# JavaScript/Dom

## Long Course: Week 3 & 4

INSTRUCTOR
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# 1. Writing to HTML document

We have two main areas we can write our JS code to - console and document. Our focus here would be document. When we use the console, the output of our code is in the console tab at the background (this is used majorly for testing purpose), however when we use the document object, the output is printed and displayed on our HTML document/page.

**a**. Display JS code output on webpage (writing JS directly into the html document)

**Illustration**:

- Displaying your name on the webpage using JS code:

```
<script>
      document.write("My Name")
</script>
```

# 1. Writing to HTML document

**b**. Modifying our HTML tags/elements using JS

**Illustration**:

- Changing the value of an h1 tag using JS:

```
<h1 id="header"></h1>


<script>
      //Referencing the h1 element using the getElementById method
      (innerHTML refers to what is within the h1 tag)
      document.getElementById("header").innerHTML = "TECHNOLOGY"
</script>
```

# CLASS WORK

1. Using the document object, display your phone number.
2. Using JS, change the value of a p tag to your favourite quote.

# 2. Conditions and Comparison Operators

The different types of conditions and comparison operators are listed below:

a. Equivalence operator (==, ===)
b. "Not Equal to" operator (!=)
c. "Logical AND" operator (&&)
d. "Logical OR" operator (||)
e. Less than and greater than operators (<, >)
f. "NOT" operator (!)

# 2. Conditions and Comparison Operators

**a. Equivalence operator (==, ===)**

Equivalence operator is denoted by == or ===

**Illustration**:

Example 1:

```
var password = "1234"
var confirmpassword = 1234
document.write(password === confirmpassword);
document.write(password == confirmpassword);
```

Example 2:

```
var email = "david@gmail.com"
var confirmemail = "david@gmail.com "
document.write(email == confirmemail.trim());
document.write(email === confirmemail);
```

# 2. Conditions and Comparison Operators

**b. "Not Equal to" operator (!=)**

“Not Equal to” operator is denoted by != or !==

**Illustration**:

```
var email = "david@gmail.com"
var confirmemail = "david@gmail.com "
document.write(email != confirmemail);
```

# 2. Conditions and Comparison Operators

**c. "Logical AND" operator (&&)**

“Logical AND” operator is denoted by &&

**Illustration**:

Example 1:

```
var idcard = true
var facemask = false
document.write(idcard && facemask);
```

Example 2:

```
var email = "david@gmail.com"
var confirmemail = "david@gmail.com "
var password = "1234"
var confirmpassword = 1234
document.write(email === confirmemail && password == confirmpassword);
document.write(password == confirmpassword && email == confirmemail.trim());
```

# 2. Conditions and Comparison Operators

**d. "Logical OR" operator (||)**

“Logical OR” operator is denoted by ||

**Illustration**:

Example 1:

```
var idcard = true
var facemask = false
document.write(idcard || facemask);
```

Example 2:

```
var password = "1234"
var confirmpassword = 1234
var email = "david@gmail.com"
var confirmemail = "david@gmail.com "
document.write(password == confirmpassword || password === confirmpassword);
document.write(email === confirmemail || password === confirmpassword);
```

# 2. Conditions and Comparison Operators

**e. Less than and greater than operators (<, >)**

Less than and greater than operator is denoted by < and > respectively

**Illustration**:

```
var cutoff = 180
var jambscore = 200
document.write(cutoff > jambscore);
document.write(cutoff < jambscore);
```

# 2. Conditions and Comparison Operators

**f. "NOT" operator (!)**

"NOT" operator is denoted by !

**Illustration**:

```
var raining = true
document.write(!raining);
```

# CLASS WORK

```
1. //What will be the output of the code below
var food = "Rice"
document.write("I wish to eat " + food + " today");
```

```
2. //Will the output of the code below be True or False?
var name = "Abel"
var othername = "abel“
document.write(name === othername);
```

```
3. //Will the output of the code below be True or False?
var num1 = 45
var num2 = "45"
document.write(num1 == num2);
```

```
4. //Will the output of the code below be True or False?
document.write(num1 === num2);
```

```
5. //Will the output of the code below be True or False?
document.write(name != othername);
```

```
6. //Will the output of the code below be True or False?
document.write(name === othername && num1 == num2);
```

```
7. //Will the output of the code below be True or False?
document.write(name != othername && num1 == num2);
```

```
8. //Will the output of the code below be True or False?
document.write(name === othername || num1 == num2);
```

```
9. //Will the output of the code below be True or False?
var x = 10
var y = 13
document.write(y < x);
```

```
10. //Will the output of the code below be True or
False?
document.write(num1 === num2 && x < y);
```

# CLASS WORK

```
11. //Will the output of the
code below be True or False?
document.write(!true);
```

```
12. //Will the output of the
code below be True or False?
document.write(!false);
```

```
13. //Will the output of the
code below be True or False?
var y = 13
document.write(!(y > 10));
```

# 3. Functions

A function can be seen as a block of code that does something. Rather than writing very similar lines of code multiple times, you can add them into the function and call the function as may times.

# 3. Functions

Illustration:

## a. A function that adds two numbers together:

```
<script>
        function addNumbers(firstNumber, secondNumber){
                return firstNumber + secondNumber;
        }

        //Call the function on our HTML document
        document.write(addNumbers(2, 3));
        document.write("<br>"); //This is just to add a line break
        document.write(addNumbers(20, 7));
        document.write("<br>");
        //NOTES: (firstNumber, secondNumber) are called parameters while (2, 3), (20, 7)
        are called arguments
</script>
```

# 3. Functions

Illustration:

**b. A function that changes the text and color of an HTML element when a button is clicked:**

```
<!- HTML tags -->
<h1 id="header">HELLO</h1>
<button onclick="red()">Red</button>
<button onclick="green()">Green</button>
<button onclick="blue()">Blue</button><br><br>
```

```
<!- JavaScript Code -->
<script>
        function red(){
            document.getElementById("header").innerHTML = "Red";
            document.getElementById("header").style.color = "Red"
        }

        function green(){
            document.getElementById("header").innerHTML = "Green";
            document.getElementById("header").style.color = "Green"
        }

        function blue(){
            document.getElementById("header").innerHTML = "Blue";
            document.getElementById("header").style.color = "Blue"
        }
  </script>
```

# 3. Functions

Illustration:

## c. Creating a calculator app using a function:

```
<!- HTML tags -->
<input type="number" class="form-control" id="box1" placeholder="Enter first number" required><br>
<input type="number" class="form-control" id="box2" placeholder="Enter second number" required><br>
<button class="btn btn-primary" onclick="add()">Add</button><br>
<input type="number" class="form-control" id="answer" readonly>
<!- JavaScript Code -->
<script>
        function add(){
            var box1 = document.getElementById("box1").value;
            var box2 = document.getElementById("box2").value;
            var sum = Number(box1) + Number(box2);

            document.getElementById("answer").value = sum;
        }
</script>
```

# 3. Functions

Illustration:

## d. Checking admission status:

```
<!- HTML tags -->
<input type="number" class="form-control" placeholder="Enter Jamb Score" id="jambscore" required>
<button class="btn btn-primary" onclick="checkAdmission()">Check</button>
<!- JavaScript Code -->
  <script>
        function checkAdmission(){
            var jambscore = document.getElementById("jambscore").value;

            if(jambscore >= 180){
                document.getElementById("message").innerHTML = "Congratulations! You are eligible for admission into the university";
            }else if  (jambscore < 180 && jambscore > 0){
                document.getElementById("message").innerHTML = "We are sorry, You are NOT eligible for admission, you scored below 180";
            }else if (jambscore == ""){
                document.getElementById("message").innerHTML = "Please enter your jamb score";
            }
        }
  </script>
```

# 3. Functions

Illustration:

## e. Form validation :

```
<!- HTML tags -->
<p id="message" style="color: red;"></p>
<input type="text" class="form-control" placeholder="Full name" id="fullname"><br>
<input type="email" class="form-control" placeholder="Enter your email" id="email"><br>
<input type="tel" class="form-control" placeholder="Enter your phone number" id="phone"><br>
<input type="password" class="form-control" placeholder="Enter your password" id="password"><br>
<input type="password" class="form-control" placeholder="Confirm your password" id="confirmpassword"><br>
<button class="btn btn-primary" onclick="register()">Register</button>
```

# 3. Functions

Illustration:

## e. Form validation :

```
<!- JavaScript Code -->
<script>
        function register(){
            var fullname = document.getElementById("fullname").value;
            var email = document.getElementById("email").value;
            var phone = document.getElementById("phone").value;
            var password = document.getElementById("password").value;
            var confirmpassword = document.getElementById("confirmpassword").value;

            if(fullname == "" || email == "" || phone == "" || password == "" || confirmpassword == ""){
                document.getElementById("message").innerHTML = "All inputs are required";
            }else if ((!fullname.match(/^[A-Za-z ]+$/)) || fullname.length > 50){
                document.getElementById("message").innerHTML = "Please enter a valid full name";
            }else if ((!email.match(/\S+@\S+\.\S+/)) || email.length > 50){
                document.getElementById("message").innerHTML = "Please enter a valid email";
            }else if (password.length < 5 || confirmpassword.length < 5){
                document.getElementById("message").innerHTML = "Password should not be less than 5 characters";
            }else if (password !== confirmpassword){
                document.getElementById("message").innerHTML = "Password and confirm password do not match";
            }else{
                document.getElementById("message").innerHTML = "Registration Successful";
            }
        }

        //NOTES: .match(), .length are known as string methods. We have a lot of others.
</script>
```

# CLASS WORK

Using the example of the calculator app, convert your calculator app into a modulo calculator app that gives us the ramainder of a division

...

# GROUP PROJECT

USING JS, CREATE A WEB APP THAT CHECKS IF SOMEONE IS A CHILD, A TEENAGER OR AN ADULT WHEN THE PERSON ENTERS HIS/HER AGE. THE FOLLOWING AGE BRACKET SHOULD BE USED:

- CHILD = (1 - 17)
- TEENAGER = (18 - 29)
- ADULT = (30 - 79)

Hint for child: if(age <= 17 && age >= 1)