

# Theory Exam Conductor and Management System

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**Abstract:** *The Theory Exam Conductor and Management System is a software application designed to streamline the process of conducting theory exams and managing related administrative tasks. It aims to facilitate efficient exam administrative, Exam Co-ordinator, Staff, eliminate manual errors, and enhance overall productivity. The system provides a platform for administrators to create and manage exams, including setting exam schedules, assign exam hall to student, and assigning exam invigilators/staff. It allows for easy generation and distribution of exam hall and hall tickets to students. Students can access the system to check exam hall allotment and enter the PRN No. for downloading hall ticket. During the exam, staff can use the system to monitor and manage the exam process. They can track attendance, verify student identities, and ensure a secure and controlled environment. The purpose of developing exam hall seating arrangement system is to computerized the traditional way of conducting exams.*

**Keywords:** Java, Admin, Invigilator, Co-ordinator, Web Application

## I. INTRODUCTION

The Theory Exam Conductor and Management System is a software platform designed to streamline and manage the entire process of conducting theory exams. It enables educational institutions, certification boards, and other organizations to efficiently organize and administer theory exams of any scale. This system provides a centralized platform for exam administrators to create and schedule exams, assign exam hall and assign staff. It offers a user-friendly interface that allows staff to easily access, ensuring a fair and standardized evaluation process.

One of the key features of the Theory Exam Conductor and Management System is its ability to assign exam hall for each student, ensuring exam integrity and preventing cheating. Theory Exam Conductor and Management System is a web-based application. Main purpose of this application is to handle the operations in an educational institute during the time examinations.

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 Theory Exam Conductor and Management System developed. Main aim for developing this application is to simplify, the manual work done for allotment of hall & seats.

This allocation of seats to be done in such a way that each student getting a seat without any clash. Students feel difficulty in searching the seat allotted in the exam hall, as they'll be tensed during the exams, this application is helpful for both the staff & students which will automatically generate their seating arrangement & it will also allocate particular invigilator for particular hall.

To simplify examination hall allotment and seating arrangement for the student, an application for Theory Exam Conductor and Management system is developed. Using this 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 Aagean 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 web based application

**Purpose System:**

Main purpose of developing the Exam Hall seating system is to generate hassle free seats for the students automatically. This application allots the staff & students the exam hall automatically & ensures that no two students are allotted on same seat. An Examination hall is a place where the students are tested for the knowledge they have acquired throughout the year. Exams are always a frightening situation for the students. The system aims to allocate examination halls in a manner that maximizes the utilization of available resources, such as seating capacity and infrastructure. By using an allotment system, the exam hall allocation process is made fair and unbiased. All students are given an equal opportunity to access appropriate examination venues, without any favoritism or discrimination. The system helps in minimizing scheduling conflicts by considering factors such as the number of students, exam duration, and availability of halls. This reduces the chances of overlapping exams and ensures smooth conduct of examinations. With an automated exam hall allotment system, the process of allocating halls can be done quickly and accurately. This eliminates the need for manual coordination and reduces the overall administrative burden. The system provides transparency in the hall allotment process, as it allows students to view their allocated venues and helps in avoiding any confusion or disputes. An exam hall allotment system enables efficient communication between exam coordinators and students, as it can send out notifications regarding the allocated halls, timings, and any changes or updates related to the examination schedule. The purpose of an exam hall allotment system is to streamline and simplify the examination process, ensuring equal opportunities for all students and efficient utilization of resources.

Evaluating - An open-ended question where students must analyze different solutions and justify their choice

Creating - A challenge where students have to devise an original mathematical problem for their peers

Theory Exam Conductor and Management System is developed for the college /Institute or Exam center to simplify the allocation of halls automatically to students during exams. It facilitates to access the examination information of a particular student in a particular department. The information is sorted information alphabetically, which will be provided by the teacher for a respective department. This system is also help in finding the examination eligibility criteria of a student of the particular department. A new sub-rule algorithm for arrangement of examination room based on the proportion of examinee is proposed. The method may control the examinee distribution and all arrangement procedure, avoiding the neighbor examinee coming from same school, and the arrangement result is very idea and uniform. The purpose of developing Theory Exam Conductor and Management system is to computerize the traditional way of conducting the exams. Another purpose for developing this software is to generate the seating arrangement report automatically during exams.

**II. METHODOLOGY**

In the existing system, exam seats are arranged for the individual students of same course by the course teachers. Since this seating arrangement is done manually it is difficult to maintain the quality of exam, as this system is less accurate & prone to errors. Allocation of rooms to staff & students was done manually which was a tedious task, requiring more manpower, more paper work & would be time consuming .also if the report is generated then calculations are done manually that leads to more errors. There is a lot of manual work involved in current system and mistake in one detail can lead to wrong generation of page. No proper collection of requirements leads a huge problem for this system. This system is to enhance manual work and also more energy is wasted to allocate the seating arrangement.

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The proposed system talks about the use of cloud computing to store all the information related to university. In the system, the institute level user will login through their username and password. They fill in the details about the staff and the students. The system will then allocate bench numbers to the students and supervisor for each block. The user can download the report. The data would be stored on cloud for easy access in any university. Also another method stated, talks about counting the number of students appearing for the same exam on the respective day and the product of the number of rooms allocated to the total number of exams allocated for that particular exam. This ensures the minimum moving of the students in between the rooms during consecutive exams. Heuristic Procedure is used to optimize and is used until the allotment of the exams is done to the rooms.

### 2.1 Objective:

- The system should ensure smooth and efficient conduct of theory exams. It should facilitate the scheduling of exams, allocation of exam halls, and management of invigilators.
- To ensure a fair and unbiased allotment of exam halls to students.
- To minimize conflicts and overcrowding in exam halls.
- To effectively manage and utilize available resources such as exam halls and seating capacities.
- To streamline the process of allotting exam halls and reduce administrative overhead.
- To ensure that students are allocated exam halls that are suitable and conducive to conducting examinations.
- To minimize the chances of cheating and malpractice during examinations by appropriately assigning students to exam halls
- To provide a convenient and hassle-free experience for both students and exam administrators.
- To maintain transparency and accountability in the allotment process, ensuring that it is conducted in line with institutional policies and guidelines.
- To efficiently handle any last-minute changes or adjustments in the allocation of exam halls.

### III. LITERATURE SURVEY

“Exam Hall Seating Arrangement System” was proposed by S. PriyaDharshini, M. SelvaSudha. Main aim of this project to help the students so that they get hassle free information of seating arrangement. Student’s information is provided by faculty or exam coordinator of department & this information is stored in alphabetical order. Any changes in student details or exam timings will be updated by admin..

Seating arrangement Tools for examinations, Author- Ashti Fatima Alam, project was developed using C/C++, main drawback was it was not efficient & was not user friendly. This application can generate hall ticket & result of each semester. Main aim of this project, once enrolled using their id & passwords students & faculty can access the information, such as hall ticket generation if they student has passed in all IA’s & result is generated semester wise.

Exam hall seating arrangement System using PHP, Author Prof S. S.Aravinth, G. Pavithra, is an online system, where student registration to be done first.

A survey was carried at public institution in southeast region of US, the result of the survey has shown the students who occupied seats at the end of rows with individual chairs scored high than the ones who occupied in the middle row.

This study has found girls scoring more marks than boys. In this type of environment student were allowed to get their required things which included books, jackets, handbags etc. making students their comfortable zone which in turn helped in active learning. Seating arrangement has evolved over few decades. In 70’s setting classroom was directed towards traditional row set up. There was influence on students having strong interest in seating arrangement.

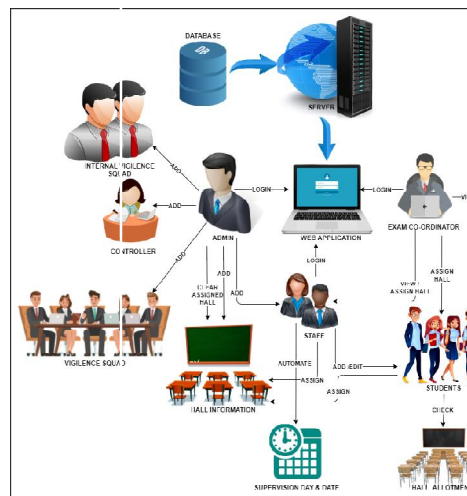
In the 70’s the classroom setting was mostly focused on the traditional row set-up classroom. Weinstein found that there was a tremendous surge of interest in determining the influence of the school setting on students. Using cloud computing technology, Dayanand G Savakar, Ravi Hosur from Rani Chennamma University, Belagavi developed “Exam Hall Seating Arrangement System”. Using the cloud computing technology, this system will automatically generate seat allotted to the students & hall allotment for faculties for the supervision may plague this system are non-availability of staff and resources, natural calamities and accidents. Also, the security of the system can be easily

compromised if leverage over the person responsible for generating question papers is obtained. Other limitations include: -

- Lack of storage space
- Prone to damage
- Inefficient document transportation
- Supply costs
- Poor environmental credentials
- Limited collaboration
- Editing problems

As the manual generation of a balanced question paper by an individual is quite complex, the blending of technology into teaching and learning process is inevitable. A simple and efficient way for an examination paper generation is provided. A three tier model is provided in this framework. Generation of Examination Papers is governed by the Syllabus Engine, Pattern Composer and Question Aggregator. The generated question paper is based on the pattern or skeleton of the course. Another component called Bank Management takes care of User Rights and Privilege assignment. Questions are entered through the Question Aggregator. The attributes related to questions are type, marks and complexity. All these attributes are efficiently used during Question Paper Generation. The paper generator selects a question according to the pattern and complexity. This engine also introduces marking systems wherein any selected question is marked so that it might not be selected again. This prevents repetition of questions in subsequent papers. Finally, generated papers are stored as pdfs.

#### IV. ARCHITECTURE DIAGRAM



This allocation of seats to be done in such a way that each student getting a seat without any clash. Students feel difficulty in searching the seat allotted in the exam hall, as they'll be tensed during the exams, this application is helpful for both the staff & students which will automatically generate their seating arrangement & it will also allocate particular invigilator for particular hall.

#### Algorithm

1. Start
2. Initialization
3. Dataset creation & allocation of marks according to blooms level
4. Preprocess
5. Data Training Process
6. Saving the model for further utilization

7. User login
8. User will upload the CSV of questions
9. Processing the CSV file in system IJRMPS230356 Website: www.ijrmps.org Email: editor@ijrmps.org
10. Predicting the marks
11. Generating the question paper
12. END

#### **Pre-Processing:**

The system should allow the creation of theory exam. The system should allow the scheduling of exams, including the date, time, duration, and venues. The system should allow the management of the exams from start to end, The system should generate different types of reports, including student performance, exam performance, and analysis reports. The system should ensure a high level of security, including protection of exam content and data, identity applied to the question in order to make the text more readable for later process. Following this, each and every word will then be tagged using a tagger. In this research, NLTK tagger (Bird et al., 2009) is used to tag the exam questions. To emphasize the tagging process, consider the following sentence: "Outline how class ArrayList could be implemented using an array.", The tagged output is: Outline/VB how/WRB class/NN ArrayList/NN could/MD be/VB implemented/VBN using/VBG an/DT array/NN./. The tagger will assist to identify important nouns and verbs, which may be important in determining the question's category. In addition, the sentence pattern may help in the correct recognition of the question's category. After tagging, some rules will be applied according to question's structure.

#### **Rules Development:**

Through this research, a rule-based approach is accepted in determining the category of an examination question based on the Bloom's taxonomy. The rules are developed from a training set which consists of 70 examination questions in the various subjects. There are two conditions where the rules will be applied:

- The rules will distinguish the suitable keyword for each question depending on its category.
- (elp to choose the appropriate category if the keyword shares more than one category. For example, Abstract may fall under Comprehension or Synthesis category. After analysing all the questions in the training set, the questions' patterns show that most of them start with a verb. (however, only some of it begins with Wh-pronoun, a determiner, preposition or subordinating conjunction, anoun and an adverb. Before rules can be applied, specific patterns should be identified from the questions item. The following will determine how the pattern and rules are developed after POS tagging is applied. Question: Write down the output of the following program: Question with tag: Write/VB down/RB output/VB following/JJ program/NN :/:

Pattern: /VB (1st word), /VB (3rd word) Each verb in the question will be captured. The verb 'Write' appears as its keyword. Based on Bloom's Taxonomy, Write can be categorised into two categories: Knowledge and Synthesis.

FOR each sentence, read into an array. Split into words. )IF pattern is found

)If the keyword "Write" is found

)IF found:

Apply Rule1: Assign weight to Knowledge

Apply Rule2 : Assign weight to Synthesis Choose the greater value or positive value Assign question category Store in database

FOR EACH(\_match in pattern :

print join (keyword, category, question)

Based on the algorithm, the question can be applied to two different rules i.e. Rule 1 and Rule 2. Rule 1 states that the questions fall under the 'Knowledge' category meanwhile Rule 2 states that it can be categorized under the 'Synthesis' category. This raises a conflict as to which category the question should fall into. When this situation occurs, there is a need to introduce 'category weighting' to altering all subsequent blocks.

Randomization Algorithm

For N questions available in database Step 1: Create a List 'L' of N elements

Step 2: Generate a random number 'n' such that  $1 \leq n \leq N$  Step 3: )f  $n \in L$  Go to Step 2

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else Store n in the List L

Step 4: Select a question from database corresponding ton, whose flag==true

Step 5: For the question, set flag=false

## V. CONCLUSION

This application is great advantage to all the educational institutes as it is simplifying the seating arrangement by automatically generating the seats for the students, room allocation for the staff. Project results in reduction of manpower & workload on students & staff. It benefits all the educational institutes by reducing the complexity involved while allocating the exam duty for the staff, examination rooms for the students. Data can be accessed anytime as it is stored in centralized database. It eliminates human errors and biases, enables efficient utilization of resources, and ensures fair and equal distribution of exam halls. It also saves time and effort for both students and administrators. However, to maximize the system's effectiveness, it is essential to ensure proper planning and implementation arise.

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