

InviSchedule: Multiconstraint Exam-Invigilator Assignment and Monitoring System

**Mr. Vinay R. Ayarekar, Mr. Shubham C. Bhosale, Ms. Yashodhara S.
Damame, Mr. Aniket A. Dange, Mr. Shripad S. Malekar.**

*U.G. Student, Department of Computer Science and Engineering, Bharati Vidyapeeth's College of
Engineering, Kolhapur, India.*

ABSTRACT

Exam-Invigilator assignment problem has constraints which have not been modeled before, these being the capacity of exam halls and splitting exams across several rooms, providing invigilator to exam hall on which his/her department's subject has not been taught, checking the overlapping timings of exam and arranging them. These constraints provide additional challenges in defining a suitable model and in developing a solution which will be beneficial. One of the contributions of this paper is to formally define this real-world problem. A further contribution is producing good quality solutions for the problem.

Keywords: *Scheduling, Invigilator Allocation.*

I. INTRODUCTION

This project focuses on invigilator-exam assignment, a problem which receives less attention than the examination timetabling problem. We mean by the problem assigning invigilators to examination rooms in which an examination timetable is already in place, usually prepared by scheduling management unit. An invigilator is the person who supervises students during an examination. Invigilator-exam assignment is a problem of assigning invigilators to exams in such a way that there are no conflicts or clashes. The examination scheduling problem is very complex problem which consisting of NP-complete sub problems. Invigilator-exam assignment is often done separately from the scheduling of examinations to time slots and rooms. In the literature there are so many researches related to other educational timetabling problems though not so many for exam-invigilator assignments. Along with scheduling this project includes report generation of every exam and invigilation scenario as a part of monitoring. It consists reports like daily seat arrangements, attendance sheets, invigilation details, hall details, students details (seat no and subject code) etc.

II. LITERATURE REVIEW

Invigilator-Exam Assignment and Scheduling exam timetables in departments of college/university is a complex problem. An invigilator is the person who supervises students during an examination. There exists various hurdles such as assignment of invigilators to exams must be in such a way that there are no conflicts or clashes.

Usually an invigilator is assigned more than one exam schedule , and more than one invigilator is needed for an examination . An invigilator should not be scheduled to invigilate more than once in the same time slot. There may be preferenced, inconvenient assignment, and pre-assignments related to invigilator-exam and/or invigilator-time slot pairs. Invigilator-exam assignment problem actually has a multi-objective structure like real-life decision problems. All such allocations for the invigilators were done manually traditionally. This paper assumes that the application described would be a prototype that would shape the future & there still remains much to do in terms of development and improvement of the existing models. Applications created with ease of understanding and the design can be created and tailored to the invigilator assignment proces to make it more effective , thus making it easier & convenient for the users to do the entire allocation process with the use of this application.

III. DATABASE FOR APPLICATION

Parameters which are needed for mathematical model for assignment will be stored in database in the form of tables. Parameters are directly extracted from these tables by simple selection queries (e.g. number of invigilators, number of required invigilators etc.). So we preferred MySQL.

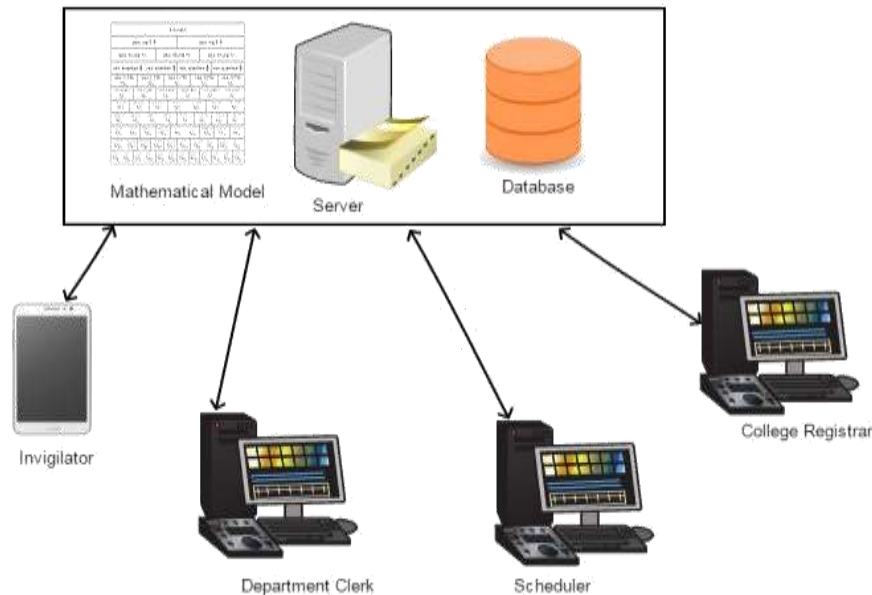
MySQL is the most popular Open Source Relational SQL database management system. MySQL is one of the best RDBMS being used for developing web-based software applications.

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed, and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons:

MySQL is released under an open-source license. So you have nothing to pay to use it. MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages. MySQL uses a standard form of the well-known SQL data language. MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc. MySQL works very quickly and works well even with large data sets. MySQL is very friendly to PHP, the most appreciated language for web development. MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB). MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.

IV. DESIGN AND IMPLEMENTATION

As every client-server based application, this application also will do all its processing part on server side and also hold the data base. Here respective college representative will load respective collage information ie. Number of teaching faculty and their designations, numbers of student, number of available hall etc. this application will take all the inputs for processing and schedule invigilators accordingly by considering all facts.



V. TRADITIONAL TECHNIQUES VS InviSchedule

In traditional techniques,

The scheduler needs to collect the data each time there is such need i.e. For every exam scheduling, as there are various departments in an college he need to visit every department a collect the information. Then considering all conditions like number of halls available of schedule , time for schedule , invigilators available and arrange them in such a way that there are no conflicts i.e. No invigilator gets overlapping schedule and many more constrains.

In InviSchedule,

Here the scheduler needs only once to fill data into the database and use whenever required and update it if any change . as the application is very user friendly and convenient to handle any user my enter the data . Input for the application is taken from various user so as to reduce the load of one person. The responsible person interacts with application by applying proper inputs generate the schedule. After schedule generation he extracts the reports and may dis paly it.

VI. CONCLUSION

This project will schedule exam-invigilation. This is going to be very useful for anyone who does this work in every educational organization for each semester. Our main aim is to reduce the workload of single person and distribute it among various users and make that portal user friendly.

Also while developing such a project we are learning many new things that will definitely help us in future.

VII. ACKNOWLEDGMENT

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