Assignment Day 4 | 17th July 2020

Question 1:

Create a for loop that iterates up to 100 while outputting "fizz" at multiples of 3, "buzz" at multiples of 5 and
"fizzbuzz" at multiples of 3 and 5.

Answer:

```
   for (var i=1; i < 101; i++){
    if (i % 15 == 0) console.log("FizzBuzz");
    else if (i % 3 == 0) console.log("Fizz");
    else if (i % 5 == 0) console.log("Buzz");
    else console.log(i);
}
```

Output:

```
1
2
Fizz
4
Buzz
Fizz
7
8
Fizz
1
2
Fizz
4
Buzz
Fizz
7
8
Fizz
Buzz
11
Fizz
13
14
FizzBuzz
16
17
Fizz
19
Buzz
Fizz
```

22
23
Fizz
Buzz
26
Fizz
28
29
FizzBuzz
31
32
Fizz
34
Buzz
Fizz
37
38
Fizz
Buzz
41
Fizz
43
44
FizzBuzz
46
47
Fizz
49
Buzz
Fizz
52
53
Fizz
Buzz
56
Fizz
58
59
FizzBuzz
61
62
Fizz
64
Buzz
Fizz
67
68
Fizz
Buzz
71
Fizz
73
74
FizzBuzz
76
77

Fizz
79
Buzz
Fizz
82
83
Fizz
Buzz
86
Fizz
88
89
Fizz Buzz
91
92
Fizz
94
Buzz
Fizz
97
98
Fizz
Buzz

Question 2:

Destructure the following object

```
const student = {
    name: "Helsinki",
    age: 24,
    projects: {
        diceGame: "Two player dice game using JavaScript"
    }
}
```

Answer:

Console.log(student.name);
>Syed Aamer Ali
Console.log(student.age);
>20
Console.log(student.project);
>{dicegame: "Two player dice game using Javascript"}

Let student{ name,age, project:dicegame) = student;
Console.log(name,age,dicegame);
>Syed Aamer Ali 20 Two player dice game using Javascript

Question 3:

Imagine you are going out to do some grocery shopping.
So you have an array called shoppingList with all the products you want to buy.

Now that you are inside of the shop, you have a basket with all the products from your list, but you want to
add a few more.
Create a new array called shoppingBasket, that will be a copy of the shoppingList array, and add some new products into it.

Answer:

```
const  =["Milk","Eggs","Wheat Flour","Ice Cream","Salt"];
const shoppingBusket =[....shoppingList,"Bread","Chocolate"];
console.log(shoppingBusket);
```

Output:

"Milk","Eggs","Wheat Flour","Ice Cream","Salt","Bread","Chocolate"

Question 4:

Make a Calculator in Javascript which can do operations as Addtion, Subtraction, Multiplication, Division, Square root, Percentage.

Answer:

cal.html code below:

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="cal.css">
  <script language="javascript" src="cal.js"></script>
</head>
<body>
<form name="sci-calc">
 <table class="calculator" cellspacing="0" cellpadding="1">
   <tr>
     <td colspan="5"><input id="display" name="display" value="0" size="28" maxlength="25"></td>
   </tr>
   <tr>
     <td><input type="button" class="btnTop" name="btnTop" value="C" onclick="this.form.display.value=
0 "></td>
     <td><input type="button" class="btnTop" name="btnTop" value="<--"
onclick="deleteChar(this.form.display)"></td>
     <td><input type="button" class="btnTop" name="btnTop" value="="
onclick="if(checkNum(this.form.display.value)) { compute(this.form) }"></td>
     <td><input type="button" class="btnOpps" name="btnOpps" value="&#960;"
onclick="addChar(this.form.display,'3.14159265359')"></td>
     <td><input type="button" class="btnMath" name="btnMath" value="%" onclick="
percent(this.form.display)"></td>
   </tr>
```

```
  <tr>
    <td><input type="button" class="btnNum" name="btnNum" value="7"
onclick="addChar(this.form.display, '7')"></td>
    <td><input type="button" class="btnNum" name="btnNum" value="8"
onclick="addChar(this.form.display, '8')"></td>
    <td><input type="button" class="btnNum" name="btnNum" value="9"
onclick="addChar(this.form.display, '9')"></td>
    <td><input type="button" class="btnOpps" name="btnOpps" value="x&#94;"
onclick="if(checkNum(this.form.display.value)) { exp(this.form) }"></td>
    <td><input type="button" class="btnMath" name="btnMath" value="/"
onclick="addChar(this.form.display, '/')"></td>
  <tr>
    <td><input type="button" class="btnNum" name="btnNum" value="4"
onclick="addChar(this.form.display, '4')"></td>
    <td><input type="button" class="btnNum" name="btnNum" value="5"
onclick="addChar(this.form.display, '5')"></td>
    <td><input type="button" class="btnNum" name="btnNum" value="6"
onclick="addChar(this.form.display, '6')"></td>
    <td><input type="button" class="btnOpps" name="btnOpps" value="ln"
onclick="if(checkNum(this.form.display.value)) { ln(this.form) }"></td>
    <td><input type="button" class="btnMath" name="btnMath" value="*"
onclick="addChar(this.form.display, '*')"></td>
  </tr>
  <tr>
    <td><input type="button" class="btnNum" name="btnNum" value="1"
onclick="addChar(this.form.display, '1')"></td>
    <td><input type="button" class="btnNum" name="btnNum" value="2"
onclick="addChar(this.form.display, '2')"></td>
    <td><input type="button" class="btnNum" name="btnNum" value="3"
onclick="addChar(this.form.display, '3')"></td>
    <td><input type="button" class="btnOpps" name="btnOpps" value="&radic;"
onclick="if(checkNum(this.form.display.value)) { sqrt(this.form) }"></td>
    <td><input type="button" class="btnMath" name="btnMath" value="-"
onclick="addChar(this.form.display, '-')"></td>
  </tr>
  <tr>
    <td><input type="button" class="btnMath" name="btnMath" value="&#177"
onclick="changeSign(this.form.display)"></td>
    <td><input type="button" class="btnNum" name="btnNum" value="0"
onclick="addChar(this.form.display, '0')"></td>
    <td><input type="button" class="btnMath" name="btnMath" value="&#46;"
onclick="addChar(this.form.display, '&#46;')"></td>
    <td><input type="button" class="btnOpps" name="btnOpps" value="x&#50;"
onclick="if(checkNum(this.form.display.value)) { square(this.form) }"></td>
    <td><input type="button" class="btnMath" name="btnMath" value="+"
onclick="addChar(this.form.display, '+')"></td>
  </tr>
  <tr>
    <td><input type="button" class="btnMath" name="btnMath" value="("
onclick="addChar(this.form.display, '(')"></td>
    <td><input type="button" class="btnMath" name="btnMath" value=")"
onclick="addChar(this.form.display,')')"></td>
    <td><input type="button" class="btnMath" name="btnMath" value="cos"
onclick="if(checkNum(this.form.display.value)) { cos(this.form) }"></td>
    <td><input type="button" class="btnMath" name="btnMath" value="sin"
onclick="if(checkNum(this.form.display.value)) { sin(this.form) }"></td>
```

```
    <td><input type="button" class="btnMath" name="btnMath" value="tan"
onclick="if(checkNum(this.form.display.value)) { tan(this.form) }"></td>
  </tr>
 </tabel>
</form>
</body></html>
```

cal.css code below:

```
* {
  padding: 0;
  margin: 5px;
  text-align: center;
}
body {
  background-color:blue;
}
.calculator {
  width: 350px;
  height: 320px;
  background-color: #c0c0c0;
  box-shadow: 0px 0px 0px 10px #666;
  border: 5px solid black;
  border-radius: 10px;
}
#display {
  width: 320px;
  height: 40px;
  text-align: right;
  background-color: black;
  border: 3px solid white;
  font-size: 18px;
  left: 2px;
  top: 2px;
  color: #7fff00;
}
.btnTop{
  color: white;
  background-color: #6f6f6f;
  font-size: 14px;
  margin: auto;
  width: 50px;
  height: 25px;
}
.btnNum {
  color: white;
  background-color: black;
  font-size: 14px;
  margin: auto;
  width: 50px;
  height: 25px;
}
.btnMath {
  color: white;
  background-color: #ff4561;
```

```
  font-size: 14px;
  margin: auto;
  width: 50px;
  height: 25px;
}
.btnOpps {
  color: white;
  background-color: #ff9933;
  font-size: 14px;
  margin: auto;
  width: 50px;
  height: 25px;
}
```

cal.js code below:

```
function addChar(input, character) {
	if(input.value == null || input.value == "0")
		input.value = character
	else
input.value += character
}

function cos(form) {
	form.display.value = Math.cos(form.display.value);
}

function sin(form) {
	form.display.value = Math.sin(form.display.value);
}

function tan(form) {
	form.display.value = Math.tan(form.display.value);
}

function sqrt(form) {
	form.display.value = Math.sqrt(form.display.value);
}

function ln(form) {
	form.display.value = Math.log(form.display.value);
}

function exp(form) {
	form.display.value = Math.exp(form.display.value);
}

function deleteChar(input) {
	input.value = input.value.substring(0, input.value.length - 1)
}
var val = 0.0;
function percent(input) {
  val = input.value;
  input.value = input.value + "%";
}
```

```
function changeSign(input) {
	if(input.value.substring(0, 1) == "-")
		input.value = input.value.substring(1, input.value.length)
	else
		input.value = "-" + input.value
}


function square(form) {
	form.display.value = eval(form.display.value) * eval(form.display.value)
}

function checkNum(str) {
	for (var i = 0; i < str.length; i++) {
		var ch = str.charAt(i);
		if (ch < "0" || ch > "9") {
			if (ch != "/" && ch != "*" && ch != "+" && ch != "-" && ch != "."
				&& ch != "(" && ch!= ")" && ch != "%") {
				alert("invalid entry!")
				return false
				}
			}
		}
		return true
}
```