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Effective Seat Allocation for Examination Using Android Application

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Abstract: This paper is committed to simplify the task of manual seating arrangement of students in an examination hall. The main goal is to develop an android app for automatic examination seating arrangement in addition to reducing the manual work of staff. A PDF containing student exam number with subject code and subject name will be sent by the university and will be received by the admin staff which will be converted into suitable format. Then an algorithm will be used to involuntarily allocate the students to the suitable block according to their strength. Then the staff will be randomly allocated to particular block. Alternating staff allocation will be done according to department. The students and the staff will receive a message regarding the block where they have been assigned. In this paper we can further add features to improve the flexibility.

Keywords: Android, MySQL Database, Parsing, PHP.

INTRODUCTION

In several universities examinations are held at regular intervals. Allocating the students to different blocks according to their strength is the main job. But allocating students manually is a hectic job for the staff. So to get rid of this inconvenience this paper is designed to remove the manual work of the staff. We are going to design an android application for this.

In this a database we will maintain a student record with their seat number, staff database and the number of blocks. The subject PDF will be sent by the university to the college and the admin will process this PDF. An algorithm will be coded and the arrangement of seats will be done.

These details will be sent to the android application of the staff and student. They are first required to login. The staff and students will get the details regarding which block they are allocated to. Unnecessarily the students and staff need not search different floors or building as they will get the details about it.

Different algorithms are used for the process of sorting, natural selection etc. As the paper is all about decision making so various algorithms regarding decisions will be used to produce as valid output.

This application can be widely used in every college for any kind of exam or even for event management. It reduces our time and makes the procedure very routine.

This paper mainly focuses on improving the efficiency of the seat allotment system and the tiring task of manually allocating seats to each individual. And also for students to easily find their class rooms during exam so that they can reach the examination hall at time.

LITERATURE SURVEY

1. In the previous paper submitted by Aashti Fatima Alam “automatic seating arrangement tool for examinations in universities/colleges” used the C/C++ language.
2. In that they have used the tool which automatically arrange student according to their seat number. They used Dev C++ compiler which is an integrated development environment distributed under the General Public License for programming in C & C++. It is bundled with a free compiler called MinGW.
3. In this paper the main drawback was the notification system. As the seating arrangements are done by the help of tools but then also the students need to go to the notice board to look for their block number. So that drawback was removed in the proposed paper.

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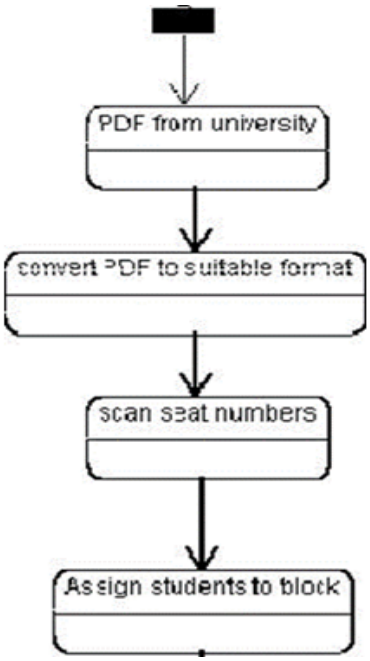
4. In second paper that is “A study on automatic allocation of membership functions for fuzzy modelling” we studied about the genetic algorithm which is used for automatic function.

PROBLEM DEFINITION

As we know that during the examination the exam coordinator has to look to the number of students attending a particular paper. After that he has to allocate them to the class rooms or blocks according to the number of students present. So this is a confused task for him as well as the other staffs with him.

In order to make their task easy we will design an application that will mechanize the task of assigning the students to particular block. But with that we need a condition that a specific department should not have the same department staff most likely to reach a goal.

Flow Chart



EXISTING SYSTEM

In the existing system internet is the main medium of communication. Messages can be sent through wireless network in the university or mobile data of students. This existing system has some drawbacks and setbacks which have to be rectified soon to avoid more problematic situations.

PROPOSED SYSTEM

In the proposed system we will focus on building up an application in android along with back end in PHP. In this there will be several databases containing interrelated information about student, teachers and number of classrooms.

During the time of examination a PDF is sent by the university to college. This PDF is converted into a suitable format. Then an algorithm is used to verify the condition. If the condition is yes then automatic allocation is done. The algorithm is chosen depending on the condition such as natural selection etc. The allocation is done along with details such as number of student, block size, paper code.

The staff allocation is also done indiscriminately but the same department staff will not be allocated to same department. When the process is done then the notification will be sent to the staff as to which block they are allocated. The same message is also sent to the students that which block they are allotted to and on which building or floor. So they need not to search buildings. The above diagram shows in short the flow of the project in an easy way.

A collection of data designed to be used by several people is called a database. It is a collection of interrelated data stored together with controlled redundancy to provide one or more applications in a possible fashion.

The data is saved in such a fashion that it does not depend on the programs of people using the data. A common and controlled approach is used in adding new data and modifying and retrieving data already present within the database.

- Student details
- Invigilator details
- Room details
- Exam schedule
- Room allocation

MODULE DESCRIPTION

The automation of exam hall seating arrangement which consist four modules such as:

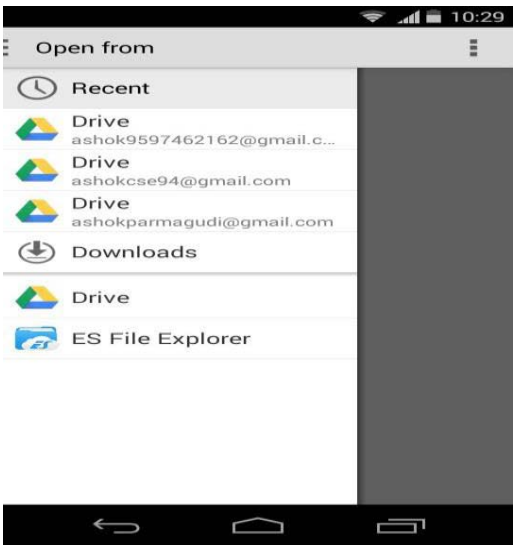
[1] Admin login module
[2] Update module
[3] Student view module
[4] Display module.

Admin Login Module

Admin login with own id and password. Admin has a security purpose for uploading seating arrangements for particular examination.

Admin Module for Seating Arrangement

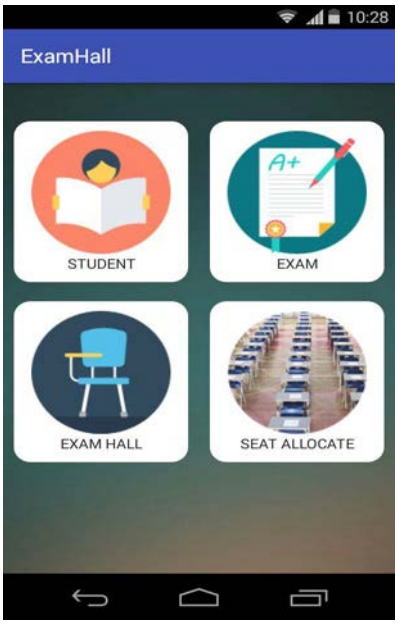
Open from Admin



Admin Option for Seating Arrangement

Update Module

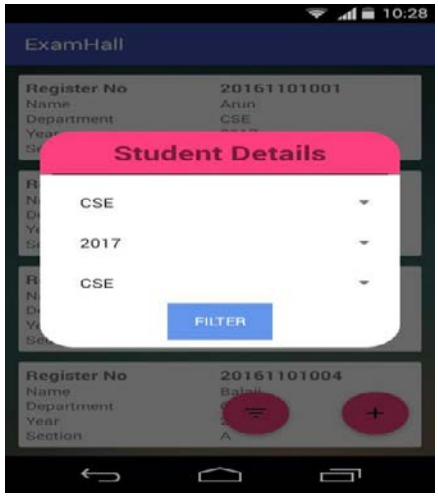
Admin can update data which stores data in the database. To update student details, exam details, exam hall details like block, rows, columns and bench and seat allocate with different subject code and different department.



Update Module for Seating Arrangement

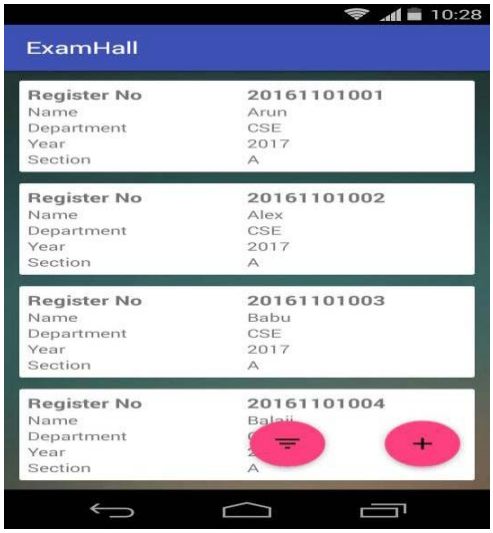
Student View

Shows the in student mobile phone enter your register number in shows on the student room number and register number, subject code manage the information of exam details and seating arrangements.



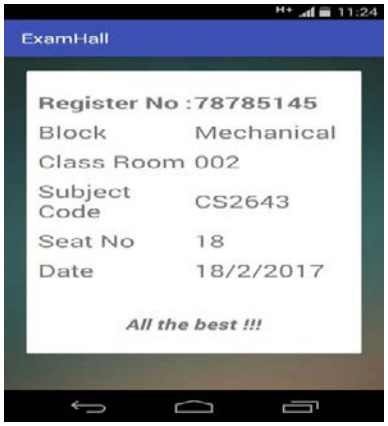
Student View Module for Seating Arrangement

This module is also used for both admin and student view module for exam hall seating arrangement.



Display Module

The display module is used to view the exam details like hall number, block, details, student register number, subject details, subject code, row, bench, session, date of the particular examination and also seat number and rows whether right or left. a student can view the displayed exam hall details on the mobile phone at anywhere.



Display Module for Seating Arrangement

BENEFITS

This software is mainly useful in today's time with the cumulative number of people attending several examinations. Manually handling data is not only tedious and time-consuming but prone to errors as well. This software allows the user to be accurate, fast and to produce reliable results.

It manages the system very efficiently and safeguards our work. Once the work has been implemented, we can make alterations manually as well. It is a multi-user environment and can be easily shifted from the terminal to another. The importance of this software to make our tasks faster and more reliable. In today's day and age work reducing applications are much required because of the increasing demand of new trends.

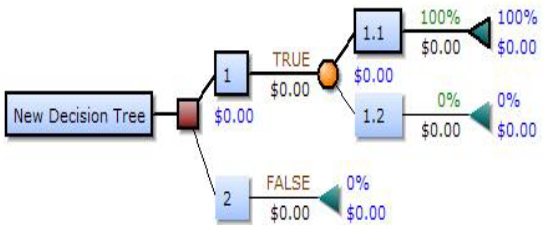
It is an organized system which permits us to automatically allocate students to their preferred location. For people supervising the institutions, the work load is very high and the need for faster work is a need of the hour. There is a common complaint that government offices have surplus work load but the speed of effectiveness is very low. Software such as these can contract our work time. Institutions use the software can save sufficient amount of time during the examination time. Some of the few advantages of this model are that it is very fast, reliable and full-bodied. In today's world, it is the tool for event management which is extremely useful for various occasions. This much-needed feature of user-friendliness is present in this model and can be used for all types of the user whether Agile, Naïve or expert.

LIMITATIONS

Even though the model of great use, there are some drawbacks such software considers each room to be of equal seating capacity. Also a large amount of data, software slows down. Sometimes, it is completely reliable it does not take into broken chairs and damaged furniture.

ALGORITHMS

Decision Tree-A decision tree is a decision support tool that uses a tree-like graph or model of decisions and their possible outcomes, including chance event outcomes, resource costs, and utility. It is one way to represent an algorithm.



The above diagram shows how a decision tree works. It generally helps to decide plans to reach our goal.

Naïve Bayes Algorithm-Naive Bayes is a conditional probability model: given a problem instance to be classified, represented by vector representing some *n* features (independent variables), it assigns to this instance probabilities for each of *K* possible outcomes or classes*.* The setback with the above formulation is that if the number of features *n* is large or if a feature can take on a large number of values, then basing such a model on probability tables is not possible. We therefore reformulate the model to make it more perfect. Using Bayes' theorem, the conditional probability can be decomposed as:

$$P(C_k|x) = P(C_k)\, P(x|C_k)/p(x)$$

In plain English, using Bayesian probability terminology, the above equation can be written.

FUTURE SCOPE

In the future we can use different strategies to find blocks, number of students also for students who do not have internet facilities or android phone then we can send them a message at any time, any place.

CONCLUSION

Here by I conclude that this paper will reduce the work load of the staff. This application further can be adapted by different institutes to reduce their work.

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