Automatic Exam Hall Allotment

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Abstract:- Exam hall seating arrangement is a complex task when allocation is to be done to numerous students. Maintaining a proper exam hall setup is one of the major concerns in many institutions. Automating this will reduce manual work and less paperwork. Our proposed work implements a PHP application with CRON job using an open-source package – PHP Mailer to send notification through email one-day prior to the exam date. This work also includes auto-allocation of seats based on the exam dates and timings, thereby ensuring no two students are allotted to the same seat. This project implements staff management, student management and hall seating management. Report generation is not achieved in many applications, and it is manually done. This is achieved in our project using the TCPDF open-source package, by generating PDF of the seating arrangement. The hall invigilating staff receive a mail with a PDF report showing details of every student assigned to the hall. The students receive a mail one-day prior to the exam and also an hour before the start of the exam starting their exam date, allotted hall number and block details.

Keyword:- Exam Hall, Arrangement, Management, Invigilating.

I. INTRODUCTION

Automation in Examination Hall Management is a demanded requirement in every college. The Examination Hall Management System must be capable of allocating halls to different batches of students. In many existing approaches this hall allotment is still a manual work. Automation can be implemented on modules like hall allocation, notification to students. By automating this work, we can simplify the allocation of halls thereby the seating arrangement for different batches of students is automated during exams. The information is sorted alphabetically for a particular hall, which will be provided by the teacher for a respective department. This system is also helpful in finding the examination eligibility criteria of a student of the department. For this system modules like student management, staff management, room management, and exam management are built as base-modules. Here hall management is automated to allot seats to the students according to the available capacity of the exam hall. This dynamic allocation helps in monitoring the hall information such as when the hall is busy, who is allocated in a hall, who is invigilating the hall, etc,. This leads to an efficient hall allocation system where no two students are allotted in the

same seat. The real-time dimension of the hall structure is also taken into consideration as rows and columns, thereby bringing the exact seating structure of the hall. Notification system is maintained by triggering emails to both students and staff stating their exam and hall information.

➢ *Problem Statement*

The web applications are built to perform most of the CRUD operations only. Only some applications are automated and maintain a notification system. This is not achieved on most of the Exam Hall seating arrangement applications. Hence, the need for automation in exam hall seating arrangement is implemented.

➢ *Problem Objective*

- To build a PHP web application for exam hall seating arrangement.
- To automate the exam hall seating arrangement web application in such a way that the exact status of the hall is automatically monitored to show the exact remaining seats in the hall after allocation on a real-time basis.
- To incorporate notification management in the web application using third party package named PHP Mailer.
- To provide necessary reports such as exam report, seating report, student list report, etc, are generated using a third-party package named TCPDF.

II. LITERATURE REVIEW

This paper is dedicated to simplifying the task of manually seating students in an examination hall. The tool provides an effective measure to dynamically place students in an examination hall just by providing the number of rooms available. This program was developed in C/C++ language referred from various sources. The main agenda of the paper to describe the working of the software and how it is used to lessen the mammoth task of manually allocating seats during an examination. This research can be further extended to seating planning in conferences, weddings, movie theaters etc.[1]

To simplify examination hall allotment and seating arrangement for the student, an application for automatic seating arrangement is developed. Using the above application, the examination information of a particular student in a particular class can be accessed. Main aim of the project is to assign the student, exam hall which is hassle free. Because most of the students feel Augean to search their allotted seat, the concept of automatic exam hall seat

generation has come up, where even the hall for invigilators, for the invigilation duty is generated. Exam Hall Seating Arrangement System is an online process developed for colleges to make the seat allocation simpler. In this project traditional approach of conduction of exams is turned to computerized way. The software helps in generation of report of seat arrangement made. The project is developed as a windows-based application. Students attending the exams their details will be stored, which consists of name, registration number, branch & hall number. Details of the hall include, number of halls in the institute & name of the hall. Details of batch include the department to which student belong CS, ME, CE etc. Details in modules such as Students Details, Examination Timing Details, and Hall Details with the proper descriptions will be monitored.[2]

Exam seat allocation is one of the major concerns in quality education. With the increasing number of students, subjects, departments and rooms, exam seat management becomes complex. Maintaining a decent exam environment with the proper seating arrangement is one of the difficult jobs for authority. This research offers solution for exam seating arrangement problems that can be achieved through the sequential execution of three proposed algorithms. This research offers a solution for preventing some exam hall cheating by arranging seats for large students and it also finds out the best combination of rooms to be assigned for the exam to organize perfect seating based on the room orientation and size, number of students, differentiation of subjects. To do this research, we have collected data and methods from a university those are being used for their exam seating arrangement. By using university exam information, we test our algorithms. It provides better seating plan then the manual system used by the university.[3]

Examinations are the most crucial section of any educational system. They are intended to measure student's knowledge, skills and aptitude. At any institute, a great deal of manual effort is required to plan and arrange examination. It includes making seating arrangement for students as well as supervision duty chart for invigilators. Many institutes perform this task manually using excel sheets. This results in excessive wastage of time and manpower. Automating the entire system can help solve the stated problem efficiently saving a lot of time. This paper presents the automatic exam seating allocation. It works in two modules First as, Students Seating Arrangement and second as, Supervision Duties Allocation. It assigns the classrooms and the duties to the teachers in any institution. An input-output data is obtained from the real system which is found out manually by the organizers who set up the seating arrangement and chalk out the supervision duties. The results obtained using the real system and these two models are compared. The application shows that the modules are highly efficient, low-cost, and can be widely used in various colleges and universities.[4]

This research is dedicated to simplify the work of manual seating arrangements for the examination hall. The exam seat arrangement is one of the difficult and complex jobs for universities/collages. Due to the large number of students, subjects and rooms, the exam seat management becomes a complex one. This paper offers solution for the exam seating arrangement difficulties. The proposed system provides the seating arrangement for large number of students and helps in preventing exam hall fraudulent activities. It also provides an easy way for the students to find the examination hall through e-mails.[5]

III. SYSTEM ANALYSIS

➢ *Existing System*

Existing approaches include a lot of manual work to be done that consumes a lot more time. In the earlier system, everything had to be done manually, that include exam hall allotment, insertion of students. Apart from this, there wasn't a specific login provided to a student. The staff have to manually add the halls, allocate students manually, the availability of the hall has to be checked manually which also triggers wrong allocation of exam halls. Hall details are visible only to the staff and students can't verify it. In some applications, only the admin can view the hall details. PDF generation wasn't done properly in conventional systems.

➢ *Proposed System*

Our proposed approach reduces a lot of manual work and reduces the time spent creating and updating records. Importance to staff and student usage preferences are prioritized and the application is constructed accordingly. Students have a separate registration page where staff don't need to manually add each student. Students have separate login so that they can cross check their allotted exam hall and exam details. Staff also have access towards student management, exam management. Staff can allocate more than one exam at a time simultaneously. Whenever a staff allocates an exam hall, the current availability of the hall is automatically retrieved for easy process. The status of each exam is regularly updated using CRON jobs. We used the PHP Mailer Package to intimate both students and staff regarding the latest exam. They receive mail one day prior to the exam date. The students receive exam details along with hall details in their mail. While the staff receive exam details along with the students list. We used TCPDF package to generate reports such as exam-wise students list, department-wise students list. These reports are attached in mail and sent to the respective hall invigilators.

IV. MODULE DESCRIPTION

1. Staff Management
- Admin can perform create, read, update, delete operations on staffs.
- Staff can login to use the functionalities in the system
- Staff can perform create, read, update, delete operations on students.
- Staff information includes name, department, email, phone number.

2. Student Management
- Admin can perform create, read, update, delete operations on students.

- Students can register and login themselves.
- Students can login and check their allotted exam halls.
- Student information includes name, department, batch, email, phone number.

3. Department Management
- Admin can perform create, read, update, delete operations on departments.
- Department information includes department name.

4. Batch Management
- Admin can perform create, read, update, delete operations on batches.
- Batch information includes batch year, department it belongs to.

5. Block Management
- Admin can perform create, read, update, delete operations on blocks.
- Block information includes the department it belongs to, block name.

6. Room Management
- Admin can perform create, read, update, delete operations on rooms.
- Information includes room name, room capacity, room dimensions, block it belongs to.

7. Exam Management
- Both admin and staff can perform create, read, update, delete operations on exams.
- Exam information includes exam type, date & time, subject details, department.

8. Hall Management
- Both admin and staff can perform create, read, update, delete operations on halls.
- Hall information includes date & time, allocated capacity, remaining capacity, exam details, staff assigned, room it belongs to.

9. Exam Students List Report
 Department wise students list and Batch wise students list are generated as PDF.

10. Exam Hall Notification Management
 Email notification is sent to both staff and students with appropriate exam details. students list. We used the TCPDF package to generate reports such as exam-wise students list, department-wise students list. These reports are attached in mail and sent to the respective hall invigilators.

V. CONCLUSION

All educational institutions can be greatly benefited by this application as it eases seating arrangements by allocating staff and student seats and rooms automatically. As a result of the project, the workload of staff and students has reduced. Simplifying the process of assigning exam duties to staff and exam rooms to students benefits all educational institutions. Since the data is kept in a centralised database, access to it is always possible.

VI. FUTURE ENHANCEMENTS

By keeping the hall ticket as a file, the current system can be improved to make it easier to examine the statistics about the hall ticket collected. Create a seating arrangement and insert the timetable using PHP by entering the time and date for the specific papers. Also, students can use the exam timetable database to view their exam locations and timing. Automatic timetable database retrieval through the internet is necessary, and seating must be provided for each specific day and session.

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