



GIFT School of Engineering and Applied Sciences

Fall 2022

**CS-120 Introduction to Information and
Communication Technology**

Lab-14 Manual

JavaScript Events

v1
29-12-2022

Lab Objectives:

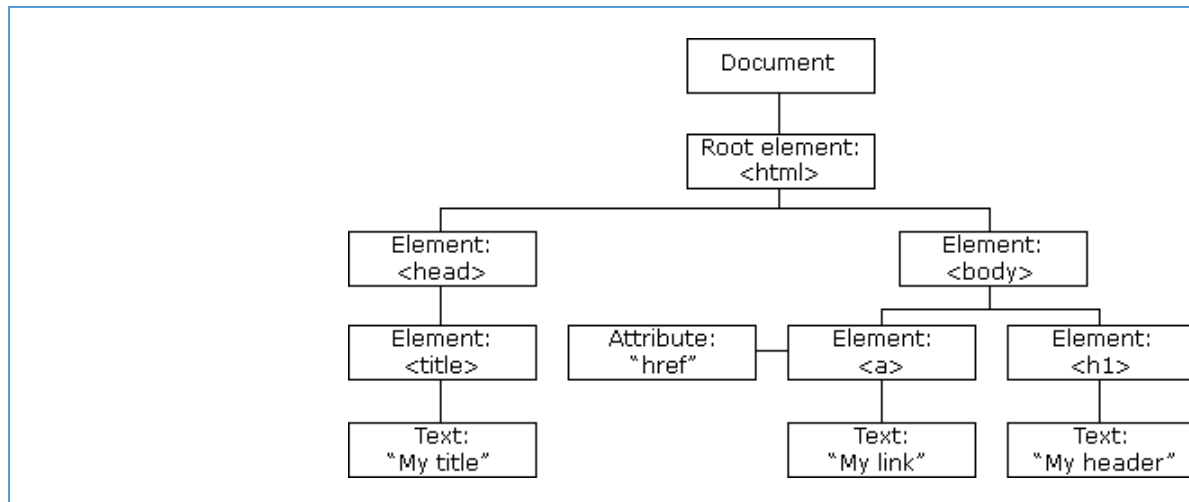
In this Lab Students will learn about **JavaScript** events:

- Document Object Model (DOM)
- Finding HTML elements through JavaScript:
 - By id
 - By tag name
 - By class
- Changing HTML elements:
 - Inner HTML
 - Attribute
 - style
- JavaScript Events
 - onclick
 - onmouseover
 - onmouseout

The HTML DOM (Document Object Model)

When a web page is loaded, the browser creates a **Document Object Model** of the page.

The **HTML DOM** model is constructed as a tree of **Objects**:



With the HTML DOM, JavaScript can access and change all the elements of an HTML document.

If you want to access any element in an HTML page, you always start with accessing the document object.

Below are some examples of how you can use the document object to access and manipulate HTML.

Finding HTML Elements

Method	Description
<code>document.getElementById(<i>id</i>)</code>	Find an element by element id

<code>document.getElementsByTagName(<i>name</i>)</code>	Find elements by tag name
<code>document.getElementsByClassName(<i>name</i>)</code>	Find elements by class name

Changing HTML Elements

Method	Description
<code>element.innerHTML = new html content</code>	Change the inner HTML of an element
<code>element.attribute = new value</code>	Change the attribute value of an HTML element
<code>element.setAttribute(<i>attribute</i>, <i>value</i>)</code>	Change the attribute value of an HTML element
<code>element.style.property = new style</code>	Change the style of an HTML element

JavaScript Events

A JavaScript can be executed when an event occurs, like when a user clicks on an HTML element.

To execute code when a user clicks on an element, add JavaScript code to an HTML event attribute:

onclick=JavaScript

Activity 1

In this activity, we will change the text when the user clicks on it.

Open editor and create an HTML Page.

Add a Paragraph and write some text in it.

Now add **onclick** event and change the text written inside the paragraph.

```
<!doctype html>
<html>
<head></head>
<body>
<p onclick="this.innerHTML='I am changed now!'">Click Me!</p>
</body>
</html>
```

Click the text in browser and observe the change in text.

Method 2

We can do the same thing by creating a script separately and then calling it as a function.

Create Paragraph and write some text in it and assign it an id “p1”.

```
<body>
<p id="p1">Click Me!</p>
```

Now create a script tag and make a function in it as follows:

```
<script>
function change() {
document.getElementById('p1').innerHTML="I am changed now";
}
</script>
```

Now call that function in event **onclick**.

```
<body>
<p id="p1" onclick="change()">Click Me!</p>
```

Click the text in browser and observe the change in text.

Method 3

We can do the same thing by writing the script in a separate file and then link the script file with HTML file.

Cut the code written in script tag and paste it in a separate file and name it “script.js”

Now link the file with html file as follows:

```
<head>
<script src="script.js"></script>
</head>
```

Click the text in browser and observe the same change.

Activity 2

In this Activity, we will display date by clicking on a button.

Create a button and assign it an id “b1”.

Create a Paragraph and assign it id “para1” but don’t write anything inside it.

Now a function in script which will change inner HTML of paragraph and display date in it.

```
function displayDate(){  
document.getElementById('para1').innerHTML=Date();  
}
```

Now apply the **onclick** event on the button created above and call the function displayDate().

```
<body>  
<button onclick="displayDate()">show Date</button>  
<p id="para1"></p>
```

Now click the button and observe the date display on screen.

Activity 3

In this activity, we will practice **onmouseover** and **onmouseout** events.

Create a div and set its padding 20px, background-color red and color white.

Assign it id “div1”

Write your name in it.

```
<body>
<div id="div1" style="background-color:red;color:white;padding:20px;">John Peter</div>
```

Now create two functions in script `mouseover()` and `mouseout()`

In `mouseover` function change the text and in `mouseout` function change the text back to your name.

```
function mouseover() {
document.getElementById('div1').innerHTML="Thank You!";
}
function mouseout() {
document.getElementById('div1').innerHTML="John Peter";
}
```

Now create two events in div **onmouseover** and **onmouseout** and call the functions written in script.

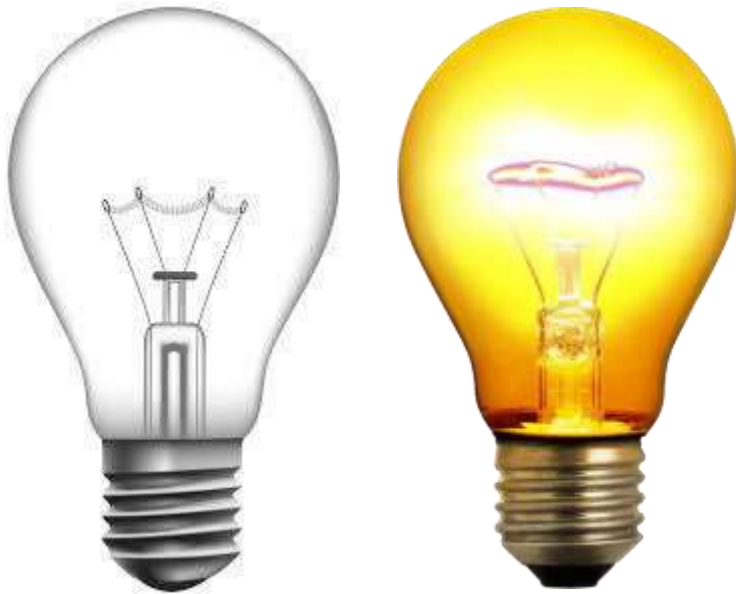
```
<body>
<div id="div1" style="background-color:red;color:white;padding:20px;" onmouseover='mouseover()' onmouseout='mouseout()'>John Peter</div>
```

Mouse over and mouse out the div in browser and observe the events applied.

Activity 4 (Game of bulb Lightening)

In this activity, we will create a game of fun. We will light up the bulb when mouse is over the bulb and light off the bulb when mouse is out.

Download two pictures of a bulb one light off and one light on like the following:



Now add image in your webpage and put bulb off there.

```

```

Now create two functions in script `bulbon()` and `bulboff()`.

Inside `bulbon` function change `src` of picture to bulb on.

Inside `bulboff` function change `src` of picture to bulb off.

```
function bulbon() {  
document.getElementById('bulb').src="pics/bulbon.png";  
}  
function bulboff() {  
document.getElementById('bulb').src="pics/bulboff.jpg";  
}
```

Now call the functions in **onmouseover** and **onmouseout** events:

```
<body>

```

Now observe the bulb lightening by mouse over and on.

Activity 5

In this activity, we will learn to change style properties by javascript.

Create a paragraph and assign id “p2”.

Write your name in it.

Inside script write function changestyle()

Inside the function change the text color to red.

```
function changestyle() {
document.getElementById('p2').style.color="red";
}
```

Now create **onclick** event for paragraph and call the function:

```
<body>
<p id="p2" onclick="changestyle()">John Peter</p>
```

Click the paragraph in browser and observe change in style.

Task

Create a game of your pictures.

Take two pictures of your own. (one of front pose and other of side pose)

Now insert your front pose picture in your webpage.

On mouse over change your pose.

On mouse out again put front pose.

The End