| **Ex. No. 5** | **JavaScript – DOM Elements and Events** | |
|---|---|---|
| Date of Exercise | 10-10-2016 | Date of Upload | 28-10-2016 |

### Aim

Create javascript functions to perform the following tasks.

**Video URL : https://youtu.be/88pwzkPOSuA**

### Program

1. Write a function that accepts a string as a parameter and find the shortest and longest word within the string.

```
<!DOCTYPE html>
<meta charset="utf-8">
<html>
     <head>
     <title>
           Javascript
     </title>
     </head>
<body>
     <p>Enter the string </p>
     <input type="text" id="entry">
     <input type="submit" value="submit" onclick="forward()">
     <p>Longest:  <span  id="large">  </span>  <br>  Shortest:  <span
id="small"></span> </p>

<script type="text/javascript">
     var forward = function (){
           var data= document.getElementById("entry").value;
           lenFinder(data);
     }
     var lenFinder = function(data){
           var ar = data.split(" ");
           var small=ar[0];
           var large=ar[0];
           for(var a=0;a<ar.length;a++){
            if(ar[a].length>large.length){
                 large=ar[a]
            }
            if(ar[a].length<small.length){
                 small=ar[a]
            }
           }
```

```
                  document.getElementById("large").innerHTML=large;
                  document.getElementById("small").innerHTML=small;
            }
</script>

</body>
</html>
```

Enter the string

| Hello world of warcraft | submit |

Longest: warcraft
Shortest: of

**2.** Write thecalculate() function that takes the weight and height in the text boxes and displays the BMI in the span with the id of **"score."**

```
<!DOCTYPE html>
<meta charset="utf-8">
<html>
      <head>
      <title>

      </title>
      </head>
<body>

<h1>Calculate your Body Mass Index (BMI)!</h1>
<fieldset>
Weight (in kilograms): <input type="text" id="weight" /><br />
Height (in meters): <input type="text" id="height" /><br />
<button onclick="calculate();">Get BMI!</button>
</fieldset>
<p>
Your BMI is <span id="score"></span>. <br />
Your body type is <span id="type"></span>.
</p>


<script type="text/javascript">var calculate= function(){
      var w=document.getElementById("weight").value;
```

```
        var l=document.getElementById("height").value;

        var bmi=w/(l*l);

        document.getElementById('score').innerHTML=bmi;

        var type="";
        if(bmi<18)
                type='Underweight';
        else if(bmi>18 && bmi<25)
                type='Normal';
        else if(bmi>25 && bmi<30)
                type='Overweight'
        else
                type='Obese';
        document.getElementById('type').innerHTML=type;
}
</script>

</body>
</html>
```

## Calculate your Body Mass Index (BMI)!

Weight (in kilograms): 56
Height (in meters): 1.72
Get BMI!

Your BMI is 18.92915089237426.
Your body type is Normal.

3. When you click the "Plant Garden" button, the page should generate a rectangular grid of fruit images in the div with the id of "garden."

```
<!DOCTYPE html>
<meta charset="utf-8">
<html>
        <head>
        <title>


        </title>
</head>
<body>
```

```
<h1>Fruit Farm</h1>
<div>
Rows: <input type="text" id ="rows" value="2" />
Columns: <input type="text" id ="columns" value="2" /> <br />
<button onclick="grow();">Plant Garden</button>
</div>
<div id="garden"></div>



<script type="text/javascript">
     var grow = function(){
           document.getElementById("garden").innerHTML="";

           var rows= document.getElementById("rows").value;
           var col= document.getElementById("columns").value;

           var ac=0,oc=0;
           var slots= rows*col;

           for(var i=0;i<rows;i++){
                 for(var j=0;j<col;j++){
                       var choice= Math.round(Math.random()+1)

                       if(choice==1 && ac<(slots/2)){
                             document.getElementById("garden").innerHTML   +=
"<img src= Apple.jpg width =100px height= 100px>"
                             ac++;
                       }
                       else if(choice==2 && oc<(slots/2)){
                             document.getElementById("garden").innerHTML   +=
"<img src= orange.jpg width =100px height= 100px>"
                             oc++;
                       }
                       else if(choice==2 && ac<=(slots/2)){
                             document.getElementById("garden").innerHTML   +=
"<img src= Apple.jpg width =100px height= 100px>"
                             ac++
                       }
                       else {
                             document.getElementById("garden").innerHTML   +=
"<img src= orange.jpg width =100px height= 100px>"
                             oc++;
                       }
                 }
```

```
                document.getElementById("garden").innerHTML += "<br/>"
            }
        }

</script>

</body>
</html>
```

## Fruit Farm

Rows: [ 2 ]        Columns: [ 2 ]

[ Plant Garden ]

4. Write the convert() function that takes the value in the text input and converts it from the unit selected in the left dropdown box to the unit selected on the right. The unit should be displayed in the empty span with the id of **"answer."**

```
<!DOCTYPE html>
<meta charset="utf-8">
<html>
        <head>
        <title>

        </title>
        </head>
<body>

<fieldset> Convert <input type="text" id="data" />
<select id="from">
<option>Indian Rupee</option>
<option>US Dollar</option>
</select>
to
<select id ="to">
<option> US Dollar </option>
<option> Indian Rupee </option>
```

```
</select>
<button  onclick="convert();">Calculate</button>  <br><br>  <p>Answer  :  <span
id="answer"></span> </p>
</fieldset>


<script type="text/javascript">
      var convert=function(){
            var f=document.getElementById("from").selectedIndex;
            var t=document.getElementById("to").selectedIndex;

            var amnt=document.getElementById("data").value;

            if(f==0&&t==0){
                  console.log("Inidan to US")
                  amnt=amnt/60;
            }

            if(f==1&&t==1){
                  console.log("us to India")
                  amnt=amnt*60;
            }

            document.getElementById("answer").innerHTML=amnt;

      }
</script>

</body>
</html>
```

| Convert | 32 | US Dollar ∨ | to | Indian Rupee ∨ | Calculate |

Answer : 1920

5. The image should change to the heads or tails picture with equal probability. Keep track of how many flips have resulted in heads and tails and report the results beneath the button in two spans with ids "num_heads" and "num_tails" respectively.

```
<!DOCTYPE html>
<meta charset="utf-8">
<html>
      <head>
      <title>

      </title>
      </head>
<body>
      <p>Enter the string </p>
```

```
<h1>Heads or Tails?</h1>
<div>
<img src="head.jpg" width="100px" id="coin" /> <br />
<button id="flip" onclick="flip()">Flip!</button>
</div>
<p>
Heads Total: <span id="num_heads">0</span><br />
Tails Total: <span id="num_tails">0</span>
</p>

<script type="text/javascript">
      var hn=0,tn=0;
      var flip=function(){


if(document.getElementById('coin').src=="file:///home/austin/Documents/Learn/k
arunya/webLab/Ex5/head.jpg"){
              document.getElementById('coin').src="tail.jpg";
              tn++;
          }
          else{
              document.getElementById('coin').src="head.jpg";
              console.log(document.getElementById('coin').src)
              hn++;

          }
          document.getElementById("num_tails").innerHTML=tn;
          document.getElementById("num_heads").innerHTML=hn;
      }
</script>

</body>
</html>
```

Enter the string

# Heads or Tails?

Flip!

Heads Total: 2
Tails Total: 3

6. A **1/2kg** cake is Rs.**100**, a **1kg** cake is Rs.**200** and a **2kg** cake is Rs.**400**. Tax is an additional **9%** to the order. The user must also pay a tip from **10-20%** of the total cost of the order after tax. Write the JavaScript code necessary to calculate and display the total cost of the order in the span with the id of **"price"** when the user clicks the **"Calculate Order"** button.

```
<!DOCTYPE html>
<meta charset="utf-8">
<html>
      <head>
      <title>

      </title>
      </head>
<body>

<h1>Pizza Order Form</h1>
<fieldset>
# of 1/2kg Cakes <input type="text" id="small" /><br />
# of 1kg Cakes <input type="text" id="medium" /><br />
# of 2kg Cakes <input type="text" id="large" /><br />
Tip:
<label><input type="radio" value="10" name="tip" /> 10%</label>
<label><input type="radio" value="15" name="tip" checked="checked" /> 15%
</label>
<label><input type="radio" value="20" name="tip" /> 20%</label> <br />
<button id="submit" onclick="cal()">Calculate Order</button>
</fieldset>
<p>
Cost of order: <span id="price"></span>
<p>

<script type="text/javascript">

var cal=function(){
            var           cost=(document.getElementById("small").value*100)+
(document.getElementById("medium").value*200)+
(document.getElementById("large").value*400);
            cost=cost*1;
            cost=cost+(cost*0.09);
            cost=                                              cost+
(cost*(document.querySelector('input[name="tip"]:checked').value/100));
            document.getElementById("price").innerHTML=cost;
      }
</script>

</body>
</html>
```

## Pizza Order Form

# of 1/2kg Cakes  `3`
# of 1kg Cakes  `2`
# of 2kg Cakes  `1`
Tip:  ○ 10%  ○ 15%  ● 20%
[ Calculate Order ]

Cost of order: 1438.8

## Result

The experiment has been successfully completed.

Staff : Mrs. Anitha Christy