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Automated Timetable Generator

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ABSTRACT

Timetable generation is tedious job for educationalist with respect to time and man power. Providing an automatic time table generator will help to generate time table automatically. Proposed system of our project will help to generate it automatically also helps to save time. It avoids the complexity of setting and managing Timetable manually. These algorithms incorporate a numeral of strategy, aimed to improve the operativeness of the search operation. The system will take various inputs like number of subjects, teachers, and workload of a teacher, semester, and priority of subject. By relying on these inputs, it will generate possible time tables for working days of the week for teaching faculty. This will integrate by making optimal use of all resources in a way that will best suit the constraints.

1. INTRODUCTION

Time table scheduling has been in human need ever since they thought about managing time efficiently. It is widely used in schools, colleges and other areas of teaching and serves as a crash course. In the early days, scheduling was incorporated into the work of scheduling by an individual or group. And time. It can also take a long time when determining small limits and increasing the amount of data to deal with the number or increments of the range. Completely re-designed time tables can be reused for the entire generation with no changes, in such cases they will be slowed down. Other cases occur because the problem is a change in the number of employers or workers, which can immediately change the timetable. Although most of the college work is computerized, the timetable is largely determined manually. Manual lecture scheduling requires considerable time and effort. Lecture-scheduling is a limiting satisfaction problem in which we find a solution that satisfies the given constraints. Automatic Timetable Generator is a Java-based software that is used to generate periodically and automatically. The difficulties posed by the time table can be represented as a constraint satisfaction problem with loose parameters and multiple constraints. These constraints can be replicated in a format that can be organized in a systematic manner through a scheduling algorithm. Scheduling involves the use of multiple path restrictions, which can be used to complete tasks. For example, when scheduling classes at an institution, a single time slot is not assigned to a single faculty member who teaches two courses. On the other hand, two different courses should not be distinguished for participation by the same group of students

II. MOTIVATION BEHIND PROJECT

The generation of timetables has always been so tedious right from time and apart from being tedious, the timetable created has always been filled with series of errors and mistakes. Educational institutions still use traditional way i.e. timetable registers for managing timetable record and classrooms. The teacher has to make timetable for increased number of staff causes wastage of important time from the valuable lecture time. This system provides a systematic and effective solution for lecturer to manage the record. Eliminates the time consuming by generating timetable automatically.

III. AIM AND OBJECTIVE

So many techniques have been put forward to solving this problem. But genetic Algorithm was used to find a solution to the timetable problem. The system administrator logs into the system and then the administrator input the courses with their codes and the unit. At that point, the admin will keep adding until the number of courses needed has been inputted. The admin can remove a course that has been inputted in the case of error. After inputting the courses, it moves to the next page where all the lecture halls or rooms that will be used will be inputted. After inputting these, the system then generates the timetable system. This technique (genetic algorithm) used helps in reducing to minimum errors and mistakes in encountered in developing an automatic timetable.

IV. SOFTWARE REQUIREMENTS

- HTML- *HTML is the core of frontend development and this situation is not going to change anytime soon. It is the 'skeleton' or 'markup' of the website.*

We have utilized HTML to design the interface of our output-timetable. This allows us to create an aesthetically pleasing and user-friendly design. Additionally, we have also employed HTML to create input forms for our project. This allows us to incorporate necessary data and information that can be used to produce the output-timetable. With HTML, the design and functionality of our project is maximized.

- CSS- *CSS helps to create some additional styling rules to the previously created HTML structure. Besides that, proper CSS rules make the web application responsive.*

With the help of CSS, we were able to make our landing page more attractive and welcoming. We made use of different styling properties to enhance the look and feel of the page. We changed the font size, font type, and color of the text. We also used a background to give the page a more engaging and inviting feel. To further make the page more attractive, we used animation effects to draw the attention of the visitors. We also used different shapes and sizes of buttons to make the page look more user-friendly. These changes have helped to make our landing page more attractive and welcoming.

- JAVASCRIPT- *It allows us to dynamically modify the contents of the app or website. It is one of the most important frontend technologies.*

This document outlines the steps needed to establish a successful connection between front end elements and back-end systems. Establishing this connection will allow for necessary data to be shared between the two systems. The first step is to identify the back-end system with which the front-end element will be connecting. Once the connection has been identified, the next step is to establish the parameters for the connection. It is important to ensure that the connection is secure and that all data is protected. The third step is to create the code to establish the connection and provide the necessary details from the back end. This code will need to be written based on the connection and security protocols established in the previous step. Finally, the connection needs to be tested to ensure that the connection is functioning properly. This will involve running tests to check the connection and ensure that data is able to be sent and received successfully.

- PHP- *PHP is an open-source server-side scripting language that many developers use for web development.*

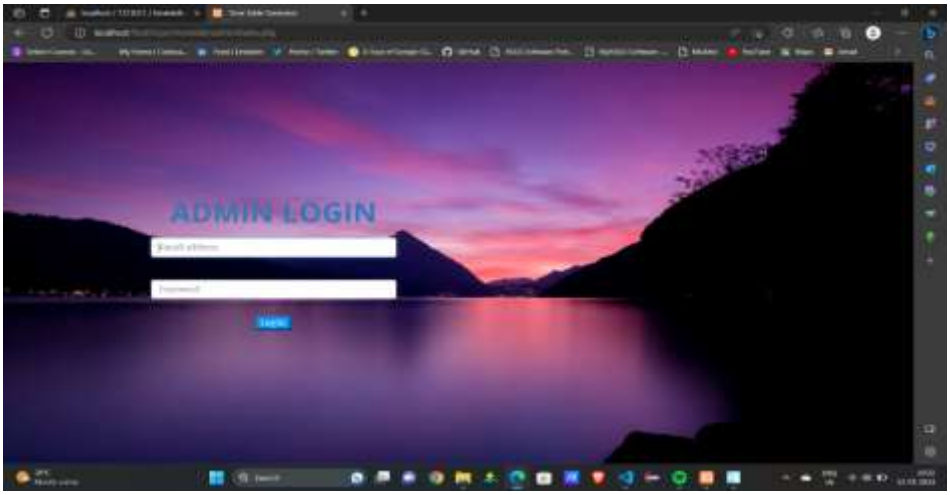
PHP has been chosen as the language of choice, as it is an open-source language with a broad range of functionality and support. All algorithms used within the backend system have been designed and written in PHP to ensure compatibility and ease of use. Additionally, since the language is open source, developers can easily share and reuse code when needed. The use of PHP for all backend language and algorithms ensures that the system is versatile and able to handle various tasks, while continuing to provide a reliable, secure, and efficient system.

- XAMPP –

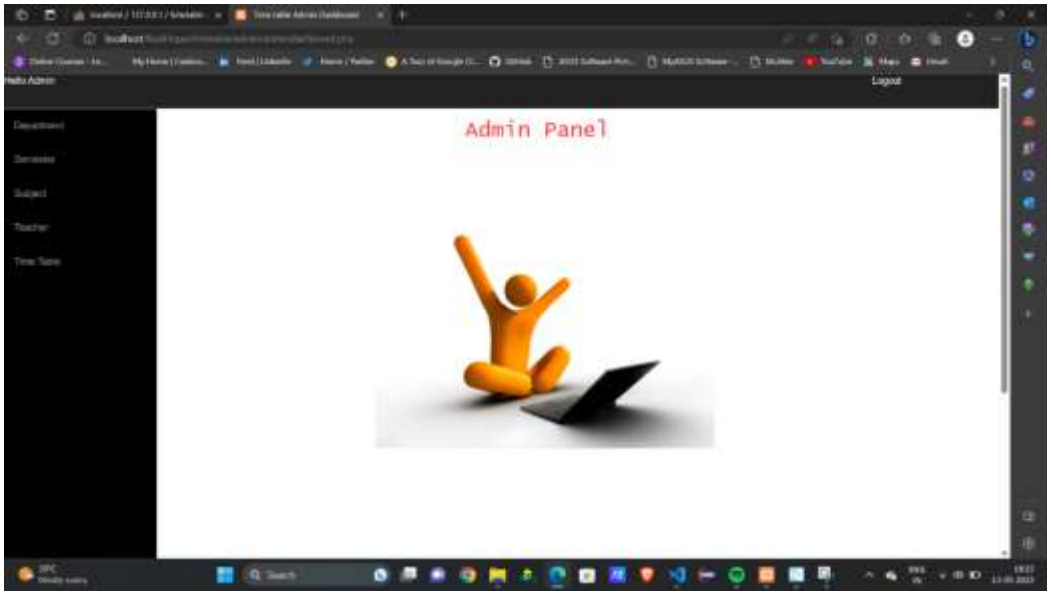
It is a local host platform that helps developers and designers to create and view projects in an easy and efficient way. It is an open-source, cross-platform web server solution stack package consisting mainly of the Apache web server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. XAMPP makes it easy for developers to set up a localhost environment for testing and development purposes, allowing them to create projects without having to worry about configuring the server.

V. IMPLEMENTATION

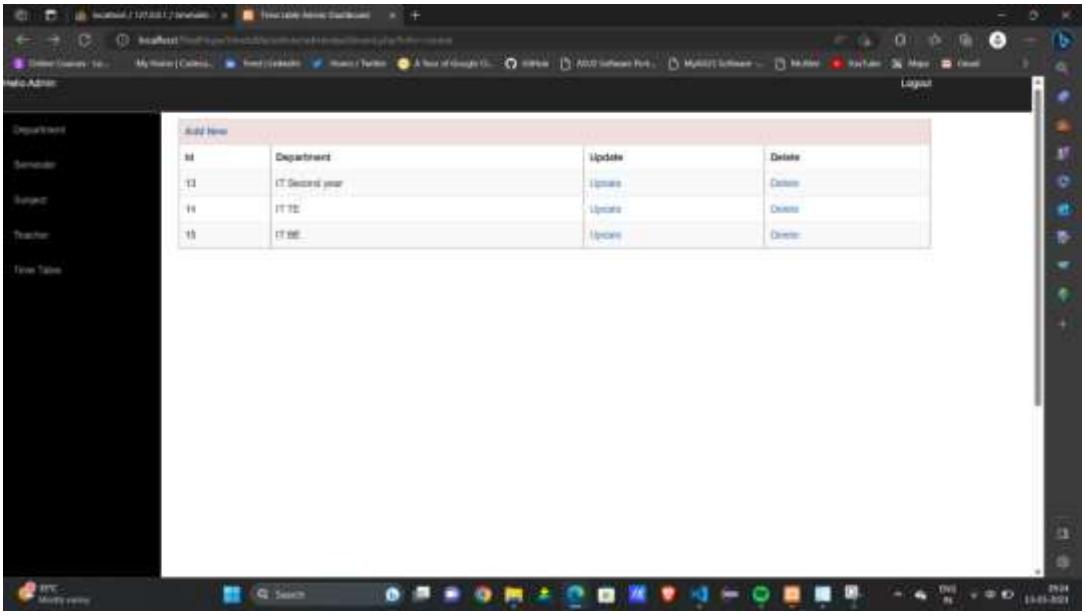
1. ADMIN LOGIN PAGE



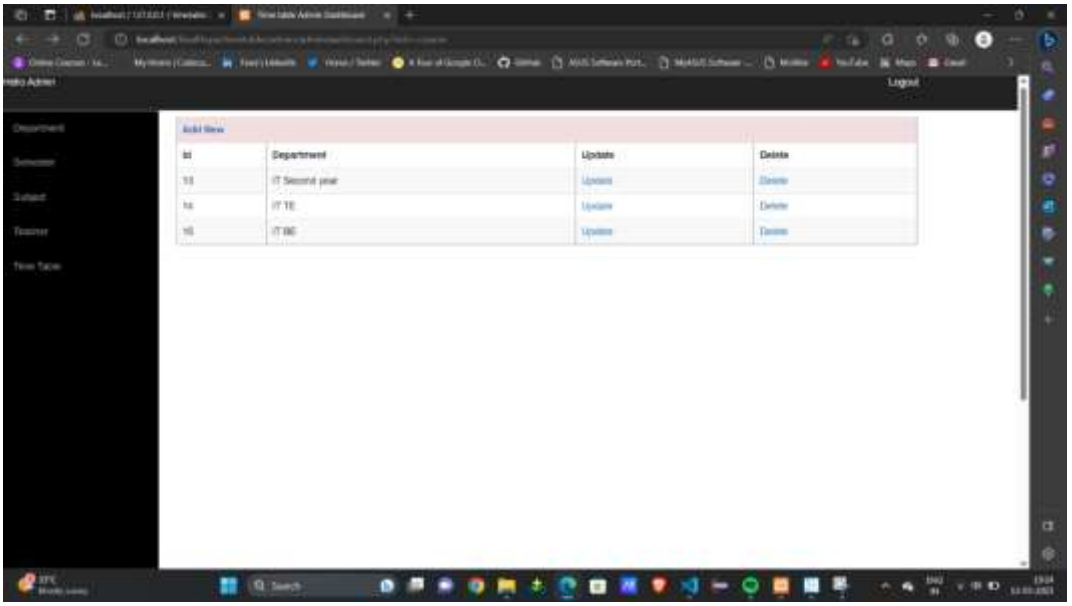
2. ADMIN PANEL



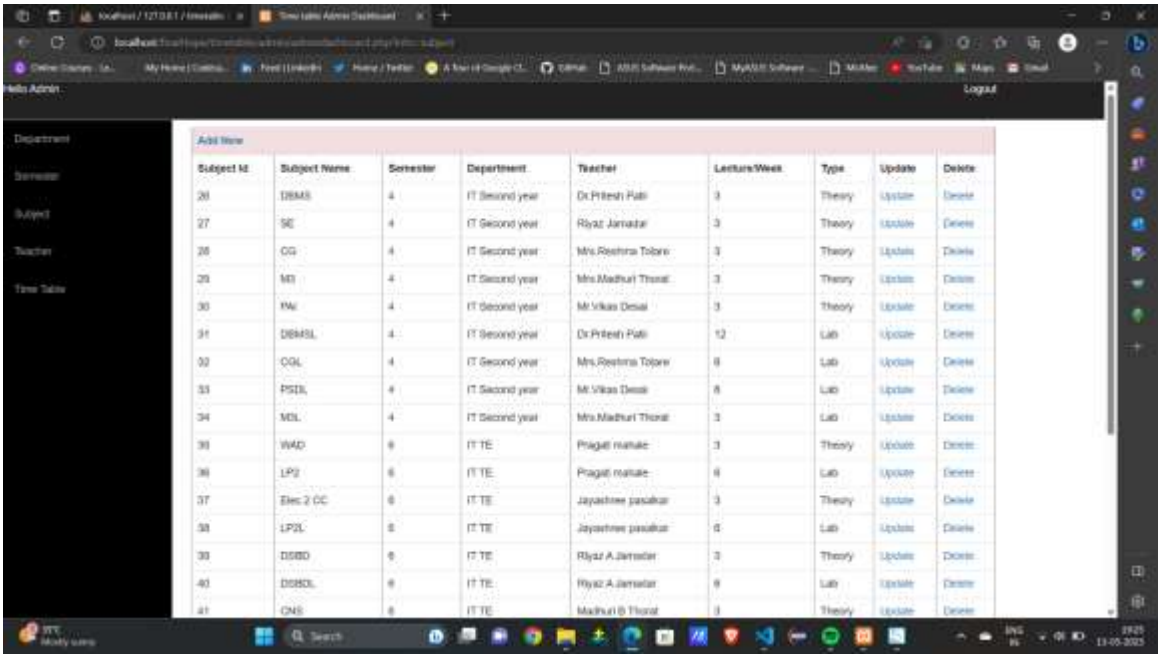
3. DEPARTMENT DATABASE



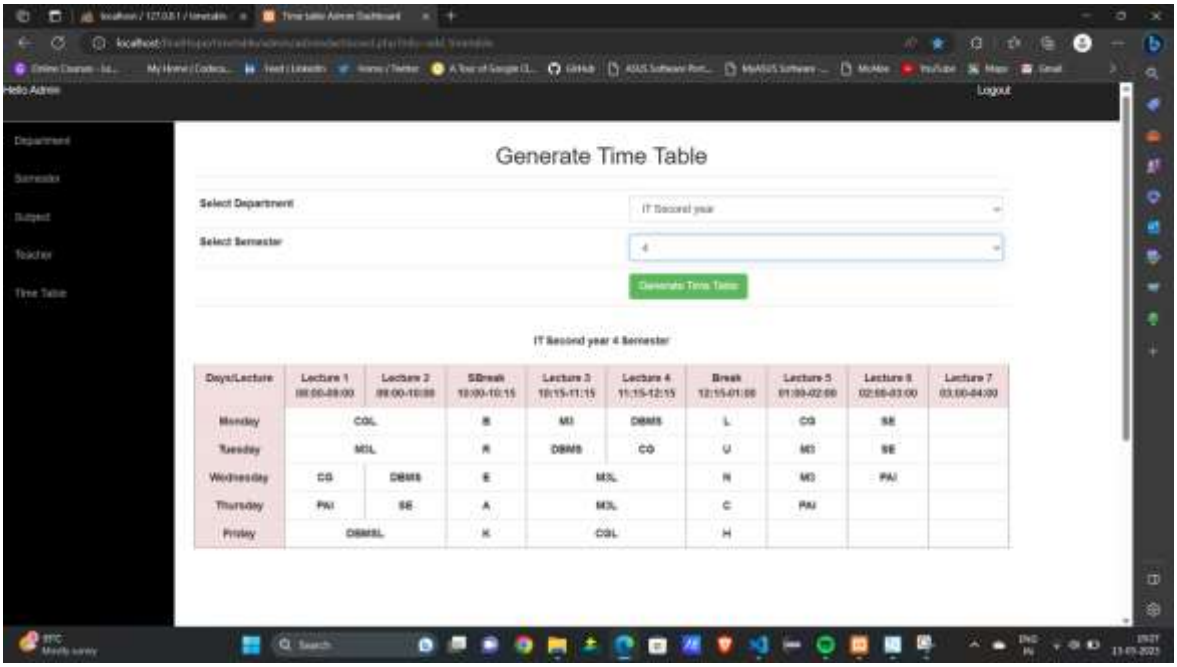
4. SEMESTER DATABASE



5. TEACHER DATABASE



6. FINAL OUTPUT



VI. CONCLUSION

Our approach of developing automated timetable system is successful in solving colleges ‟lecture-course timetabling problem. We have also shown that how we can fit our timetabling system as Rich Desktop Application. The graphical user interface (Windows Form Application) used in this application provides an easy way in understanding how application works and also makes ease in providing the input. This application is provided with necessary details of faculty and subjects which are stored in database (SQL SERVER) and then by making use of the available data it generates the lecture-course timetable with minimum time when compared to manual generation of timetable and involves in satisfying all the constraints.

VII. ACKNOWLEDGEMENTS

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VIII. REFERENCES

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Download XAMPP (apachefriends.org)

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