my family and friends

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My Hod Dr Mrs MONICA AGU you are amother indeed so patient understanding and every ready to listen,

I cannot forget all the staff and lecturers of computer sciences they have been like a parent to me I remain grateful for you all.

To my friends Blessing, Ogbe blessing, Stacey, Victoria, Chiamaka, Yoonis, Ifeanyi ,Buna, my lovely Enyidi Precious he has a good heart and most especially, my lovely siblings favour, Chibuike , Chinedu, Chikodi they are the best.

## ABSTRACT

This research work deals with the problems of managing and allocating hostels and to avoid the problems which occur when carried out manually. The objective of this research work “A web based Student Hostel Allocation System” is to develop a web based system with a central database that will automatically allocate rooms to students, manage records related to the hostel, the system designed will keep track of all the available hostels. Information for this research work was collected from two forms of data which are primary and secondary data. These are done by semi structured interviews and exploitation of the services of the library from textbooks, journals, internet and other materials for purpose of better understanding. The methodology used is an object oriented methodology (OOM); this method develops a computer system on component basis which enables the effective re-use of software component and facilitates the sharing of its component. The new system was implemented using PHP and MySQL. The result of the research is a Web based Student Hostel Allocation System, a system that facilitate timely allocation of hostel rooms to students and keep hostel occupancy record and report for easy retrieval.

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CHAPTER 1

**INTRODUCTION**

## Background of Study

Hostel is an establishment which provides cheap food and lodging for specific group of people, it is also seen as a home for students when staying away from their home. It has large well ventilated dormitories and single rooms and is situated in the school premises. Providing clean and calm hostel accommodation is one of the key responsible of school management.

To manage the hostel facilities, a lot of data need to be maintained such as number of student hostel can accommodate, hostel rules and regulation, hostel fee, hostel in and out of student, guest and visitor record and so on. So, this needs the system which has an ability to capture all kind of data and information and analyze it properly for smooth functioning of the hostel. Hostel warden can easily maintain the data.

Hostel Allocation in schools often involves administering of all activities of students. All these still remain difficult and require some job for the school management. Hostel Allocation functions and responsibilities in modern day schools have always been a problem in managing, because of the manual system method of tools they use. Hostel Allocation System is well designed specially to meet challenges of administrative set up of any school.

Hostel Allocation System can be used to assist in student’s allocation, setup hostel information, hostel application. In short, this system will assist the staff in managing some of the hostel activities. In 1912, in Altena Castle in Germany, [6]RichardSchirrmann created the first permanent "Youth Hostel". These first Youth Hostels were an exponent of the ideology of the German Youth Movement to let poor city youngsters breathe fresh air outdoors. The youths were supposed to manage the hostel themselves as much as possible, doing chores to keep the costs down and build character as well as being physically active outdoors. Because of this, many Youth Hostels closed during the middle part of the day.

There are several differences between hostels and hotels, including:

1. Hostels tend to be budget-oriented; rates are considerably lower, and many hostels have programs to share books, DVDs and other items on the other hand hotel rates are not lower, many hotels are built with the intention of making the customer spend exorbitantly.
2. For those who prefer an informal environment, hostels do not usually have the same level of formality as hotels.
3. For those who prefer to socialize with their fellow guests, hostels usually have more common areas and opportunities to socialize. The dormitory aspect of hostels also increases the social factor. Hotels also have common areas but not for socializing as such but for more serious business.
4. **Hostels are cheaper** to cut costs, hostels forgo many of the usual room amenities that non-business travellers rarely use anyway but **payment may not be as convenient in hotels because it** has all the usual room amenities.
5. **You Can Negotiate** in some hostels since they cater to backpackers who only stay a couple of nights at a time, [you may be able to negotiate a better rate](https://www.tripsavvy.com/budget-accommodation-in-asia-1458726) if you’ll be staying a week or longer. But hotels have a fixed rate which is non-negotiable.

## 1.1 Statement of the Problem

This study will be concerned with the problems posed by poor hostel allocation, as it affects the quality of education in higher institute with particular reference to Godfrey Okoye University and these are as follows:

* At Godfrey Okoye University, the whole process of hostel allocation and management is done manually.
* Statistics of the number of rooms required to match the growing number of students are far-fetched.
* Most often, the overall process is time consuming and requires a lot of effort.
* student’s information retrieval is difficult and records are unsecured due to manual method of storage.

## 1.2 Aim of study

The aim of the research work is to develop Hostel Allocation software that will manage the hostel activities of Godfrey Okoye University, Ugwuonu-Nike, Enugu.

The main objectives of the project include:

1. Identify and model the requirements to develop the system.
2. Provide online student application for students to apply for hostel.
3. Upgrade from manual means of student’s hostel allocation.
4. Design and develop a central database system that would serve as hostel database, which will contain information on all the available rooms in the hostels.
5. Design a computer – driven hostel allocation system for allocating hostel rooms to students.
6. Generate reports on hostel occupancy.

## 1.3 Significance of the Project

This project will affect student and staff of the university in the sense that it will change the system of hostel allocation from manual to automated, facilitates timely allocation of hostel rooms to student.

The project will provide a first-hand information on the statistics of student in the hostel and enable management to plan on improving hostel living condition

The cost effectiveness affects the overall administration by reducing the problem with bureaucracy in hostel allocation.

# Chapter 2:

# Literature Review

## Introduction

Davies et al (2008), defined hostel as an establishment which provides cheap lodging and food for travellers, a place of residence for students [2]. It is also defined as a budget-oriented, shared-room ("dormitory") accommodation that accepts individual travellers or groups for short-term stays, and that provides common areas and communal facilities [9]. It further stated that for it to be considered a hostel, the property must provide short-term, shared (dormitory-style) accommodation for individual travellers, though many hostels also provide private rooms.

Hostel has become an opportunity to develop and improve the quality of education in most academic institutions. The desire to provide spaces for students that allow active interaction, comfort and convenience, and opportunities for socialization is foremost in university and college planning (Perkin & Will, 2001). They also assert that all these need to be considered along with the pragmatic spatial needs of furnishings, integration of efficient effective mechanical, electrical, plumbing and safety requirements when planning for hostel buildings.[3]

**2.1** **Theoretical Background**

The major HTML features used were form and cascading style sheet (CSS). We used the form to collect information from the students and staff alike and processed the information in PHP and stored the information or data collected in the MySQL database.

It is recommended to use a Web-based technology for the system (using PHP & MySQL with Apache as the web server). The advantage is that the system developed using this technology is: -

* Easy to manage and maintain.
* Cheaper
* Easy to Use (with user friendly interfaces)

PHP the PHP Hypertext Preprocessor allows web developers to create dynamic content that interacts with databases. (Mehdi Achour, Friedhelm Betz and Antony Dovgal, 2009). It’s a server side scripting language.

MYSQL is an open source relational database management system. It is based on the structure query language (Sun Microsystems, Inc., 2009), it is consistent fast performance, high reliability and ease of use.

APACHE the apache is a freely available Web server that is distributed under an “Open source” license.

PHPMYADMIN as the user graphic, it is the interface free and convivially realized in program language (PHP) and easy to manage the MySQL database on the server.

JAVAS CRIPT is a scripting language used to enable programmatic access to objects within other applications. It is primarily used in the form of client-side JavaScript for the development of dynamic website.

## HYPERTEXT TRANSFER PROTOCOL (HTTP) is an application-level protocol for distributed, collaborative, hypermedia information system? Its use for retrieving inter-linked resources led to the establishment of the World Wide Web. (Hypertext Transfer Protocol, 2009)

## 2.2 Review of Related Literature

A review of the hostel situation in county down.Northern Ireland Queen Street Mental Health Centre, Toronto, Ontario, Canada. In this article, it is shown about the hospital’s situation. In 1992, the working party was set up to report on the hostel situation in co. down, Northern Ireland and to make recommendations regarding future needs. The hostels have been in existence in co. down since 1963 and have increased from four beds to 102 beds at the time of the report [4].

A journal has been written by Smithey.P discuss about a contextual analysis of resident management in public housing. Resident management is a policy that allows the tenants of the apartment to act wisely fully to settle the community problem, gain the support from public and some funding. By using black empowerment cities as a research, Smithey find out a suitable way to manage resident in public housing. By using this journal, one can know what was needed in an apartment or hostel for students to live and what are the requirements for a good resident [8].

It is advocated that hostel accommodation management system is a user friendly computer based system for managing hostel facilities in institutions [14]. The current management system and facilities IIUM (International Islamic University Malaysia is carried out manually similar to other universities in developing countries An issue discussed by [14]. This manual system increases usage of paper work and delay some activities related to room booking and affect negatively the general intended work of the university.

The journal has been written by Bowman K. the journal discusses about students residence. The survey from 380 respondents’ shows 1.6% expressed a desire to live in a student residence. Majority of students’ response indicate that they want to choose their own living environment than dormitory standard space. The other results shows that they would like to add the parking lot, restaurants and grocery store as the additional facilities at their resident. The apartments that are provided to students have occupancy range from one to four people. The individual rooms were organized suitable to the student’s activities in their rooms [1].

This journal had been written by Pulvis C. and it discusses about hostels survey. This survey required detailed information on sample hostels. The survey was designed appropriately to collect the information about the hostel. A qualitative questionnaire was designed to get their opinion about the sample hostels. The collected information includes the occupants, the month that gets higher occupants, and the facilities of the sample hostels. After the survey, the manager will make the analysis about the sample hostels [7].

The modelling and control of hot water consumption in residential hostels. Centre for new electricity studies, department of electrical and electronics engineering University of Pretoria, South Africa [6].

This paper describes the models that have been developed for the design of control of hot water consumption of the residential hostel at the University of Pretoria. It is based on 1999 tariff rates. Hot water load capacity is available to be controlled on main campus alone. In the optimal control of the hot water cylinders, stratification of hot water in the cylinder is not considered [6].

### **2.2.1 Historical Development of Hostel**

The first youth hostel was founded by[5] Richard Schirrmann around 1909. He was a German teacher who organized trips and visits with his students. During one of these excursions, a sudden rainstorm forced his group to seek shelter in an empty school. It was then that Schirrmann had the idea of using schools that were empty during holidays as guest houses for young people that were travelling in groups in the countryside. The concept of student "youth hostels" was born.

The movement flourished in Germany. Permanent hostels were established by gifts of hiking and recreation clubs, wealthy patrons and local communities. By 1932, Germany had more than 2000 youth hostels recording more than 4.5 million overnights annually. In the meantime, Switzerland, Poland, the Netherlands, Norway, Denmark, the British Isles, Ireland, France and Belgium had joined the movement and added another 600 hostels in Europe. With national hostelling associations spreading across Europe, in 1932 the first international meeting was held in Amsterdam to develop common standards. The International Youth Hostel Federation was formed. Americans Isabel and Monroe Smith attended the second international meeting in 1933. Shortly afterwards, they opened the first U.S. youth hostel in Northfield, Massachusetts in 1934. Pre-war European political currents overshadowed much of the international movement in the late 1930's. Hostels were closed, and even appropriated by governments for military purposes. The operations of many European hostelling associations were suspended. During the war, the growth of the hostelling movement stalled, although parts of the European youth hostel system still continued to operate, as well as a small network of hostels in the US and Canada.

The end of the war brought a time of rebuilding and reflection worldwide. Groups of American youth went to Europe to help rebuild hostels. International youth travel, while still nascent, was embraced by governments as a way to encourage understanding, and avoid future conflict. The International Youth Hostel Federation grew, as the German youth hostel system was re-established and new hostel associations were formed in Africa, Asia, Australia and South America. In recent times, the concept of hostel has broadened, and now providing cheap but comfortable accommodation and a unique atmosphere that cannot be found in hotels. Worldwide, there about 4000 hostels recording over 33 million overnights in more than 80 countries.

### **2.2.2 Student Housing In Nigeria Tertiary Institutions**

The Nigerian higher educational institution was established with the aim of giving a student a very sound and qualitative education, so as to be able to function effectively in any environment in which they may find themselves, so as to become more productive, self- fulfilling and attain self-actualization. This is because in Nigeria, students are the single most important stakeholders in the university/college system. Similarly, student’s accommodation is among the most important facilities that should be provided in a typical Nigeria university campus.

Living in student’s residence on campuses, has been identified as one of the interesting experiences in the life of a university student. This is because it offers them the opportunity to interact amongst their colleagues from faculties other than their own in addition to the unique opportunity for night discussions and social interactions which when put together will help in shaping the social life of the student’s social life, appreciation of their roles and responsibilities in the community and society at large.

In the beginning Nigerian universities were established with the intention of providing comfortable hostel accommodation for all students on campus. Up till the early 1970’s there was no problem of student’s accommodation in university campuses. Alaka (2007) sees student’s accommodation beyond mere proposal for development, to embrace the physical structure offering bundles of services either as a facility from which the social, psychological and physiological activities are attained, or one developed strictly for leisure, as an affordable and safe accommodation. As a facility, the design and housing style should address especially the internal space needs, highly needed by the residing students. Jinadu (2001) identifies the psychological, physiological, facility and security requirements as four important qualitative needs that measures the adequacy and habitability of the student housing. Bach (2001) also embraces other measures like healthy, safe and sanitary shelter provision as necessary to harness students’ educational cultural and recreational needs. Although students’ accommodation is considered necessary in controlling students’ moral discipline and plays a vital role in increasing students’ academic performance, but it remain a exigent venture for institutions to manage. Like many other tertiary institutions in the world, tertiary institutions in Nigeria are facing problems in providing comfortable and affordable accommodation to their ever increasing students’ population. In the recent years, tertiary institutions are facing real cuts in the level of public funding. Thus, the level of flexible funding that could be allocated to major infrastructure projects such as accommodation was reduced. On the other hand, the demand for high quality education is fast growing in a crowed education market. Nigeria has the biggest tertiary education system in Sub-Saharan Africa with well over 300accredited tertiary institutions. More than 50% of these tertiary institutions have large student population. The tertiary institutions have continued to experience a tremendous rise in student enrolments over the past decades, the surge in students has not been matched by a corr­­­­­esponding growth in student accommodation.

**2.3 Summary**

The online student’s hostel allocation system will be the best solution to hostel management problems as it will provide easy online application, so that students can apply from home or anywhere else via internet. The online system will also provide quick and reliable registration process hence reducing the load of work done by the staff and saving time for students who apply.

 This chapter assessed the user’s views about the current system and their expectations from the new system. The next chapter discusses the system software requirements.

# Chapter 3:

# SYSTEM ANALYSIS AND DESIGN

## 3.0 Introduction

This chapter provides an overview of what to be covered, how it will communicate with the students through the system. It will also provide details of system analysis, system requirements such as the hardware and software requirement and their specifications. It will also cover the research design setting and data collection.

The methodology that is going to be used is the object orient methodology (OOM) is a system development approach encouraging and facilitating re-use of software components. With this methodology, a computer system can be developed on a component basis which enables the effective re-use of existing component and facilitates the sharing of its components by other systems.

The object-oriented approach combines data and processor (called methods) into single entities called objects. object usually correspond to the real things a system deals with, such as customer, student(as applied in this project),suppliers, contracts, and invoices. Object-oriented models are able to thoroughly represent complex relationships and to represent data and data processing with a reliable notation, which allows an easier mix of analysis and design in growth process.

Must of the current work, however tends to focus on a particular phase without addressing the transition and the traceability between phases. The object oriented methodology is proposed for the full development life-cycle.

It synthesis and enhances several emerging object oriented techniques and notation into a consistent approach.[10]

**The basic steps of system designing using object modelling may be listed as;**

1. **System Analysis;** As in any other system development model, system analysis is the first phase of development, Also same in the case of object oriented, in this phase, The developer interact with the user of the system to find out the user requirement and analysis the system to understand the functioning
2. **System design;**This is the next development stage where the overall architecture of the desired system is decided.
3. **Object design;**In this phase the details of the system analysis and the system design are implemented. Here the implementation of these object is decided as the data structures get defined and also the interrelationships between the objects are defined.
4. **Implementation;** during this phase the class object and the interalatinship of these classes are translated and actually coded using the programming language decided upon.

### **3.0.1** **Research approach and design**

In any research there ought to be a research approach, the way data was collected for the purpose of research, and this system was not an exceptional. Before developing this system, detailed information was collected from the student’s administration and hostel managers to justify the automation of hostel operations.

The data collection was done through personal interviews with students and staff of Godfrey Okoye University. The interviews were to determine the challenges encountered by the students and staff of their respective campuses who still use manual approach in carrying out hostel operations. From the interviews in was evident that the automated system was far much better compared to manual system. The hostel staff who still ran hostel manually complained of;

* Too much work in keeping and arranging files of students.
* Disappearance of the files.
* Hard to track information of the current students and students who already left the hostel.
* Delay in hostel allotment.

## 3.1Description of Existing System

First pay school fees and take the teller to the bursary office where the payment is confirmed. The teller is been taken to hostel allocation office. The officer in the office collects the teller, then the student is asked what hostel he or she prefers and then the student is given the hostel card(accommodation form) containing the student name, hostel name, room number and bunk number either up-bunk or down-bunk. The student name is written under the list of the chosen hostel. Basically hostel allocation is done using the school fees teller.

The existing system is manual based and needs lot of effort and consumes enough time. In the existing system we can allocate room for student with the use of keeping files, a form and filling them. It may lead to corruptions in the allocation process as well as loss of file or file damage.

**Disadvantages:**

1. More human power
2. More strength and strain of manual labour needed
3. Repetition of same procedure.
4. Low security.
5. Data redundancy.
6. Difficulty to handle.
7. Difficulty to update data.
8. Record keeping is difficult.
9. Backup data cannot be easily generated.

## 3.2 Analysis of Proposed System

The model that will be adopted in developing this system server- client. Server will host database where data will saved. When the information is requested by the user the server will process the request then display the results. This whole process will be implemented by PHP, HTML and MySQL.  
PHP and HTML will be playing a role in creating the interface. The role of PHP will basically be to validate forms verify them and support embedding of MySQL responsible for querying MySQL database. It’s also used as a server-side scripting language.

### **3.2.1 Requirement Analysis**

System design is concerned with the design of the proposed system based on the investigation and requirement made. This involves the processing algorithms and data structure; system design is not same as implementation. It is strongly influences by the programming language used to implement the proposed system.

Requirement analysis is the process of looking into software specifications which intends to communicate the customer needs to system developers. So this will deal with resources to be used in building this system.

 The software requirement is classified into two:

* Functional
* Non functional

|  |  |  |
| --- | --- | --- |
| **FUNCTIONAL REQUIREMENTS** | **DESCRIPTION** | **EXAMPLE** |
| Hostel information | Information the system must contain | The system must contain the students information |
| View application status | Status the system must contain | The system should allow students to check for their application status |
| Rooms allocation | Allocate rooms to hostel | The system should be able to allocate rooms to students |

**Non functional**

Maintainability – the system will be capable of backing up data.

Flexibility-the system will flexible for future plans.

Speed-should be fast in terms of processing any query issued.

Security-users will only access using their passwords.

Time in restarting after failure.

Reliability a less failure and unavailability.

**Input Requirements**

The input requirements includes: users ID, students details, staff details, hostels, rooms, programmes, levels, reports, fees type, no of beds, room number, room capacity etc.

**Output Requirements**

The output requirements includes: reports, available space, staff information, students details etc.

**Hardware and Software Requirements**

The hardware is the physical and tangible components of a system unit which will function together to perform the required task. These components are:

1. Central processing unit (CPU)

2. Network

3. Keyboard

4. 512 Mb of RAM

5. 10 Gb of hard disc

6. Monitor (VDU-visual display unit)

7. Printer

8. Mouse

9. Uninterrupted power supply (UPS).

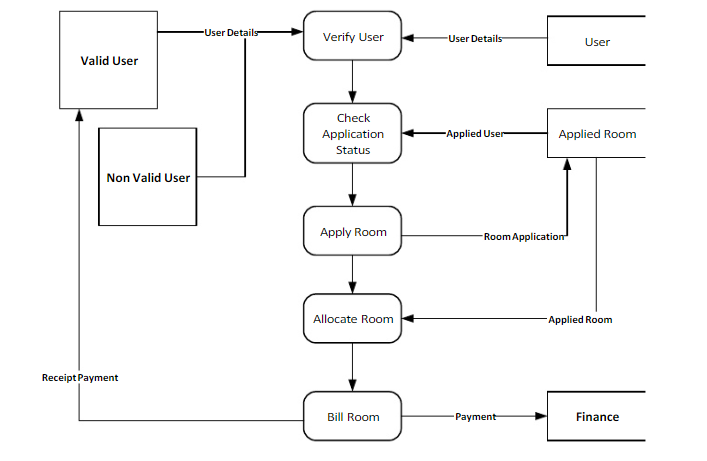
The software is the non-physical part of the system that uses the hardware components to successfully run the system that has been built. These components are:

1. Windows operating system

2. Local host (XAMPP Server)

3. Web browser

4. MySQL

Fig 3.1 Design of Proposed System

**3.2.2 Feasibility Study**

**Technical Feasibility**

The technical feasibility in the proposed system deals with the technology used in the system. It deals with the hardware and software used in the system whether they are of latest technology or not. It happens that after a system is prepared a new technology arises and the user wants the system based on that technology. This system is going to online, HTML and PHP as front end technology and MySQL as backend technology. Thus Design and Implementation of Online Students Hostel Allocation Management System is technically feasible.

**Economic Feasibility**

Economic analysis is the most frequently used method for evaluating the effectiveness of a new system. More commonly known as cost/benefit analysis. HTML, PHP and MySQL database are easily available and user friendly

**Operational Feasibility**

The project has been developed in such a way that it becomes very easy even for a person with little computer knowledge to operate it. This software is very user friendly and does not require any technical person to operate .Thus the project is even operationally feasible.

## 3.3 Design of Proposed System

The model that was adopted in developing this system is spiral model. It is preferred because of its web based nature. This model takes care of risks and lessening them thus keeping development process under control. The main reason why spiral was chosen is because it enables continuous stream and extension of previous products and also allows user review.

The proposed system which is a web-based that can be launched on the internet or run on a server is a robust system which interconnects all the departments and personnel involved in the student’s management and allocation process in a network. The system also have robust database for the storage of information in all places where students data needs to be stored.

**Advantages of the Proposed System**

1. The proposed system will automate the hostel’s allocation/management process thereby eliminating the loopholes associated with the current system.

2. The use of database will help in easy retrieval of information and control data concurrency.

3. The use of password will be incorporated to maintain and ensure data security and integrity.

4. The online connection of all the departments and the relevant personnel involved in the allocation process will help users to locate and view information faster and use application that is relevant to their roles and responsibilities.

5. The new system is cost effective because information can be accessed through web browsers rather than maintaining physical documents which will help to save money on printing, duplicating of documents as well as document maintenance overhead.

**3.3.1 Database Design**

The information on the database of the website which is in formatted tables, making it a relational database, it has to be regularly updated and edited. Implying that there should be masters file which is not permanent in nature, since it has to reflect current changes to reflect the current events as they unfold. Among the tables to be regarded as master files in this research work is;

Table 1: Application Table

The student’s data table below stores student’s information on the database.

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Field** | **Data type** | **Description** |
| 1 | Student name | varchar(255) | Student name |
| 2 | Hostel name | varchar(200) | Hostel name |
| 3 | MatricNo | varchar(255) | Unique student id |
| 4 | Prog | varchar(255) | Student program |
| 5 | Dept | varchar(255) | Student department |
| 6 | Level | varchar(100) | Student level |
| 7 | roomNo | int(11) | Room number |
| 8 | bedNo | int(11) | Bed number |
| 9 | RecepitNo | int(11) | Receipt number |
| 10 | AmtPaid | int(11) | Amount paid |
| 11 | Approve | varchar(10) | Approval |

**Table 2: Hostels table**

This table stores the information of the hostel, information such as, the hostel id, hostel name, and the category of the hostel (gender).

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **FIELD** | **DATA TYPE** | **DESCRIPTION** |
| 1Primary | Id | Int(11) | Hostel id |
| 2 | hostel\_name | varchar(255) | The hostel name |
| 3 | Gender | varchar(30) | The gender occupying the hostel |

Table 3: Rooms table

This table stores the details of a room, details such as the roomid, the hostel where the room is located, the room number, number of beds in the room and the hostel description. Below is the room table.

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Field** | **Data type** | **Description** |
| 1 | idPrimary | int(11) | Room id |
| 2 | Hostel | varchar(200) | Hostel name where the room is situated |
| 3 | roomNo | int(20) | Room number |
| 4 | bunkNo | int(10) | Bunk number |
| 5 | Gender | varchar(20) | Hostel gender |
| 6 | Status | Varchar(20) | Hostel status |

Table 4: Admin table

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Field** | **Data type** | **Description** |
| 1 | idPrimary | int(11) | Unique admin id |
| 2 | Username | varchar(50) | Admin name |
| 3 | Password | int(50) | Admin password |

Table 5: Student’s table

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Field** | **Data type** | **Description** |
| 1 | idPrimary | int(11) | Student id |
| 2 | Course | varchar(255) | Student course of study |
| 3 | Name | varchar(255) | Student name |
| 4 | Matric No | int(11) | Student unique id |
| 5 | Dob | Date | Student’s Date of brith |
| 6 | father\_name | varchar(255) | Student’s father name |
| 7 | mother\_name | varchar(255) | Student’s mother name |
| 8 | Gender | varchar(20) | Student’s gender |
| 9 | Address | varchar(255) | Student’s address |
| 10 | Contact | int(11) | Student’s contact |
| 11 | parents\_no | int(11) | Student’s Parent number |
| 12 | blood\_group | varchar(50) | Student’s blood group |
| 13 | Status | varchar(255) | Student’s status |
| 14 | matricNo | varchar(255) |  |
| 15 | Password | varchar(255) | Student’s password |

### **3.3.2 Modular design**

An approach of dividing the system into small modules.

**Admin module**

The admin cane edit details of the students.

Allot the students their rooms

Vacate the students

**Student registration module**

This part contains all the personal details of the student, name, Reg. number, date of birth, blood group, next of kin etc. The students will only have access to online information portal, payment portal and notification page to view notification using their phone of computers provided they have internet connection.

**Room module**

Contains the room numbers and the vacant rooms.

## 

## 3.4 System Design and Specification

The system design shows the blueprint of any system that is to be developed. It gives the very detail about every component of the system that is to be built. Here the researcher gives the general outline of the final product.

The various procedure of usage of the new system is given here, i.e. how to, what to and on what shall the system be used on. The importance of the design is to enable system designer or researcher to know the cost consequence of the product on the user and the developer. In that the effectiveness of the system will not be obsolete. (Investing much resource and having less productivity).

### **3.4.1 Dataflow Diagram**

A data flow diagram models objects, associations and activities by describing how data flow between and around various objects. Data flow diagram is used to illustrate how data is processed by a system in terms of inputs and outputs. They are pipelines through which packets of information flow. Data flow diagram work on the premise that for every activity there is some communication, transference or flow that can be described as a data element. Data flow diagrams describe what activities are occurring to fulfil a business relationship or accomplish a business task, not how these activities are to be performed. It shows the logical sequence of associations and activities, not physical processes.

**Context Dataflow Diagram**

A context diagram is a top level (also known as “level 0”) dataflow diagram. It only contains only one process node (“process 0”) that generalizes the function of the entire system in relationship to the external entities.

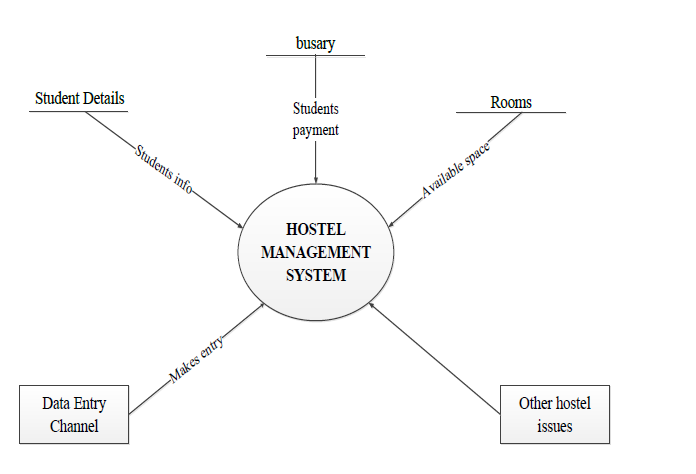
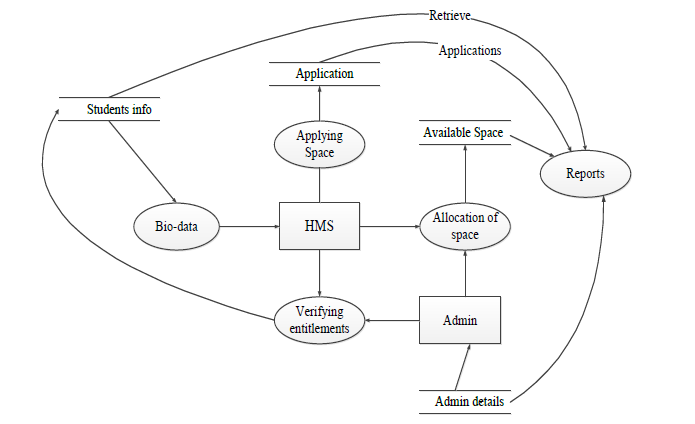


Figure 3.2: Context DFD

**Level 1 Dataflow Diagram**

Level 1 DFD is an expansion of the context diagram that shows more processes and how the interacts with the system in terms of inputs and outputs.

Figure 3.3: Level 1 DFD

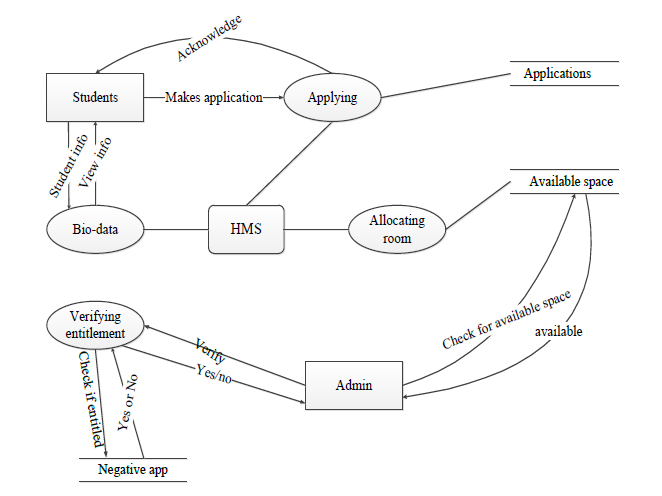
Level 2 Dataflow Diagram

Figure 3.4: Level 2 DFD

### **3.4.2 Entity Relationship Model**

An entity relationship model (ER model) is a systematic way of describing and defining a business process. The process is modelled as components (entities) that are linked with each other by relationships that express the dependencies and requirements between them, such as: one building may be divided into zero or more apartments, but one apartment can only be located in one building. Entities may have various properties (attributes) that characterize them. Diagrams created to represent these entities, attributes, and relationships graphically are called entity relationship diagrams.

An ER model is typically implemented as a database. In the case of a relational database, which stores data in tables, every row of each of table represents one instance of an entity. Some data fields in these tables point to indexes in other tables; such pointers represent the relationships.

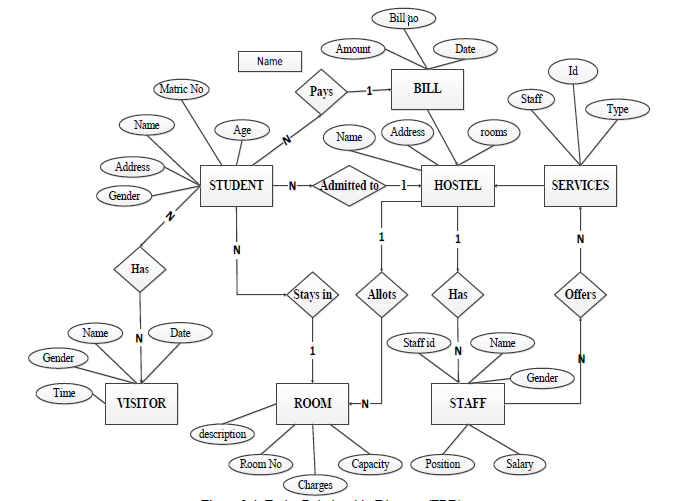


Figure 3.5: Entity Relationship Diagram (ERD)

### **3.4.3 Use Case Model**

Use case diagrams describe what a system does from the standpoint of an external observer. The emphasis of use case diagrams is on what a system does rather than how. They are used to show the interactions between users of the system and the system. A use case represents the several users called actors and the different ways in which they interact with the system.

Actors

* Students
* Admin
* Hostel management System

Use Cases

* Apply
* Setup hostels
* Set rooms
* View status
* Delete setups
* View applications
* Change password
* Login.

Below is the diagram of the use case for the proposed system.

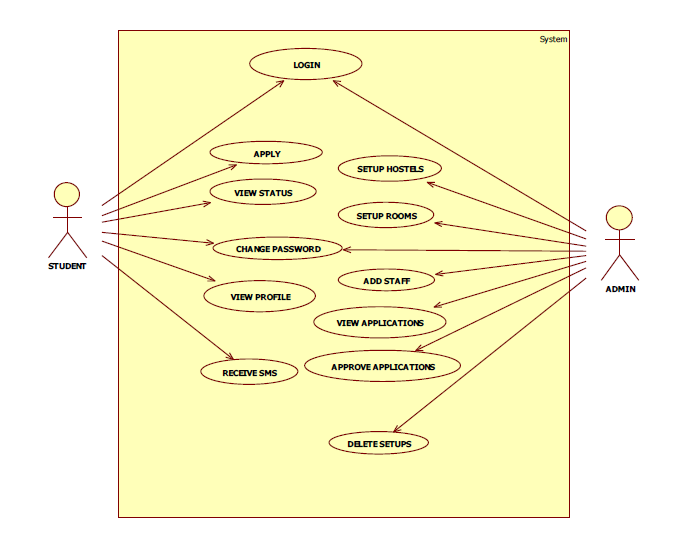


Figure 3.6: Use case diagram

# Chapter 4

# SYSTEM IMPLEMENTATION

## 4.0 Introduction

This chapter describes the installation of the new system, the software and the hardware that would be needed to be installed for proper implementation.

## 4.1. Choice of Development Environment

Hypertext Markup Language (HTML) is the basic language used for creating web pages and other information that can be displayed in a web browser. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser doesn’t display the HTML tags, but uses the tags to interpret the concept of the page.[11]

HTML elements form the building blocks of all websites, allows images and objects to be embedded and can to be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for txt such as heading, paragraphs, lists, links, quotes, and so on. It can also embed scripts written in languages such as JavaScript which affect the behaviour of HTML web pages. HTML consists of several key components, including tags and their attributes, character-based data types, character references and entity references. An important component is the document type declaration, which triggers standards mode rendering.

CSS is a style sheet language used for describing the look and formatting of a document written in a markup language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is designed basically to enable the separation of document content from document presentation, including elements such as layout, colors, and fonts. This improves content accessibility, provides flexibility and control in the specification of presentation characteristics, enable multiple pages to share formatting and reduce complexity and repetition in the structural content, for instance, allowing tableless web design. CSS can also allow the same markup page to be presented in different styles for different rendering methods such as on-screen, in print and on Braille-based, tactile devices. CSS specifies a priority scheme to determine which style rules apply if more than one rule matches against a particular element. Priorities are calculated and assigned to rules, so that the results are predictable. [12]

PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP code may be embedded into HTML code, or it can be used in combination with various Web template systems and web frameworks. PHP code is usually processed by a PHP interpreter (computing) interpreter implemented as a plug-in (computing) module in the web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. [13]

MySQL (structured query language) is an open-source relational database management system (RDBMS), the world's second most used relational database following SQLite. It is deployed with every Android (operating system) and iPhone device along with the Google Chrome and Firefox browsers. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary software agreements. MySQL is a popular choice of database for use in web applications, and is a central component of the widely used XAMPP (software bundle) open source web application software stack and other list of AMP packages. Free software-open source projects that require a full-featured database management system often use MySQL.

## 4.2 Implementation Architecture

The following block diagram shows the various components of the software and their linkages.

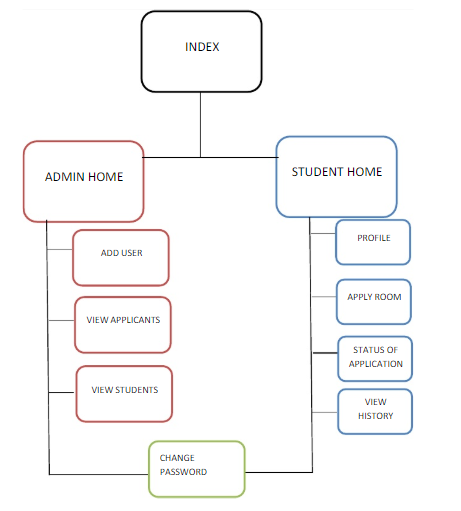


Figure 4.1 Block Diagram showing the system architecture of the new system.

## 4.3 Software Testing

This is the test conducted on a computer integrated system to evaluate the system’s compliance with it specified requirements. The proposed system has been tested with real life data and information each program module has been tested with appropriate data to ensure it work as expected, the system testing with appropriate data to ensure it work as expected. The system testing determines how the entire system as a whole can be relied upon.

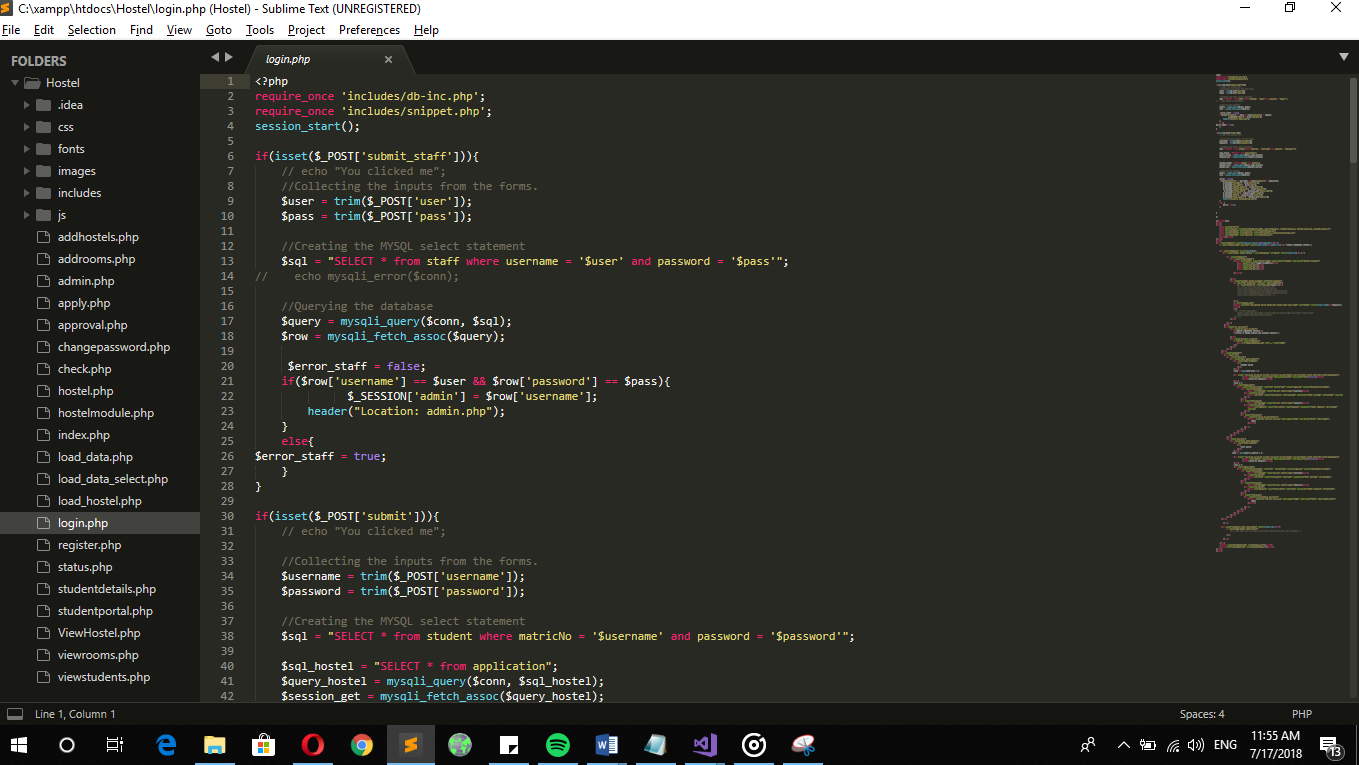


Figure 4.2 Screenshot showing debugging of the login page.

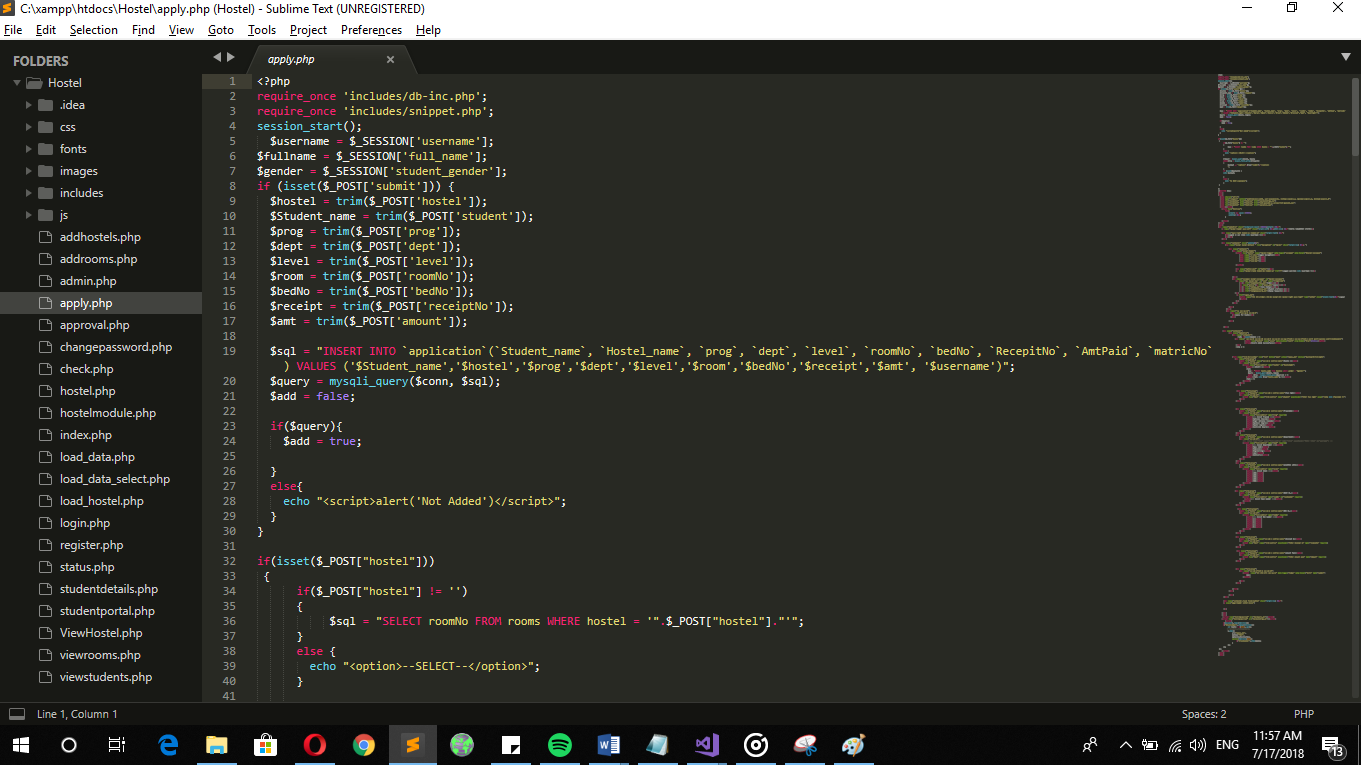


Figure 4.3 Screenshot showing debugging of application page.

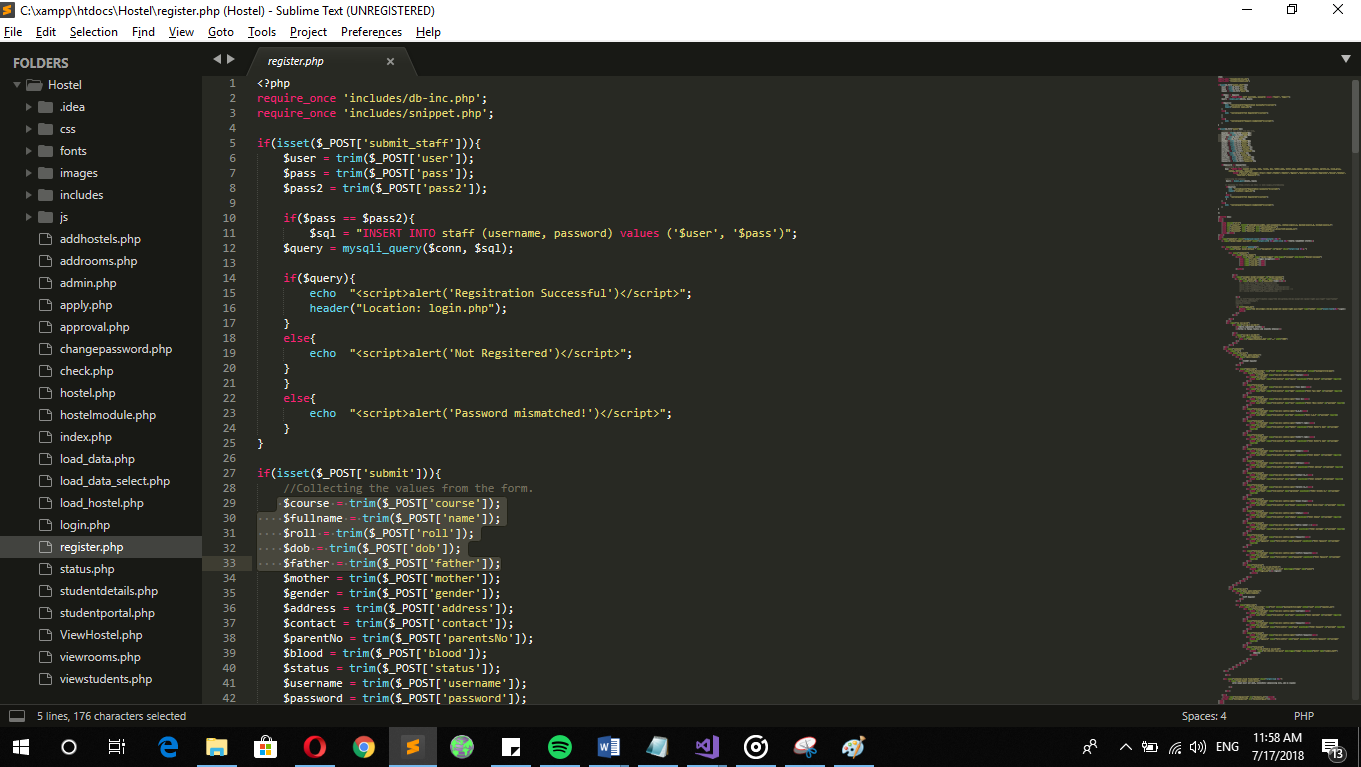


Figure 4.4 Screenshot showing debugging of student registration page.

## 4.4 Documentation

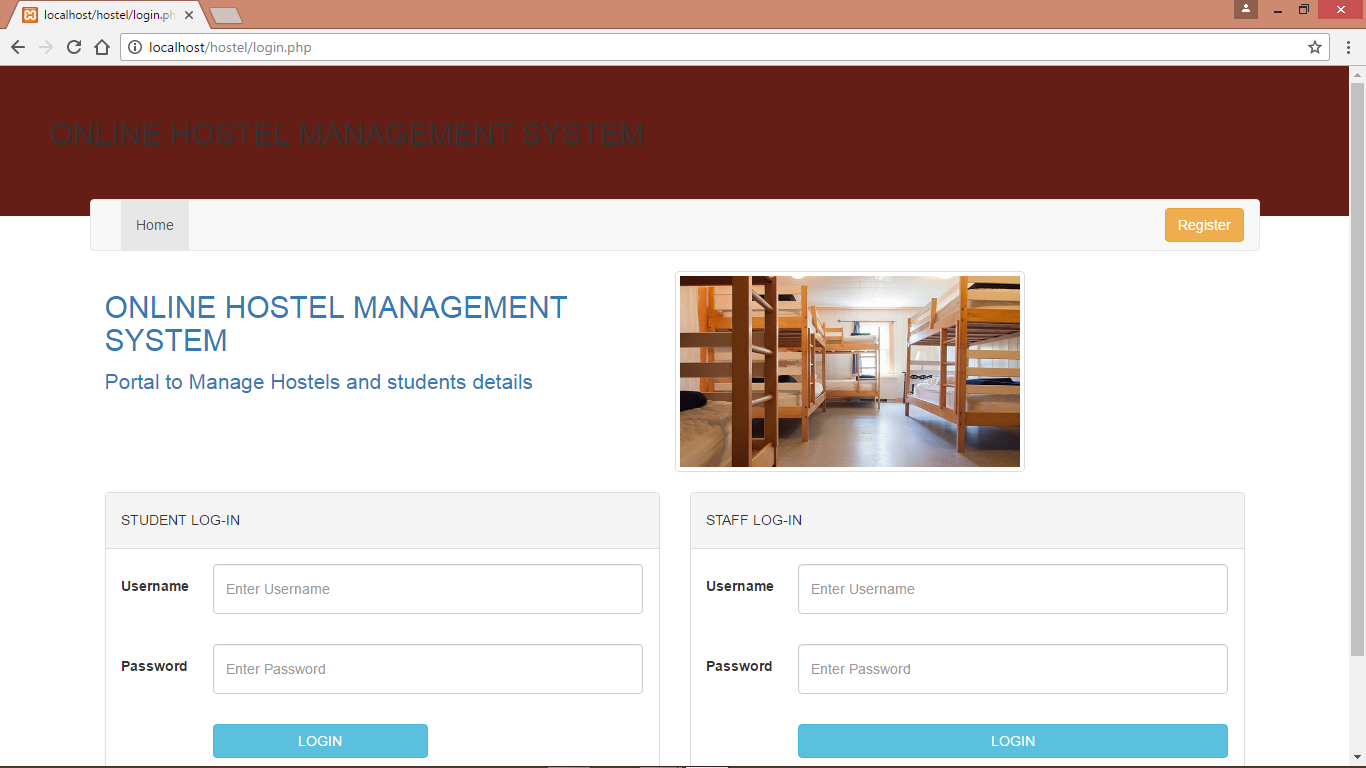


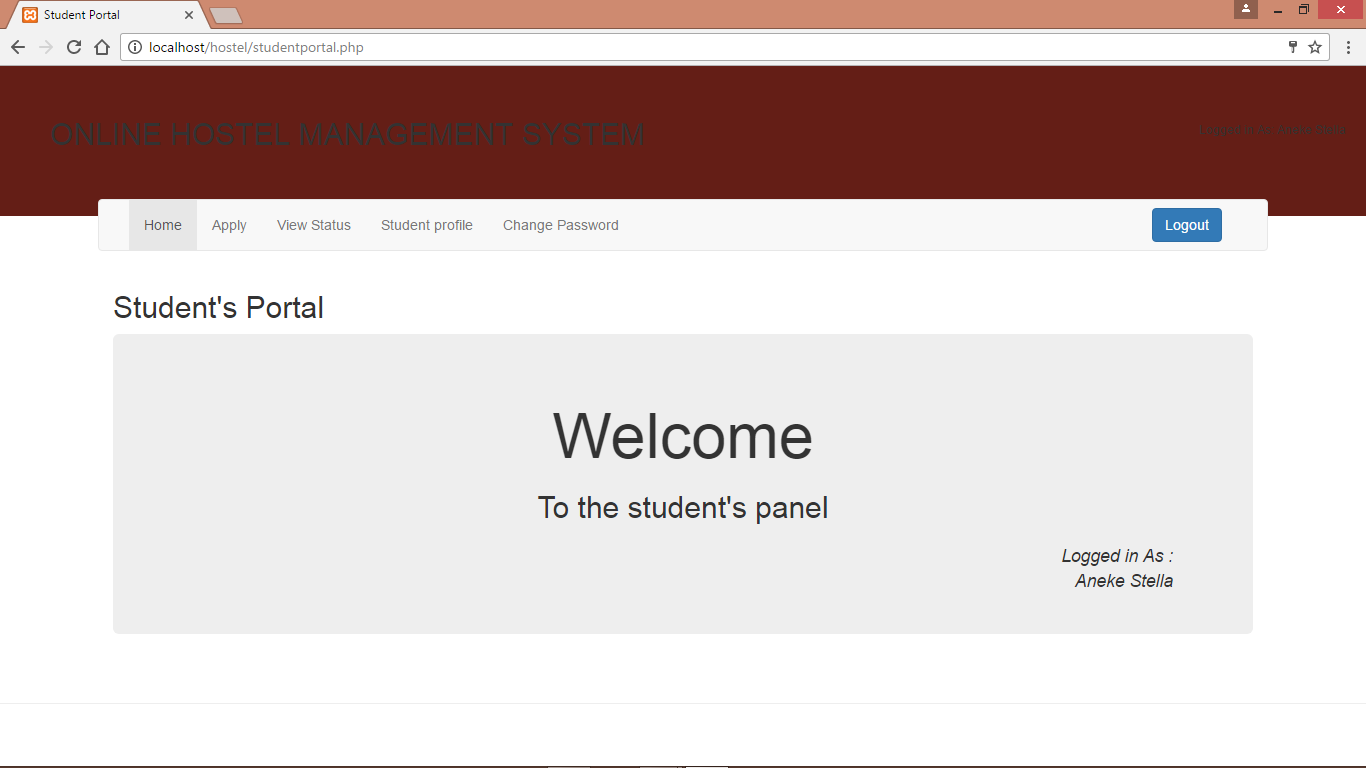
Figure 4.5 Screenshot of Home Page

Figure 4.6 Screenshot of student index Page.

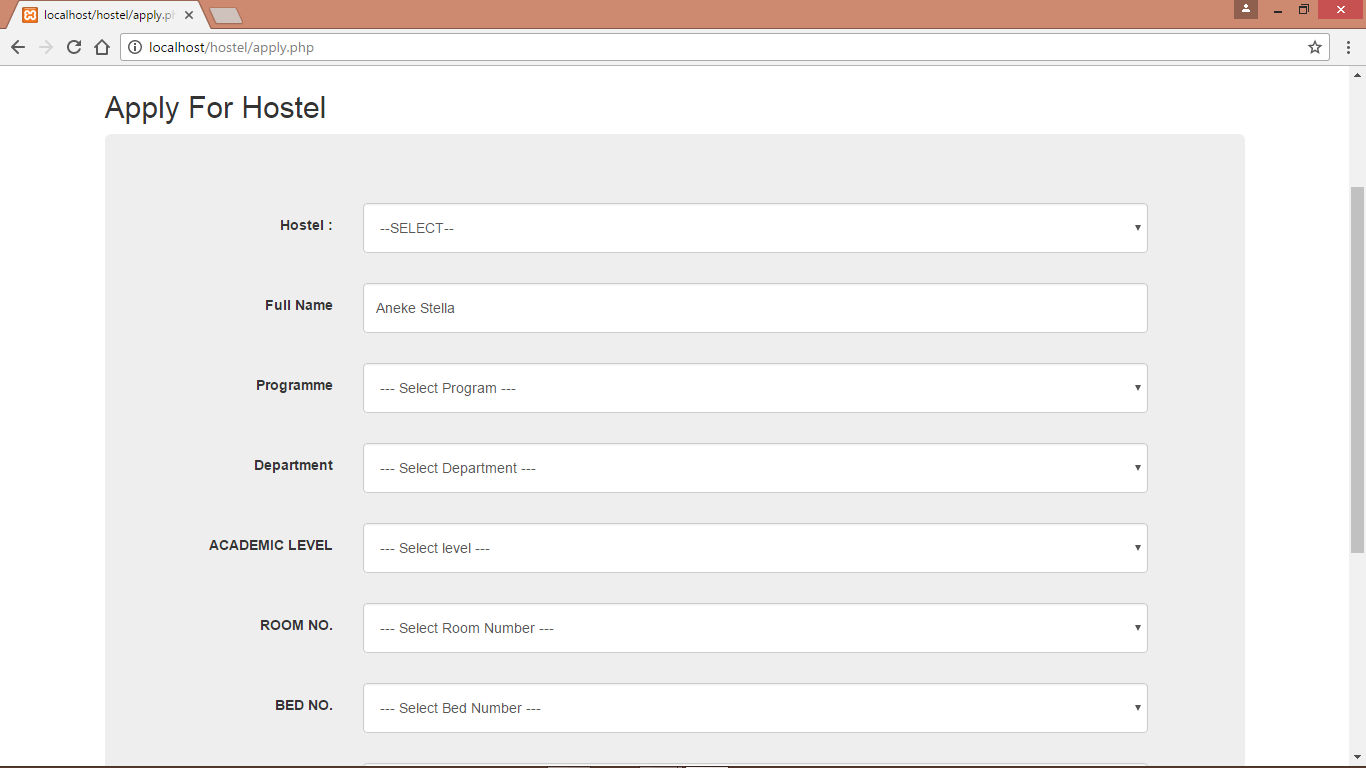


Figure 4.7 Screenshot of student hostel application Page.

### 

Figure 4.8 Screenshot of student hostel status Page.

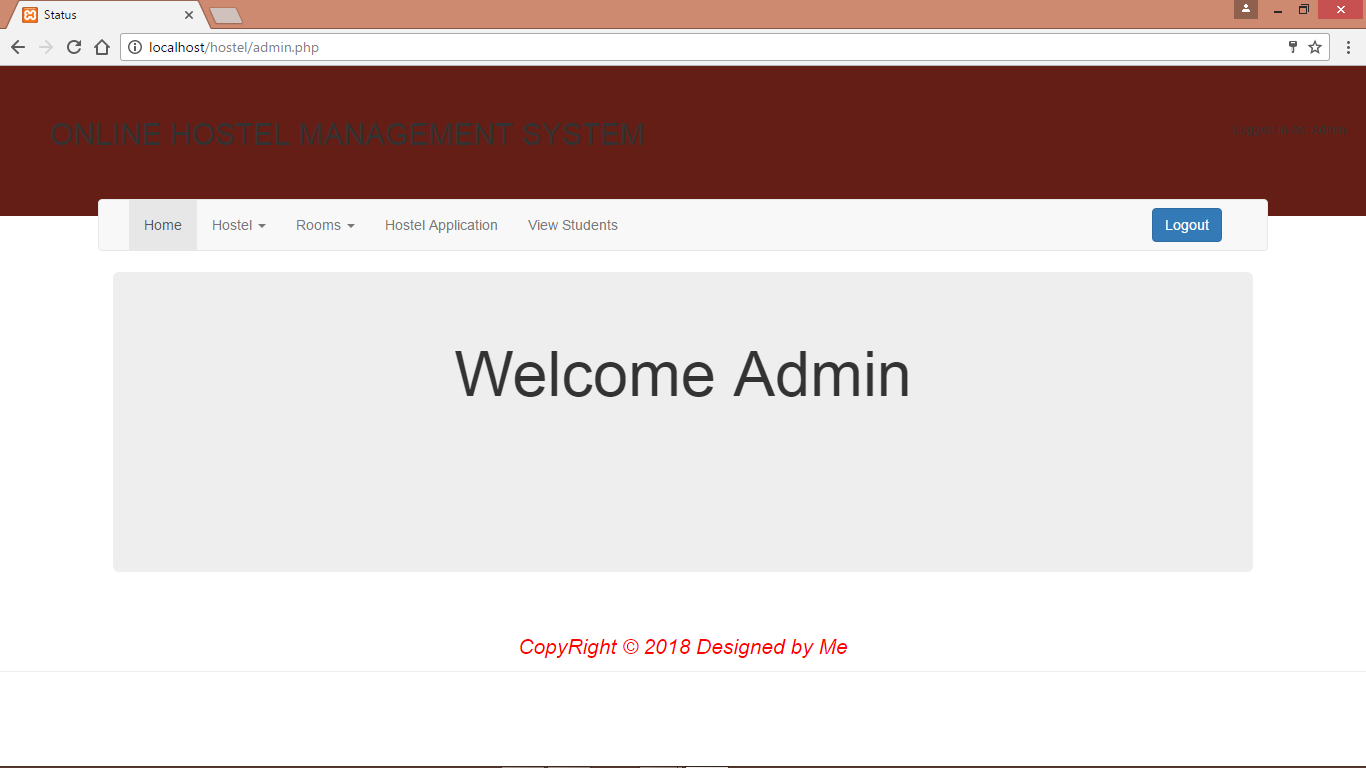


Figure 4.9 Screenshot of admin index Page.

### 

Figure 4.10 Screenshot of admin add hostel Page.

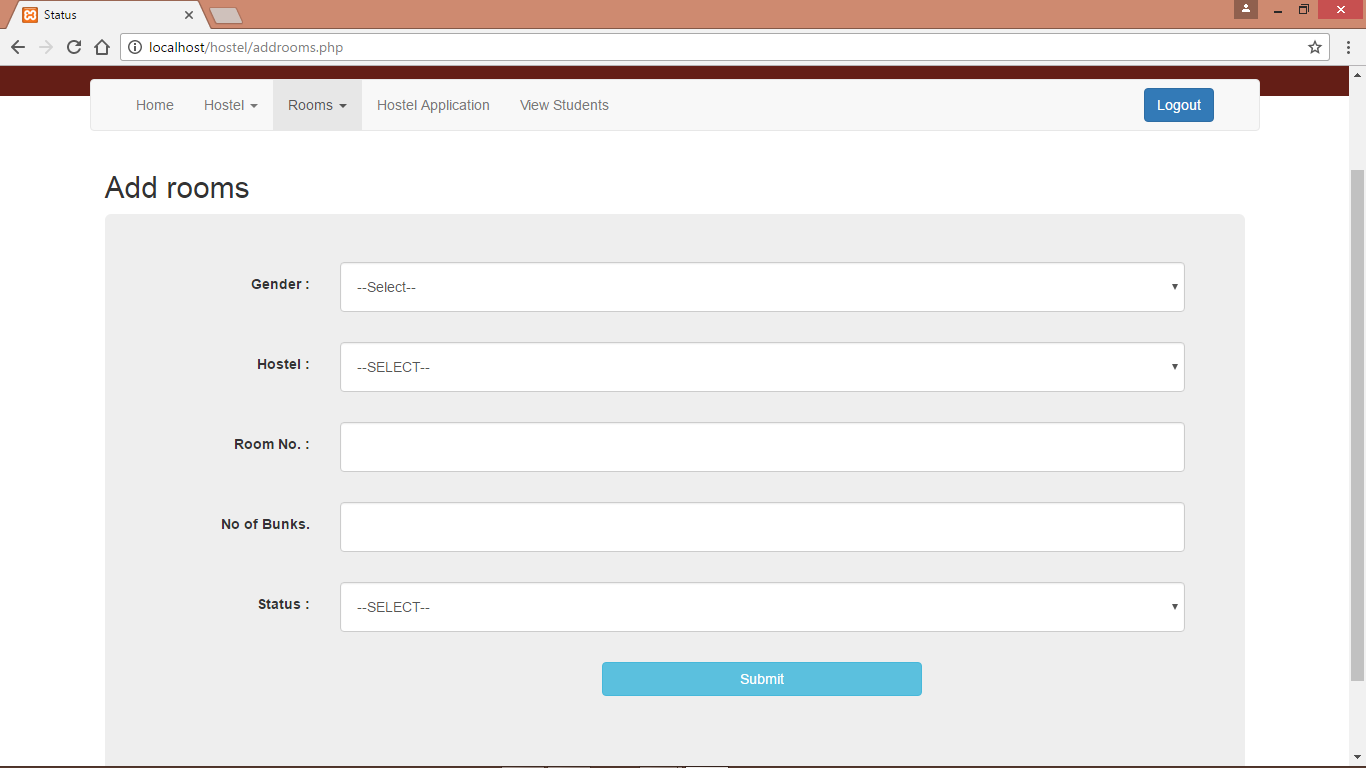


Figure 4.11 Screenshot of admin add rooms Page.

### 

Figure 4.12 Screenshot of admin room application Page.

**4.4.1 User Manual**

To use this application, follow these steps;

1. Go to local host/hostel.
2. Register an account on the application
3. Login to the application
4. Apply for a hostel­
5. Wait for a response for the admin Department.

**4.4.2 Source code listing**

1. Refer to Appendix A for the source code of the index page.
2. Refer to Appendix B for the source code of the admin page.

# Chapter 5

# SUMMARY AND CONCLUSION

## 5.1 Conclusion

In conclusion, the online students’ hostel allocation system developed in PHP provides a platform for students of Godfrey Okoye University to carryout hostel application online and to also enable the Staffs manage the hostel applications. The proposed system is faster and efficient compared to the existing system and can perform the following task:

a. online hostel application

b. online students and staff information management

c. online hostel application approval based on first come first serve

d. viewing hostel application status online

The software does not capture online payment, other hostel issues such as mess activities, visitors profile etc.

## 5.2 Recommendation

The researcher wishes to recommend that:

1. Other researchers should work on areas such as the implementation of the online hostel fee payment.

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**APPENDIX**

**SOURCE CODE**:The index page

<!DOCTYPE html>

<html>

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, user-scalable=no, initial-scale=1.0, maximum-scale=1.0, minimum-scale=1.0">

<link rel="stylesheet" type="text/css" href="css/bootstrap.css">

<link rel="stylesheet" type="text/css" href="font-awesome-4.7.0/css/font-awesome.css">

<link rel="stylesheet" type="text/css" href="css/style.css">

<title></title>

</head>

<body>

<div class="jumbotron" style="background-color: #000000;height: 150px">

<p class="navbar-header pull-left" style="margin-left: 50px;font-size: 30px">ONLINE HOSTEL ALLOCATION SYSTEM </p>

<div class="container" style="padding:0;">

<nav class="navbarnavbar-default " role="navigation" id="navbar" style="margin-top: 85px; ">

<div class="container">

<div class="navbar-header">

<button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#navbar-collapse">

<span class="sr-only">Toggle Navigation</span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

</button>

</div>

<div class="collapse navbar-collapse" id="navbar-collapse">

<ul class="navnavbar-nav" id="list" class="breadcrumb">

<li class="active"><a href="index.php">Home</a></li>

<!--<li><a href="apply.php">Apply</a></li>

<li><a href="status.php">View Status</a></li>

<li><a href="studentdetails.php">Student profile</a></li>

<li><a href="changepassword.php">Change Password</a></li> -->

<!--<li><a href="login.php">Logout</a></li> -->

</ul>

<a href="register.php">

<button class="btnbtn-warning btn-md navbar-btnnavbar-right pull-right" type="button" style="margin-left:15px">Register</button>

<a/>

<a href="login.php">

<button class="btnbtn-primary btn-md navbar-btnnavbar-right pull-right" type="button" style="margin-right:15px">Login</button>

</a>

</div>

</div>

</nav>

<div class="row col-lg-12">

<div class="col-lg-6 col-md-6">

<h2>Welcome to</h2>

<p>ONLINE HOSTEL MANAGEMENT SYSTEM </p>

please use the menu above to carryout operations

</div>

<div class="col-lg-6 col-md-6">

<a href="#" class="thumbnail">

<imgsrc="images/pic.jpg" alt="..." width="100%">

</a>

</div>

</div>

</div>

<div class="container\_fluid fixed-buttom" style="margin-top: 30px">

<p class="page-header center-block">

</p>

</div>

</div>

<script type="text/javascript" src="js/jquery.js"></script>

<script type="text/javascript" src="js/bootstrap.js"></script>

</body>

</html>

**THE LOGIN PAGE**

<?php

require\_once 'includes/db-inc.php';

require\_once 'includes/snippet.php';

session\_start();

if(isset($\_POST['submit\_staff'])){

// echo "You clicked me";

//Collecting the inputs from the forms.

$user = trim($\_POST['user']);

$pass = trim($\_POST['pass']);

//Creating the MYSQL select statement

$sql = "SELECT \* from staff where username = '$user' and password = '$pass'";

// echo mysqli\_error($conn);

//Querying the database

$query = mysqli\_query($conn, $sql);

$row = mysqli\_fetch\_assoc($query);

$error\_staff = false;

if($row['username'] == $user && $row['password'] == $pass){

$\_SESSION['admin'] = $row['username'];

header("Location: admin.php");

}

else{

$error\_staff = true;

}

}

if(isset($\_POST['submit'])){

// echo "You clicked me";

//Collecting the inputs from the forms.

$username = trim($\_POST['username']);

$password = trim($\_POST['password']);

//Creating the MYSQL select statement

$sql = "SELECT \* from student where matricNo = '$username' and password = '$password'";

$sql\_hostel = "SELECT \* from application where matricNo = '$username'";

$query\_hostel = mysqli\_query($conn, $sql\_hostel);

$session\_get = mysqli\_fetch\_assoc($query\_hostel);

// echo $session\_get['Hostel\_name'];

// $\_SESSION['hostel\_name'] = $session\_get['Hostel\_name'];

// $\_SESSION['room\_no'] = $session\_get['roomNo'];

// $\_SESSION['stats'] = $session\_get['Approve'];

// echo $\_SESSION['hostel\_name'];

$hostel\_gender = "SELECT gender from hostels";

$gender\_query = mysqli\_query($conn, $sql\_hostel);

$gender\_get = mysqli\_fetch\_assoc($gender\_query);

//Querying the database

$query = mysqli\_query($conn, $sql);

$row = mysqli\_fetch\_assoc($query);

$error = false;

if($row['matricNo'] == $username && $row['password'] == $password){

$\_SESSION['username'] = $row['matricNo'];

$\_SESSION['full\_name'] = $row['name'];

$\_SESSION['student\_gender'] = $row['gender'];

$\_SESSION['student\_password'] = $row['password'];

$\_SESSION['hostel\_name'] = $session\_get['Hostel\_name'];

$\_SESSION['room\_no'] = $session\_get['roomNo'];

$\_SESSION['stats'] = $session\_get['Approve'];

$\_SESSION['hostel\_gender'] = $gender\_get['Approve'];

header("Location: studentportal.php");

}

else {

$error = true;

}

}

?>

<!DOCTYPE html>

<html>

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, user-scalable=no, initial-scale=1.0, maximum-scale=1.0, minimum-scale=1.0">

<link rel="stylesheet" type="text/css" href="css/bootstrap.css">

<link rel="stylesheet" type="text/css" href="font-awesome-4.7.0/css/font-awesome.css">

<link rel="stylesheet" type="text/css" href="css/style.css">

<title></title>

</head>

<body>

<div class="jumbotron" style="background-color: #000000;height: 150px">

<p class="navbar-header pull-left" style="margin-left: 50px;font-size: 30px">ONLINE HOSTEL MANAGEMENT SYSTEM</p>

<div class="container" style="padding:0;">

<nav class="navbarnavbar-default " role="navigation" id="navbar" style="margin-top: 85px; ">

<div class="container">

<div class="navbar-header">

<button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#navbar-collapse">

<span class="sr-only">Toggle Navigation</span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

</button

</div>

<div class="collapse navbar-collapse" id="navbar-collapse">

<ul class="navnavbar-nav" id="list" class="breadcrumb">

<li class="active"><a href="index.php">Home</a></li>

<!--<li><a href="apply.php">Apply</a></li>

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<li><a href="studentdetails.php">Student profile</a></li>

<li><a href="changepassword.php">Change Password</a></li>

<li><a href="login.php">Logout</a></li> -->

</ul>

<a href="register.php">

<button class="btnbtn-warning btn-md navbar-btnnavbar-right pull-right" type="button" style="margin-left:15px">Register</button>

<a/>

<!--<a href="login.php">

<button class="btnbtn-primary btn-md navbar-btnnavbar-right pull-right" type="button" style="margin-right:15px">Login</button>

</a> -->

</div>

</div>

</nav>

<div class="row col-lg-12">

<div class="col-lg-6 col-md-6">

<h2>ONLINE HOSTEL MANAGEMENT SYSTEM</h2>

<p>Portal to Manage Hostels and students details</p>

</div>

<div class="col-lg-4 col-md-6">

<a href="#" class="thumbnail">

<imgsrc="images/pic.jpg" alt="..." width="100%">

</a>

</div>

</div>

</div>

<div class="container">

<div class="row">

<div class="col-lg-6">

<div class="panel panel-default">

<div class="panel-heading">

<h5>

STUDENT LOG-IN

</h5>

</div>

<?php if (isset($error)) { ?>

<div class=" col-lg-10 col-md-10 col-sm-8 col-xs-10 col-lg-offset-1 col-xs-offset-1 alert alert-info alert-dismissable">

<button type="button" class="close" data-dismiss="alert" aria-hidden="true">&times;</button>

<strong>Incorrect Details</strong>

</div>

<?php } ?>

<div class="panel-body">

<form class="form-horizontal" role="form" method="post" action="login.php" enctype="multipart/form-data">

<div class="form-group">

<label for="Username" class="col-sm-2 control-label">Username</label>

<div class="col-sm-10">

<input type="text" class="form-control" name="username" placeholder="Enter Username" id="username" required>

</div>

</div>

<div class="form-group">

<label for="Username" class="col-sm-2 control-label">Password</label>

<div class="col-sm-10">

<input type="password" class="form-control" name="password" placeholder="Enter Password" id="username" required>

</div>

</div>

<div class="form-group">

<div class="col-sm-10 col-sm-offset-2">

<button class="btnbtn-info col-lg-6" data-toggle="modal" data-target="#info" name="submit">

LOGIN

</button>

</div>

</div>

</form>

</div>

</div>

</div>

<div class="col-lg-6">

<div class="panel panel-default">

<div class="panel-heading">

<h5>

STAFF LOG-IN

</h5>

</div>

<?php if (isset($error\_staff)) { ?>

<div class=" col-lg-10 col-md-10 col-sm-8 col-xs-10 col-lg-offset-1 col-xs-offset-1 alert alert-info alert-dismissable">

<button type="button" class="close" data-dismiss="alert" aria-hidden="true">&times;</button>

<strong>Incorrect Details</strong>

</div>

<?php } ?>

<div class="panel-body">

<form class="form-horizontal" role="form" method="post" action="login.php" enctype="multipart/form-data">

<div class="form-group">

<label for="Username" class="col-sm-2 control-label">Username</label>

<div class="col-sm-10">

<input type="text" class="form-control" name="user" placeholder="Enter Username" id="username">

</div>

</div>

<div class="form-group">

<label for="Username" class="col-sm-2 control-label">Password</label>

<div class="col-sm-10">

<input type="password" class="form-control" name="pass" placeholder="Enter Password" id="username">

</div>

</div>

<div class="form-group">

<div class="col-sm-offset-2 col-sm-10">

<button class="btnbtn-info col-lg-12" data-toggle="modal" data-target="#info" name="submit\_staff">

LOGIN

</button>

</div>

</div>

</form>

</div>

</div>

</div>

</div>

</div>

<div class="container\_fluid fixed-buttom" style="margin-top: 30px">

<p class="page-header center-block">

<!-- -->

</p>

</div

</div>

<script type="text/javascript" src="js/jquery.js"></script>

<script type="text/javascript" src="js/bootstrap.js"></script>

</body>

</html>