Experiment No.: 05

Date of Performance:

TITLE: Create a countdown timer

Aim: Write a JavaScript program that will create a countdown timer

Problem Statement:

Write a JavaScript program that will create a countdown timer.

Objective:

1. Learn different methods related with Date objects.

2. To learn how to extract time parameters from Date object in Javascript.

3. Apply the knowledge of time methods

Hardware Requirement:

Any CPU with Pentium Processor or similar, 256 MB RAM or more, 1 GB Hard Disk or more

Software Requirement:

➢ **IDE Software:** Visual Studio Code / Sublime Text3

➢ **Web Browser:** Google Chrome / Firefox/ Internet Explorer.

➢ **Operating System:** Windows 7/10, Linux or MAC OS

Theory:

By default, JavaScript will use the browser's time zone and display a date as a full text string:

Thu Aug 11 2022 23:03:11 GMT+0530 (India Standard Time)

Creating Date Objects

Date objects are created with the new Date() constructor.

There are 4 ways to create a new date object:

new Date()

new Date(year, month, day, hours, minutes, seconds, milliseconds)

new Date(milliseconds)

new Date(date string)

Using 6, 4, 3, or 2 Numbers

6 numbers specify year, month, day, hour, minute, second:

Example

const d = new Date(2018, 11, 24, 10, 33, 30);

5 numbers specify year, month, day, hour, and minute:

Example

const d = new Date(2018, 11, 24, 10, 33);

4 numbers specify year, month, day, and hour:

Example

const d = new Date(2018, 11, 24, 10);

3 numbers specify year, month, and day:

Example

const d = new Date(2018, 11, 24);

2 numbers specify year and month:

Example

const d = new Date(2018, 11);

The Math Object

Unlike other objects, the Math object has no constructor.

The Math object is static.

All methods and properties can be used without creating a Math object first

Math Properties (Constants)

The syntax for any Math property is : Math.property.

JavaScript provides 8 mathematical constants that can be accessed as Math properties:

Example

Math.E   // returns Euler's number

Math.PI   // returns PI

Math.SQRT2   // returns the square root of 2

Math.SQRT1_2   // returns the square root of 1/2

Math.LN2   // returns the natural logarithm of 2

Math.LN10   // returns the natural logarithm of 10

Math.LOG2E   // returns base 2 logarithm of E

Math.LOG10E   // returns base 10 logarithm of E

Math Methods

The syntax for Math any methods is : Math.method(number)

There are 4 common methods to round a number to an integer:

Math.round(x) Returns x rounded to its nearest integer

Math.ceil(x)   Returns x rounded up to its nearest integer

Math.floor(x) Returns x rounded down to its nearest integer

Math.trunc(x) Returns the integer part of x

Conclusion:

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Review Questions:

1. How to extract time parameter from Date object
2. Explain the use of Math.floor() method with example.
3. Explain getTime() method in Date object in detail.
4. Explain any two methods related to Math operations.

REFERENCES:

1. Jon Duckett, "JavaScript & JQuery: Interactive Front-End Web Development", Wiley, ISBN-13. 978-1118531648
2. David Flanagan, "JavaScript: The Definitive Guide", O'Reilly, 6th Edition, ISBN: 9781491952023.
3. Mike Mackgrath, "Javascripts in easy steps" Dreamtech