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Timetable Generator

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Abstract:
This project is created for developing a Time Table Generator for Colleges. Colleges are supposed to make time tables for each semester which used to be a very difficult and pain staking job. Each teacher and Student is eligible for viewing his own timetable once they are finalized for a given semester but they can't edit them.

I. INTRODUCTION

Timetable scheduling has been in human requirements since all thought of managing time effectively. It is widely used in schools ,and other fields of teaching and working like crash courses, coaching center training programs etc. in early days, time table scheduling was done manually with one single person or some group involved in task of scheduling it with their hands, which takes a lot of effort and time. While scheduling even the smallest constraints can take a lot of effort and time. While scheduling even the smallest constraints can take a lot of time and the cases are even worse when the number of constraints or The amount of data to deal with increases.

II.BASIC CONCEPTS

A great deal of time is devoted by the teaching personnel in generating and managing timetables. This project aims at the development of a tool which will allow institutes generate timetables for schools and colleges without any hindrance, directly from raw schedule. While generating a timetable, the availability of teachers and other resources is considered by this timetable generation software. Furthermore, timetables can be changed according to our necessity, depending on the availability of students, technicians, teachers, substitutes, classrooms and lessons. The difficulties that arise during the generation of timetables are definite and are concerned mainly with assigning events to timeslots subject to constraints with the resultant solution constituting a timetable. Timetabling as defined by Wren (1996) is, Timetabling is the allocation, subject to constraints, of given resources to objects being placed in space time, in such a way as to satisfy as nearly as possible a set of desirable objectives. The constraints during timetable generation can be categorized into hard constraints that cannot be violated and soft constraints that are not vital but their satisfaction is highly desirable for a good quality solution to be processed. A common timetabling issue is composed of assignment of events like course, examinations, lectures, lab sessions etc. into a limited number of rooms while reducing the violations in the set of constraints.

III.PROPOSED SYSTEM

Timetable generator consists input module, and as output timetable will be generated.

A. Input Data:

The input data module can be described by a type of data given, the data contains:

- **Teacher:** describe the name of lecturers.
- **Subject:** describe the name of the subjects belonging to desired year and semesters.
- **Department:** describe the name of the department.
- **Time interval:** it's a time slot with a starting time and duration.

B. Constraints:

Constraints can be divided into 3 parts:
Validity violation constraints
Hard constraints

Soft constraints

1) Validity violation constraints: These are the constraints which are needed to be followed:

- There are certain lecturers that may appear at the same time in more than one class.
- The most trivial violation constraint is that a teacher must not clash in two different tables of a time table.
- Fixed slots. Operations assigning subjects to timeslots Remove clashes Manage data timetable subject Staff Classroom

2) Hard constraints: Hard constraints are the one's which needs to be fulfilled necessarily.

- Class room must not be double booked.
- Every class must be scheduled exactly once.

3) Soft constraints:

These are the constraints that are not that obvious but still demanding. They are not to be really satisfied but the solutions are generally considered good if large numbers of them are taken care.

- No consecutive lectures of the same teacher in the class.
- Minimize continuous lectures of the same course in a day.
- Same teacher must not have consecutive periods unless specified.
- Assigning fixed slots for particular subjects.

The proposed system is used togenerate time table automatically. This ensures the following features:

- Easier slot assigning
- Less time consumption

• NO slot clashes
• Always considers the other department slots first
• Various possible slot combinations can be acquired
• User friendly

Login:

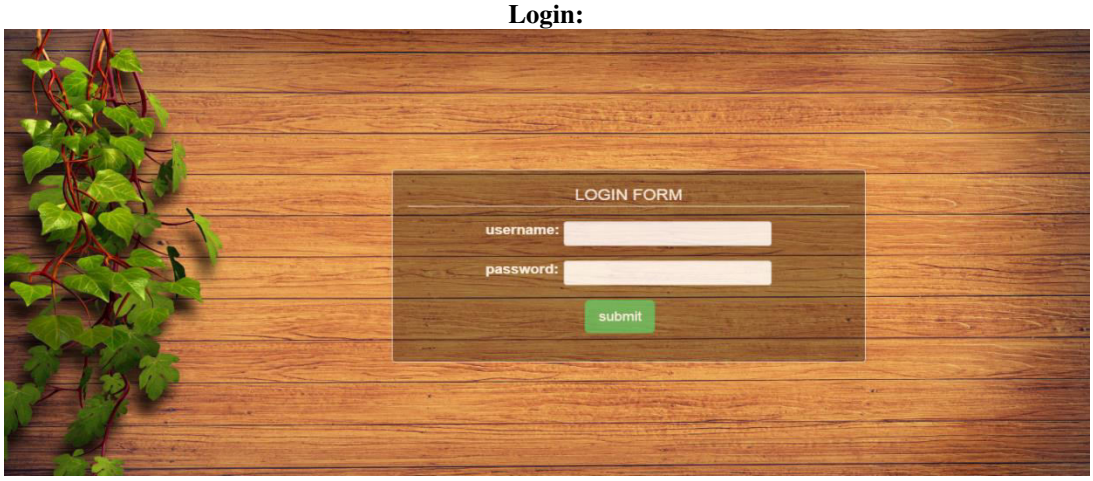

Figure.1. Login Page Form

Set department name:

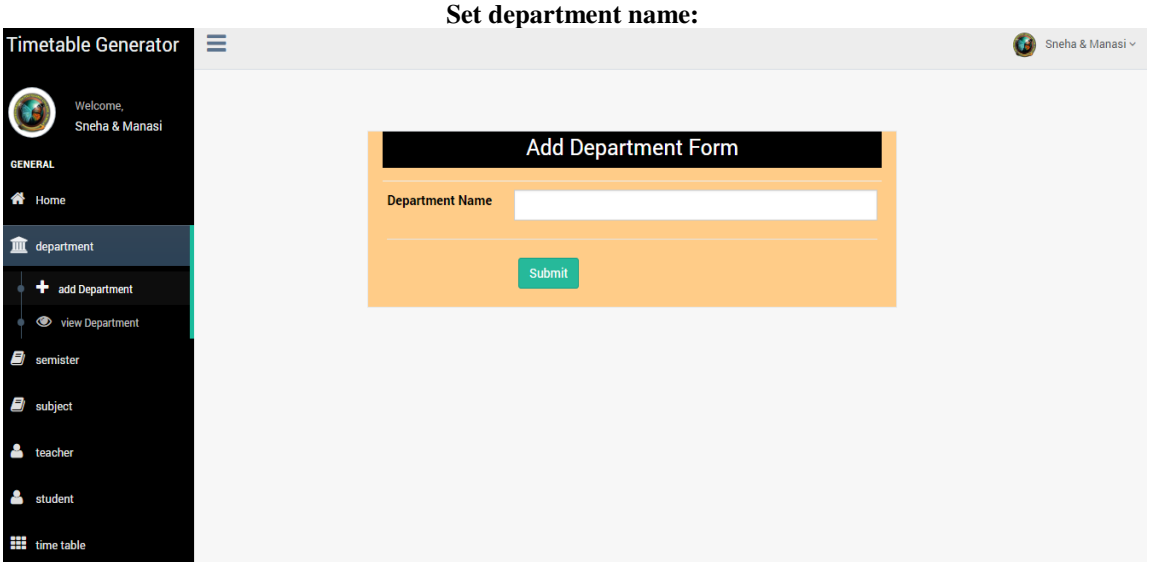

Figure.2. Department Page Form

Set seminar details:

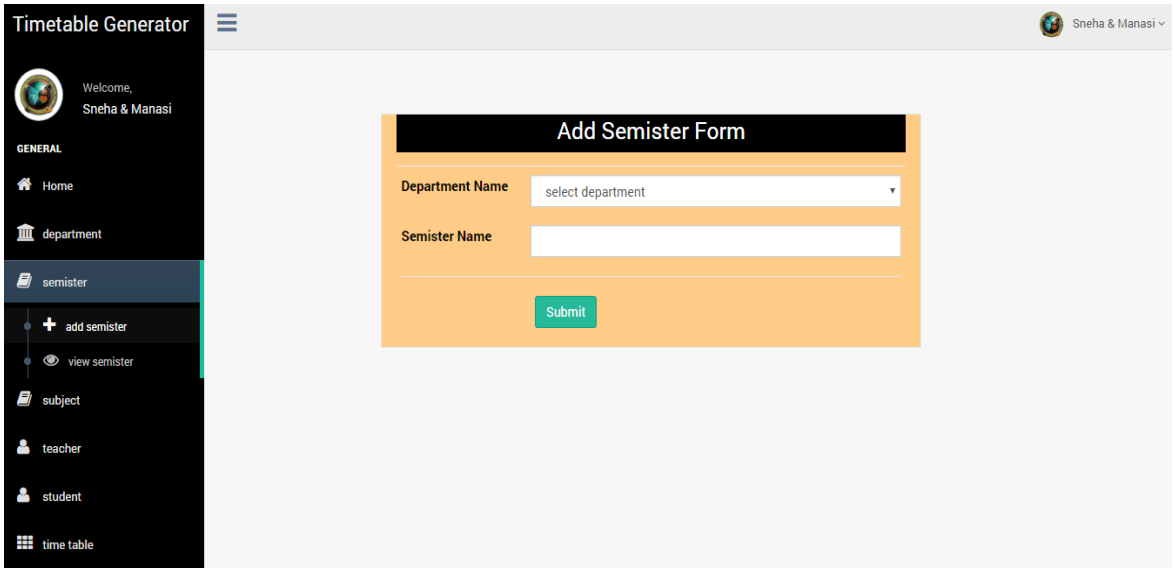

Figure.3. Semester Page Form

Set subject details:

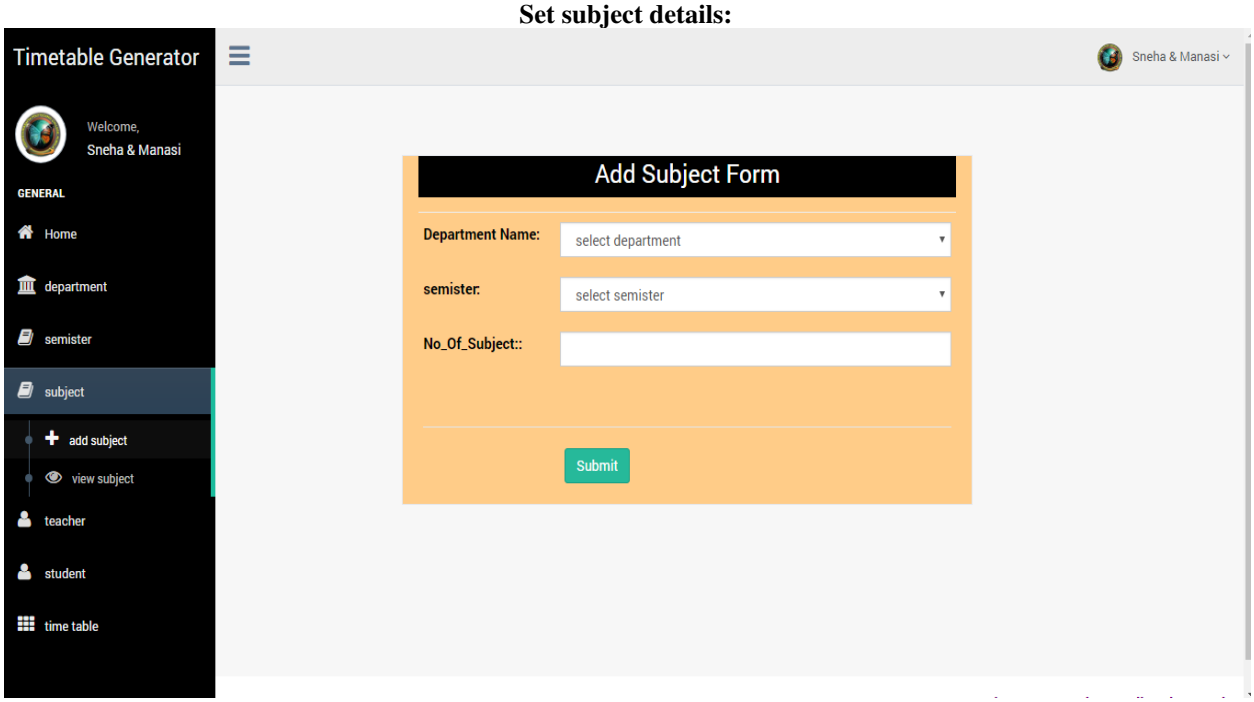

Figure.4. Subject Page Form

IV. PROJECT DESIGN

Use-Case Diagram

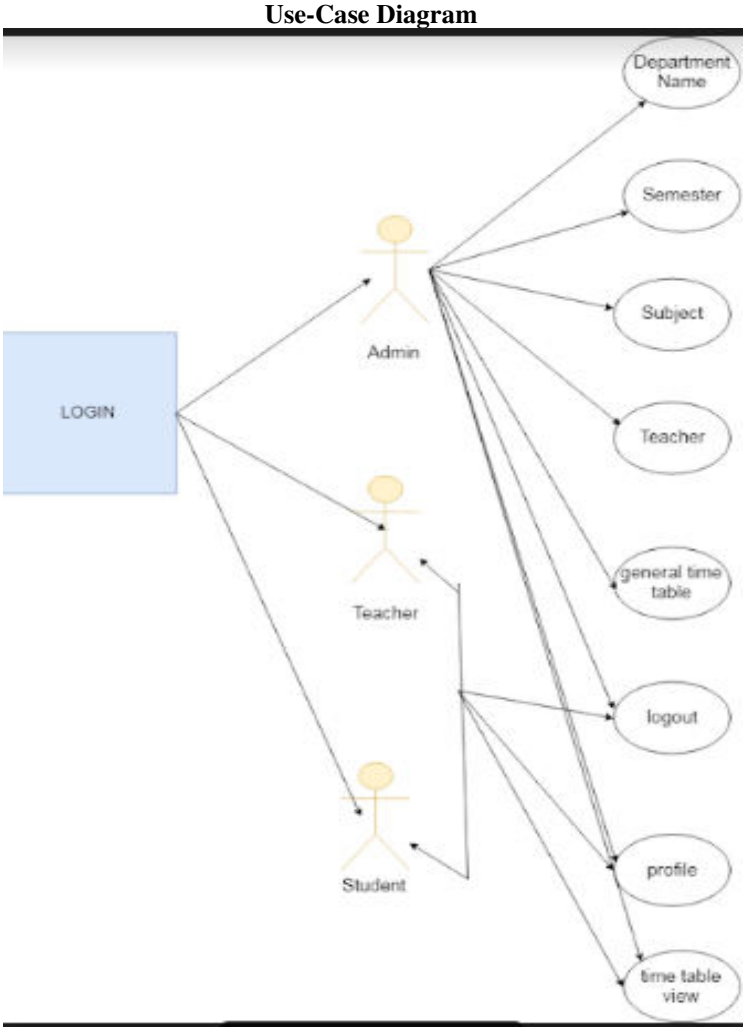

Figure.5. Use case diagram of timetable generator

Sequence-Diagram

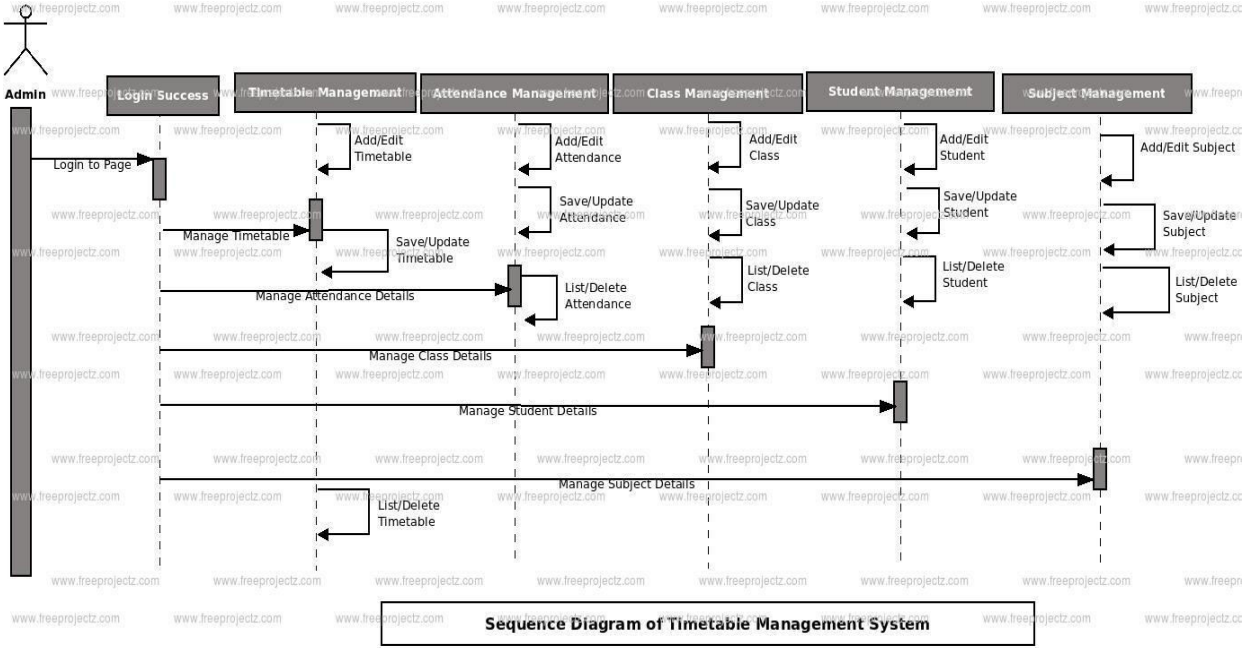

Figure. 6. sequence diagram of timetable generator

DFD-Diagram

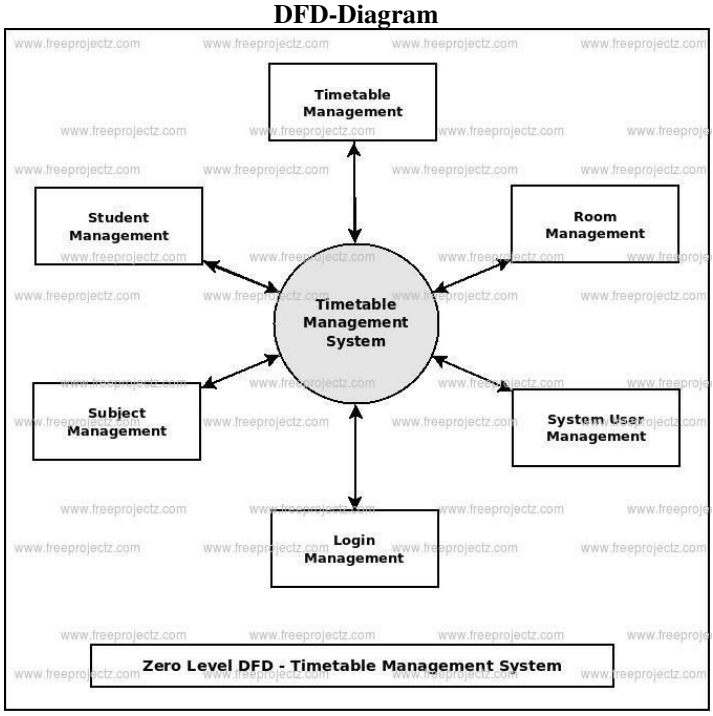

Figure.7.data flow diagram of timetable generator

V. IMPLEMENTATION

This system is implemented using the minimum hardware requirements like RAM 512MB and above, hard disk used is 20GB or above, processor used is 2.4GHz or above, display is standard output display and data input is keyboard/mouse. Software requirements deal with defining software resource requirements and prerequisites that need to be installed on a computer to provide optimal functioning of an application. These requirements or prerequisites are generally not included in the software installation package and need to be installed separately before the software is installed. Languages used are HTML, CSS, Database used is MYSQL, Web server used here is XAMPP, Operating system is Windows 7/8/10.

VI. RESULT AND ANALYSIS

The final system should be able to generate time tables in completely automated way which will save a lot of time and effort of a department administration. Focus on optimization of resources i.e., teachers, classrooms etc. Provide a facility for everyone to view the time table. This application is provided with necessary details of faculty and subjects which are stored in database and then by making use of available data it generates

timetable with minimum time when compared to manual generation of timetable.

VII. ACKNOWLEDGMENT

We are thankful to Department of Computer Technology, Vishweshwarayya Abhiyantriki Padvika Mahavidyalaya, Almala (India) for their guidance and cooperation.

VIII. CONCLUSION

The major benefit of this project is to store information at one place and it can be accessed via online transaction. Instead of tedious paper work, students can view the timetable with a quick turnaround. This system is user friendly and provides faster and better generation of timetable, which in turn saves time. There are few points that justify the need of this system:

- user friendly
- faster and better generation of timetable
- Saving time and manpower

IX. REFERENCE

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[2]. www.wikipedia.com

[3]. www.google.com