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Web Technology

Project on

TIME TABLE GENERATOR

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CHAPTER 1

1.1 INTRODUCTION

Time Table Generator is a web application to generate a time table based on the information given to it like the number of days the schedule is to be made for, the number of subjects (including theory and practical), the number of times each subject can be repeated in a day or in a week, etc. With this information a time table is generated wilth random allotment of subjects.

1.1.1 HTML

HTML stands for Hypertext Markup Language. It allows the user to create and structure sections, paragraphs, headings, links, and blockquotes for web pages and applications.

HTML is not a programming language, meaning it doesn't have the ability to create dynamic functionality. Instead, it makes it possible to organize and format documents, similarly to Microsoft Word.

When working with HTML, we use simple code structures (tags and attributes) to mark up a website page. For example, we can create a paragraph by placing the enclosed text within a starting * * and closing * * tag.

1.1.2 CSS

Stands for "Cascading Style Sheet." Cascading style sheets are used to format the layout of Web pages. They can be used to define text styles, table sizes, and other aspects of Web pages that previously could only be defined in a page's HTML.

CSS helps Web developers create a uniform look across several pages of a Web site. Instead of defining the style of each table and each block of text within a page's HTML, commonly used styles need to be defined only once in a CSS document. Once the style is defined in cascading style sheet, it can be used by any page that references the CSS file. Plus, CSS makes it easy to change styles across several pages

at once. For example, a Web developer may want to increase the default text size from 10pt to 12pt for fifty pages of a Web site. If the pages all reference the same style sheet, the text size only needs to be changed on the style sheet and all the pages will show the larger text.

1.1.3 JAVASCRIPT

JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive. Where HTML and CSS are languages that give structure and style to web pages, JavaScript gives web pages interactive elements that engage a user. Common examples of JavaScript that you might use every day include the search box on Amazon, a news recap video embedded on The New York Times, or refreshing your Twitter feed.

1.1.3.1 What can in-browser JavaScript do?

Modern JavaScript is a "safe" programming language. It does not provide low-level access to memory or CPU, because it was initially created for browsers which do not require it.

JavaScript's capabilities greatly depend on the environment it's running in. For instance, Node.js supports functions that allow JavaScript to read/write arbitrary files, perform network requests, etc.

In-browser JavaScript can do everything related to webpage manipulation, interaction with the user, and the webserver.

For instance, in-browser JavaScript is able to:

- Add new HTML to the page, change the existing content, modify styles.
- React to user actions, run on mouse clicks, pointer movements, key presses.
- Send requests over the network to remote servers, download and upload files (so-called AJAX and COMET technologies).
- Get and set cookies, ask questions to the visitor, show messages.
- Remember the data on the client-side ("local storage").

1.2 PROBLEM STATEMENT

To generate the time table correctly following thins need to taken care of:

- There should be enough choices of subjects to choose from
- Only one subject should repeat twice or more in a day
- The practical are to allotted in the croups of three

1.3 OBJECTIVE

The main objective of the project is to generate time table for any batch of the institute or college easily and accurately.

1.4 SCOPE

This project can be used in all the education bodies such a school, colleges, tuition, training institutes, etc.

CHAPTER 2

2 HOW IT WORKS

The project uses three languages: HTML, CSS, JavaScript.

2.1 HTML

The HTML is used t create the skeleton of the page. So here it creates the starting input fields and the buttons and tables generated at the end.

2.2 CSS

CSS here is used for the styling of the input elements, buttons, the positions of the input cards ,etc.

2.3 JavaScript

The main logic work is being done by the JavaScript.

Here we have two classes: Subject and Practicals

The Subject class holds all the information about the subject such as the subject number, subject type (theory or practical) , number of used slots in a day or week, the number of maximum allowed repetitions in a week and day.

It also has two functions isAvailable() checks if the subject is available for allotment to the current slot being processed and setSlotsInADay() sets the value of the allowed repetitions in day to 1 for the rest of the if the subject has repeated the times allowed by the user in day.

Practicals class holds the data such as the slot number, practicalArray, and type.

This class is required to assign 3 practicals to different groups at a single slot. The practicalArray holds this info. It has three elements with indices corresponding to the groups an the value a the indices corresponding to the subject number in the Subject Object.

The main logic stores the theory subjects in an array and randomly chooses a subject to allot to a slot. If the subject fails to pass the basic test for availability then it s removed form the array of available subjects.

Similarly, practicals are allotted. First the slot is allotted similar to the allocation of the theory subjects. The for each slot three practicals are allotted randomly, to correspond to each group.

Finally all the data is stored in a 2D array and passed to a function dsplayTable(). This function does the final job of creating a table, extracting the name of the subjects and extracting the name of the three practical to be allotted in a practical slot.

CONCLUSION

The time table generator is made working. This makes the job of making the time table easy and just a work of merely a few minutes.

Also this project was a learning experience for us as we had a chance to have a deeper dive in the concepts of HTML, CSS and most importantly JavaScript. We also learned the concepts of Object Oriented Programming not just by reading but by practical use.