

<b>Ex. No. 5</b>	<b>JAVASCRIPT – DOM ELEMENTS AND EVENTS</b>
<b>Date of Exercise</b>	<b>22-Aug-2022</b>
<b>Web Host Link</b>	<a href="https://github.com/jubaljacob/Web_Tech_Lab">https://github.com/jubaljacob/Web_Tech_Lab</a>

**Aim:**

To create a web pages demonstrating the applications of document object model and events in JavaScript.

**Description:****Document Object Model:**

A Document object represents the HTML document displayed in that window. The Document object has various properties that refer to other objects which allow access to and modification of document content. The way documented content is accessed and modified is called the Document Object Model, or DOM.

**Finding HTML Element:**

```
var myElement = document.getElementById("intro");  
Finding HTML Elements by Tag Name  
var x = document.getElementsByTagName("p");  
Finding HTML Elements by Class Name  
var x = document.getElementsByClassName("intro");  
Finding HTML Elements by CSS Selectors  
var x = document.querySelectorAll("p.intro");  
Attach event handler to the document  
document.addEventListener("click", function()  
{  
    document.getElementById("demo").innerHTML = "Karunya";  
});
```

### JavaScript Events:

JavaScript's interaction with HTML is handled through events that occur when the user or the browser manipulates a page.

Event	Description
Onabort	Triggers on an abort event
Onblur	Triggers when the window loses focus
Onchange	Triggers when an element changes
Onclick	Triggers on a mouse click
Ondblclick	Triggers on a mouse double-click
Ondrag	Triggers when an element is dragged
Onfocus	Triggers when the window gets focus
Onkeyup	Triggers when a key is released
Onload	Triggers when the document loads
Onkeydown	Triggers when a key is pressed
Onkeypress	Triggers when a key is pressed and released
Onmousedown	Triggers when a mouse button is pressed
Onmousemove	Triggers when the mouse pointer moves
Onmouseout	Triggers when the mouse pointer moves out of an element
Onmouseover	Triggers when the mouse pointer moves over an element
Onmouseup	Triggers when a mouse button is released
Onmousedown	Triggers when a mouse button is pressed
Onresize	Triggers when the window is resized
Onscroll	Triggers when an element's scrollbar is being scrolled
Onresize	Triggers when the window is resized
Onscroll	Triggers when an element's scrollbar is being scrolled
Onsubmit	Triggers when a form is submitted
Onunload	Triggers when the user leaves the document

### Program:

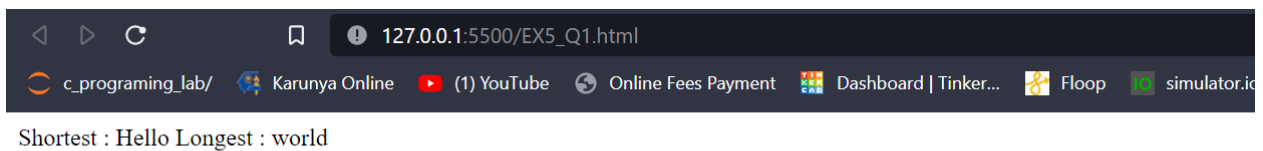
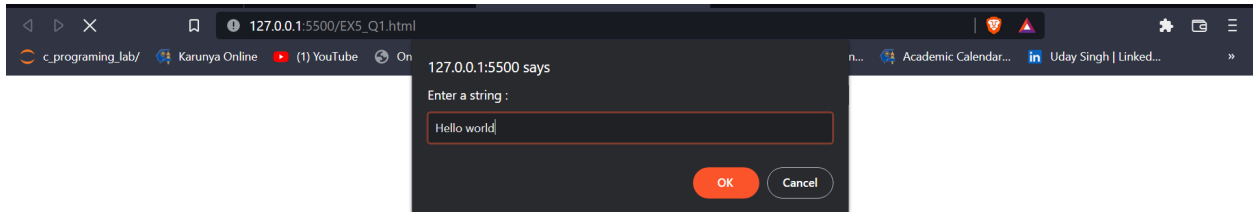
1. Write a function that accepts a string as a parameter and find the shortest and longest word within the string.

### Code:

```
<!DOCTYPE html>
<html>
  <head>
    <title>string</title>
  </head>
  <body>
    <script>
      function big_small()
      {
        len = str1.length
        const arr = str1.split(' ');
        arr.sort((a,b) => a.length - b.length);
        len = arr.length
        document.write("Shortest : "+ arr[0]);
        document.write(" Longest : "+ arr[len-1]);
      }

      var str1 = prompt("Enter a string : ");
      var smallest = big_small(str1);
    </script>
  </body>
</html>
```

## Output :



## 2.Design a BMI calculator

### Code:

```
<!DOCTYPE html>
<html>
  <head>
```

```
<title>BMI calculator</title>
</head>

<body>
  <h1><b>Calculate your body index</b></h1>

  <fieldset>
    Weight(in kilograms): <input type="text" id="weight"><br><br>
    Height(in meters): <input type="text" id="height"><br><br>

    <button type="submit" onclick="calculate()">Get BMI </button>
  </fieldset>

  <p> Your BMI is <u><b><span id = "score1"></span></b></u><br>
    Your body type is <u><b><span id = "type1"></span></b></u>
  </p>

  <script language="JavaScript">

    function calculate()
    {
      var weight = parseFloat(document.getElementById("weight").value);
      var height = parseFloat(document.getElementById("height").value);
      const score = weight/(height*height)
      document.getElementById("score1").innerHTML = score;

      var type;
      if(score < 18)
      {
        type = "Underweight";
      }

      else if(score > 18 && score < 25)
      {
        type = "Normal";
      }

      else if(score > 25 && score < 30)
      {
        type = "Overweight";
      }
    }
  </script>
</body>
</html>
```

```
        else
        {
            type = "Obese";
        }

        document.getElementById("type1").innerHTML = type;
    }
</script>

</body>
</html>
```

## Output :

### Calculate your body index

Weight(in kilograms):

Height(in meters):

Your BMI is 24.96494647925858

Your body type is Normal

**3. Fruit Farm:** 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.” The dimensions of grid are given by the values entered in the text boxes.

## Code:

```
<!DOCTYPE html>
```

```
<html>
  <head>
    <title>Fruit Farm</title>
  </head>
  <body>
    <h1><b>Fruit Farm</b></h1>
    <div>
      Rows:<input type="text" id="row">
      Columns:<input type="text" id="column">
      <button type="button" onclick="grow()">Plant Garden</button>
    </div>
    <p id="garden"></p>
    <script>
      function grow()
      {
        var Rows = parseInt(document.getElementById("row").value);
        var Columns = parseInt(document.getElementById("column").value);
        var arr = ["orange.jpg", "apple.jpg"];
        var Name = arr[Math.floor(Math.random() * arr.length)];

        for (let i = 0; i < Rows; i++)
        {
          for (let j = 0; j < Columns; j++)
          {
            var arr = ["orange.jpg", "apple.jpg"];
            var Name = arr[Math.floor(Math.random() * arr.length)];
            string = document.getElementById("garden").innerHTML += "";
          }
          garden.innerHTML += "<br>";
        }
      }
    </script>
  </body>
</html>
```

**Output :**

## Fruit Farm

Rows:  Columns:



4. Currency convertor from USD to INR and vice versa.

### Code:

```
<!DOCTYPE html>
<html>
  <head>
    <title> Currency Converter</title>
  </head>
  <body>

    <fieldset>Convert <input type="text" id="data"><br><br>
      From : <select id="from">
        <option value="India">Indian Rupee</option>
```



```
<option value="US">US Dollar</option>
</select><br><br>

To :
<select id = "to">
    <option value="India">Indian Rupee</option>
    <option value="US">US Dollar</option>
</select><br><br>
<button type="button" onclick="convert()">Calculate</button><br><br>

<div> The converted amount is : <p id = "answer"></p></div>

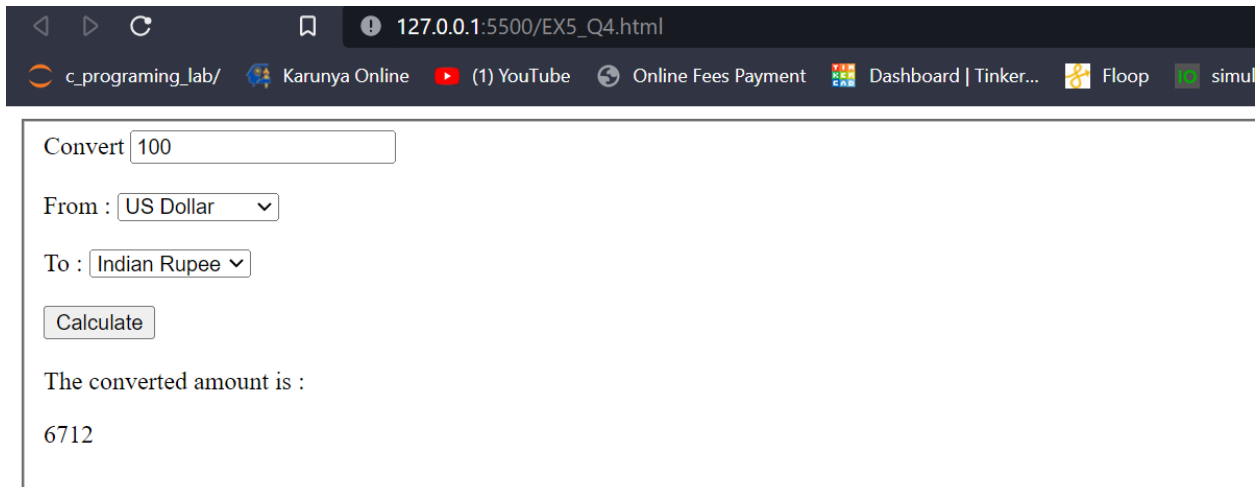
</fieldset>

<script>
    function convert()
    {
        var amount = parseInt(document.getElementById("data").value);
        var value_from = document.getElementById("from").value;
        var value_to = document.getElementById("to").value;

        if (value_from == "India" && value_to == "US")
        {
            answer = amount*0.015;
        }
        else if (value_from == "US" && value_to == "India")
        {
            answer = amount * 67.12;
        }
        else if (value_from == value_to)
        {
            answer = amount;
        }
        document.getElementById("answer").innerHTML = answer;
    }
</script>

</body>
</html>
```

### Output :



Convert

From :

To :

The converted amount is :  
6712

5. Write JavaScript code to randomly change the src of the img in the HTML snippet to “heads.jpg” or “tails.jpg” when the “Flip!” button is pressed.

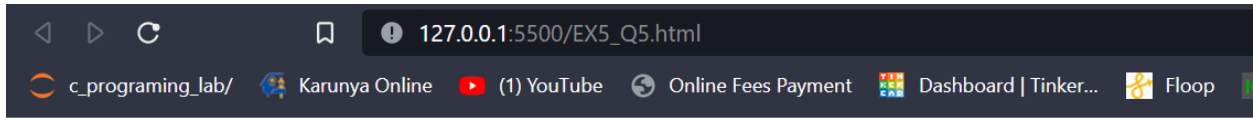
### Code:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Coin Flip</title>
  </head>
  <body>
    <h1>Heads or Tails</h1>
    <div>
      
      <button type="button" id="flip" onclick="flip()">Flip!</button>
    </div>
    <p>
      Heads Total: <span id="num_head">0</span><br>
      Tail Total: <span id="num_tail">0</span>
    </p>
  </body>
</html>
```

```
<script>
  function flip()
  {
    var img = document.getElementById('coin');
    var head = document.getElementById('num_head');
    var tail = document.getElementById('num_tail');
    var h = parseInt(head.innerHTML);
    var t = parseInt(tail.innerHTML);
    var l = ["head.jpg", "tail.jpg"];
    var s = Math.floor(Math.random()*2);

    if (l[s]==l[0])
    {
      head.innerHTML = h+1;
    }
    else{
      tail.innerHTML = t+1;
    };
    img.src ="img/"+l[s];
  }
</script>
</body>
</html>
```

**Output :**



## Heads or Tails



Flip!



Flip!

Heads Total: 1

Tail Total: 1

6. Birthday Cake order form with additional tax and tips.

**Code:**

```
<!DOCTYPE html>
<html>
  <head>
    <Title>Birthday Cake</Title>
  </head>
```

```

<body>
  <h1>Birthday cake Order Form</h1>
  <fieldset>
    Birthday cake Order Form of 1/2kg Cakes : <input type="text"
id="small"><br><br>
    Birthday cake Order Form of 1kg Cakes : <input type="text"
id="medium"> <br><br>
    Birthday cake Order Form of 2kg Cakes : <input type="text"
id="large"><br><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 type="button" id="submit" onclick="bill()">Calculate
Order</button><br>
    <span id="price"></span>
  </fieldset>
  <script>
    function bill()
    {
      var half = parseInt(document.getElementById("small").value);
      var one = parseInt(document.getElementById("medium").value);
      var two = parseInt(document.getElementById("large").value);
      var total;

      var small = 100;
      var medium = 200;
      var large = 400;

      total = (half * small) + (one * medium) + (two * large);
      var tax = 0.09 * total;
      total +=tax;

      var tip_per =
document.querySelector('input[name="tip"]:checked').value;
      tip=(tip_per/100)*total;
      total += tip;
    }
  </script>

```

```
document.getElementById("price").innerHTML = "Cost of Order : "+  
total + "Rupees";  
}  
</script>  
</body>  
</html>
```

### Output :

#### Birthday cake Order Form

Birthday cake Order Form of 1/2kg Cakes :	<input type="text" value="2"/>
Birthday cake Order Form of 1kg Cakes :	<input type="text" value="5"/>
Birthday cake Order Form of 2kg Cakes :	<input type="text" value="1"/>
Tip <input type="radio"/> 10% <input checked="" type="radio"/> 15% <input type="radio"/> 20%	
<input type="button" value="Calculate Order"/>	
Cost of Order : 2005.6Rupees	

### Result :

The above program is executed and verified successfully.