Automatic Timetable Management System

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Abstract: *We provide a solution for an intelligent auto-generate scheduling system made especially for the academic sector. When making an accurate and highly successful timetable, it is important to take into account the availability of classrooms, students, lecturers, courses, time slots, and other aspects. These time-consuming elements contribute to how challenging it is to create the same. It is crucial to keep in mind that each course may have one or more lecturers and classes, depending on the total number of students enrolled for the particular semester. The evaluation of instruction by students is crucial in the educational system. A lexicon-based technique can be used to analyse student responses to determine whether they have a positive or negative attitude. The analysis of the student response and the gathering of opinions are the key goals of this study.*

Keywords: Timetable system, Smart scheduling, Opinion mining, Teaching Evaluation

I. INTRODUCTION

In recent years, institutions of higher education increasingly expand the enrollment, and it is more difficult to manage students in college. In the 21st century, computer science is an important and irreplaceable work currently in the construction of modern universities. Exploiting Digital and informatics in universities has been attracted more and more attentions. In general, with the increasing number of students in college, student management systems design is also important.

Using a robust time management system institution can manage an efficient, effective, and systematic timetable creation process focusing on other productive tasks as well. Time Table Management system is an automated system which generates Time table according to the data given by the user. The main requirement of the application is to provide the details about the branch, subjects, number of labs, total number of period and details about the lab assistance. Then the Application generates the time table according to the need. The problem is to design and implement an algorithm to create a semester course time table by assigning timeslots and rooms to a given set of courses to be run that semester under given constraints. The constraints include avoiding clashes of time-slots and rooms, assigning appropriate rooms and appropriate number of slots and contact hours to the courses etc.

In today's era, the teacher-student relations in any educational institute play a critical role in the development of the student and the institute in general. To determine the capabilities of students, students are being evaluated by the process of well-defined examination systems. At the same, for determining the capabilities of teachers, a feedback system is required to be kept in place. Feedback mechanism system ensures a detailed analysis of the performance of the teacher's w.r.t the various parameters. The feedback system provides capabilities for selecting a particular course for feedback and then the reports are being generated by the admin. It provides proper feedback to the concerned teachers and hence can result in good results as the concerned would then work on their weaker points as the same would be reflected from their individual feedback report. The existing manual system for the same would take a lot of time for analysing the performance and the manual processes are susceptible to errors. Feedback analysis helps to analyze individual pieces of incoming student feedback and determine their category.

We propose a design for Timetable management and Faculty feedback analysis system, which can help educational institutions manage tasks through automation. The aim of the project is to reduce the time for generating timetable and getting an in-depth analysis of student's feedback about the performance. The system being developed helps in making the decision processes and the selection processes much more effective and error free.

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II. RELATED WORK

In the paper {1},The proposed algorithm can be further adapted to suit as per the requirements of different institutes and universities. It considers a wide range of constraints divided into soft and hard, to generate faculty, classroom/laboratory and student timetables. The complexity of the proposed algorithm is n3.

In {2}, The paper presents a categorisation of the methodologies conducted in recent years based on chronology, category and application.

3}We propose two pattern-based formulations and a solution algorithm that simultaneously exploits column generation and a team of metaheuristics to build and improve solutions

{4} Graph Colouring Algorithm (GCA) takes 11 percent of the time, Genetic and Graph Colouring (GCA) takes 25 percent, Heuristic and Iterated Local Search Algorithms (ILSA) take 44 percent of time, and Heuristic Algorithm takes 20 percent.

{5}.This means developers can use imperative programming for business logic and declarative programming for user interface (UI) development.

{6}. The fitness score relates to the quantity of crashes the timetable has experienced.

2.1 Existing System/Open Issues

The rapid rise in higher education institution enrolment has made managing college students more difficult. A vital and essential element in the development of modern universities in the twenty-first century is information technology. Interest in utilising technology and informatics at universities is growing. Designing a student management system is important in general because of the increase in college enrollment.
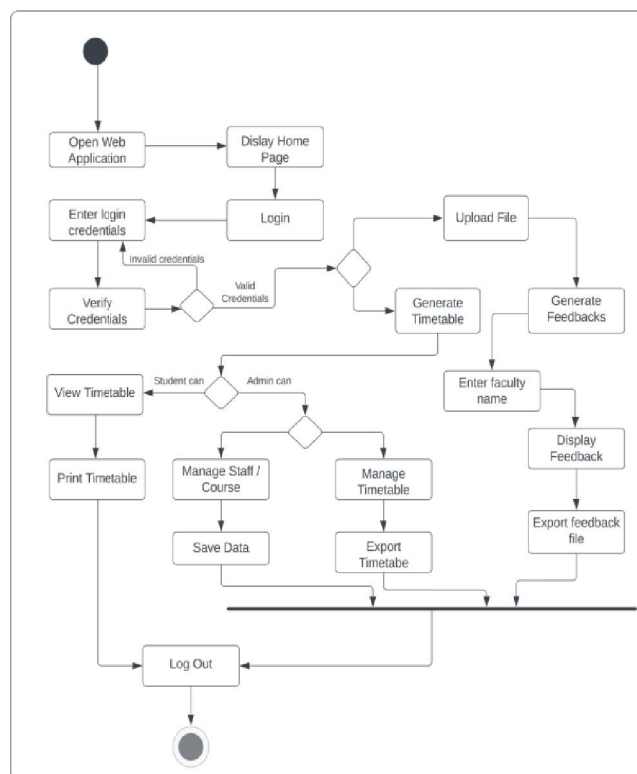
2.2 Proposed System

Figure 1. System Architecture

Let us consider S as a system

S= INPUT: Identify the inputs F= f1, f2, f3 ....., FN—

F as set of functions to execute commands.

I= i1, i2, i3—I sets of inputs to the function set

O= o1, o2, o3.—O Set of outputs from the function sets,

S= I, F, O

I=Input

O = Output

F = Functions implemented to get the output

- Space Complexity: The space complexity depends on Presentation and visualization of discovered patterns. More the storage of data more is the space complexity.
- Time Complexity: Check No. of patterns available in the datasets= n If (n(1)) then retrieving of information can be time consuming. So the time complexity of this algorithm is O (n^n). = Failures and Success conditions.

Failures:

1. Huge database can lead to more time consumption to get the information.
2. Hardware failure.
3. Software failure.

Success:

1. Search the required information from available in Datasets.
2. User gets result very fast according to their needs.

III. RESULT AND DISCUSSION

Experiments are done by a personal computer with a configuration: Intel (R) Core (TM) i3-2120 CPU @ 3.30GHz, 4GB memory, Windows 7, MySQL 5.1 backend database and Jdk 1.8. The application is web application used tool for design code in Eclipse and execute on Tomcat server.
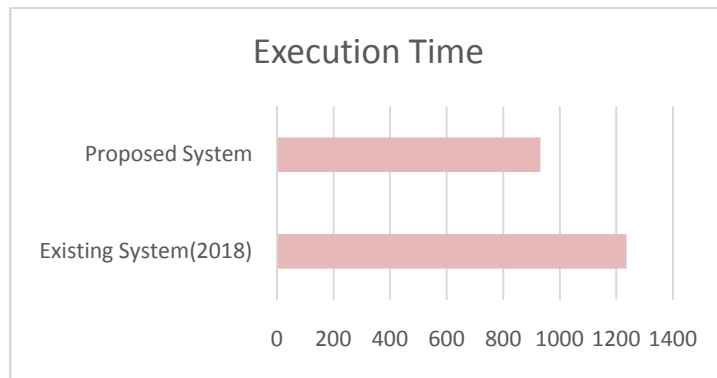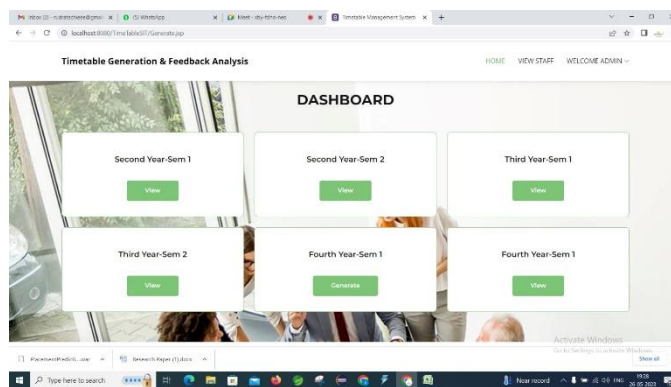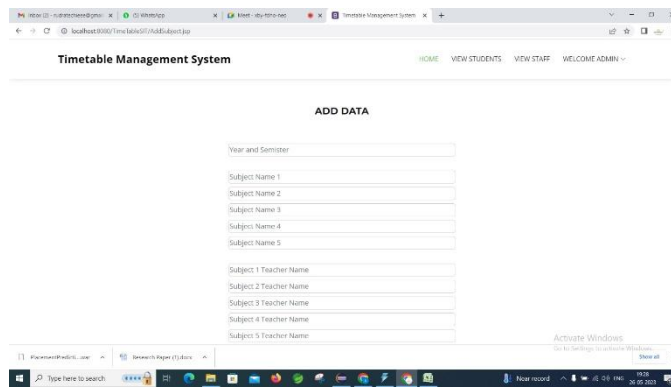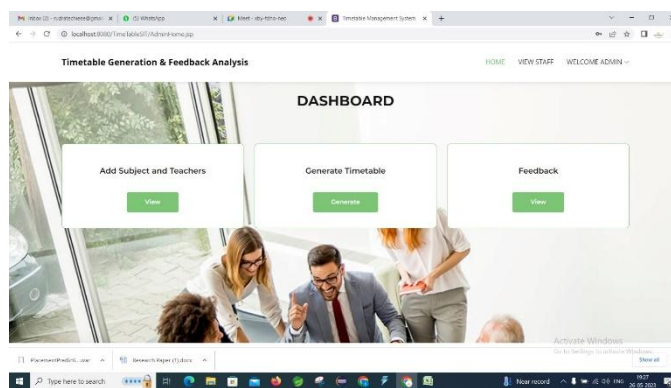

Figure: overall system execution graph

Existing System	Proposed System
1236	932

Table: overall system execution table
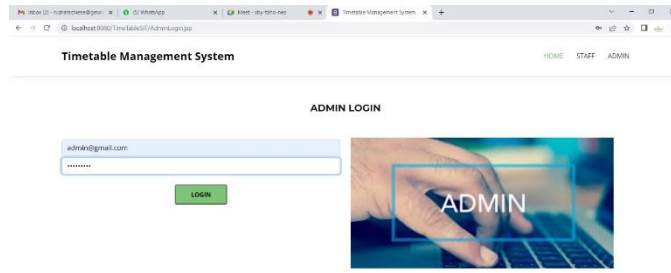
IV. CONCLUSION

The system will use JSP techniques to automatically generate separate schedules for each class, faculty member, and lab. The project will cut down on the amount of time and discomfort involved in physically constructing the schedule. With capabilities that allow us to customise the schedule, the project can be built so that no time slots conflict. System for classifying teacher performance using faculty input eliminates the need for time-consuming manual work.

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