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Reliable Examination Management System

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Abstract: Faculty and staff members must perform invigilation duties as a prerequisite for conducting examinations, such as exams in universities. The preparation of an invigilation duty list is a laborious task in educational organizations, exam authorities, etc. It becomes more complex when more invigilators are involved for examinations scheduled daily in two or more shifts for a greater number of days. Here, we have discussed the development of a system that can generate an invigilation duty list for any type of examination. This automated system will take some required data, like staff lists, exam dates, and the number of invigilators on the days, as input and produce an invigilation duty list based on fed data. It can be useful with this approach, one may cut down on the time wasted creating the invigilation duty list by hand in any organization, including universities and institutes where exams are held.
Keywords: Exams, Invigilation, Staff members, Universities.

I. INTRODUCTION

The present schedule invigilation committee came to understand the value of a methodical and creative approach. Their goal was to design timetables that reduce mistakes as much as possible while allowing lecturers to select particular days and times for their invigilation responsibilities. The committee aimed to strike a balance between flexibility and efficiency so that instructor preferences could be accommodated in a methodical manner. This method attempted to lessen scheduling errors while meeting the needs of lecturers for certain invigilation dates and hours. It is difficult to create an exam invigilation timetable. Exam department responsibilities include scheduling exams in a timely manner, avoiding interfering with teachers' grading time, and ensuring that no teacher is supervising their own topic. Due to the random assignment of invigilation duties, there was a lot of mutual swapping amongst the lecturers resulting in confusion, misunderstandings, and complaints on uneven duty distribution.

II. LITERATURE REVIEW

1) *S. Priya Dharshini, M. Selva Sudha, Mrs. V. Anitha Lakshmi, "Exam Cell Automation System," International Journal of Engineering Science and Computing (2017), Volume 7, Issue no3.*

Authors in [1] says that examination is a core activity of any educational institution. As the examination arrives there exists a lot of work like consolidating the time table, seating arrangement and invigilation allotment which will be done manually and it takes lot of time and requires man power. Thus, an automated system would solve the above stated problem in just few clicks of work. The purpose of developing Examination Management Automation System is to computerize the traditional way of conducting exams. It is a web and android application that can be used by students and exam cell coordinator using their smart phones or PCs. The project keeps track of various details in modules such as Students Details, Staff Details, and Hall Details with proper descriptions. It also has some features to generate reports for bundle handovers, absentee's statement and roll lists.

2) *Dayanand G Savakar, Ravi Hosur, "Automation of Examination System", International Journal of Science and Research, Volume 4 Issue 11 November 2015.*

Authors in [2] says that Allocation of faculty will be done in the excel sheet. And also, allocation of thousands of students to particular block is a hectic work and that will be done manually thus it may take lot of time and require man power. Thus, an automated system would solve the above stated problem in just few click work. An automated system can be used through cloud computing technology that facilitates every college to provide their student and staff information and get the results of allotment. And by this way even University can track the details of allotment with each institute.

3) *Digital Persona Incorporation (2012), Best Practices for implementing Fingerprint Biometrics in Application. A Whitepaper*

Authors in [3] says that embodiments may take the form of devices and methods to help expedite matching biometric data in a validation process.

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One embodiment, for example, may take the form of a method for biometric validation including receiving a biometric input and retrieving metadata data of a most recently matched template. The method also includes evaluating the metadata and selecting one or more nodes from the most recently matched template for comparison. Additionally, the method includes comparing the selected one or more nodes with the received biometric input and determining if the selected one or more nodes match with the received biometric input. Also, the method includes validating the received biometric input if the selected one or more nodes match with the received biometric input.

4) *Josphine Leela R. and Ramakrishnan M. (2012). An efficient Automatic system using Fingerprint Reconstruction Technique. International Journal of Computer Science and Information Security, 10(3):1-6*

Authors in [4] says that Biometric time and attendance system is one of the most successful applications of biometric technology. One of the main advantages of a biometric time and attendance system is it avoids "buddy-punching". Buddy punching was a major loophole which will be exploiting in the traditional time attendance systems.

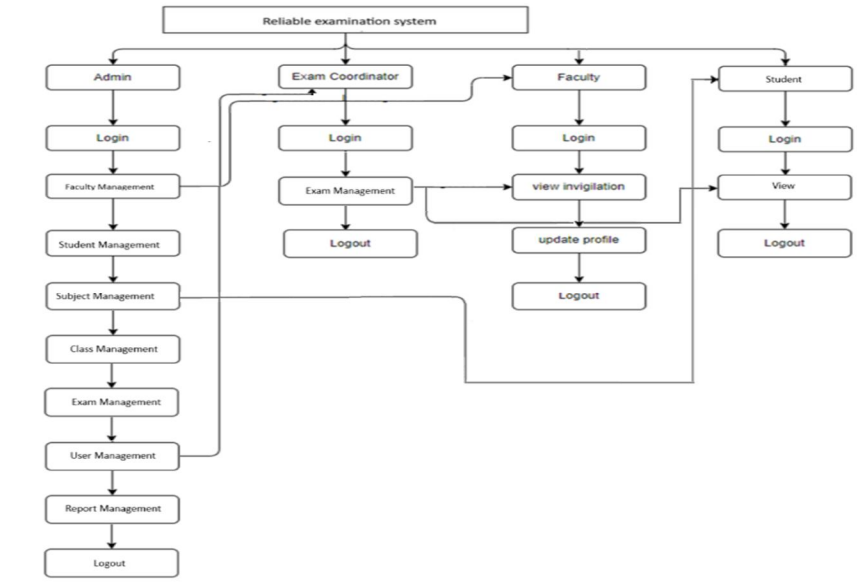
5) *Ong, M. L., Liew, L. H. and Sim, J. (2014). Examination Invigilation Scheduling System In Optimising Lecturers' Preference. UiTM Sarawak: Unit of Research, Development, and Commercialization (URDC), Sarawak: University Technology Mara*

In this paper, the examinations Invigilation Scheduling System aims to reduce manual involvement and amount of time taken by the invigilation scheduling committee in preparing the final examinations invigilation schedule. This is made possible with the creation of a database that collects information pertaining to the examinations invigilation schedule such as lecturers' preferences and constraints of the invigilation designing process. This system is beneficial especially to the Academic
Administration Office of institutions of higher learning because it enables them to produce comprehensive examinations invigilation schedule. Besides that, being computer-aided and accessible by lecturers on-line, it allows lecturers to choose their preferences, provide feedback and any other relevant information, and at the same time obtain a summary of their invigilation schedule even while away from the office. This automated way of capturing, optimising, and disseminating invigilation information paves the way for the development of a systematic approach in preparing examinations invigilation schedule. With that, suitable problem-solving support system which will aid the process of computerising examinations invigilation scheduling system can be identified.

III. PROPOSED SYSTEM

The propose system is highly reliable and makes the invigilation information much easier and flexible. The faculty can get the very right information at the very right time. The system is expected to increase the efficiency in the allocation rooms to the faculty members who are going to invigilate during the examination. Therefore, it will decrease the work hours and manpower.

IV. SYSTEM DESIGN AND ARCHITECTURE



V. DETAIL IMPLEMENTATION OF MODULES

After thorough analysis, the following modules have been found to be present in the system:

1) *Admin:* Admin is person to maintain the whole application.

- *Login:* admin will login into the application by entering the valid details like (email and password).
- *Operation-* Faculty management, Student management, Subject management, Sem management, Exam management, User management, Report management: Add, view
- *Faculty management:* Admin will add the faculty with their details like (Name, Email, Contact, Sem, Subject, Password, Gender, Date of birth, address) and he can view all the faculty who are added by himself.
- *Student management:* Admin will add the student with their details like (Usn, Name, Email, Parents Contact, Sem, Password, Gender, Date of birth, address) and he can view all the students who are added by himself.
- *Subject management:* Admin will add the subjects with their details like (Sem, Subject name) and he can view all the Subjects which are added by himself.
- *Sem management:* Admin will add the Sem with their details like (Sem name) and he can view all the Sem which are added by himself.
- *Exam management:* Admin will add the block with their details like(block name) and he can view all the blocks which are added by himself, Admin will add the room with their details like(block name, name, room strength) and he can view all the rooms which are added by himself, Admin will add the exam with their details like(Sem, subject, exam name, date, start time, end time) and he can view all the exam which are added by himself, Admin will add the allotment with their details like(Sem, subject, exam , room, class capacity, block capacity) and he can view all the allotment which are added by himself.
- *User management:* Admin will add the users with their details like (Name, Email, Password, Gender, date of birth, contact, address, group, image) , he can view all the users which are added by himself and he can set permissions for the user.
- *Report management:* Admin can view the exam report.

2) *Exam coordinator:* exam coordinator is person to allot exam and invigilation.

- *Operation- Login:* Exam coordinator will login into the application by entering the valid details like (email and password).
- *Operation-* Exam management: Add, view
- *Exam management:* exam coordinator will add the block with their details like (block name) and he can view all the blocks which are added by himself, exam coordinator will add the room with their details like(block name, name, room strength) and he can view all the rooms which are added by himself, exam coordinator will add the exam with their details like(sem, subject, exam name, date, start time, end time) and he can view all the exam which are added by himself, exam coordinator will add the allotment with their details like(sem, subject, exam , room, class capacity, block capacity) and he can view all the allotment which are added by himself.

3) *Faculty:* faculty is the person who can view their invigilation duty allotted.

- *Operation- Login:* Faculty will login into the application by entering the valid details like (email and password).
- *Operation-* view invigilation

4) *Student:* Student is the person who can view their exam schedule.

- *Operation- Login:* Student will login into the application by entering the valid details like (email and password).
- *Operation-* view exam.

VI. RESULT

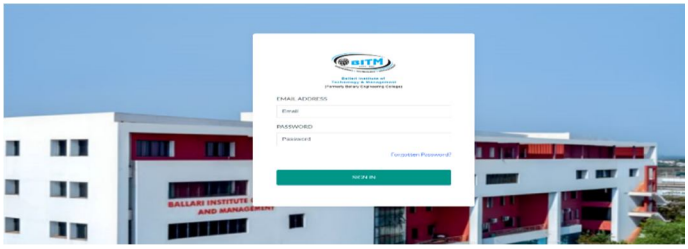


Fig 1: Admin Login

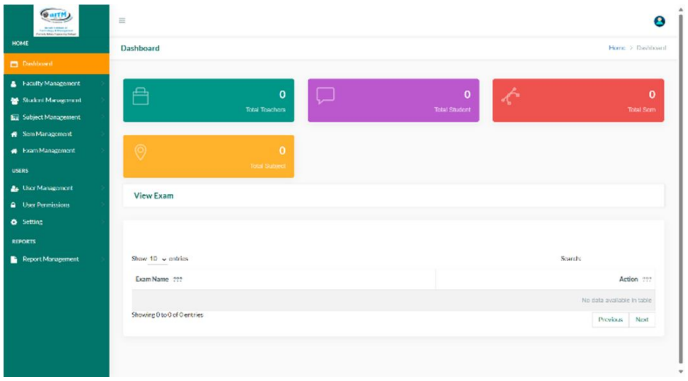


Fig 2: Dashboard

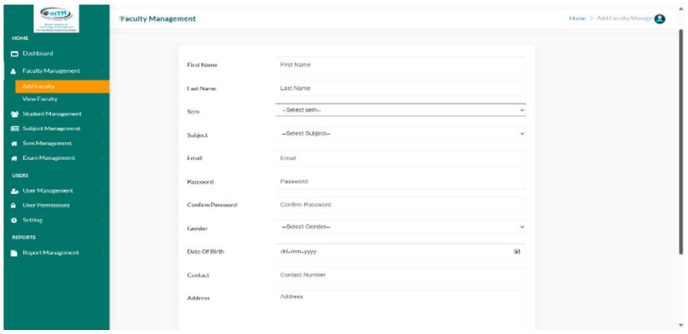


Fig 3: Add Faculty

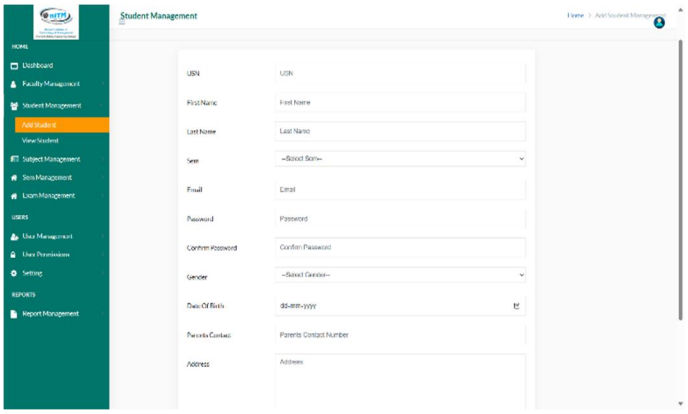


Fig 4: Add Student

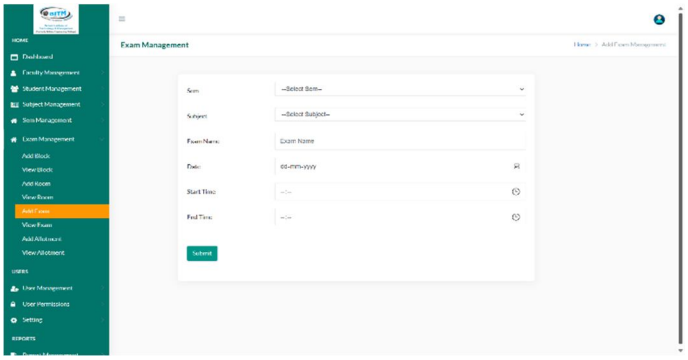


Fig 5: Add Exam

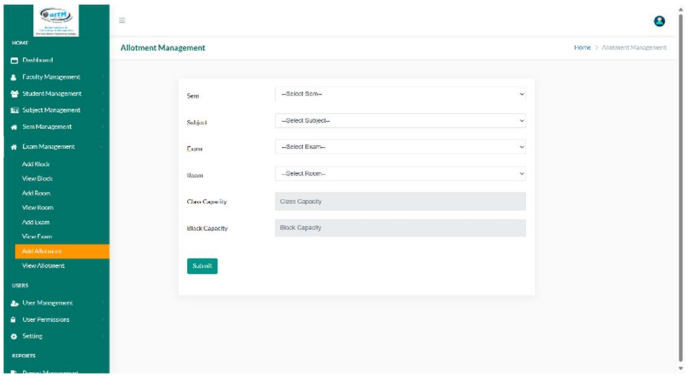


Fig 6: Add Allotment

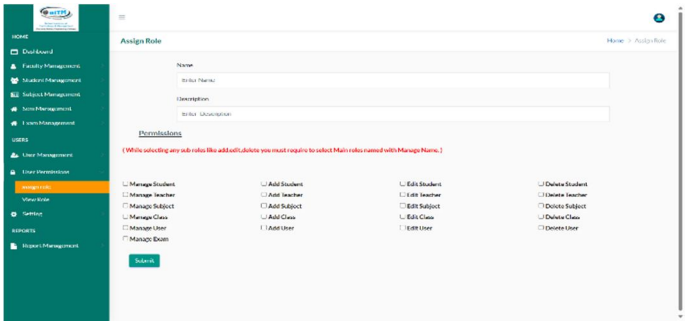


Fig 7: Admin Assigning Role

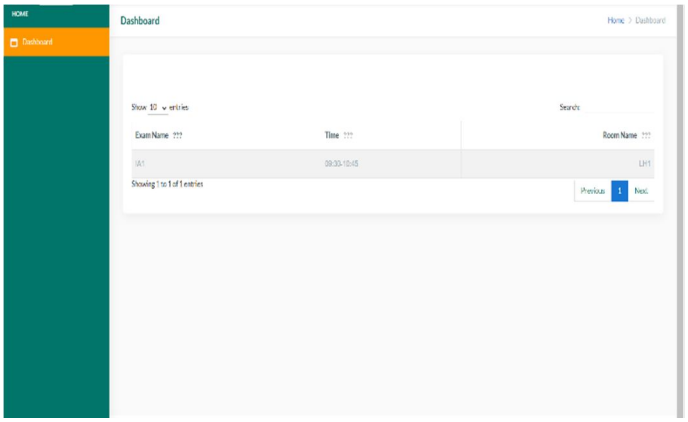


Fig 8: View Exam

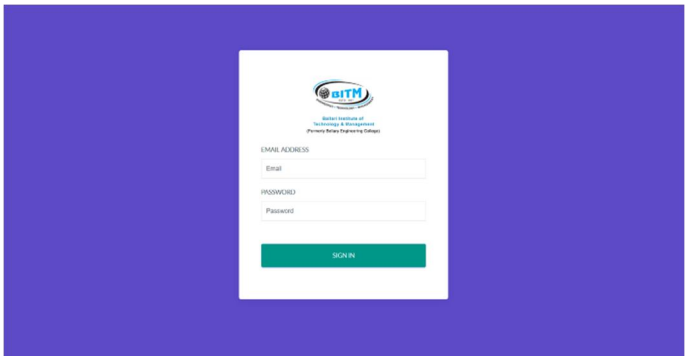


Fig 9: Faculty Login

VII. CONCLUSION

The deployment of the Examination Hall System marks a pivotal advancement in exam management automation. By amalgamating efficient seating allocation and automated reporting, this system equips educational institutions with a streamlined solution to alleviate logistical challenges. Moreover, it empowers administrators to enhance examination logistics, ensuring smoother operations and improved student experiences.

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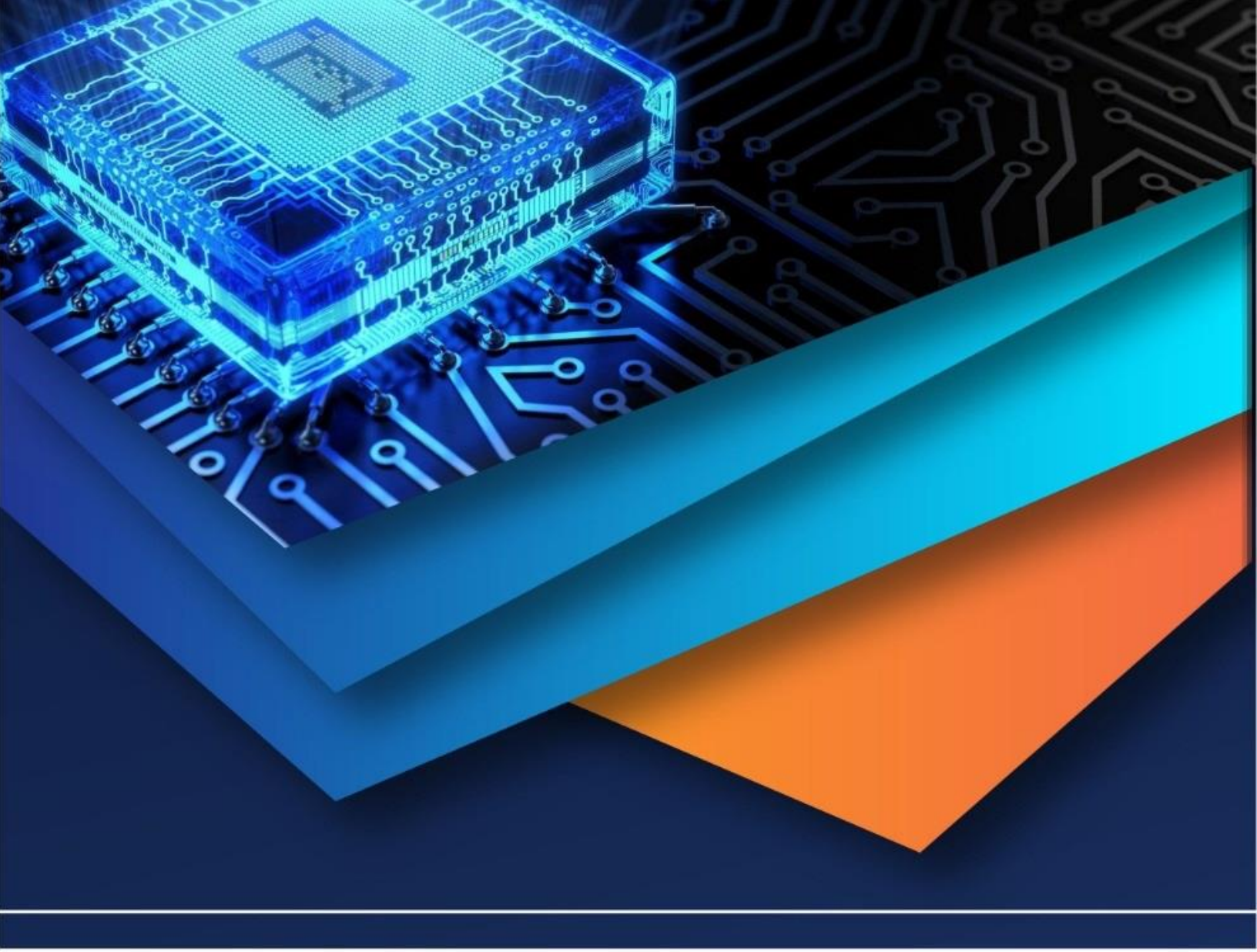

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