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TEACHER'S AUTOMATIC TIMETABLE GENERATOR USING PHP

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Abstract: Teacher's Automatic Timetable Generator using PHP is a system designed to automate the process of generating timetables for teachers. The system is built using PHP programming language and provides an easy-to-use interface for teachers to input their availability, subjects, and classes. At present we are using the manual system to create timetable which is very time-consuming process and requires a lot of efforts. In the manual system the teacher must create the timetable manually. As a result, the automatic timetable generator can reduce both the time and effort of the teacher. In this system we will send a reminder to the teacher via SMS so that they don't have to keep the track of all the classes they have. Using this system, we can also create a timetable if the teacher is absent.

Keywords—Timetable generator, genetic algorithm, SMS Reminder.

I. INTRODUCTION

In the world of education, teachers are responsible for managing their schedules and ensuring that classes run smoothly. One of the key challenges that teachers face is creating a timetable that efficiently allocates time for various subjects and activities while also accommodating the availability of students and other resources. To address this challenge, an automatic timetable generator using PHP can be a valuable tool for teachers. This web- based application can be designed to create an optimized timetable based on various constraints such as the availability of teachers, classrooms, and resources, as well as the preferences of students and the curriculum requirements. The automatic timetable generator operates by using complex algorithms to allocate available resources efficiently and minimize scheduling conflicts. This ensures that the classes run on time and that there is no overlap in the allocation of resources.

Moreover, the application can be designed to be user-friendly, enabling teachers to easily input their scheduling constraints and preferences. The application will then generate the timetable automatically, which can be customized and fine-tuned by the teacher. This type of automatic timetable generator has several benefits. First, it can save time for teachers, allowing them to focus on teaching instead of managing their schedules. Second, it can optimize resource allocation, leading to more efficient use of time and facilities. Finally, it can improve the overall quality of education by ensuring that classes are run on time and that teachers are able to cover the required curriculum.

In conclusion, a teacher's automatic timetable generator using PHP is a valuable tool for teachers to manage their schedules and ensure that classes run smoothly. With its ability to optimize resource allocation and minimize scheduling conflicts, it can save time, increase efficiency, and improve the quality of education.

II. MOTIVATION

One of the primary motivations is to save time and increase efficiency for teachers who have a multitude of tasks to manage daily. By automating the scheduling process, teachers can focus on teaching and preparing for classes rather than spending hours manually

creating timetables. Additionally, the automatic timetable generator can optimize the allocation of resources such as classrooms, equipment, and other teaching aids. This can lead to better use of resources and ultimately improve the quality of education for students. Another motivation for using an automatic timetable generator is to minimize scheduling conflicts. Scheduling conflicts can be a significant issue for teachers and can lead to disruptions in class and a loss of valuable teaching time. By automating the scheduling process, the generator can help to ensure that all classes run smoothly and without interruption.

III. PROBLEM STATEMENT

Manual timetable creation is a time-consuming and challenging process for teachers. The process of creating a timetable involves considering various factors such as student preferences, teacher availability, classroom availability, and the requirements of the curriculum. Creating a timetable manually can be a tedious and error-prone process that requires significant time and effort from teachers. Moreover, it is difficult to ensure that the timetable is feasible and does not contain any scheduling conflicts. Inefficient scheduling can lead to underutilization of resources, missed teaching opportunities, and a decrease in the quality of education provided.

IV. LITERATURE REVIEW

[1] Neeraj Sharma, identifies that creating timetable at universities is a problem under many constraints and the resources are very limited. So, he discovers a technique that can handle constraints which is needed to optimize the problem. It focuses on a technique called Particle Swarm Optimization (PSO). It helps in finding optimal solutions that can be used to create timetable for the universities. It solves Np-hard problems because it has fast convergence and fewer parameter settings. Firstly, it provides detailed introduction about the timetable topic, PSO method and variations. Secondly, it applies them to generation of timetable.

[2] Monirul Hasan, discovers that universities are facing problems to generate a schedule for exam and course. So, he solves this problem by using tabu search algorithm for the generation of timetable. It can generate both course and exam schedule for a university. Tabu search is a procedure that helps us in solving the optimization problems. It deals with sub-optimal initial solutions. It analyses search space and averts non-essential exploration. It optimists the solution and it keeps the list of visited area in Tabu list. Further it solves these problems and give feasible solution within reasonable time.

[3] Pushkar R. Patil, finds that the manual system that is used to create timetable in universities is very time consuming and it is a very tedious task. The manual system can end up in many classes clashing with the same teachers having multiple classes at a time or similar rooms. The manual system approach does not utilize the resources properly. So, to overcome these problems the author proposes to make an automated timetable generator that uses computer assisted timetable generator. The system takes various inputs like number of teachers, classrooms, subjects, maximum subjects a teacher can take. The timetable will be generated depending upon these inputs.

[4] Yash Kamboj, discovers the manual way of creating timetable is very time consuming and very tedious. There are chances where the classes can collide, or same teacher is assigned for multiple classes. So, the author proposes a Heuristic technique that can generate timetable in an efficient way. The system takes inputs like number of classrooms, teachers, subjects, maximal number of subjects a lecturer can take. After taking all these inputs the timetable can be generated in a suitable way.

V. PROPOSED SYSTEM

The proposed system starts with the collection of datasets. We will first take the input from the user regarding the information that is related to create the timetable such as number of courses, labs, subjects, semester etc. Later we will apply rules and constraints to the user input. For example, if we are taking input for lectures, we should make sure that there should not be the same lecture for the same faculty at the same time. Later we will verify all the possibilities and constraints which will help in generating the timetable. Once the

timetable is generated the user will review the timetable generated and if he wants to make any changes the user can regenerate the timetable. Even if the teacher is absent, we can generate the timetable according to that. Messages will also be sent to the respective teachers for the class they have.

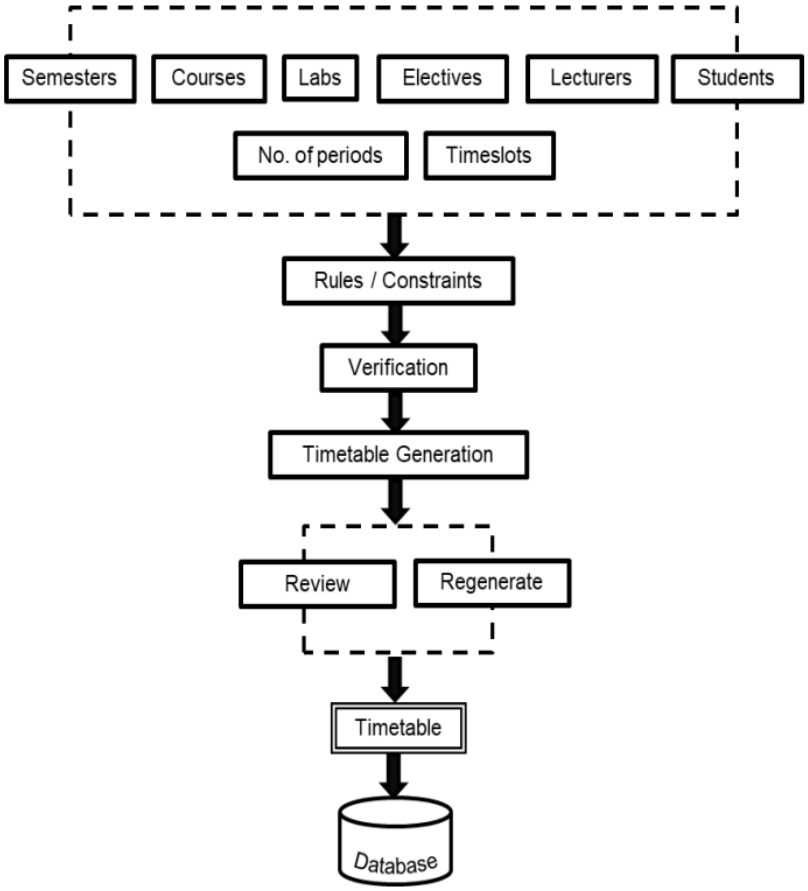

Fig 1. General System Architecture of Timetable Generator

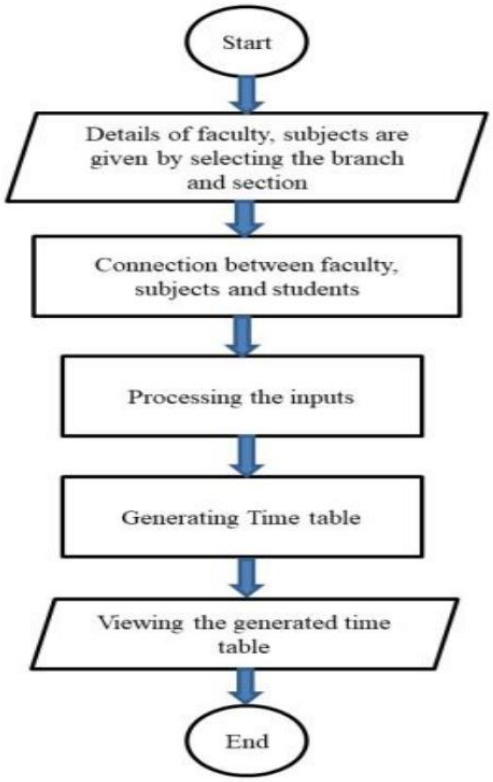

Fig 2. General Flow Diagram of Timetable Generator

VI. ADVANTAGES OF PROPOSED SYSTEM

- The slot assignment is very easy.
- It consumes less time.
- There are no slot clashes.
- It always considers the other department slots first.
- There are various possible slot combinations that can be acquired.
- It is user friendly.

VII. LIMITATIONS AND CHALLENGES OF THE SYSTEM

The existing system has a lot of disadvantages as it is done manually. Few disadvantages are listed below.

- It is done manually.
- It increases paperwork.
- There are high chances of errors.
- It very time-consuming process.
- It is very confusing.

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REFERENCES

[1] Utkarsh Kumar, Yash Kamboj, Vaibhav Kumar, Rajesh Singh "Timetable Generator Using Heuristic Technique", International Journal for Research in Applied Science & Engineering Technology (IJRASET),2022.

[2] Mr. Vadipina Amarnadh, B. Hemanthi, G. Sravanthi, S. SaiSanketh "Automatic Timetable Generator", International Journal of Research (IJR), 2020.

[3] Shraddha Ambhore1, Pooja Walke2, Rohit Ghundgrudkar3, Akshay Alone4, Anushree Khedkar "Timetable Generator Using N-Queen Algorithm", International Journal of Research in Engineering, Science and Management (IJRESM), 2020.

[4] Abhinaya, K. Sahithi, K. Akaanksha, "Online Application of Automatic Time-Table Generator", International Research Journal of Engineering and Technology (IRJET), 2019.

[5] Akshay Puttaswamy, H M Arshad Ali Khan, Chandan S.V, Parkavi.A "A Study On Automatic Timetable Generator", International Journal Of Science And Innovative Engineering And Technology (IJSIET), 2018.

[6] Sundresan Al Perumal, Mujahid Tabassum, Norita Md Norwawi, Ganthan Al Narayana Samy, "Development of an Efficient Timetable System", 8th IEEE International Conference on Control System, Computing and Engineering (ICCSCE), 2018.

[7] Tanzila Islam, Zunayed Shahriar, Mohammad Anower Perves, Monirul Hasan "Timetable Generator Using Tabu Search", Journal of Computer and Communications, 2016.

[8] Mayuri R. Bagul, Sunil C. Chaudhari, Sunita N. Nagare, Pushkar R. Patil, K.S. Kumavat "A Novel Approach for Automatic Timetable Generation", International Journal of Computer Applications, 2015.

[9] Andeep Kumar, Kawaljeet Singh, Neeraj Sharma, "Timetable generator using Particle Swarm Optimization", International Journal on Recent and Innovation Trends in Computing and Communication (IJRITCC), 2013.