Time Table Management System

Using C++

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Mentor

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Problem Description

Problem given was to automate the task of making timetable of the classes of IT department. Generating Time Tables manually was a tedious and time taking task. So there was a dire need of making a system capable of generating the automated time table.

Project Objectives

- To develop an automated time table system.
- To develop user friendly system.
- To develop a system which can be easily modified in any type of constraints.
- To develop which can be easily maintained.
- To develop a robust system.

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Introduction

This system creates the time table for all the classes of IT Department. It prevents the clashes of teachers within two classes. It creates time-table for whole week and represent in a table format. It also applies the constraint of break time, where no lecture can be allocated.

Terminology Used

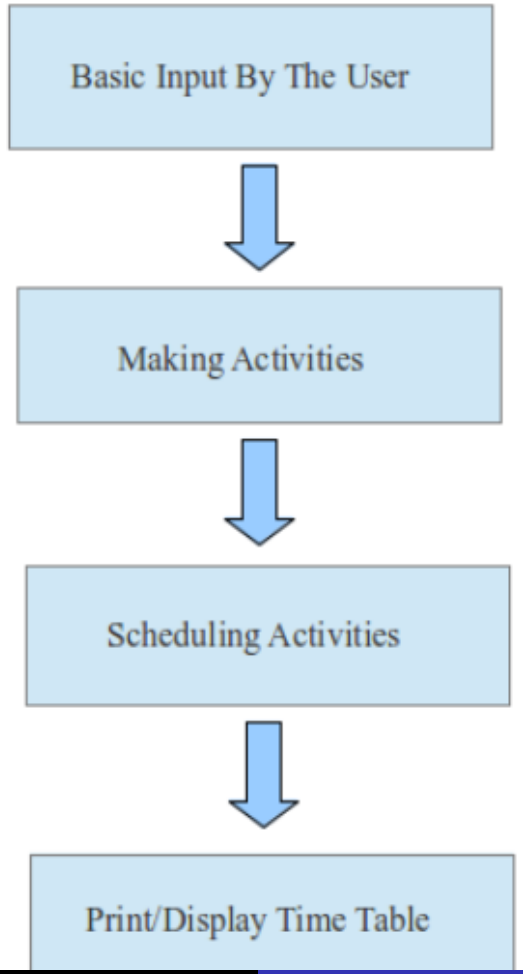
- Activity: A single lecture in a class is called an activity. In other words, a class having a lecture on particular subject by a particular teacher is known as activity.
- Constraints: Constraints means restriction or conditions which should be kept in mind while placing activities in time slots. For example: Break is a constraint in which no lecture can be held.

Terminology Used

- Clash: It means that no two activities can take place at a particular time. For example, Same teacher can't be in two classes at same time.
- Load: It means total no. of lectures alloted to a teacher. In our college, Associate Professor has a load of 10 lectures and Assistant Professor has a load of 18 lectures in a week.

Design of Project

Design of Project



Project Modules

Project has following three modules:

1. User Interface
2. Making Activities
3. Placing Activities on Time Slots

User Interface

In this module, user will assign teachers to the subjects of concerned classes. Dropdown list shown to the user is coming from database of teachers which prevents the user from entering an invalid teacher.

User Interface

Making Activities

In this module, activities are generated automatically. Activity here means all the content that is shown in each block of time table i.e. Lecture Tag (L), Subject and Teacher of the subject of concerned class.

Making Activities

Placing Activities on Time Slots

Here comes the role of C++. After making the activities, these are placed on the time slots of each class depending upon constraints and clashes. Contraints here means break/recess time of each class in IT department. Clashes means no two teachers can be in two classes at the same time. Depending on clashes and constraints, these activities are placed on 3-D matrix of time table and are displayed using HTML tables on the screen in 2-D form.

Placing Activities on Time Slots

Days		D2 IT	D3 IT	D4 IT
Mon	0	L Math-3 RJK	L DBMS AK	L DotNet RK
	1	L WoTC HK	L SAD MS	L Java AG
	2	L DSPM RKD	L MIS AA	L EVS PI
	3	L DS MJK	**	L MM AA
	4	**	L PAC MK	**
	5	L DCLD GK	L WP KJ	
	6			
	7			
Tue	0	L WoTC HK	L SAD MS	L Java AG
	1	L DSPM RKD	L MIS AA	L EVS PI
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Technologies Used

Following technologies are used in the project.

- C++
- MySQL
- HTML
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Technologies Used

- C++: It is a programming language that is general purpose, statically typed, free-form, multi-paradigm and compiled. It is regarded as an intermediate-level language, as it comprises both high-level and low-level language features.
- MySQL: It is the world's most widely used open-source relational database management system.MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack.

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Technologies Used

- HTML: HyperText Markup Language(HTML) is the main markup language for creating web pages and other information that can be displayed in a web browser.The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages.
- CSS: Cascading Style Sheets(CSS) is a style sheet language used for describing the presentation semantics of a document written in a markup language. Its most common application is to style web pages written in HTML and XHTML, but the language can also be applied to any kind of XML document.

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System Requirements

Software Requirements:

- g++ Compiler: g++ is Gnu C++ compiler. It normally does preprocessing, compilation, assembly and linking.
- CGICC Library Files: CGI stands for Common Gateway Interface. CGI is one method by which a web server can obtain data from (or send data to) databases, documents, and other programs, and present that data to viewers via the web.One of the main advantages of using CGI is the ability to provide dynamic pages.

System Requirements

Software Requirements:

- MySQL: MySQL is a popular, free, open-source database. The great part is that 99% of the time you get a hosting package MySQL comes free and is ready-to-go.

Hardware Requirements:

- CPU: Min. 1.2 GHz
- HDD: Min. 500MB of free space
- Operating System: Ubuntu 12.04 or higher.
- Internet Connectivity: For taking references help from Internet.

Features

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- It prevents duplication.
- All essential constraints can be added.
- It ensures equal work distribution among all the teachers.

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Future Scope

- Any educational institute may be use this software to generate its time table.
- User Interface will be improved.
- It will be connected through network.
- Distance barrier will be eliminated and complete work will monitor remotely.
- This project can be extended to include reminders about the classes in google calender.

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Conclusion

Project created is going to help in automating the time table generation of all the classes of IT department. It will save time and efforts. Moreover, its fully documented. Anyone can read the code and make necessary changes.

Thank You