

The Design and Implementation of Online Examination Hall Allocation System for Students in Kaduna Polytechnic, Kaduna

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ABSTRACT

The purpose of examination hall allocation process is to determine the venue of students who are candidates of examination in any given institutions and also be able to give first-hand information about any student who sat for the exam. The aim of the project is to design and implement online examination hall allocation system for students in Kaduna Polytechnic, Kaduna. The new system will be achieved using Structured System Analysis and Design Methodology. The software required to design the new system includes Adobe Dreamweaver, the programming language that will be used comprises of Hypertext Mark-up Language, JavaScript's, Cascading Style Sheet and Hypertext Preprocessor (PHP), the website will be tested on a local web server "XAMPP" and Structured Query Language is used for the Database design. The project work covered all the necessary details involved in designing the Online exam hall allocation system. The web-based application is aimed at allocating halls only to students and keeping record in a database. The methodology focused on the study area, system design analysis, review of proposed system and architecture of the system. Other method of information generation adopted includes relevant literatures (such as textbooks.) and surfing the Internet, the concerned with presentation of the implementation, the different views of the scheduling on computer system. Therefore, this project if implemented will replace the manual method of exam hall allocation in department of computer science and enhance the process of hall allocation also, would address the problems of the existing system paper based outlined earlier.

Keywords: database; system; languages; programming; hall

INTRODUCTION

Examination hall allotment and seating arrangement is a web-based application. Main purpose of this application is to handle the operations in an educational institute during the time examinations. All the students and staff can make use of this application without facing any issues as they get the information of the allotted seat & room number (Ibrahim, 2020). Because of the flexibility of the application, it can be used on desktop as well as on mobile devices. To simplify examination hall allotment to staff & students and seating arrangement for the student, Exam Hall seating arrangement System was developed. Allocation of rooms to staff & students was done manually which was a tedious task & would be time consuming. To overcome this disadvantage Exam Hall seating arrangement System was developed. Details in modules such as Students Details, Examination Timing Details, and Hall Details with the proper descriptions will be monitored (Ibrahim, Yaro and Adebola, 2017).

The proposed model is to implement online system at Kaduna Polytechnic, Kaduna, with the overall view of improving efficiency in the examination hall allocation process.

The need to speed up the process of examination hall allocation at institutions of higher learning is more vital and need is there to automate the process itself and move away from manually visiting the school for the process. This has wasted much time for students and money as they sometimes travel only to register and some have failed to meet the stipulated time frames (Kelvin, 2011).

This paper presents our experience in developing, deploying and running an online examination hall allocation system at Kaduna Polytechnic. In this system, students will only come check their allocated exam venue, automatically reducing the burden of time and pressure of the students and the administrative staff.

LITERATURE REVIEW

Introduction

With the rapid growth of Information Technology, a lot of things that were previously done manually are now automated. Computerized student registration system entails a lot thing among which are on-line (in this aspect, connecting to or having access to internet), administration.

The conventional examination hall seat allotment is a mammoth task of manually allocating the seats for conducting the examination. There is a general grievance that government offices have surplus work load but the speed of efficiency in completing the tasks is very low (Adebola, Ibrahim and Yaro, (2018). A software application is necessary to decrease our manual work time (Ibrahim, and Abdullahi, 2016). The system must be user-friendly for the fast retrieval and storing of data. It has to be maintained efficiently with the graphical user interface and effective database design (Adetona, Hassan, Salawu and Omolola, 2020). The Image Processing can be done by using camera which recognizes the face of the students. The comparison is done once the face of the student is recognized for security (Chandra, Manoj, Naveen and Tharane, 2019).

Existing Queue Management System

There are many products available on the market produced by many queue management companies for delivering optimum customer service, which are Stand Alone Queue System and Centralized Control Queue System (Ahmed & Huda, 2011).

• Stand Alone Queue System

Stand Alone Queue System (SAQS) design based on First Come First Serve, FCFS queue model, where there is only one service counter operation. All customers will be managed at the single counter (Ibrahim, et. al., 2022).

• Advance Queue System

Advance Queue System (AQS) based on SAQS design where additional service counters are added to give flexibility in queue system process. This system can support up to 32 service counters and additional of 60 counters.

• Centralized Control Queue System

Centralized Control Queue System (CCQS) design is use for higher range of customers in different department. This system has the capability to support up to 20 departments which each department can have up to 32 service counters and 60 counters (Adebola, Ibrahim and Yaro, (2018).

METHODOLOGY

The new system will be achieved using Structured System Analysis and Design Methodology. The software required to design the new system includes Adobe Dreamweaver, the programming language that will be used comprises of Hypertext Mark-up Language, JavaScripts, Cascading Style Sheet and Hypertext Preprocessor (PHP), the website will be tested on a local web server “XAMPP” and Structured Query Language is used for the Database design.

Use Case Diagram

Use Cases are services or functions provided by the system to its users and to identify the primary elements and processes that form the system. The primary elements are termed as “actors” and the processes are called “Use cases”. The Use Case diagram shows which actors interact with each use case and the purpose of a Use Case diagram is to provide a graphical view of the functionality provided by the system in terms of actors, goals of actors (represented as Use cases) and dependencies between Use cases.

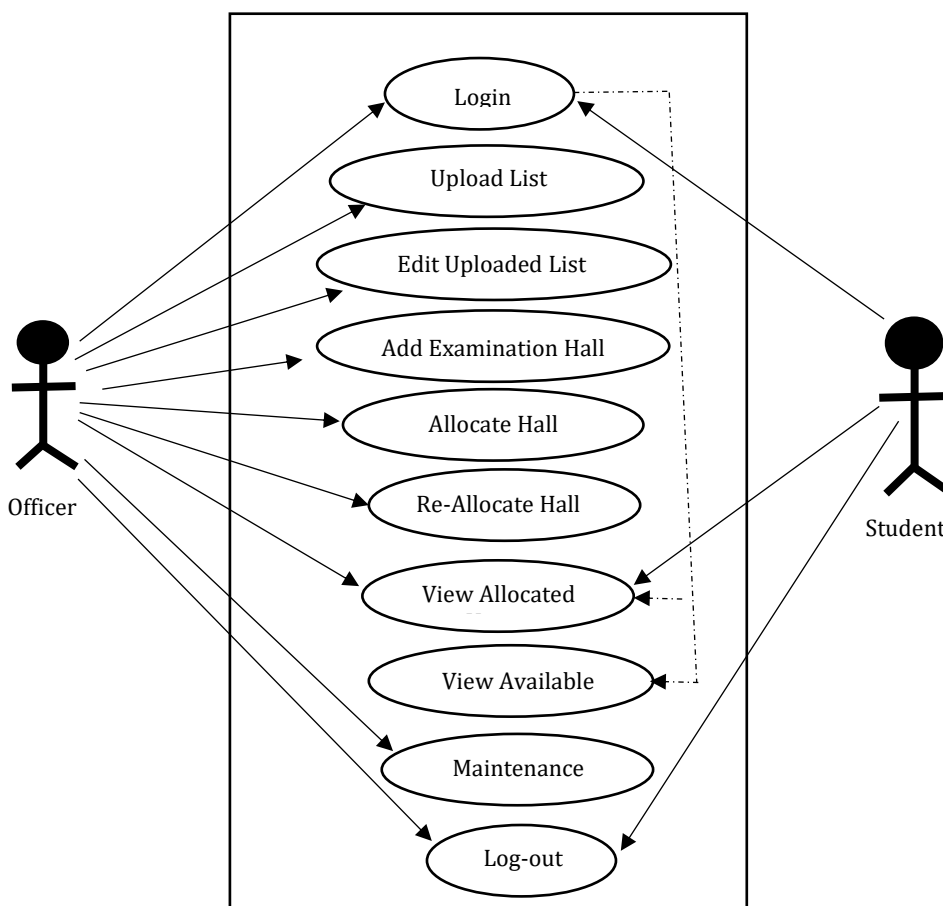


FIGURE 1: Use Case Diagram Showing the System.
 Source: Adopted from Chandra, Manoj, Naveen and Tharane, (2019).

Class Diagram

This is an illustration of the relationship and source code dependencies among classes in the unified modeling language (UML).

In this content, a class defines the methods and variables in an object, which is a specific entity in a program or the unit of code representing that entity.

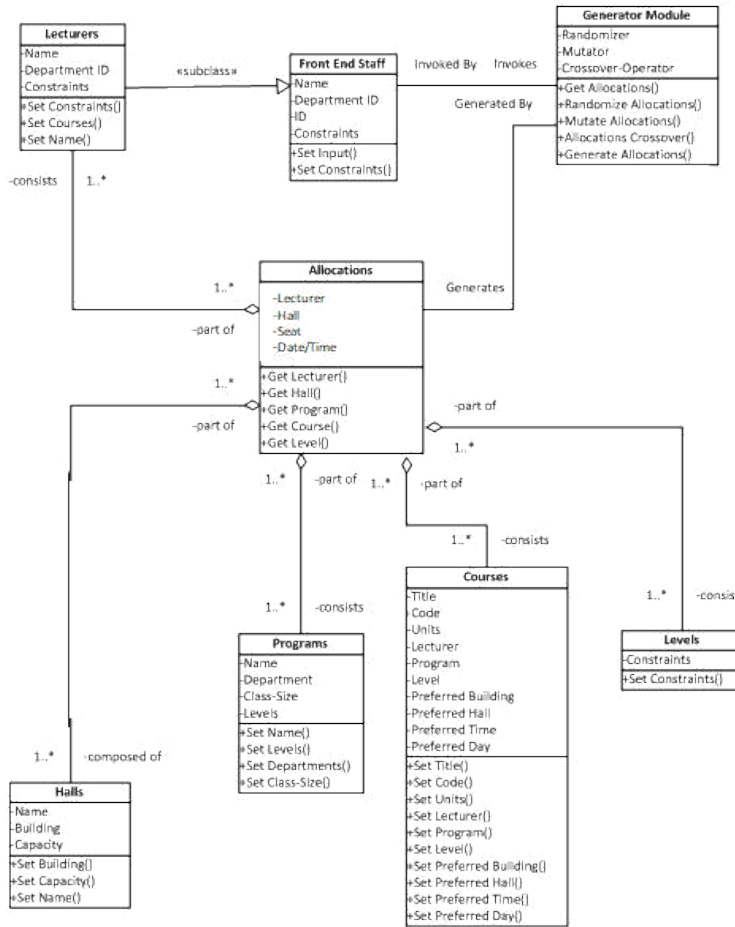


FIGURE 2: Class Diagram.

Source: Adopted from Chandra, Manoj, Naveen and Tharane, (2019).

RESULTS AND DISCUSSIONS

SYSTEM IMPLEMENTATION AND EVALUATION

The presents the contents of the system developed and explains the basic segments of it as well as the operational guide that will direct the users of the system. The sample output to the system is presented as well as the security issues relating to the system.

System Testing and Evaluation

In order to properly evaluate the designed system, the application should be installed in an offline system. Each of the units of the application can run independently but some of the units depend on the data supplied by the other. In such case, the needed operations or fill data would have to be entered first before usage by the segments that need them.

System Conversion Plan

The changeover plan is the process whereby the new system is taken to usage. However, the type of changeover employ in this research is piecemeal changeover which means the system will be taken one piece at a time, gradually will be run and tested for a period of three (3) to six (6) months; this will enable us to identify any errors that may be associated with the new system and also to ensure that the system meet its requirement.

System Installation

The various operations required for the successful installation of the system and databases as well as its implementation are explained.

Installing the Program Folder/Files

- i. Open the directory containing the program file “project”
- ii. Copy the entire folder to the C:/xampp/htdocs/
- iii. Close

Running the Software System

- i. Start XAMPP Control Panel
- ii. Open a web browser and type C: localhost /screenings
- iii. The computerized system home page will automatically be displayed

Program Sample Output

These describe and give the pictorial representation of the program or software; it shows and gives clear understanding of the design, and displays all the interfaces

The Home Page

The page briefly describes the purpose of the software which is mainly focused on business transactional activities satisfactory evaluation only. And a login buttons which link to the login page when clicked (Figure 3).

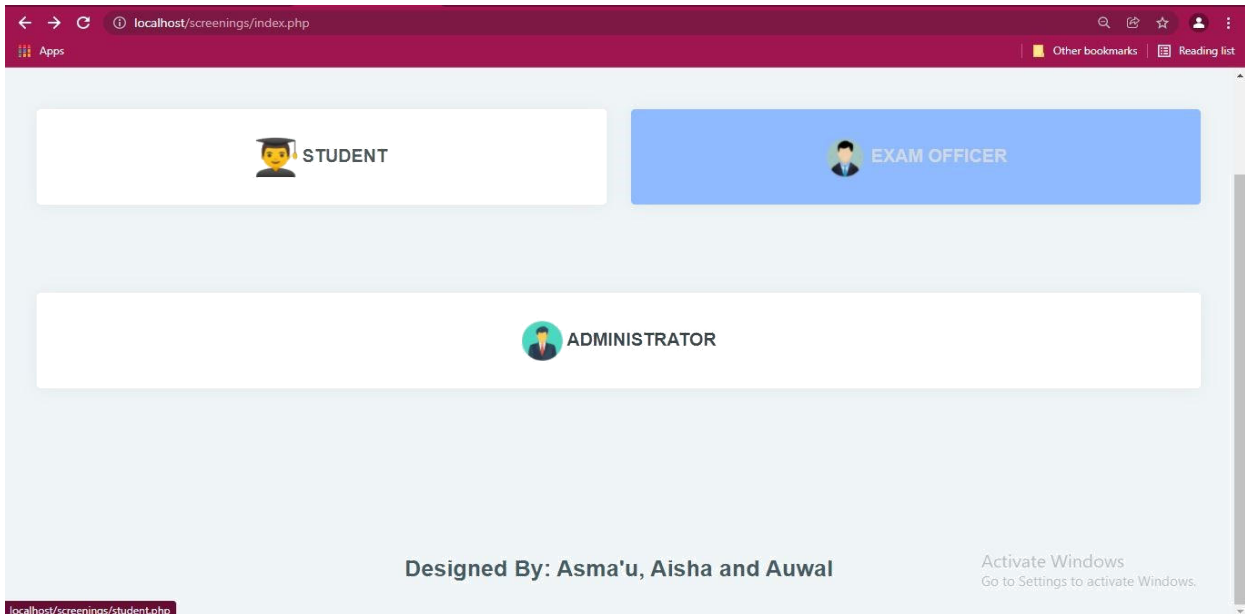


FIGURE 3: The Homepage.
Source: Researcher's Computation, 2023.

Admin Login Page

This provides an interface for admin to supply username and password to login to perform administrative task assigned to the administrator (figure 4).

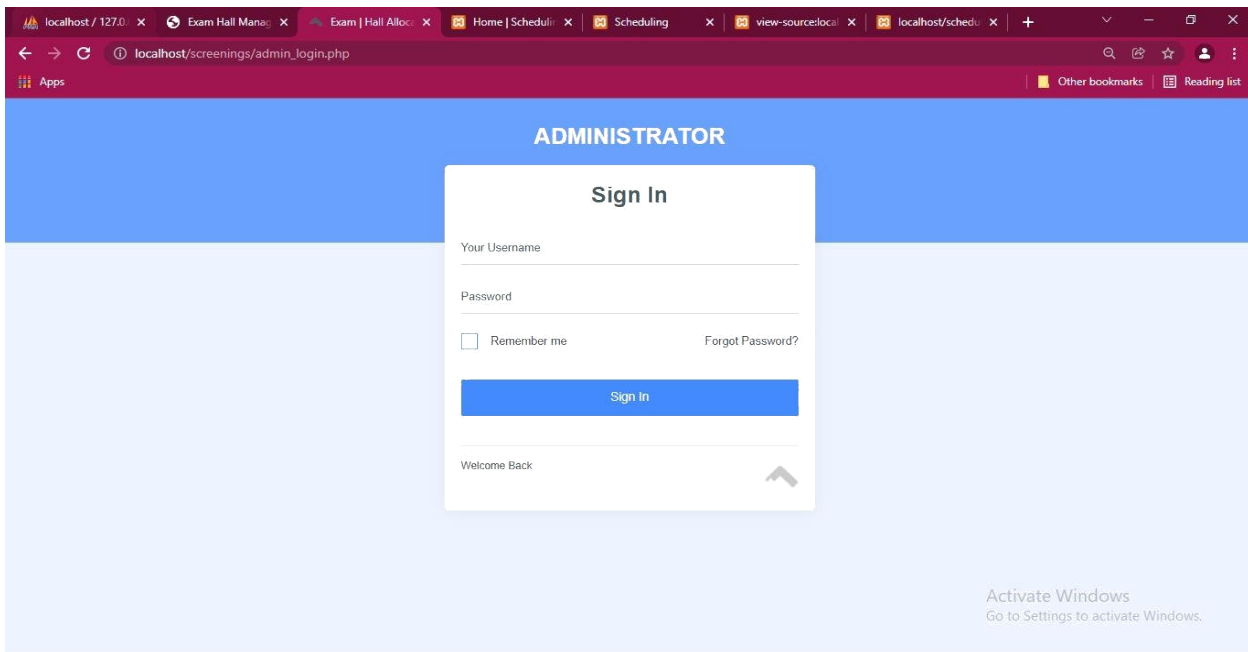


FIGURE 4: Admin Login Page.
Source: Researcher's Computation, 2023.

Admin Dashboard

The page displays the dashboard of the admin where the admin navigates to perform task (See figure 5).

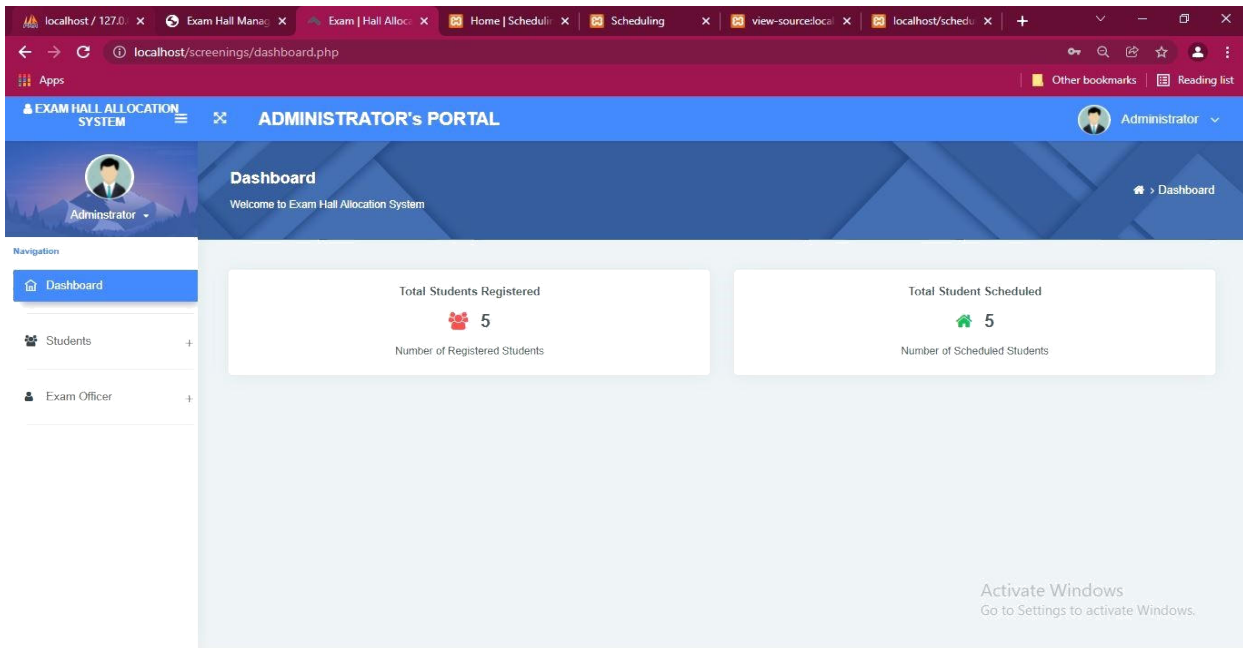


FIGURE 5: Admin Dashboard.
Source: Researcher’s Computation, 2023.

Upload Student List Page

The page allows the administrator to upload students’ list in .csv file format (figure 6).

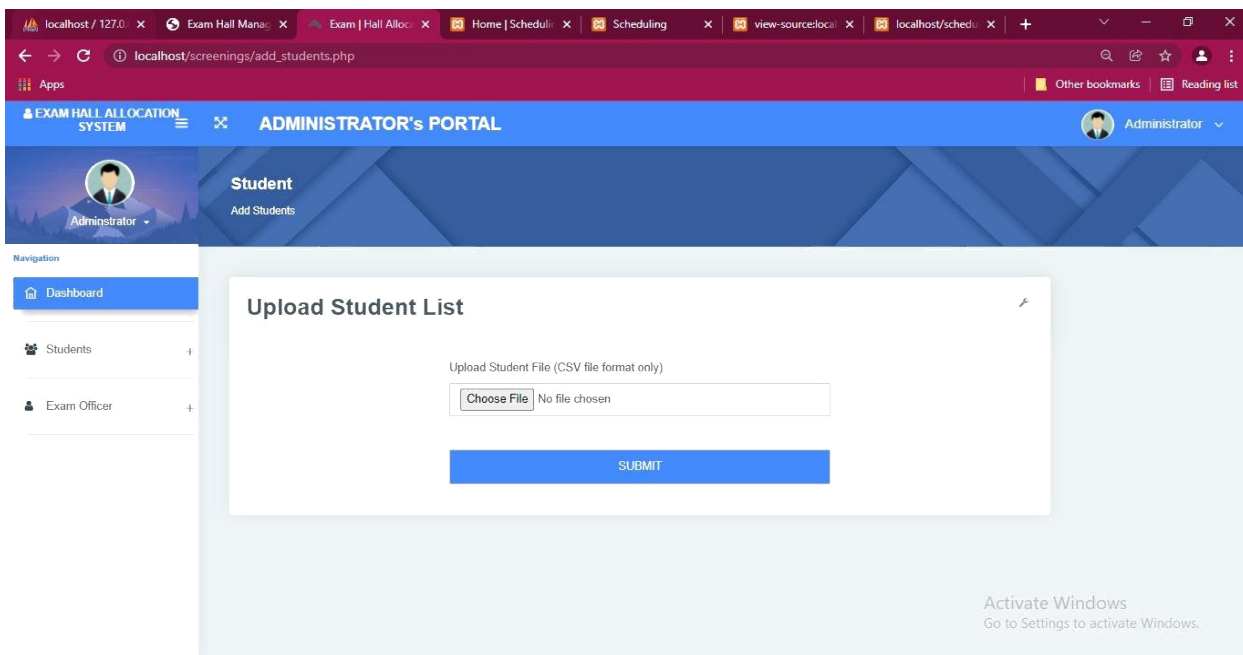


FIGURE 6: Upload Student List Page.
Source: Researcher’s Computation, 2023.

Add Exam Officer Page

This page allows the administrator to add exam officer who is responsible for the allocation of halls to student (figure 7)

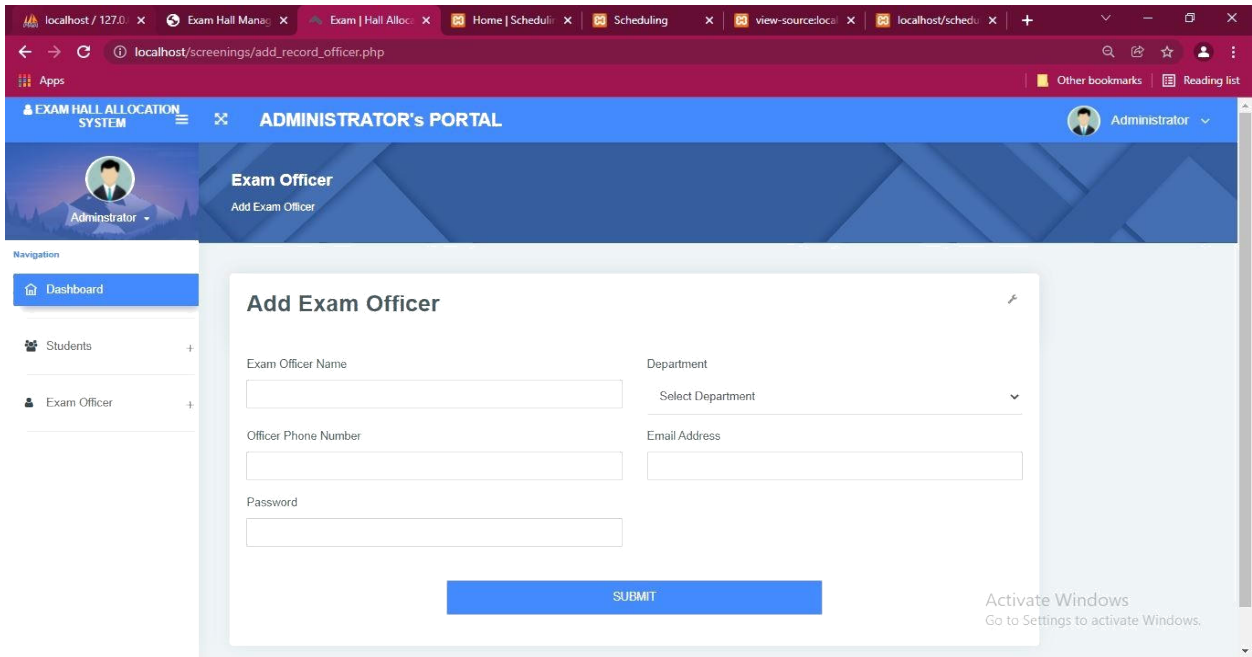


FIGURE 7: Add Exam Officer Page.
 Source: Researcher’s Computation, 2023.

Manage Exam Officers Page

This page allows the administrator to manage exam officers that have been added (figure 8).

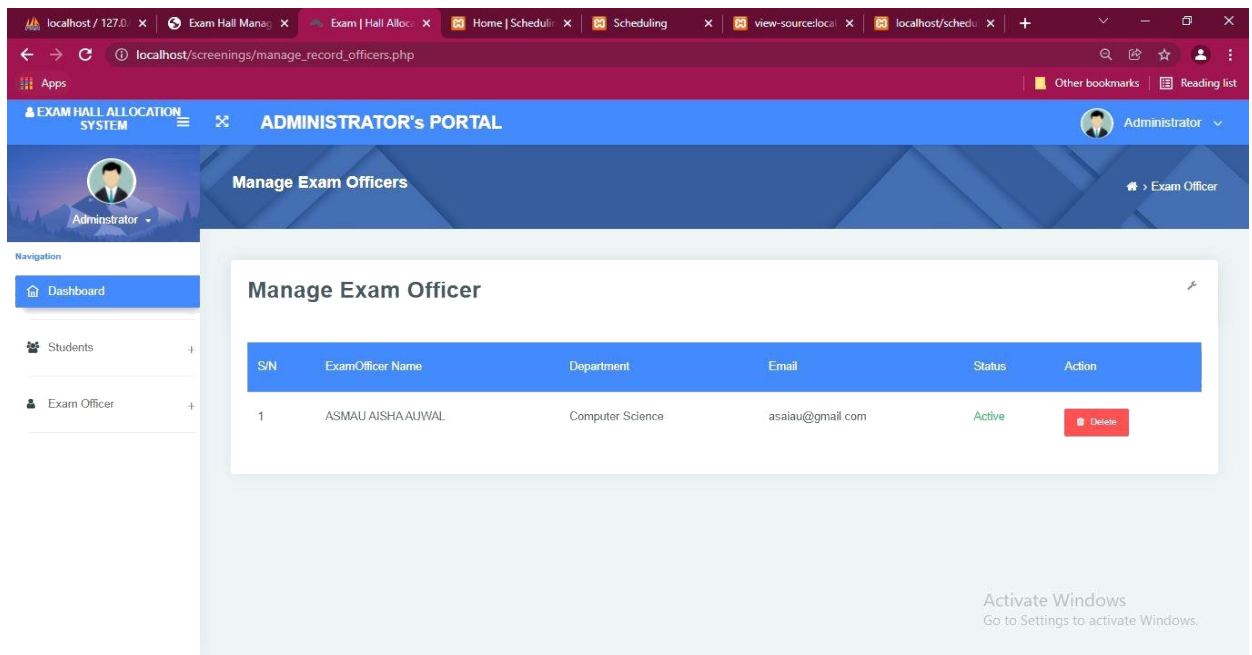


FIGURE 8: Manage Exam Officer Page.
 Source: Researcher’s Computation, 2023

Exam Officer Login Page

This provides an interface for admin to supply username and password to login to perform administrative task assigned to the administrator (figure 9).

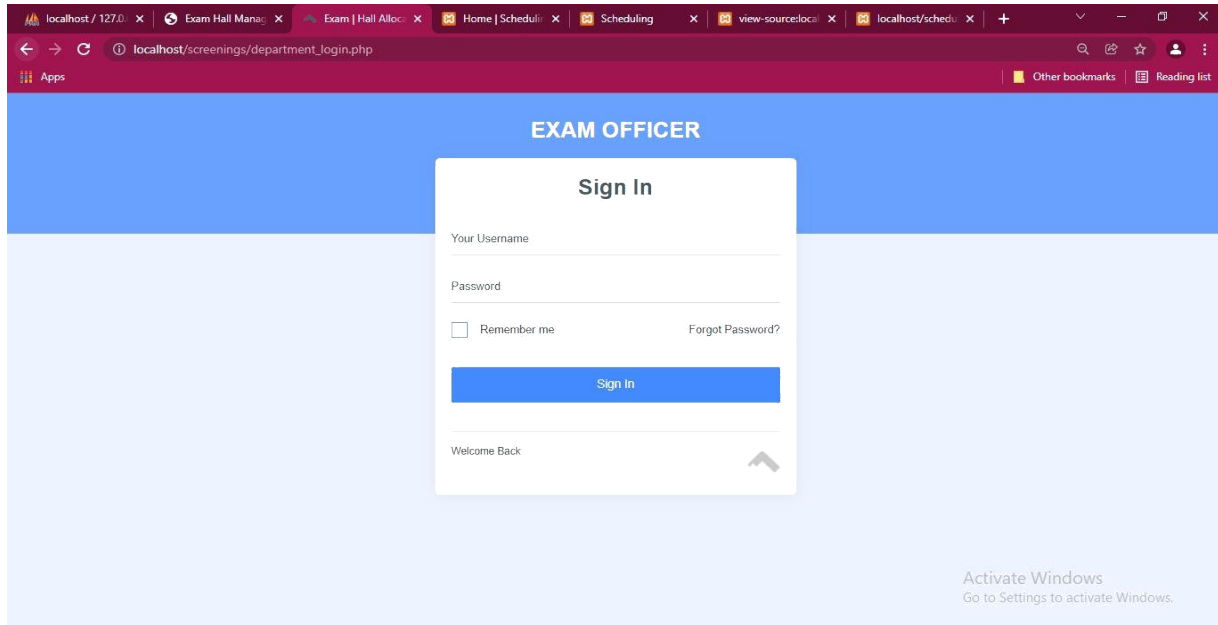


FIGURE 9: Exam Officer Login Page.
Source: Researcher’s Computation, 2023.

Exam Officer Dashboard

The page displays the dashboard of the exam officer where the admin navigates to perform task (figure 10).

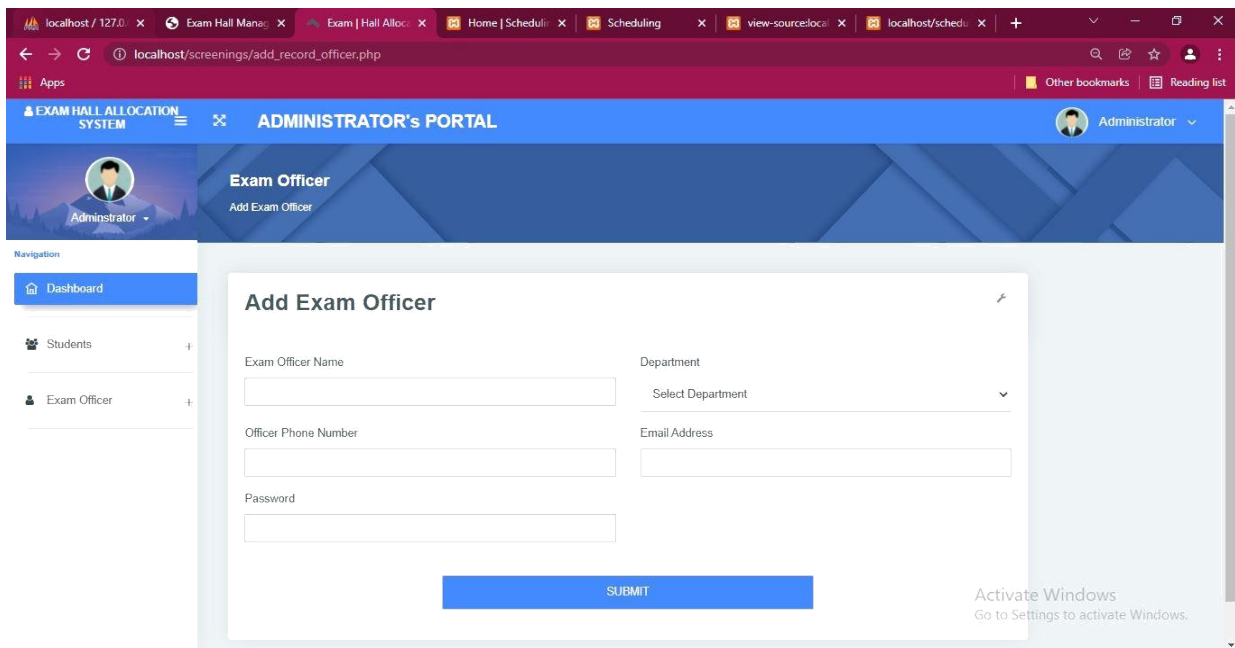


FIGURE 10: Exam Dashboard.
Source: Researcher’s Computation, 2023.

Student List Page

This page displays the list of students in the list ready to be allocated (figure 11).

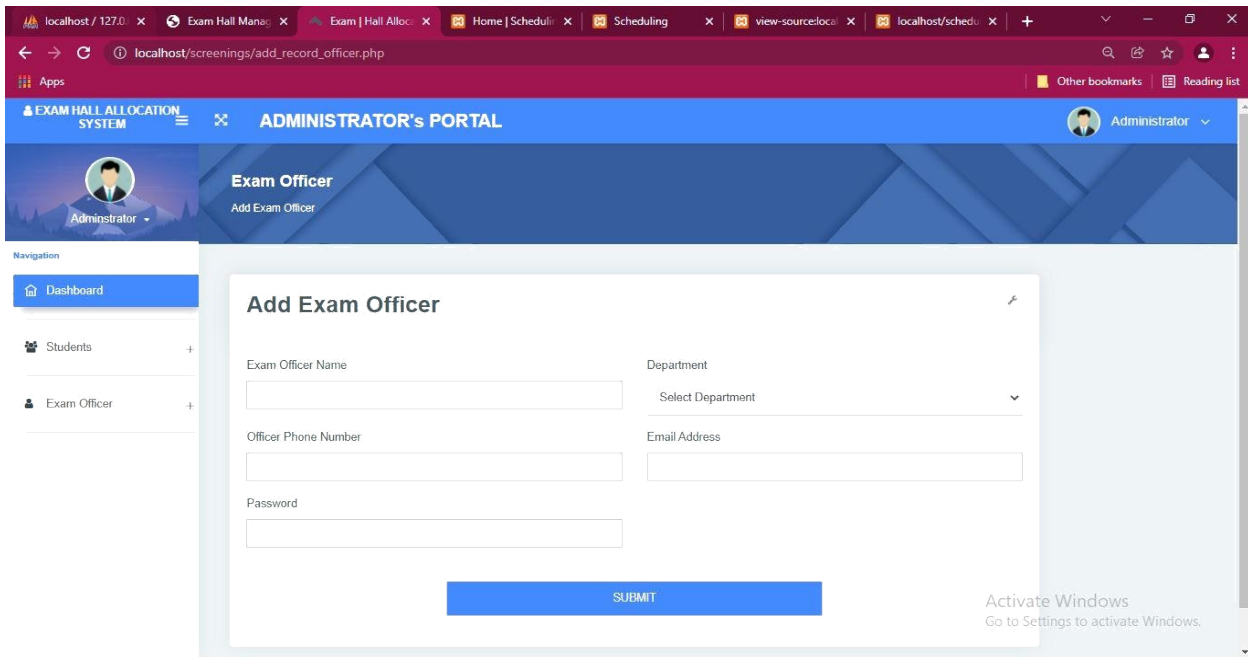


FIGURE 11: Student List Page.
Source: Researcher's Computation, 2023.

Schedule Student Page

This page allows the exam officer to schedule students into available halls (figure 12).

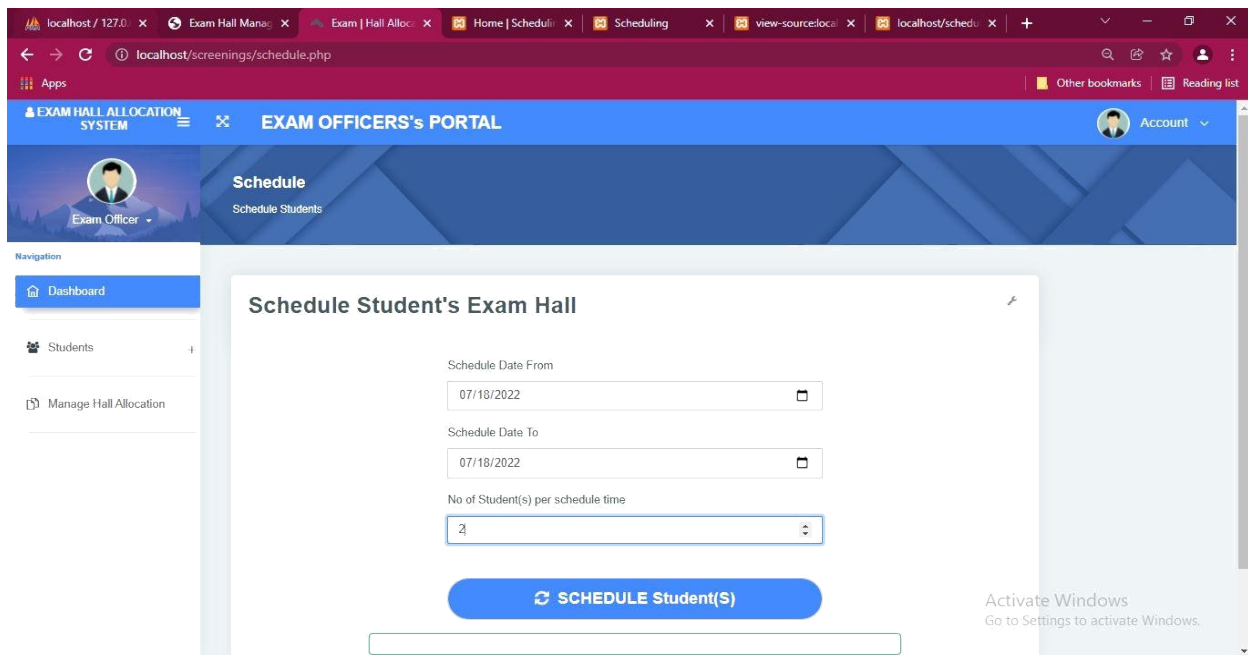


FIGURE 12: Student List Page.
Source: Researcher's Computation, 2023.

Student Check Page

This page allows the student to check the hall which allocated using registration number or e-mail (figure 13).

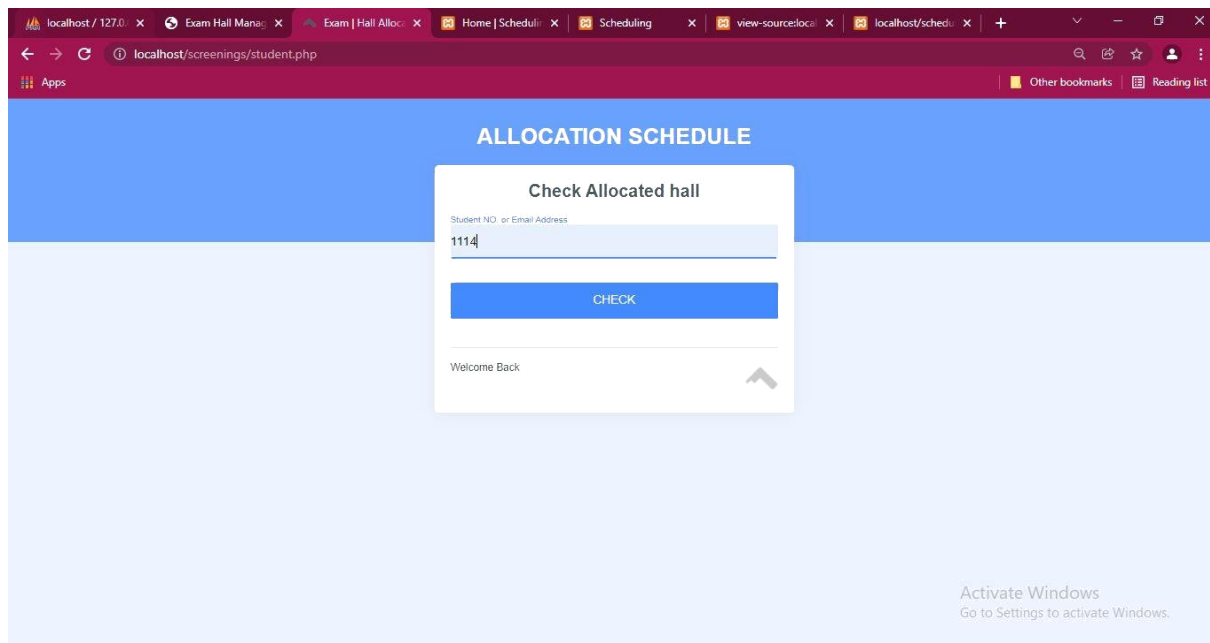


FIGURE 13: Student List Page.
Source: Researcher's Computation, 2023.

Schedule Student Page

This page is a sample output of the student allocated to a hall (figure 14).

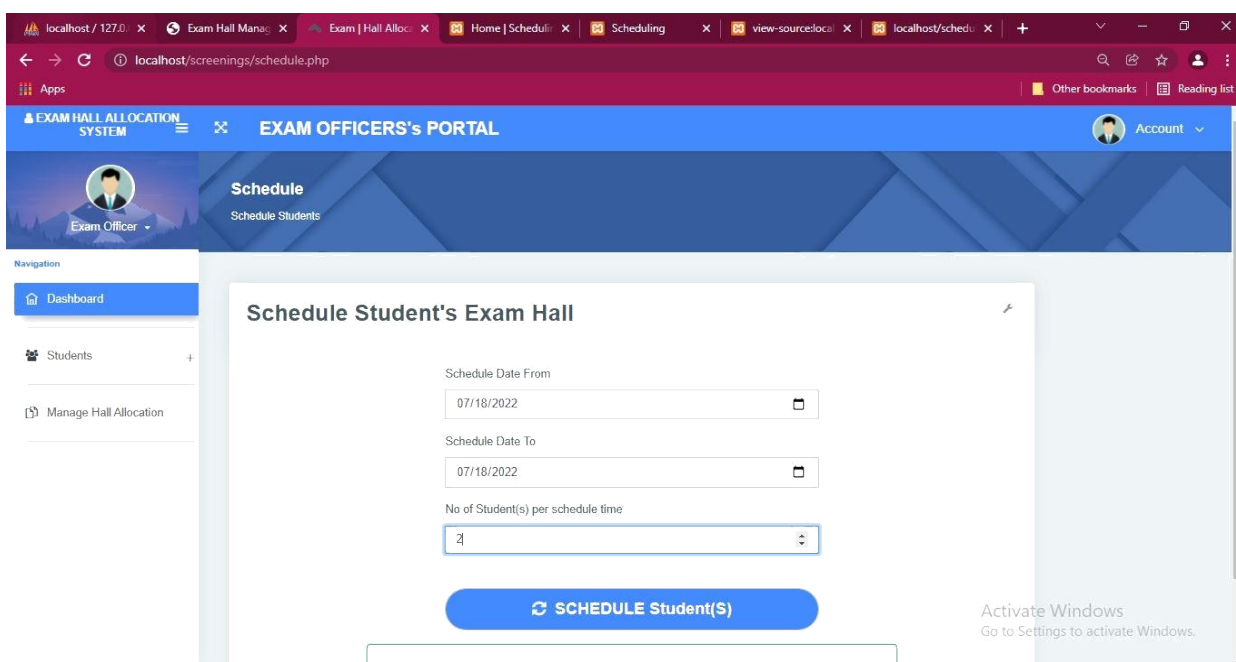


FIGURE 14: Student List Page.
Source: Researcher's Computation, 2023.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

The research covered all the necessary details involved in designing the Online exam hall allocation system. The web-based application is aimed at allocating halls only to students and keeping record in a database. The methodology focused on the study area, system design analysis, review of proposed system and architecture of the system. Other method of information generation adopted includes relevant literatures (such as textbooks.) and surfing the Internet, the concerned with presentation of the implementation, the different views of the scheduling on computer system.

Conclusion

Exams Hall Allocation System is developed using HTML, Bootstrap Cascading Style Sheet (CSS), JavaScript and PHP and MySQL fully meet the objectives of the system for which it has been developed. The system has reached a steady state where all bugs have been eliminated. As far as design is concerned no design is complete ever and there are chances of improvement each moment.

Recommendation

The recommendation of this project depends largely on the reliability of the project. It was designed to be generally accepted and used by any exam hall allocation system for

any department that is ready to transform and employ this model. It is also designed to use the present outline system of interacting with the computer without much stress. The following are some of the recommendations on this project:

- i. Invigilators and seat allocation should be included in future work.
- ii. USSD and SMS technology can be implemented on the system to notify the students with low internet access.
- iii. Integrating a GPS and that helps locate hall current location to enhance identification and other variable for optimization process system routing optimization.

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