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Exam Invigilation Duty

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Abstract 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 performs 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 (SSA) and second as, Supervision Duties Allocation (SDA). 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.

INTRODUCTION

Invigilator duty allocation is an algorithm to allocate duties of each invigilator in different examination halls in such a way that each invigilator will get equal number of duties during whole examination session. This algorithm is developed because every year each school or college, each season of exams, the various departments or classes of an institution facing the complexity to draw a pattern to allocate the invigilators in different examinations halls.

The invigilator allocation process must be optimized and simple. The main purpose of this algorithm is to demonstrate the possibility of allocating examination halls to each invigilator, automatically, using computers or other devices. This software consists front-end or user interface that will displayed on the screen and algorithm which is written in java where all the back-end coding, functionalities and activities linking related codes are written. The paper begins with the introduction of complexity in allocating invigilators to each examination halls and steps followed while creating algorithm to allocate invigilators to each examination hall.

Fig.1.1 Invigilation duty

1.1 Objective of the project:

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 performs 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 (SSA) and second as, Supervision Duties Allocation (SDA). 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.

LITERATURE SURVEY

1. **A Hybrid Genetic Algorithm for Make-Up Examination Arrangement**

This paper presents a hybrid genetic algorithm to solve the make-up examination arrangement problem. The objective of make-up examination arrangement to minimize the number of classrooms is analyzed, and a greedy algorithm and an original mutation operator are devised to achieve this goal. This new operator, combined with a crossover and a local search operator which are used to minimize the number of timeslots, leads to a very powerful genetic algorithm. Experiment shows that the solutions of this hybrid genetic algorithm are of excellent quality, providing a theoretical foundation for the practical application.

2. **Algorithm For Efficient Seating Plan For Centralized Exam System**

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. **Sub-rule Algorithm for Arrangement of Examination Rooms Based on the Examinee Proportion.2010 International Conference on Computing**

Combining with the usual requirement and multi-constraint conditions of examination arrangement, the math model of examination arrangement is built, and a sub-rule algorithm for arrangement of examination seat based on the proportion of examinee is proposed. Then the detail step of the algorithm is given, and the complexity is analyzed. The Analysis and experiment result show the algorithm can control the distribution proportion of examinee and the arrangement process completely avoiding the examinee of the same high school been arranged the adjacent position. The model and algorithm should been used in all kinds of arrangement of examination seat and other corresponding problems because of having some good excellences, such as, speediness, efficiency, inheritance and realization easily.

4. **A New Model for an Examination-Room Assignment Problem**

This paper discusses the results of a survey on examination room assignment in University Kebangsaan Malaysia. The survey aims to measure level of satisfaction and requirement of undergraduate students, lecturers and administrators to examination room assignment. After analyzing the data from the respondents, we identified several factors that can be considered as soft constraints when assigning examinations to rooms. As a result, we model the problem of assigning examinations to rooms and proposing two new objective functions. The first objective function is to minimize the number of students move to different room in consecutive exams in the same day. Meanwhile, the second one aims to maximize room utilization.

5. **Automatic seating arrangement tool for examinations in universities/colleges**

This paper is dedicated to simplify 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.

6. **Automated Allocation of Resources for Examination System using Genetic Algorithm**

The quality of education is to a major extent assessed through examination and therefore examination is an inseparable and integral part of education. Even though we have seen a lot of technological advancements, the examination process is still carried out the traditional way with most of the process performed manually. As a result of which the current system at times are prone to errors and are time consuming. Various techniques have been proposed to automate the time table generation, automatic paper setting and evaluation. One of the tasks that has not got much attention is the assignment of work on a per day basis to invigilators and their assignment to rooms for invigilation. So we propose a system that integrates task like invigilator allotment, room allotment student allotment and time table generation in an efficient way.

SYSTEM ANALYSIS

3.1 Existing System

Preparation of invigilation duty list is a tedious work if done manually when large number of invigilators is involved for examination scheduled daily in two or more shifts for large number of days.

Disadvantages:

1. Less Accuracy
2. More time taking process

3.2 Proposed System

In this project we are automatically allocating invigilators on exam duty. In propose work admin will add faculty (invigilators) details and then update their leisure times, admin will schedule exams using hall number, date and time and while scheduling admin will get list of available invigilators on selected time and then admin will choose desired invigilator for allotment.

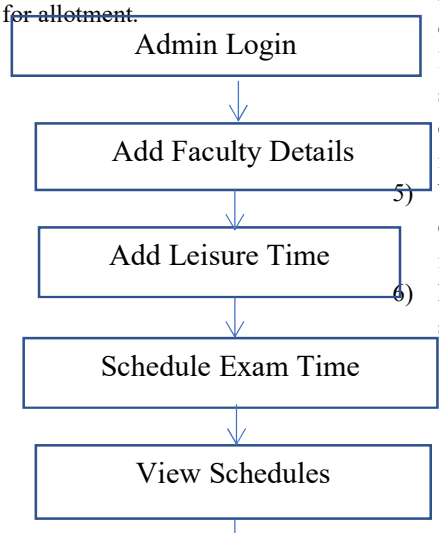

Fig.3.3 Flowchart of proposed method

Advantages:

1. High Accuracy
2. Takes less time

RESULT

In this project we are automatically allocating invigilators on exam duty. In propose work admin will add faculty (invigilators) details and then update their leisure times, admin will schedule exams using hall number, date and time and while scheduling admin will get list of available invigilators on selected time and then admin will choose desired invigilator for allotment.

Invigilator can login to system and then can view allotted date, time and hall number for invigilation's.

We have coded this project using FLASK framework and consists of following modules

1) Admin Login: using this module admin can login to system using username and password as 'admin' and 'admin'.
2) Add Faculty Details: After login admin can add faculty or invigilators and will give login details to invigilators
3) Add Leisure Time: using this module admin can add or update leisure time for the selected invigilator
4) Schedule Exam Time: using this module admin will schedule exam by entering date, time, hall number and then will get list of available invigilators on exam schedule time and then admin will select desired invigilator for that exam invigilation
5) View Schedules: using this module admin can view all scheduled exams and its invigilator and other details
6) Invigilator Login: invigilator can login to system using login details given by admin

7) View Allotted Scheduled: After login invigilator can see allotted invigilation details

to run code copy content from 'database.txt' file and then paste in MYSQL database console to create database

Now double click on 'run.bat' file to start FLASK server and get below output

Fig.7.1 flask server started

In above screen flask server started and now open browser and enter URL as http://127.0.0.1:5000/index and then press enter key to get below page

Fig.7.2 Admin Login Here

In above screen click on 'Admin Login Here' link to get below page

Fig.7.3 Admin login

In above screen admin is login and after login will get below page

Fig.7.4 Add Faculty

In above screen click on 'Add Faculty' link to get below page

Fig.7.5 admin adding invigilator

In above screen admin is adding invigilator or faculty details and then press button to get below page

Fig.7.6 faculty details added

In above screen in blue colour text we can see 'faculty details added' and similarly you can add any number of faculty and now click on 'Add Leisure Time' link to add leisure time for faculty

Fig.7.7 admin will select invigilator name

In above screen admin will select invigilator name and then choose his leisure time to add free time details and get below page

Fig.7.8 leisure time added to selected faculty kumar

In above screen in blue colour text can see leisure time added to selected faculty kumar and similarly you can assign to many faculties. Now click on 'Schedule Exam Time' link to get below page

Fig.7.9 Entering the exam details

In above screen admin will enter exam details and then select date and time and then press button to get below list of available invigilators on exam time

Fig.7.10 Admin can see the list

In above screen admin can view list and then click on 'Click Here' link to allot that invigilator for selected exam

Fig.7.11 details of selected invigilator

In above screen admin can details of selected invigilator for particular exam with date and time. Once allotted then his name will not show for next allotment on same date. In similar way you can assigned exam to other invigilators and now click on 'View Schedules' link to get below page

Fig.7.12 list of allotted invigilator

In above screen admin can view list of allotted invigilator for particular exam and now logout and login as 'Invigilator' to view his allotted details

Fig.7.13 invigilator is login

In above screen invigilator is login and after login will get below page

Fig.7.14 View Allotted Schedules

In above screen invigilator can click on 'View Allotted Schedules' link to view his allotted exam invigilation like below page

Fig.7.15 invigilator can view details of exam

In above page invigilator can view details of exam with hall number, date etc.

In same way by following above screens you can allot invigilation's to any number of faculties

CONCLUSION

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 performs 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 (SSA) and second as, Supervision Duties Allocation (SDA). 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.

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