Ex. No. 6	JAVASCRIPT - TIMER FUNCTIONS AND OBJECTS
Date of Exercise	29-8-2022
Web Host Link	https://github.com/jubaljacob/Web_Tech_Lab
YouTube Link	

Aim:

To create web pages using various timer functions, events and objects in JavaScript.

Description:

Timing Events

The window object allows execution of code at specified time intervals. These time intervals are called timing events. The three key methods to use with JavaScript are:

- setTimeout(function, milliseconds)

  Executes a function, after waiting specified number of milliseconds.

  Ex:window.setTimeout(function,millisecds);

- setInterval(function,milliseconds)

  Same as setTimeout(), but repeats the execution of the function continuously.

  Ex: window.setInterval(function, milliseconds);

- The clearInterval() method stops the executions of the function specified in the setInterval() method.

  EX: window.clearInterval(timerVariable)

Date Object

Date Object gives various methods to multiple ways to access date, month, year details.

Method	Description
getDate()	Returns the day of the month (from 1-31)
getDay()	Returns the day of the week (from 0-6)
getFullYear()	Returns the year
getHours()	Returns the hour (from 0-23)
getMilliseconds()	Returns the milliseconds (from 0-999)
getMinutes()	Returns the minutes (from 0-59)
getMonth()	Returns the month (from 0-11)
getSeconds()	Returns the seconds (from 0-59)

getTime()	Returns the number of milliseconds since midnight Jan 1 1970, and a specified date
getDate()	Returns the day of the month (from 1-31)
getDay()	Returns the day of the week (from 0-6)
getFullYear()	Returns the year
getHours()	Returns the hour (from 0-23)
getMilliseconds()	Returns the milliseconds (from 0-999)
getMinutes()	Returns the minutes (from 0-59)
getMonth()	Returns the month (from 0-11)
getSeconds()	Returns the seconds (from 0-59)
getTime()	Returns the number of milliseconds since midnight Jan 1 1970, and a specified date
setTime()	Sets a date to a specified number of milliseconds after/before January 1, 1970
setDate()	Sets the day of the month of a date object
setFullYear()	Sets the year of a date object
setHours()	Sets the hour of a date object
setMilliseconds()	Sets the milliseconds of a date object
setMinutes()	Set the minutes of a date object
setMonth()	Sets the month of a date object
setSeconds()	Sets the seconds of a date object
toString()	Converts a Date object to a string
toTimeString()	Converts the time portion of a Date object to a string

Class and Object

A class is a type of function, but instead of using the keyword function to initiate it, we

use the keyword class, and the properties is assigned inside a constructor() method.

Example:

```
class Car {
    constructor(brand) {
       this.carname = brand;
   }
   present() {
        return "I have a " + this.carname;
     }
}
mycar = new Car("Ford");
document.getElementById("demo").innerHTML = mycar.present();
```

Program:

1. Write JavaScript code to display digital clock.

Code:

```
<!DOCTYPE html>
<html>
    <head>
        <title>Digital Clock</title>
    </head>

    <body onload="display()">

        <h1>Digital Clock</h1>
        <p id="time"></p>

        <script>
            function display()
            {
                const today = new Date();
                let h = today.getHours();
                let m = today.getMinutes();
                let s = today.getSeconds();
                m = checkTime(m);
```

```
                s = checkTime(s);
                document.getElementById('time').innerHTML =  h + ":" + m + ":" +
s;
                setTimeout(display, 1000);
            }

            function checkTime(i)
            {
                if (i < 10) {i = "0" + i};
                return i;
            }

        </script>
    </body>
</html>
```

Output:

Digital Clock

9:21:34

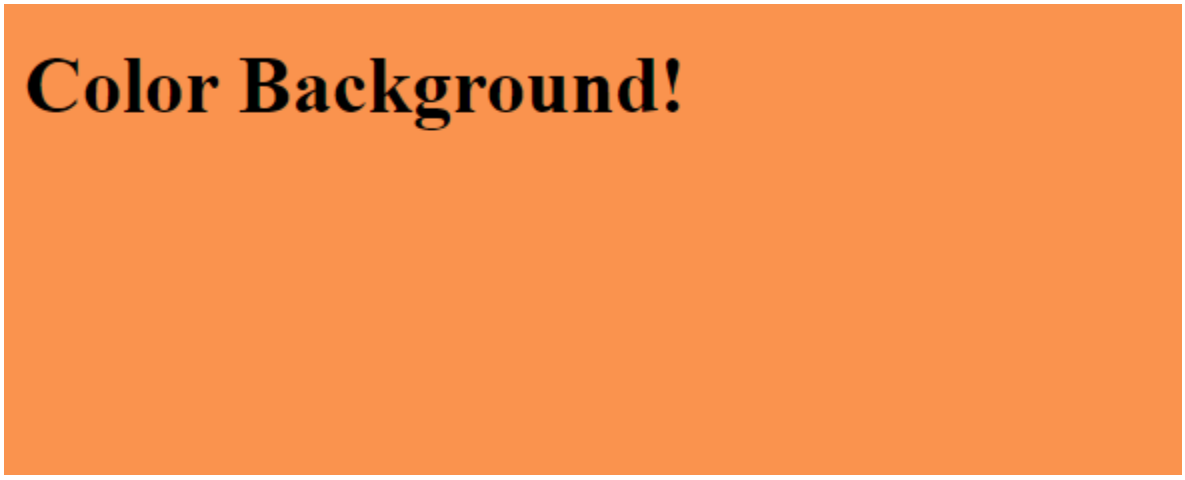
2. Write JavaScript code to change background colour for every 30 seconds.

Code:

```
<!DOCTYPE html>
<html>
    <head>
        <title>BG Color changer</title>
    </head>

    <body onload="color()">
        <h1>Color Background!</h1>
        <script >
            function color()
            {
```

```
                var red = Math.floor(Math.random()*255);
                var blue = Math.floor(Math.random()*255);
                var green = Math.floor(Math.random()*255);

                var color = "rgb("+red+","+green+","+blue+")";

                document.getElementsByTagName("body")[0].style =
"background-color:"+color;

            }
            setInterval(color,1000);

        </script>
    </body>
</html>
```

Output:



After 30 seconds:

3. Create event handlers that will increase the font size when a mouse moves over a paragraph and decrease the size when the mouse moves off the paragraph.

Code:

```
<!DOCTYPE html>
<html>
    <head>
        <title>Change font size</title>
    </head>
    <body>
        <h1>Change Font size</h1>

        <p id="para1" onmouseover="incSize()" onmouseout="decSize()"> Move cursor
over me to zoom in....</p>

        <script>
            function incSize()
            {

                document.getElementById("para1").style = "font-size : 28px";
            }

            function decSize()
            {
                document.getElementById("para1").style = "font-size : auto";
            }

        </script>
    </body>
</html>
```

Output:

On mouse out:

On mouse over:

Change Font size

Move cursor over me to zoom in....

4. Write JavaScript code to move absolutely-positioned car image when a user clicks the move button and stop the car image when a user clicks the stop button on the following webpage.

Code:

```
<!DOCTYPE html>

<html>
    <head>
        <title>logo</title>
    </head>
    <body>
        <h1>Move the logo</h1>
        <button type="button" onclick="moveRight()">Move Right</button>
        <button type="button" onclick="stop()">Stop</button>

        <img id="img" src="ailog.jpg">

        <script>
            function init()
            {
                imgObj = document.getElementById('img');
                imgObj.style.position = 'relative';
                imgObj.style.left = '0px';
            }

            function moveRight()
            {

                imgObj.style.left = parseInt(imgObj.style.left)+1+'px';
                animate = setTimeout('moveRight()',10);
            }

            function stop()
            {
                clearTimeout(animate);
                imgObj.style.left = '0px'
```

```
            }

            window.onload = init()
        </script>
    </body>
</html>
```

Output:

5. Create an array of objects, where each object describes about a student and his/her properties for the name (a string), regno (a string) and year of birth (a number). Iterate through the array of students and display it on the web page. For each student, print the student name and register no like so: "John's Register Number is UR13CS129". Now use an if/else statement to categorize the students they have date of birth before 2000 and after 2000.

Code:

```
<!DOCTYPE html>
<html>
    <head>
        <title>Student</title>
    </head>
```

```
    <body onload="Student_arr()">
        <h1>Student details</h1>

        <div id="out_before"></div>
        <div id="out_after"></div>

        <script>
            function Student_arr()
            {
             var Student = [{name : 'Jubal', r_num : 'URK20CS2031', dob :
'20-apr-1995'},{name : 'Joseph',r_num : 'URK20CS2048',dob : '05-jan-1998'},{name
: 'Ram',r_num : 'URK20CS2052',dob : '05-jan-2005'}];

                let text_before = " "
                let text_after = " "
                for(var i =0; i<Student.length;i++)
                {

                    let nam = Student[i].name;
                    let reg = Student[i].r_num;
                    let d_o_b = Student[i].dob;

                    dob_slice = d_o_b.slice(7,11);
                    year = parseInt(dob_slice);

                    if(year < 2000)
                    {
                        text_before +=nam + "'s Register Number is " +
reg+"<br>";
                    }

                    else if (year > 2000)
                    {
                        text_after +=nam + "'s Register Number is " + reg+"<br>";
                    }

                }

                document.getElementById('out_before').innerHTML ="<b><u>Student
have date of birth before 2000</u></b><br>"+ text_before;
                document.getElementById('out_after').innerHTML
="<br><b><u>Student have date of birth after 2000</u></b><br>"+ text_after;
            }

        </script>
    </body>
</html>
```

Output:

Student details

Student have date of birth before 2000
kevin's Register Number is URK20CS2044
rahul's Register Number is URK20CS2049

Student have date of birth after 2000
Raghu's Register Number is URK20CS2055

Result:

The website has been successfully created using JavaScript timer function and objects.