

Kairos Guardian

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Abstract—Even though most of the administrative works has been computerized, some basic works are still done manually due to inherent difficulties. So, keeping this in mind we are proposing a system that uses a web application concept to facilitate the departmental system in educational institutes. Our proposed system would be an automated version of some of the manual works done by any particular Education Department. In case of manual system, they need a lot of time, manpower etc. However, through our proposed system, almost all basic manual work will be computerized. It will provide autonomous features to the functions of the system and will maintain the accuracy as well. The main objective of this system is to reduce the paperwork and manual processing. Name explanation of our proposed system ‘KAIROS GUARDIAN’—Kairos is a Greek word for time and Guardian is a synonym for savior, the one who saves, that means the TIME SAVER system.

Keywords—Kairos Guardian Manual processing
Autonomous Accuracy.

I. INTRODUCTION

Automation is the process of replacing manual task with the one that happens automatically. Although, we may not realize it, we reap the benefits of automation every day. Processes can broadly be divided into two categories – manual processes and automated processes. Generally, modern organizations, like Schools and colleges, use a combination of both types of processes in their day-to-day functioning.

Disadvantages of using some manual processes-

- 1) Time-consuming process
- 2) Too much paper usage
- 3) Susceptible to error
- 4) Editing problem

- 5) Susceptible to damage due to natural calamities
- 6) Less safe and secure
- 7) Decrease Productivity of Employees
- 8) Limited Access to Reports and Data
- 9) Less availability of work done

With the advancement of the technologies, the remaining manual processes are also being converted into automated processes. Nevertheless, some basic tasks are still usually overlooked during such conversions. Some of those tasks are Time tabling for each class, Question Paper setting for examinations and Seat allocation during examinations. Our proposed system will contain three sections to perform each of the mentioned above tasks.

II. EXISTING SYSTEM

Present mode of work is based on manual system in which the all the information is first collected, processed, mapped on register and then drawn or typed on the computer. It is very difficult job and time consuming also. Moreover, the existing system is also totally dependent on faculty, if those particular faculty members are absent, it leads to problem and affects the Institutional performance. Due to large volume of data, a lot of complexities are involved in developing, maintaining, updating, retrieving and optimizing selected information.



Existing system of each sections of our proposed work are-

A. Seat Allocation

Most of the institutions are not agreeing to make centralized examination system. One of the main causes is that with the variable number of students, courses and departments, it becomes unmanageable to allocate proper exam seats. It is also requiring strenuous efforts to properly allocate the seats among a large number of students. We have to follow some constraints for proper allocation of exam seats. The best set of seat allocation should be confirmed. To eliminate these problems, some institutions encourage decentralized exam system. For maintaining centralized examination with quality of examination we have introduced a particular section of our proposed system for automated seat allocation. It will provide optimal result and also prevent cheating in exams.

B. Question Paper Generation

The existing system for Question Paper Generation requires faculty members to search, analyze and set questions for question paper. These faculty members select the questions as per the syllabus and pattern as prescribed by the curriculum. There might be some questions which are repeated in many question papers because those are from paper setter's favorite topic. So, there is no guarantee of unbiased question paper generation. Also, the security and confidentiality of the system can be easily compromised. Aside from the existing issues, our proposed system can tackle these issues and produce error free unbiased question paper that will be kept out of the reach of students until the examination day.

C. Time Table

After analyzing the basic yet essential tasks that are done in any educational institutions, we can evidently say that the traditional hand operated method of time table is very monotonous and time consuming and usually ends up with various classes clashing either at same room or with same teachers having more than one class at a time. This can be resolved by automated time table scheduling. This proposed system introduces a practical timetabling approach capable of taking care of both hard and soft constraints required for preparing time table in colleges. The automated time table scheduling provides easier ways for faculty members.

III. PROPOSED SYSTEM

The proposed system consists of three sections, namely

- 1) Auto Timetable Generation
- 2) Auto Question Paper Generation
- 3) Auto Exam Seat Allotment,

As shown below.

The users can choose any of the given options as per their need and they can also access all the option one by one after successful login. The intended users of our proposed automated system are the faculty members or teachers of the Institutions or schools. It is meant to computerize the basic internal tasks of the institutions.

The first web page of our proposed system will consist of the following three sections of different functionalities as shown in the Fig. 1. Below:-

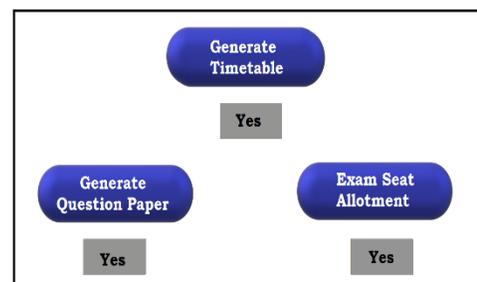


Fig. 1.

After selecting the desired option, the user will be navigated to the login/sign up page.

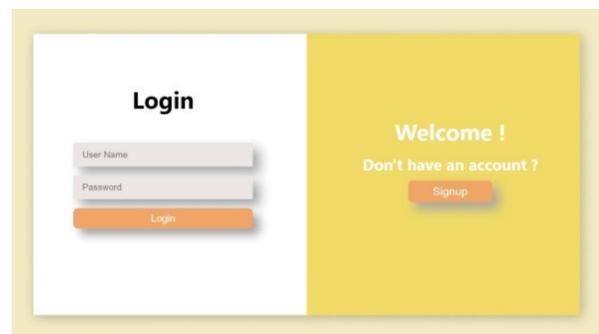


Fig. 2.

A closer look to the basic functionalities of each of the sections are given below.

A. Timetable generator

If user wants to generate timetable when user proceeds with the timetable option, the user then has to type its credentials to login and get started with the time-tabling process. Fig. a shows the structural description of working of the time-table generator.

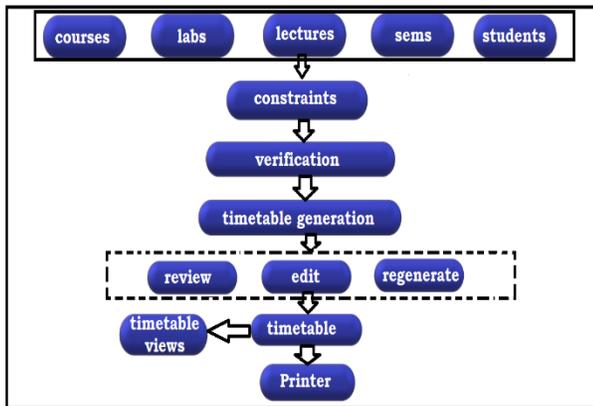


Fig. a. Timetable generation process

The timetable section contains options like Instructors, Rooms, Subjects and Sections and also in all these options you will further get two more option 1- add 2- import from csv. After adding any details, the edit option activates itself, so, a user can easily edit its submitted information. The database saves the information, therefore, user do not have to mention every details every time it accesses the timetable. After clicking the generate-timetable option, the verification of input constraints takes place, if the input data is sufficient to generate the timetable, it generates the timetable. User can regenerate, edit or review the timetable and also printout the same.

B. Question Paper generator

If user wants to generate Question Paper.To get started with the Question paper generatorsection, the user (paper setter) has to login or sign up as per his/her interaction with our proposed system' website. The flow of working of Question paper generator is shown in Fig.b.

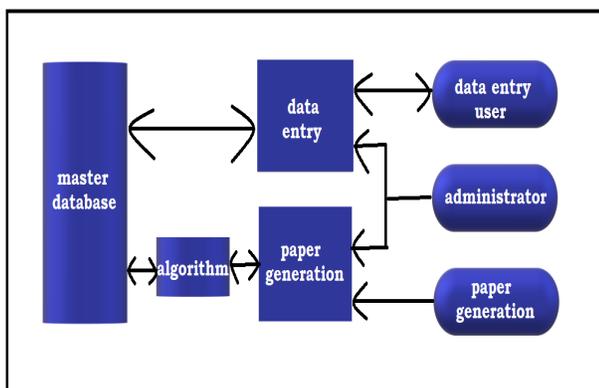


Fig. b. Question Papergeneration process

After entering into the environment, the user gets two options either to enter some Questions or to generate Question Paper. In case, user wants to add Question into his/her master database; our system provides category in

which they want to keep that particular Question, for example, in Easy, Medium or Difficult Category. This helps in maintaining labelled information into our master database which helps in quick invocation in future as per the command. Now, in case user wants to generate Question paper, he/she can simply decide which category of paper they want to generate and proceed with the generation process. After generating the Question paper, the user can save the same in form of pdf also.

C. Seating Arrangement

If user wants to generate timetable.In Exam Seating Arrangement section, user has to input its credentials and log in.The flow of seating plan generation is shown below in Fig. c.

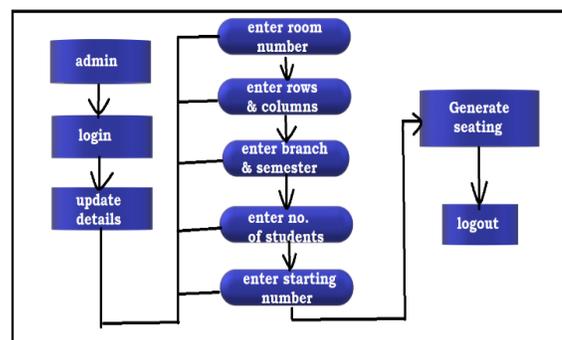


Fig. c. Exam Seating arrangement process

If the user is new, he/she will get various constraints to complete like room number, branch, number of students and starting roll number. If the user has already input these information, he/she can edit it as per the needs, however, most of the information like room number or number of student or rows and columns do not change with time that easily, as the infrastructure and institute's map will not change every year. This saves a lot of recursive manual work. After completing all the necessary requirements, the user can generate the seating arrangement that will be shown in a well arranged block. If user wants to enter some special conditions like any two students that should not be seated together then the user can add this as well. The generated seating plan will keep those special conditions as its priority. User can also re-generate the generated seating plan, it will shuffle all the names keeping special conditions fulfilled at the same time. Finally, the user can print the seating arrangement sheet.

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We are also thankful to our Faculty members, lab attendants and our friends for their direct and indirect support that kept us motivated.

We submit this proposed approach of ours with utmost regard.

CONCLUSION

This application would be very beneficial for the Educational Institutions. This paper assists in automating the existing manual tasks. Lack of automation has always been there in the existing system of all the three tasks mentioned above. The goal of our proposed system is to minimize, in fact, completely remove the workload and to save significant faculty's time and hard work. This System will provide the automated version of timetable, seat allotment and question paper generation. It will be a paperless work which can be accessed, used and controlled easily. It reduces the hard work required in assigning basic resources logically while keeping in mind various constraints. It will provide accurate results always. Subjects, number of classrooms do not easily change with time. So, we do not have to update everything every time as the previous data will always be there until we explicitly remove it. It is not just a system but also a step towards complete automation.

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