**Assignment 3.**

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Programming and Scripting

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1. These are the details for a function that prompts a user for a colour then links the colour within the existing webpage. When the user first gets to the website, a message prompt will appear immediately requesting for the user to type a colour or in some cases select a colour from a drop down list. Once the user selects the colour, the colour will be chosen from the Javascript default colour pool and then the background of the webpage will change to the selected color. In case there is a typing error, an alert box should appear showing an input error and will request for a valid input.

The Style property in JavaScript can change the <body> element or any other element dynamically. The document object model (DOM) property can be manipulated by calling it inside the <script> tag. The property that will be manipulated in the above code is ‘document.body.style.background’. Any HTML element that supports the style attribute also has a style property.

//Question 2

<!DOCTYPE html>

<html>

<head>

    <script type="text/javascript">

        //This function can be used to input User first and second names then output. More functionality like object constructor can be added to store this data

        function display() { //Function connected to the button is called whenever the user clicks the mouse

            document.getElementById('display').innerHTML =

                document.getElementById("user\_input1").value; //User input in the first form will be output

            document.getElementById('display1').innerHTML =

                document.getElementById("user\_input2").value; //User input in the second form will be output

        }

        function highlight(x) { //This will highlight each field yellow when clicked

            x.style.background = "yellow";

        }

        //If data is selected from form fill data instead of typed data, highlighter will only work when any keyboard key is pressed

        function regular(x) { //This will return form to regular color while other form is clicked

            x.style.background = "white";

        }

    </script>

</head>

<body>

    <!--Add id to input tag-->

    <h1>Question 2</h1>

    <form name="exam"><!--form validation can be added for different types of data-->

        <input type="text" name="first" id="user\_input1" onmousedown="highlight(this)" onblur="regular(this)">

        <input type="text" name="last" id="user\_input2" onmousedown="highlight(this)" onblur="regular(this)">

        <input type="button" value="click me" onClick="display()">

    </form>

    <p><span id='display'></span> <span id='display1'></span></p>

</body>

</html>

//Question 3

<!DOCTYPE html>

<html>

<head lang="en">

    <meta charset="UTF-8">

    <title>Question 3</title>

</head>

<body>

    <h1>Question 3</h1>

    <p id="demo"></p>

    <script>

        //These are two methods for writing this code, since it is the same string

        //Method 1

        //An Array constructor can be used to make the list

        for (let i = 1; i <= 50; i++) {

            const item = 'item' + [i]

            const arr = Array.from({

                length: 1

            }, () => item)

            console.log('arr', arr) //Output on console

                //'document.write(arr + "<br/>")'. The output will can be ordered in a list with list tags

        }

        //For loop is an easier way to generate the item list since it's the same string

        //But for different strings, the object constructor function should be used

        //Also the .push or .unshift methods are used to add new items to an array

        //Method 2

        let text = "<ul>";

        for (let i = 1; i <= 50; i++) { //Second ‘for’ loop is to explain and compute second method

            text += "<li>" + "Item" + [i] + "</li>";

        }

        text += "</ul>";

        //This output will be ordered in a list on webpage

        document.getElementById("demo").innerHTML = text;

    </script>

</body>

</html>

//Question 4

<!DOCTYPE html>

<html>

<head lang="en">

    <meta charset="UTF-8">

    <title>Question 4</title>

</head>

<body>

    <h1>Question 4</h1>

    <p id="demo"></p>

    <script>

        function trueorfalse() { //Function name

            var arr = {};

            //will ask user to type in number 50 times//

            for (i = 1; i < 5; i++) {

                arr[i] = Number(prompt("Enter number " + (Number(i)))); //prompt will ask for inputs

            }

            //parseFloat will return numbers. NaN will appear for other inputs

            var a = parseFloat(arr[1])

            var b = parseFloat(arr[2])

            var c = parseFloat(arr[3])

            var d = parseFloat(arr[4])

            document.getElementById("demo").innerHTML = //This will display inputs after computation

                "Input a is: " + a + "<br/>" +

                "Input b is: " + b + "<br/>" +

                "Input c is: " + c + "<br/>" +

                "Input d is: " + d;

            if (a \* b < c \* d) { //If evaluates the conditon. If it is true, alert box will pop up with True

                alert(true)

            } else { //or else alert box will be false

                alert(false)

            }

        }

    </script>

    <button onclick="trueorfalse()">Compute</button>

    <!--This will call function-->

</body>

</html>

//Question 5

<!DOCTYPE html>

<html>

<head lang="en">

    <meta charset="UTF-8">

    <title>Question 5</title>

    <script language="JavaScript">

        function checkRequired() { //User input will be validated using this function,

            //first to check if the input is empty then check if the 'space key' was used to fill the fields using 'trim'

            let a = document.forms["RegistrationForm"]["firstName"].value;

            if (a.trim() == "" || a.length < 2) { //'a.length' checks length of input, it can adjusted accordingly

                alert("Missing First Name"); //If a form field (fname) is empty, either 'Alert messages' or

                //the 'required' attribute prevents this form from being submitted

                return false;

            }

            let b = document.forms["RegistrationForm"]["lastName"].value;

            if (b.trim() == "" || b.length < 2) {

                alert("Missing Last Name"); //It is not neccessary to write all this code, it is just for explanatory purposes

                return false;

            }

            let c = document.forms["RegistrationForm"]["dob"].value;

            if (c.trim() == "" || c.length < 2) { //The 'required' attribute checks for proper date format

                alert("Missing Date of Birth");

                return false;

            }

            let d = document.forms["RegistrationForm"]["address"].value;

            if (d.trim() == "" || d.length < 5) {

                alert("Missing Physical Address");

                return false;

            }

            let e = document.forms["RegistrationForm"]["town"].value;

            if (e.trim() == "" || e.length < 2) {

                alert("Missing Town Name");

                return false;

            }

            let f = document.forms["RegistrationForm"]["county"].value;

            if (f.trim() == "" || f.length < 2) {

                alert("Missing County Name");

                return false;

            }

            let g = document.forms["RegistrationForm"]["postcode"].value;

            if (g.trim() == "" || g.length < 2) {

                alert("Missing Postal Code");

                return false;

            }

            let h = document.forms["RegistrationForm"]["email"].value;

            if (h.trim() == "" || h.length < 2) { //The 'required' attribute checks for email validity. It checks for '@' or '.com'

                alert("Missing Email Address");

                return false;

            } else {

                true;

            }

        }

    </script>

</head>

<body>

    <h1>Question 5</h1>

    <form id="user-form" action="#" name=RegistrationForm method="post" onsubmit="return checkRequired()">

        <table>

            <tr>

                <td>\*Title:</td>

                <td><select name="title">

                  <option selected>Mr</option>

                  <option>Mrs</option>

                  <option>Ms</option>

                  <option>Miss</option>

                  <option>Dr</option>

                  <option>Prof</option>

                </select></td>

            </tr>

            <tr>

                <td>First name:</td>

                <!—‘required’ attribute is included in all the fields-->

                <td><input type="text" id="firstname" name="firstName" size="20" maxlength="20" placeholder="First Name" required></td>

            </tr>

            <tr>

                <td>Last name:</td>

                <td><input type="text" id="lastname" name="lastName" size="20" maxlength="20" placeholder="Last Name" required></td>

            </tr>

            <tr>

                <td>Date of Birth:</td>

                <td><input type="date" id="dob" name="dob" size="20" maxlength="20" placeholder="Date of Birth" required></td>

            </tr>

            <tr>

                <td>Address:</td>

                <td><textarea id="address" name="address" row="4" , cols="40" placeholder="Physical Address" required></textarea></td>

            </tr>

            <tr>

                <td>Town:</td>

                <td><input type="text" id="town" name="town" size="30" maxlength="40" placeholder="Town" required></td>

            </tr>

            <tr>

                <td>County:</td>

                <td><input type="text" id="county" name="county" size="30" maxlength="40" placeholder="County" required></td>

            </tr>

            <tr>

                <td>Postcode:</td>

                <td><input type="text" id="postcode" name="postcode" size="20" maxlength="10" placeholder="Postcode" required></td>

            </tr>

            <tr>

                <td>Email:</td>

                <td><input type="email" id="email" name="email" size="30" maxlength="64" placeholder="Email Address" required></td>

            </tr>

        </table>

        <div>

            <input type="submit" value="Submit" onClick="checkRequired()">

        </div>

    </form>

</body>

</html>