

Enhancing Exam Hall Seating Arrangement With An Automated System For Optimal Efficiency

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Abstract- *The Exam Hall Seating Management System is an online platform designed specifically for colleges to streamline the process of examination hall allotment and seating arrangement. By offering easy access to examination information for individual students within specific classes, this system aims to modernize and simplify the traditional method of exam administration. The primary objective of developing this software is to automate the process of generating seating arrangements, eliminating the need for manual intervention during exams. Implemented as a web-based application, the system is tailored to the requirements of each institute, providing a user-friendly interface for administrators, instructors, and students alike. Through the integration of this innovative solution, colleges can expect improved efficiency in exam management, reduced administrative overhead, and enhanced convenience for all stakeholders involved in the examination process.*

Keywords- Exam hall, Seating arrangement, Automation, Efficiency, Algorithm, Student information database

I. INTRODUCTION

The main purpose of developing this program is to simplify the manual work of hall and seats. This distribution of seats must be done in such a way that every student gets a seat without collision. Students have problems to find a reserved seat in the exam hall because they are nervous during exams. This application is useful for both staff and students to automatically generate their seat [1].

This study showed that girls rise higher than boys. In such an environment, the student can get the things they need, including books, coats, handbags, etc., which made a comfortable area for the students, which in turn contributed to active learning. The seat has changed a few decades. In the 70s, the classroom that taught was oriented to the traditional line [2].

The system is a web-based application designed to manage and process the activities of the educational institution during examinations. It is an application that can be used by

all students and employees of an educational institution to facilitate communication with each other. The app is easy to customize as it is used on desktops and laptops [3].

The developed application is used in computer systems, it improves the connection between students and systems, helping the institution to provide a more open system in general. Automation of hall seating An organizational system was developed for the educational institution to simplify the allocation of halls, the seating order of students and the allocation of staff to examination halls [4].

The model contains various details in modules like student details, staff details and hall details with proper descriptions. Most of the important processes of the educational institution, such as tuition fee, student information and the number of halls available for the exam, are done manually, because all these processes are done manually, which increases the workload and is prone to mistakes [5].

II. LITERATURE SURVEY

According to Abdul Cader Mohamed Nafrees et al., 2018 The examination department is one of the main parts of colleges that provide necessary services to students and faculty, such as semester examination applications, scanned copies of certificates and student certificates, as well as lesson plans, result updates. whenever they need and wherever they are etc. Current methods have many disadvantages, such as time-consuming, on-site HR services that do not allow immediate service to students [6].

According to Mohamed Nafrees et al., 2020 A solution to avoid the existing manual method to a centralized online computer information system, which can transfer most of the work such as student registration, examination registration, result download and review, departmental SMS notification, staff and student live public discussion forum, student can download and print with examination through browsers related documents and system user interface adjustments; this system provided three different levels of access based on user

rights. In addition, the developed system can be accessed from any computer or smartphone [7].

According to Sheikh Ramzan.et al.,2019 model is useful for faculty and staff administrators to facilitate online sharing of review assignments and classrooms during the exam. An invigilator is a person who guides students in an organization during examinations. Assigning proctors to exams is an important step in the exam planning process. The problem has its own limitations and multi-objective structure. The proposed system automates the manual exam management process[8].

According to Madhuri Devi Chodey.et al.,2019 An invigilator is a person who guides students in an organization during examinations. Assigning proctors to exams is an important step in the exam planning process. The problem has its own limitations and multi-objective structure. The proposed system automates the manual exam management process by implementing a web-based application that uses an efficient algorithm to schedule exam tasks[9].

According to Shazia Anjum.et al.,2021To assign a test hall to a student that is effortless. As most of the students feel that Augea is looking for a reserved seat only for them, the concept of automatic exam hall seat generation has arisen where even a lively hall is created for monitoring tasks. The Examination Hall Allocation System is an online process developed for colleges that facilitates seat allocation[10].

III. PROPOSED SYSTEM

This project deals with the automation of whole process of examination work such as preparing examination schedule, entering the details of all the students, additions and deletions of students' details wherever required, exam details, class rooms etc.

This project also deals with allocation list, class room allocation etc. As there is a admin interference in the provider, system is highly authenticated

This project is applicable to examinations conducted in colleges, schools or any other organizations conducting examinations

In this project, a mail system has been implemented. Before each exam, the system automatically sends an email containing hall and seat information to every student.

ARCHITECTURE DIAGRAM:

Explanation

1.User Interface (UI):This is where users interact with the system. It could be a web interface or a mobile application. Users can input exam details such as exam date, time, venue, and number of examinees. They can also view and manage seating arrangements, including adding or removing students, assigning seats, etc.

2.Seating Arrangement Algorithm: This component uses algorithms to optimize seating arrangements based on various factors such as the number of students, exam constraints (e.g., separating students from the same class), accessibility requirements, and any special accommodations.

3.Students Register Number: It's used as a primary key in the student database to store and retrieve information about individual students, including their personal details, courses enrolled, and exam preferences.

4.Available Hall:It includes information such as the hall capacity, facilities available (e.g., seating capacity, audiovisual equipment), and any special requirements (e.g., wheelchair accessibility).

5.Available Desk:It includes details such as the desk number, location within the hall, and availability status (occupied or vacant).

6.SeatingNumber:It determines the physical location of each student within the examination hall. Seating numbers are typically organized in rows and columns for easy identification and navigation.

7.Current:It ensures that only eligible students are assigned seats for exams and prevents scheduling conflicts.

8.Arrear:Refers to students who have failed to pass one or more courses in previous semesters and need to clear them (referred to as arrear subjects) during the current exam session.

IV.RESULT AND DISCUSSION

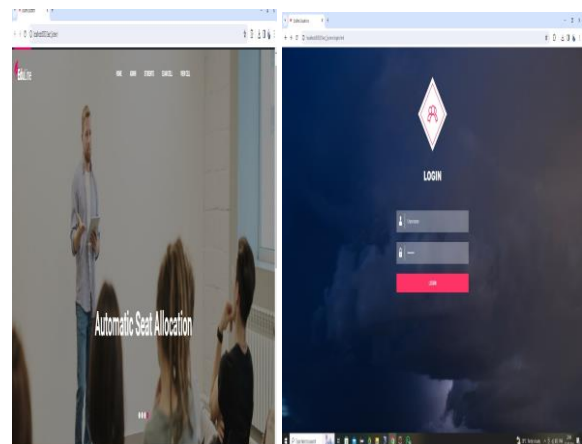


Fig 1.Home Page

Admin Login Page

a) Home Page: The Home Page serves as the entry point for users, providing essential information about the system and its functionalities. It offers a user-friendly interface designed to facilitate easy navigation and access to relevant features.

b) Admin Login Page: The Admin Login Page serves as a secure gateway for authorized administrators to access the system. It requires valid credentials for authentication, ensuring only authorized personnel can access sensitive administrative functions.

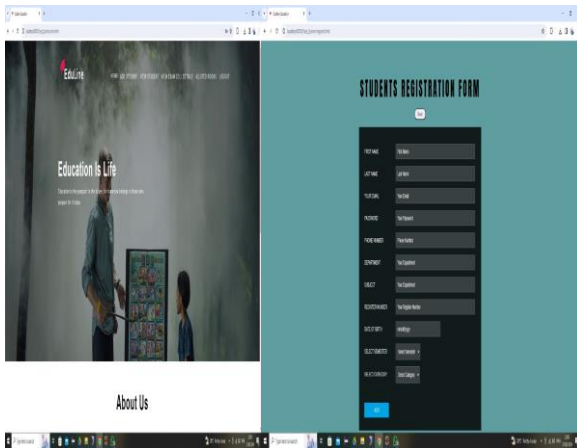


Fig 2. Home Page Add Student Page

a)Admin Home Page:The Admin Home Page serves as the central hub for administrators to manage and oversee the exam seating arrangements. It provides access to essential administrative functionalities, such as inputting candidate data, generating seating plans, and making real-time adjustments.

b)Add Student Page: Enables efficient input of candidate information, streamlining data collection. Digitizing student registration reduces errors and ensures consistency, improving administrative efficiency.

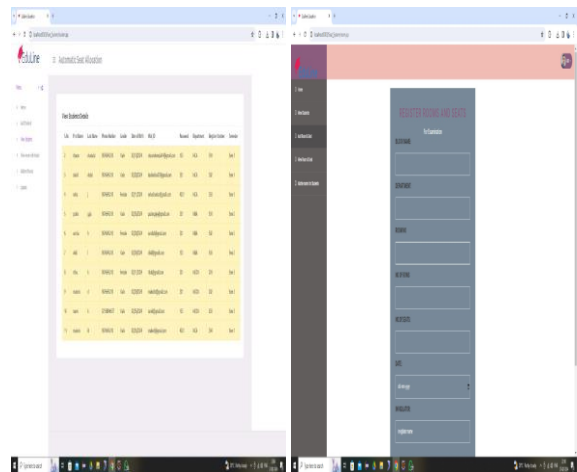


Fig3.View Student Details Add Room and Seat

a)View Student Details: Facilitates easy access to candidate information for administrators. Enhances transparency and accountability in exam administration, aiding in seating arrangement management.

b)Add Roomand Seat: Allows administrators to define exam hall configurations accurately. Streamlines venue setup, minimizing logistical errors and ensuring smooth exam experiences.

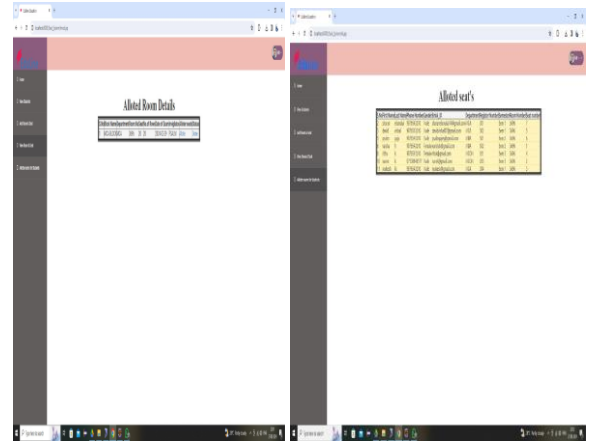


Fig3. Room Details Allotted seat 's

a) Allotted Room Details:Automated room allotment streamlines exam organization, ensuring fair distribution and optimal space usage. Candidates receive room information in advance, reducing anxiety and improving preparedness.

b)Allotted Seats:Automated seat allocation enhances fairness and security by optimizing seating arrangements based on various factors. Real-time monitoring allows for swift adjustments and compliance with regulations like social distancing.

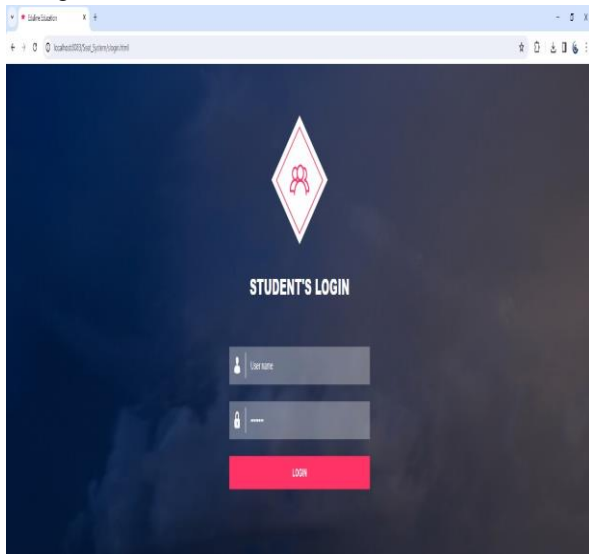


Fig4.Student Login Page

a)Student Login Page:The student login page offers candidates secure access to exam details and resources, reducing

administrative workload. Authentication measures ensure data security and facilitate effective communication.



Fig5. Student home Page

a) Student Home Page: The student home page serves as a centralized hub for candidates, offering easy access to essential exam-related information and resources. It provides a user-friendly interface for viewing exam schedules, room assignments, seat numbers, and additional materials. Authentication measures ensure data security, while real-time updates keep candidates informed and prepared.

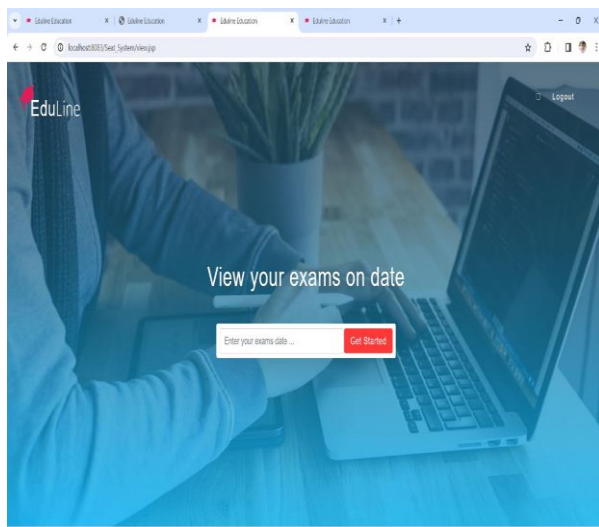


Fig6. View cell home page

a) View Cell Home Page: The view cell home page provides administrators with a comprehensive overview of exam hall arrangements and occupancy. It enables efficient monitoring and management of seating assignments, facilitating adjustments in real-time as needed. This centralized platform enhances coordination and ensures smooth exam administration.

V. CONCLUSION

The application works well and satisfy the end users. The application is tested very well and errors are properly debugged. The application is simultaneously accessed from more than one system. Simultaneous login from more than one place is tested. This system is user friendly so everyone can use easily. Proper documentation is provided. The end user can easily understand how the whole system is implemented by going through the documentation. The system is tested, implemented and the performance is found to be satisfactory. All necessary output is generated. Thus, the project is completed successfully. Further enhancements can be made to the application, so that the application functions very attractive and useful manner than the present one. In summary, automated seat assignment represents a significant advance in exam management. Using advanced algorithms and data processing techniques, this system overcomes the challenges of today's manual seating process. The system offers many benefits including time savings, fairness, error reduction, customization, conflict resolution, security, scalability, and reporting capabilities. Simplify the admissions process and ensure admissions are fair, equitable, and optimized according to pre-defined criteria and constraints. Automating the seating process reduces the administrative burden on exam coordinators by allowing them to free up time and resources for other important tasks.

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