

EXAM SEATING ARRANGEMENT PORTAL**Dr. B. Krishna¹, S. Achutha², N. Nagaraju³, Ch. Pooja⁴, P. Srujana⁵, Dr. V. Ramdas⁶**^{1,6} Associate Professor , Department of CSE, Balaji Institute of Technology and Science,
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Abstract: The “EXAM SEATING ARRANGEMENT PORTAL” is an innovative solution developed for the college to simplify the allocation of halls to the students during the exams. Manual seat allocation frequently leads to issues such as double-booked seats, misassigned locations, and confusion due to last-minute changes. These problems not only overwhelm administrative staff but also create stress for students who may struggle to find their correct seats, impacting their exam performance. This project addresses these daily challenges by centralizing seat management into an accessible online platform. Administrators can input and organize student data, including names, departments, and exam schedules, with ease. The system ensures accurate seating assignments by preventing overlaps and errors, thus improving the reliability of the seating arrangements. Students benefit from the web-based interface by being able to access their seating details online, reducing the need for physical notices and minimizing last-minute chaos. Additionally, the portal automatically sends notifications to students regarding their seat allocation, keeping them informed and further enhancing the exam experience.

Key Words: ESAP, Allocation, Customizable Parameters, Conflict Avoidance, Automatic Notification.

1.INTRODUCTION

Creating a fair and supportive environment for students during exams is essential to uphold the integrity and accuracy of the assessment process. An effective exam hall seating arrangement plays a vital role in preventing cheating, reducing distractions, and fostering a comfortable, stress-free setting where students can perform at their best.

A well-thought-out seating plan should consider factors such as the number of students, the hall's size and layout, and any special requirements for individual students. It should also allow invigilators to easily monitor the room, ensuring a secure environment that discourages any potential misconduct.

By adopting a systematic and thoughtful approach, exam organizers can establish a seating arrangement that is fair, transparent, and conducive to academic success. This introduction outlines the key guidelines for designing a seating plan that promotes a smooth and efficient examination experience for everyone involved.

2.LITERATURE SURVEY

The seating arrangement for examinations is currently managed manually, involving several intricate steps. Initially, the examination section collects detailed registration information for each student, organized by branch and year. This data includes the student's name, roll number, branch, year, and the list of subjects they are registered to take. The administrator must then tally the total number of students registered. Following this, they select appropriate rooms and distribute students across these rooms. Once the rooms are allocated, the administrator prepares a list of students for each exam and each room, ensuring that the seating arrangement is organized based on the number of students in each room. This meticulous process needs to be repeated for every exam, branch, and year, highlighting the manual effort and potential for errors involved in managing seating arrangements.

- **SeatAllocation System by Government Engineering College, Kerala (2018)**

The Seat Allocation System developed by Government Engineering College, Kerala, in 2018 automates seat assignments for exams based on roll numbers, departments, and hall availability, reducing errors like duplicate seating. While efficient, it offers limited customization for different exam types and minimal flexibility for last-minute changes, such as room adjustments. Additionally, it lacks sending notifications to students.

- **Exam Seat Allotment Portal at Indian Institute of Technology (IIT) Delhi (2019)**

The Exam Seat Allotment Portal at IIT Delhi, developed in 2019, is part of a broader academic management system that enables administrators to assign seats based on student data, exam halls, and seating capacities. It provides a detailed seating chart, helping manage seating efficiently. However, the system is heavily dependent on other academic systems, meaning downtime in those platforms can affect seat allocation.

- **Examination Hall Seating Arrangement System at the University of Lagos (2020)**

The Examination Hall Seating Arrangement System at the University of Lagos, developed in 2020, automates seat assignments by department and class using Python and a web interface. It provides real-time updates and reduces conflicts, but is limited to the campus network, hindering remote use. The system is restricted to specific halls, making it less adaptable for multiple locations or online exams. Additionally, real-time adjustments are possible but not user-friendly, making quick changes difficult for administrators.

- **Automated Exam Seating Arrangement System in African Universities(2021)**

The Automated Exam Seating Arrangement System developed by a consortium of African universities in 2021 uses PHP and MySQL to support seat allocation for large exam groups across multiple venues. It offers encrypted student data and dynamic seat assignments based on exam schedules. However, handling large cohorts can slow down performance due to server load, and the system requires strong internet connectivity, which may be a challenge

in areas with unreliable access. Additionally, the portal does not integrate with external tools, limiting its flexibility for institutions using other software for exam management.

3.EXISTING SYSTEM

Current exam seating arrangements largely rely on manual processes that are time-intensive and error-prone. Administrators manually collect student data, assign rooms, and prepare seating charts for each exam session. This approach often results in issues like double-booked seats, misplaced students, and high administrative burden, particularly during last-minute changes.

While some institutions have implemented automated systems, these still face limitations. For example, the systems developed at Government Engineering College, IIT Delhi, University of Lagos, and African universities offer basic automation but lack flexibility for different exam formats, real-time adjustments, and remote accessibility. They are also typically unable to send automated notifications to inform students about their seating assignments, which could reduce confusion.

4. PROBLEM STATEMENT

Manual exam seating arrangements present a range of issues, including double-booked seats, incorrect assignments, and challenges with last-minute changes. These complications disrupt the examination process, causing stress for both students and administrative staff. During exams, any confusion about seat allocation can impact students' focus and performance, as well as place a significant burden on staff responsible for managing seating charts, rooms, and student details.

Although several automated systems have been developed to streamline seat allocation, these existing solutions often lack flexibility and customization. They may not effectively support diverse exam types, quick adjustments, or remote access. Additional limitations include dependencies on other institutional systems, network restrictions, and the inability to integrate external tools, which reduces the efficiency of these solutions. The need for a more adaptable, user-friendly, and accessible system that meets institutional demands for error-free, centralized seat management remains largely unmet.

The proposed project addresses these challenges by developing an advanced, web-based seating arrangement portal that simplifies seat allocation, minimizes errors, and improves the student experience. This portal automates key functions, including room assignments, and sends automatic notifications to students through email, ensuring they are well-informed of their seat details. The goal is to create a comprehensive, reliable platform that enhances the examination process for all stakeholders involved.

5.PROPOSED SYSTEM

Our Exam Hall Seating System is a user-friendly platform created to simplify and streamline exam management. Administrators can effortlessly add students and assign them to specific exam rooms. Students can then log into the website to view their designated exam rooms, and the system automatically sends seat allocation notifications to students via email, ensuring they are well-informed. This organized approach minimizes confusion, reduces errors, and enhances the overall efficiency and organization of exam day.

Advantages of Proposed System

The Exam Hall Seating System simplifies exam management with its organized and user-friendly platform. Here's how it benefits the institution:

- **Easy Student Addition and Room Assignment**

Admins can quickly add students and assign exam rooms, reducing manual errors.

- **Student Access to Exam Room Info**

Students log in to view their designated exam room and seat, ensuring easy access to critical information.

- **User-Friendly Interface**

The intuitive design makes it easy for both admins and students to use.

- **Automatic Notifications via Email**

The system sends email notifications to students with their seat and room details, keeping them informed and reducing confusion.

- **Simplified Exam Management and Fewer Errors**

This centralized system organizes seating arrangements, eliminates conflicts, and ensures a smooth exam day.

6.METHODOLOGY

Our project includes three modules:

- Admin Module
- Student Module

Admin Module

The Admin module is responsible for managing all aspects of the seating arrangement portal. Key operations include:

- **Manage Class:** Administrators can add, delete class information.

- **Manage Room:** Assign and organize exam rooms based on student numbers and other criteria.
- **Manage Students:** Add,remove student records to ensure accurate seat allocations.
- **Manage Allotment:** Allocate seats to students based on their department, exam schedule, and room availability.

Student Module

The Student module provides an interface for students to view their seat allocations and other relevant details.

- **Dashboard:**

A personalized dashboard that shows students their seating arrangements, including room details along with any important notifications regarding their exam schedule.

7.CONCLUSION

In conclusion, our Exam Seating Arrangement Portal offers a comprehensive solution for manual exam seating management, empowering administrators, students with a user-friendly and efficient platform. With its robust features and intuitive interface, the system streamlines exam preparations, reduces errors, and enhances the overall exam experience.

Looking ahead, the integration of machine learning algorithms will revolutionize the system, automating seating arrangements, optimizing resources, and providing personalized experiences. This future enhancement will solidify our system's position as a cutting-edge solution for educational institutions, setting a new benchmark for exam management excellence.

- Comprehensive solution for exam seating management
- Streamlines exam preparations and reduces errors
- Enhances overall exam experience
- Future automation using machine learning algorithm
- User-friendly and efficient platform
- Revolutionizing exam management for educational institutions

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