JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

TEACHER'S AUTOMATIC TIMETABLE GENERATOR USING PHP

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Abstract: Timetables are created automatically using the Teacher's Automatic Timetable Generator. Our current method of creating a schedule is manual. In this case, the teacher is the manual system has to prepare the schedule, which takes a lot of time. As a result, this technique for creating schedules automates the management of all the periods. It also enables faculty have schedules automatically sent to their phones using this application. When a teacher is absent, tardy, or early, the schedule is still managed by this timetable generating programme. For the purpose of efficiently creating a schedule, the maximum and minimum workload for a faculty for a day, a week, and a month will be defined. Admin and Faculty are the two elements that make up this system. The administrator is in charge of overseeing the course, faculty, classroom, timetable, lecture slots, and topic times. the faculty.

Key words: Genetic algorithm, timetable, constraints, chromosomes.

I. INTRODUCTION

The class timetabling problem is a typical scheduling problem that appears to be a tedious job in every academic institute once or twice a year [3]. In earlier days, time table scheduling was done manually with a single person or some group involved in task of scheduling it manually, which takes a lot of effort and time. Planning timetables is one of the most complex and error-prone applications.

Timetabling is the task of creating a timetable while satisfying some constraints. There are basically two types of constraints, soft constraints and hard constraints. Soft constraints are those if we violate them in scheduling, the output is still valid, but hard constraints are those which if we violate them; the timetable is no longer valid [1]. The search space of a timetabling problem is too vast, many solutions exist in the search space and few of them are not feasible. Feasible solutions here mean those which do not violate hard constraints and as well try to satisfy soft constraints. We need to choose the most appropriate one from feasible solutions. Most appropriate ones here mean those which do not violate soft constraints to a greater extent [1]. Using Genetics Algorithm, a number of trade-off solutions, in terms of multiple objectives of the problem, could be obtained very easily. Moreover, each of the obtained solutions has been found much better than a manually prepared solution which is in use.

This system provides a simple interface for generating the timetable automatically. It can be used by educational institutes or colleges to view their timetable in most efficient and easy manner. Achieving this objective is difficult as there are large number of clashes occur and it becomes a more tedious process to generate timetable for large number of classes. All these problems are solved using automatic timetable generation system. The paper focuses on presenting information in an easy and intelligible manner which provides facilities like viewing the student timetable and staff time table separately. Creation of timetable thus reducing paper work and automating the generation process in an educational institution.

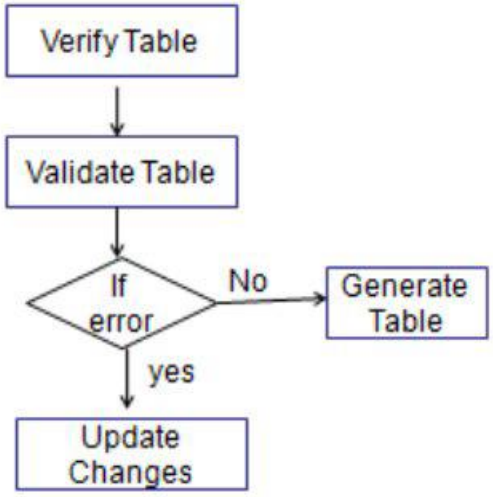

Fig 1. *VERIFICATION AND VALIDATION.*

II. LITERATURE SURVEY

[1] Damage A , evolutionary techniques used to solve the problem of scheduling time. Methods such as Genetic Algorithms, Evolutionary Algorithms etc. used with mixed success. In this paper, we have reviewed the problem of scheduling an educational timeline with a genetic algorithm. We also solved the problem with a mimetic hybrid algorithm, a synthetic genetic defense network and compared the result with that found in the genetic algorithm. The results show that GAIN is able to reach a possible solution faster than that of GA.

[2] Dipti Srinevasan , Discover the study schedule that is possible at the university's main department is a recurring problem facing academics. This paper represents an evolutionary algorithm (EA) approach based on solving the university's robust timetable problem. Moving to problematic chromosome representation. Heuristics and contextual-based thinking using timetables may have been obtained at the right computer time An ingenious genetic modification scheme has been used to improve cohesion. The comprehensive curriculum plan presented in this paper is approved, evaluated and discussed using real-world data from a major university.

[3] Anuja Chowdhary introduces an effective timing algorithm that can effectively manage both strong and weak obstacles, which is used in an automated timeline system. So that each teacher and student can look attheir timetable after they have completed a particular semester but do not plan. The Timetable Generation System generates a timeline for each class and teachers, in line with the teacher's calendar, availability and power of visual resources and other rules applicable to different classes, semesters, teachers and grade level.

[4] Anirudha Nanda, suggests a common solution to the problem of timing. Most of the proposed previous heuristic programs of difficulty from the perspective of students. This solution, however, works from the point of view of the subject, that is, the availability of the instructor at a given time. Although all potential barriers (e.g., teacher availability, etc.) are solved firmly, the planning solution presented in this paper is flexible, with the primary purpose of resolving academic and academic conflict, teacher-related issues.

[5] Al-Khair [5], algorithm tools proposed to solve the problem of timing while providing teacher availability admissions. This algorithm uses a heuristic approach to provide a complete solution to the difficulty of scheduling school time. Initially it uses randomly generated title sequences to create a temporary timeline. If a teacher is divided beyond the maximum allowable subjects the subjects are transferred to the Clash data structure.

III. PROPOSED METHODOLOGY

In this proposed architecture, The process starts with the collection of datasets. For the dataset, it will first take the input from the user regarding the information related to the timetable such as "Courses, Subjects, labs, Semester"etc. The next step is to apply certain Rules/Constraints to the user input. E.g.- If we are taking input for lectures so the system should look after the clashes issues such that there should not be the same lectures for the same faculty at the same time. After this, all the constraints and possibilities are being verified which further leads to timetable generation. Now, the final timetable will get generated. In the further process, the user will review the generated timetable and suppose wants to edit the timetable as he/she is not satisfied with the generated one then the user can regenerate the timetable again. After this, a final regenerated timetable will get generated. And in the final process, the timetable will be viewed by the user. 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.

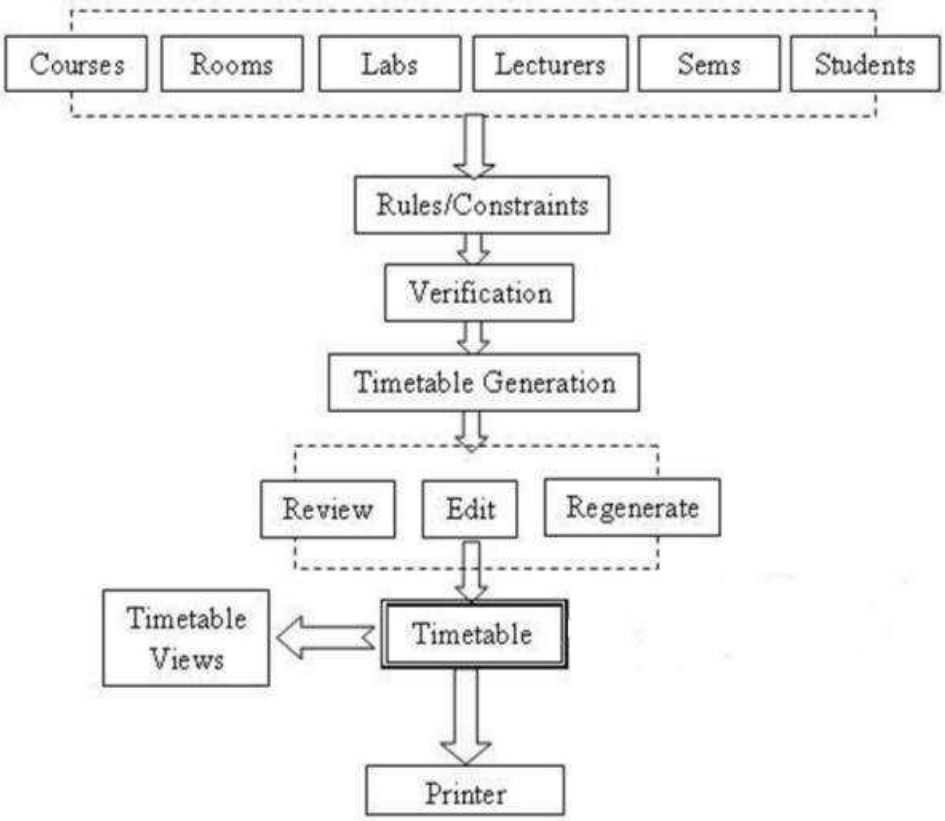

Figure 2. General view of Timetable Generator

IV. RESULTS

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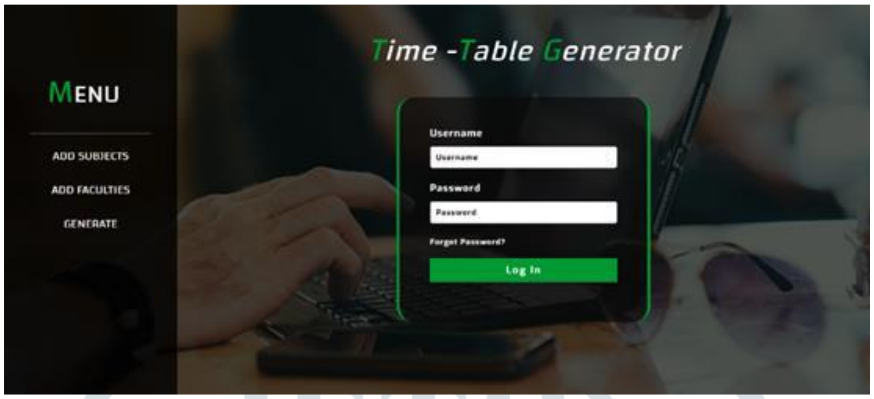
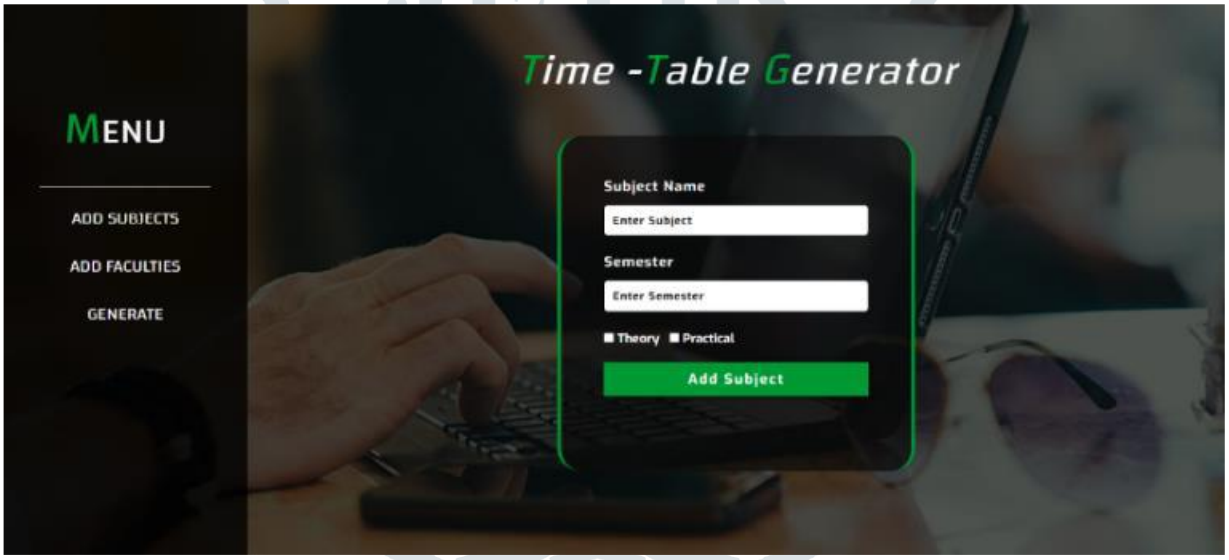
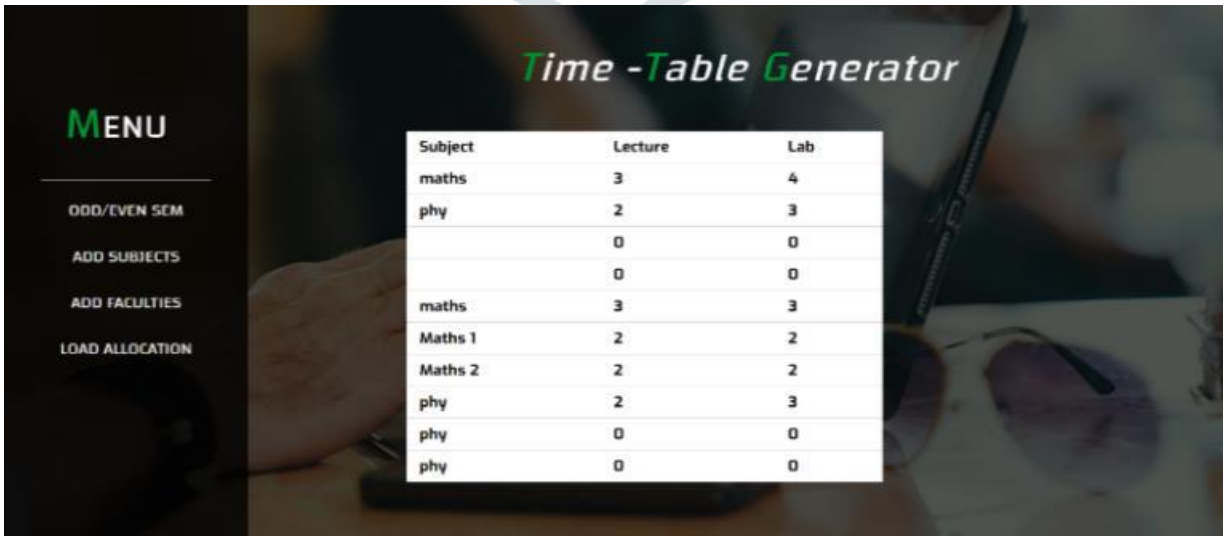


1 LOGIN PAGE



2(A) ADD SUBJECT



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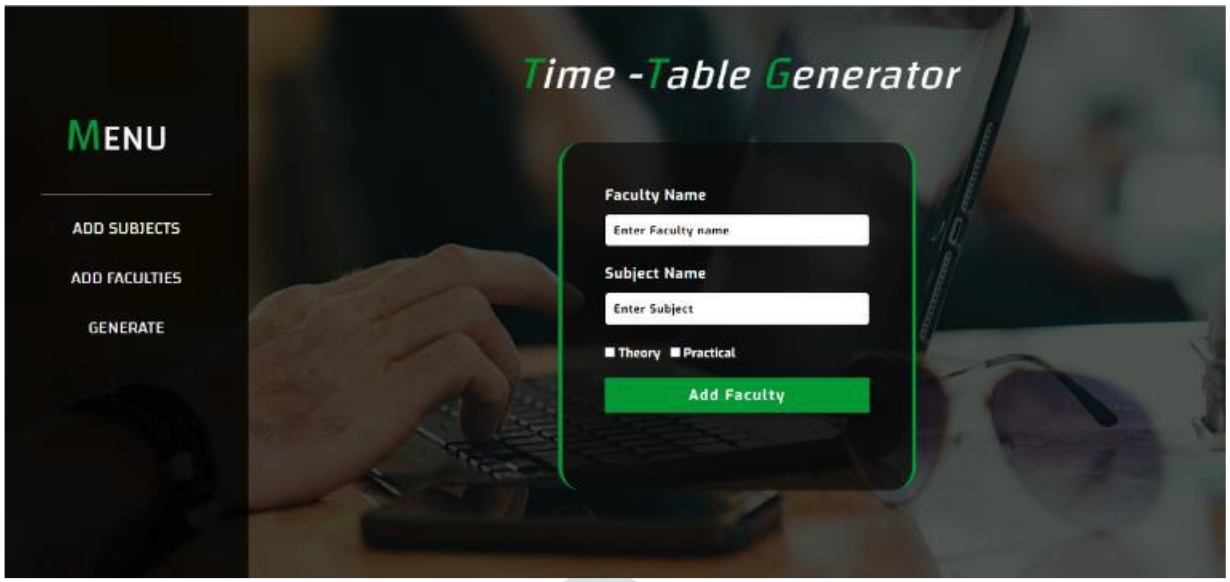
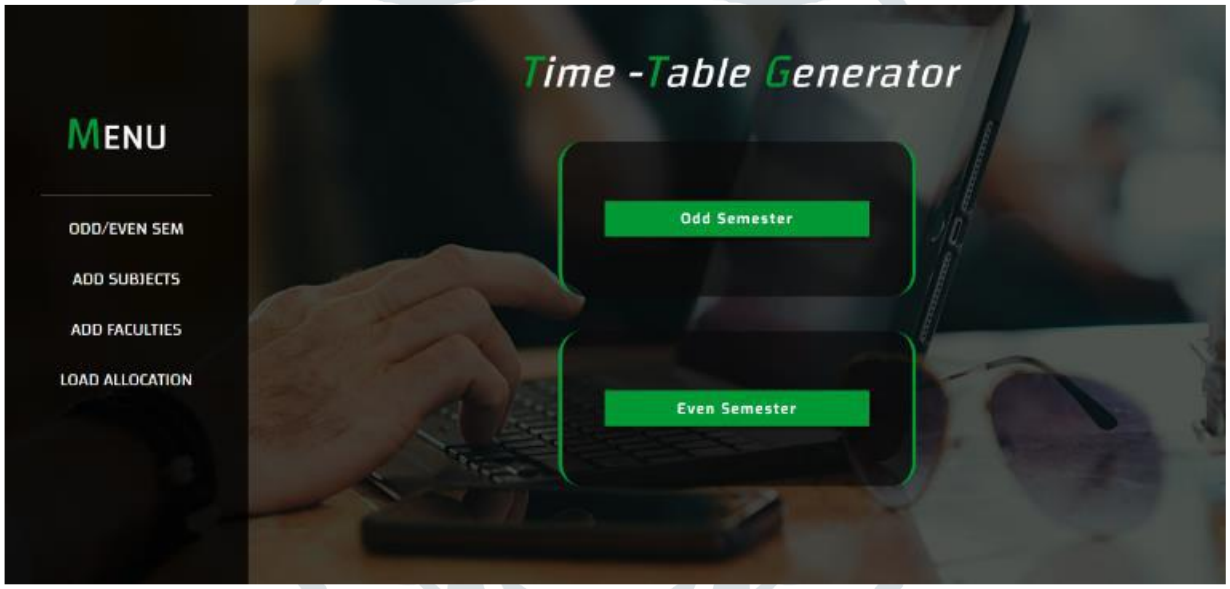
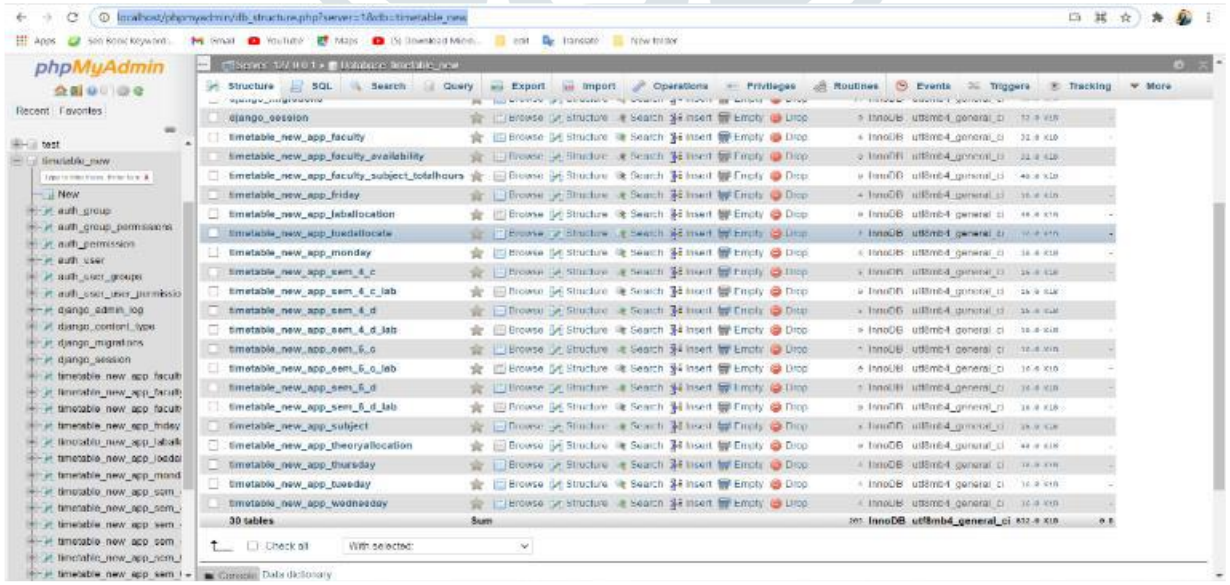


3 ADD FACULTY



4 ODD/EVEN SEM



5 DATABASES

©

V. CONCLUSION

This paper addresses the Timetabling Issues, real-life problems faced by many educational institutions till now. Since, it is a very complicated task for a single staff to handle many Faculty's and allocating subjects for them at a time, physically. So our proposed system will help to overcome this disadvantage. Generally, this system can be considered a useful system since it helps the teacher to improve their process of preparing the timetable. Separate timetable for the individual class, faculty, and labs are generated automatically by the system that will save the time and effort of the teacher as well as no more paper wastage will be there and possibly solving all constraints problems smoothly that are difficult to determine when time table is generated manually and helps to provide an optimal solution.

REFERENCES

[1] M. Doulaty, M. R. FeiziDerakhshi, and M. Abdi, "Timetabling: A State-of-the-Art Evolutionary Approach", International Journal of Machine Learning and Computing,Vol. 3, No. 3, June 2013.

[2] Anirudha Nanda, Manisha P. Pai, and AbhijeetGole, "An Algorithm to Automatically Generate Schedule for School Lectures Using a Heuristic Approach", International Journal of Machine Learning and Computing, Vol. 2, No. 4, August 2012

[3] DilipDatta, Kalyanmoy Deb, Carlos M. Fonseca, "Solving Class Timetabling Problem of IIT Kanpur using Multi-Objective Evolutionary Algorithm".KanGAL 2005.

[4] AnujaChowdhary, PriyankaKakde, ShrutiDhoke, SonaliIngle,RupalRushiya, Dinesh Gawande, 'Time table Generation System", International Journal of Computer Science and Mobile Computing, Vol.3 Issue.2, February- 2014.

[5] MughdaKishorPatil, RakheShrutiSubodh, Prachi Ashok Pawar NaveenaNarendrasinghTurkar, "Web Application for Automatic Time Table Generation", International Journal of current Engineering and Technology, E-ISSN 2277-4106, P-ISSN 2347-5161.

[6] Sandeep Singh Rawat, Lakshmi Rajamani, "A Time table Prediction for Technical Educational System using Genetic Algorithm", Journal of Theoretical and Applied Information Technology,2005-2010JATIT.

[7] BharkaNarang, Ambika Gupta, RashmiBansal, "Use of Active Rules and Genetic Algorithm to Generate the Automatic Time- Table", International Journal of Advances in Engineering Sciences,Vol.3(3).

[8] Alberto Colorni, Marco Dorigo, Vittorio Maniezzo, "A Genetic Algorithm to Solve the Time Table Problem", Computonal

[9] Optimization and Applications Journal. Rupert Weare, Edmund Burke and Dave Elliman, "A Hybrid Algorithm for Highly Constrained Timetabling Problem",Computer Science Technical Report No. NOTTCS-TR-1995-8.

[10] D. Abramson, J.Abela,"A Parallel Genetic Algorithm for Solving the School Timetabling Problem", 15 Australian Computer Science Conference, Hobart, Feb 1992.

[11] Melanie Mitchell, "An Introduction To Genetic Algorithm", A Bradford Book The MIT Press, Fifth printing 1999.

[12] David A.Coley, "An Introduction To Genetic Algorithms For Scientists And Engineers",WorldScientific Publishing Co. Pvt. Ltd.,1999.