A Nobel Way of Examination Schedule and Sitting Plan Automation in Universities

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Abstract: Almost all educational institutions have an examination scheduling system in place because it is a necessary and frequently performed administrative task. Exanimation can be scheduled using this technology, which aids in the planning of exams for students. Because of the limited resources available, developing an exam schedule that will meet the needs of students, faculty, and the administration of the institution is a particularly tough undertaking. This restriction makes exanimation scheduling extremely difficult. It is the goal of this study to develop a Decision Support System that will ensure that all institutional resources are fully utilized and that the management of the institution, lecturers, and students are all satisfied. The goal of the approach is to decrease the level of conflict at each grade.

Keywords: University Examination System, Conflict, Course, Scheduling, Examination, Sitting Plan, Student

1. Introduction

The difficulties with the practice manual method were the impetus for the creation of the university examination system. This software is designed to alleviate some of the problems with the current system and, in some cases, to eradicate them altogether. Researchers studied a wide range of methodologies using a set of benchmark cases to examine recent attempts to automate examination systems. They have served as a useful benchmark, but their application to modern college examination schedule is severely restricted. Many exciting and novel search tactics can be gleaned from real-world experiences at institutions in the Middle East, it is hoped, and will be put to use in actual searches. The primary goal of this project is to provide scholars with a realistic model to help bridge the theoretical and practical barrier in exam scheduling (Miranda J, 2012).

A web-based application is designed and implemented to establish the exam schedule and seating arrangement for the students. This system is automatically establishing a schedule for all grades, randomly generate a sitting plan for each exam, select a class based on student enrollment, and set a sitting plan based on student rank in the class. As all of these operations are done manually, the burden increases and is more susceptible to errors. As things stand now, we're using antiquated technology that relies on labor-intensive, paper-based procedures. System now in place is both inefficient and inaccurate (K, 2015).

Automated systems would be used for fixing all of these issues in a matter of seconds. Modules like Admin Details, Student Details, and Faculty Details are used to keep track of many aspects of the project.

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Faculty and student information can be added by an administrator. student and details of rooms allocated to students and faculty (Desroches S, 2011).

The project aims at allocating the duties with much greater effectiveness. The system serves the purpose of saving the manual work and time put into the allocation.

A faulty test schedule may cause students to do poorly since it does not provide them adequate time to prepare for two consecutive exams. However, the enormous number of students who have completed different courses, the small number of rooms or exam halls available, and other limitations such as no conflict in a single student's examinations make scheduling experimentally extremely hard. The scheduling issue that these conditions have generated definitely poses an intellectual challenge (M., 2013).

The project's goal is to create an automated system that delivers quick and dependable service to the registrar's office, departments, lectures, and students while saving time and resources. Our research aims to uncover the present system's faults by fully researching the system's problems and giving clear and simple solutions to those concerns. We plan to replace the current manual method with a new automated system.

The project's is using to develop an automatic scheduling system with the conflict consideration for all the grades, to randomly create sitting plan for each exam, to selecting the class based on the number of students and based on the student rank in the class, to make easy for the exam committee to search and find specific information regard student and the course.

2. Literature Review

In an examination system, a series of lectures between lecturers and students is scheduled over a certain time period (usually a week), while fulfilling a variety of limitations. There are many different ways to solve the timetabling issue, depending on the kind of institution (university or school) and the sort of limitations. Recently, approaches from artificial intelligence (such as genetic algorithms and constraint fulfillment) have been used to solve this topic, which has historically been seen as a challenge for operational research. A college's test system varies from one to another. Creating an exam schedule and other test related materials follows a distinct procedure at each university or institution (Fagbola, 2013).

Students at universities have a daunting issue when it comes to scheduling classes or examinations. Departments and faculties vary greatly in their conceptions of how and when classes should be held. Modularization also include the ability for students to take courses from many departments, even across separate faculties (Pillay, October 11–13, 2010). Many university scheduling systems have been developed, and efforts are ongoing to develop a standard that would allow objective comparisons. If you are new to test and course scheduling, this article should serve as a good starting point for you to learn more about the subject (Fangsheng, April 2016).

Students around the country are dealing with the difficulty of arranging tests over a long period of time in every university system. One of the biggest problems with test scheduling is that the number of students taking the exams has grown well beyond what can be accommodated, exam sites are hard to come by, and meeting all the requirements is becoming more difficult (Dimopoulou, 2010).

Using the Web-based Examination System (WES) at the Federal University of Agriculture, Abeokuta, Nigeria, has solved the scheduling issues that have plagued the conventional (paper-based) examination system (Gunawan, 2008). This system provides a campus-wide service for e-assessment that is free of irregularities and generally fair to examinees and also enhances instant feedback. As a consequence, results may be released in record speed and without any errors. Many unique aspects of WES, such as real-time data collecting, administration, and analysis, distributed assessment, and interactive assessment, may be applied in paper-based systems to promote remote education (Rashad, 2010).

3. Methodology

The problem statements may be answered by a web-based system that enables the exam committee to search and locate precise information about the student and the course. Figure 1 depicts the stages of the project and the steps that needed to be taken to get things moving in the right direction.

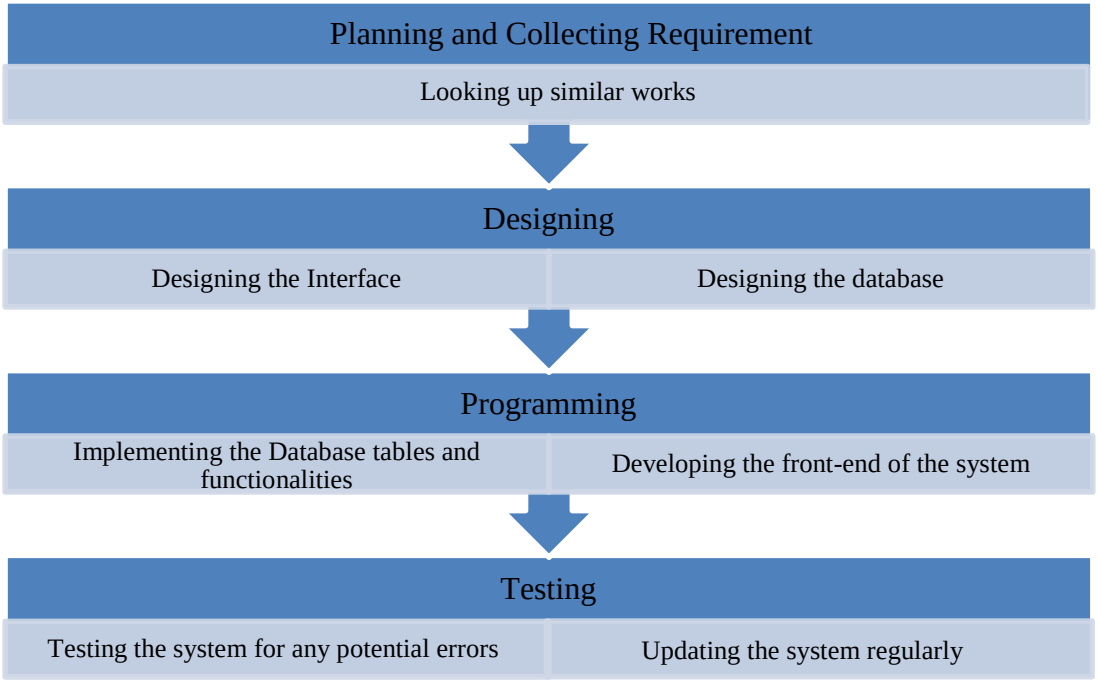

Figure 1: University Examination System Phases

4. Result & Discussion

The university examination system is made up of a number of interconnected components that work together to ensure that the software runs correctly and efficiently.

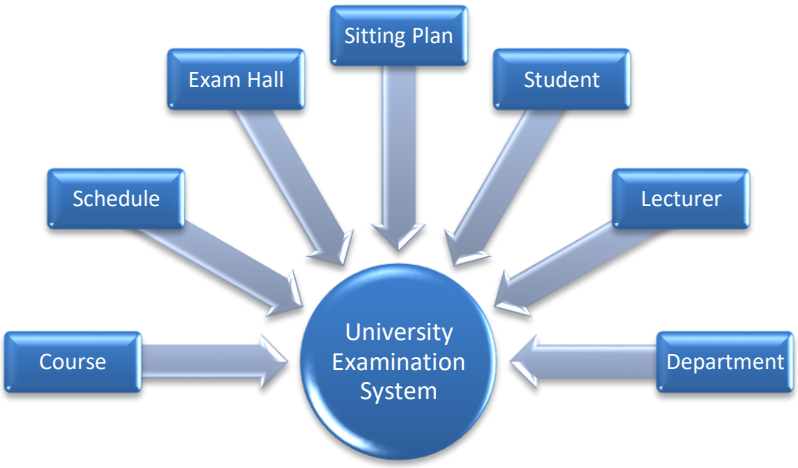

Figure 2: Web-based structural design of University Examination System

4.1 Scheduling Process

The process of conflict and automation is in the exam schedule page that is shown in figure 3, in the exam schedule page the admin should to choose exam template, course, exam time, exam date. So, point is in here if have a course that it selected before for example robotics and user want to choose another exam in the same day and the same time the system will automatically process these exams and compare the students, it will bring all students that have two exams in that day and the system will bring the total of students for each group.

Now the system has total number of students and also have the students that have these two exams in the same day when user choose the second exam, the system will show an alert message that say please select another day because it has conflict rate.

The process of conflict is that the system will compare these two courses and bring the total of student and the students that have these two exams in same day the system will find the average of them, so it has 5 student that have conflict problem and the total student for these two courses is 30 it will be (5/30 = 0.16) so the system will allow to put these courses together because the condition for conflict process it will be less than 0.2 or %20 (conflict student / total student).

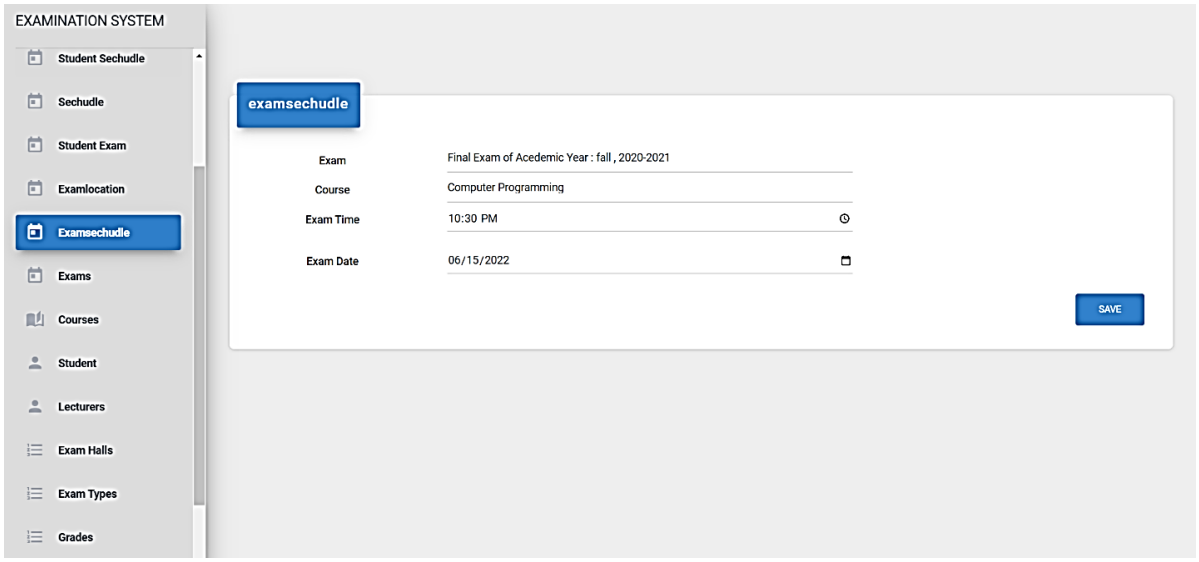

Figure 3: exam schedule page

the process is done and the courses is ready to put in the schedule, when the user click the schedule button the system will show new schedule with the minimum conflict or no conflict, the invigilator and chief invigilator will put in the schedule each of them for each hall and the lecturer of the course that have exam in that day will not be a chief invigilator.

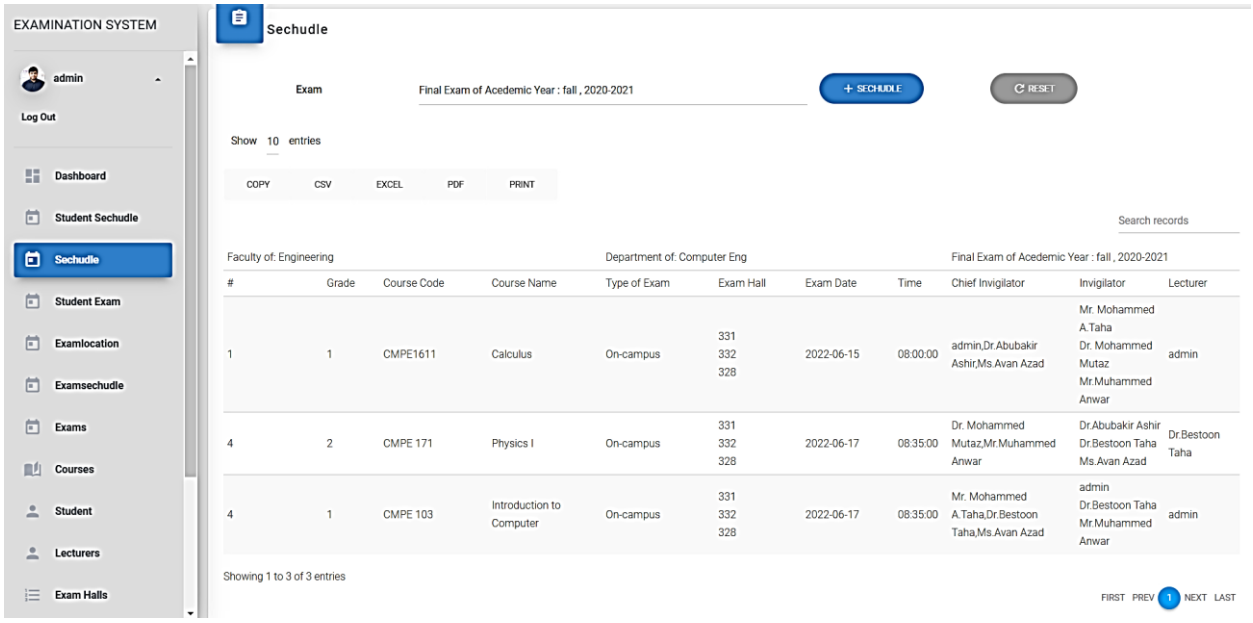

Figure 4: Schedule Interface

5. Conclusion

For the Tishk International University test committee, this project's goal was to create and design a web-based management system to better organize and manage their work. Exam committee tasks were mostly automated in order to create a paperless atmosphere.

There are many various aspects to scheduling, such as selecting a department and faculty and the number of lectures and courses. They can be accessed and managed by the administrator. The online system's database stores all data instead of physical files and documents.

It is necessary for administrators to set up all general settings in the Administration section, which are responsible for scheduling elements such as departments and faculties and classes and instructors. The system is ready for usage once the scheduling structure has been established. The method for approving leave requests is controlled by the structure of the schedule.

The number of departments, students, courses, and lecturers can be seen in the dashboard. Since we've added so many recently, we're able to see all kinds of granular information about each course, student, exam hall...etc.

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