JAVA SCRIPT EVENTS AND EVENT LISTENERS

Introduction

- Event-driven: code executed resulting to user or browser action.
- Event: a notification that something specific occurred -- by browser or user.
- Event handler: a script implicitly executed in response to event occurrence.
- Registration: the process of connecting event handler to event.
- Events are JavaScript objects --> names are case sensitive, all use lowercase only.

  (Method ***write*** should never be used in event handler. May cause document to be written over.)
- JavaScript events associated with HTML tag attributes which can be used to connect to event-handlers

- JavaScript's interaction with HTML is handled through events that occur when the user or the browser manipulates a page.
- When the page loads, it is called an event. When the user clicks a button, that click too is an event,Other examples include events like pressing any key, closing a window, resizing a window, etc.
- Developers can use these events to execute JavaScript coded responses, which cause buttons to close windows, messages to be displayed to users, data to be validated, and virtually any other type of response imaginable.
- Events are a part of the Document Object Model DOM Level 3 and every HTML element contains a set of events which can trigger JavaScript Code.

onclick Event Type

- This is the most frequently used event type which occurs when a user clicks the left button of his mouse. You can put your validation, warning etc., against this event type.
- One attribute can appear in several different tags:

  e.g. ***onClick*** can be in ***<a>*** and ***<input>***
- HTML element ***get focus:***

  1. When user puts mouse cursor over it and presses the left button
  2. When user tabs to the element
  3. By executing the ***focus*** method
  4. Element get blurred when another element gets focus

- Event handlers can be specified two ways
  1. Assigning the event handler script to an event tag attribute

     onClick = "alert('Mouse click!');"

     onClick = "myHandler();

  2. Assigning them to properties of JavaScript object associated with HTML elements.
- The ***load*** event: the completion of loading of a document by browser
- The ***onload*** attribute of ***<body>*** used to specify event handler:
- The ***unload*** event: used to clean up things before a document is unloaded.

Example:

```
<!DOCTYPE html>
<html>
        <head>
                <script type="text/javascript">
                </script>
        </head>
        <body>
                <p>Click the following button and see result</p>
                <form>
                        <input type="button" onclick="sayHello()" value="Say Hello" />
                </form>
        </body>
</html>
```

onSubmit Event Type

- onSubmit is an event that occurs when you try to submit a form. You can put your form validation against this event type.
- The following Next slide shows how to use onsubmit. Here we are calling a validate function before submitting a form data to the webserver. If validate function returns true, the form will be submitted, otherwise it will not submit the data.

Example:

```
<!DOCTYPE html>
<html>
        <head>
                <script type="text/javascript">
                </script>
        </head>
        <body>
                <form method="POST" action="target.html" onsubmit="return validate()">
                        .....
                        <input type="submit" value="Submit" />
                </form>
        </body>
</html>
```

onmouseover and onmouseout

- These two event types will help you create nice effects with images or even with text as well.
- The onmouseover event triggers when you bring your mouse over any element and the onmouseout triggers when you move your mouse out from that element.
- Try the following example.

Example:

```
<!DOCTYPE html>
<html>
        <head>
                <script type="text/javascript">
                </script>
        </head>
        <body>
                <p>Bring your mouse inside the division to see the result:</p>
                <div onmouseover="over()" onmouseout="out()">
                        <h2> This is inside the division </h2>
                </div>
        </body>
</html>
```

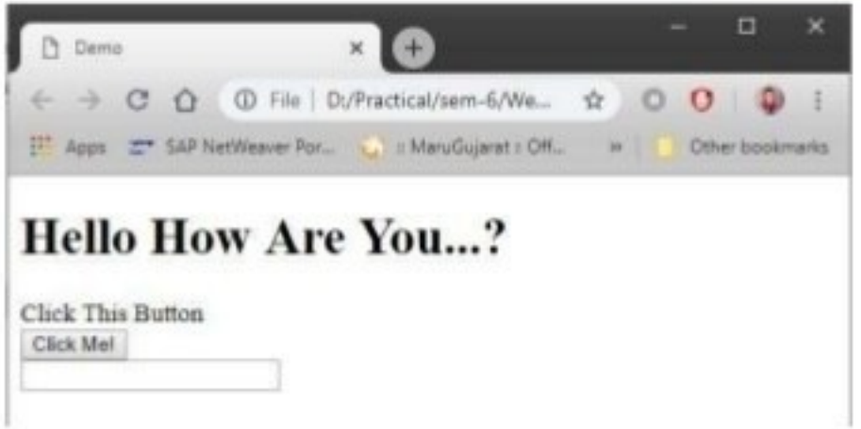
Event List

EVENT HANDLERS

Event Handlers	Triggered when
onChange	The value of the text field, text area, or a drop down list is modified
onClick	A link, an image or a form element is clicked once
onDblClick	The element is double-clicked
onMouseDown	The user presses the mouse button
onLoad	A document or an image is loaded
onSubmit	A user submits a form
onReset	The form is reset
onUnLoad	The user closes a document or a frame
onResize	A form is resized by the user

Focus & Blur Event Example:

```
<!DOCTYPE html>
<html>
<head>
	<title>Demo</title>
</head>
<body>
	<h1>Hello How Are You...?</h1>
	<form>
		Click This Button<br/>
		<input type="button" value="Click Me!" onclick="myFun()"/><br/>
		<input type="text" id="username" onfocus="this.blur()"/><br/>
	</form>
	<script type="text/javascript">
		function myFun()
		{
			document.getElementById("username").value="Dhruv";
		}
	</script>
</body>
</html>
```



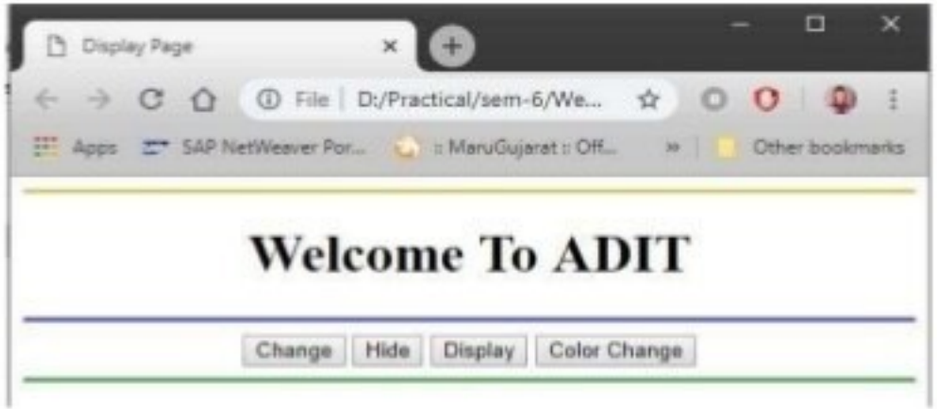
[fig.1 Before Click On That Button]

[fig.2 After Click On That Button]

Other Example Of Events

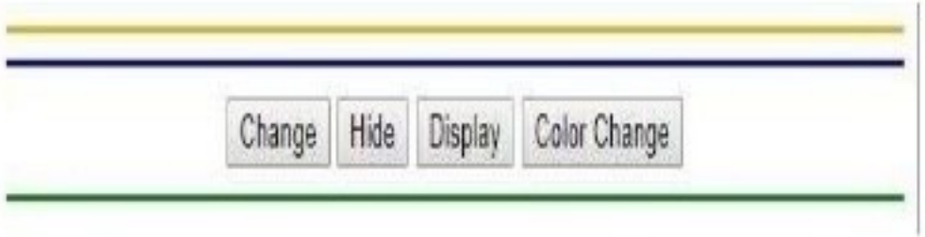
```
<!DOCTYPE html>
<html>
   <head><title>Display Page</title></head>
   <body>
      <hr color="orange" />
      <center><h1 id="htag">Welcome To ADIT</h1></center>
      <hr color="blue" />
      <center><button type="button" onclick="Change()">Change</button>
      <button type="button" onclick="Hide()">Hide</button>
      <button type="button" onclick="Display()">Display</button>
      <button type="button" onclick="ChangeColor()">Color Change</button></center>
      <hr color="green" />
      <script type="text/javascript">
         function Change()
         { document.getElementById("htag").innerHTML="Welcome ABC"; }
         function Display()
         { document.getElementById("htag").style.display="block"; }
         function Hide()
         { document.getElementById("htag").style.display="none"; }
         function ChangeColor()
         { document.getElementById("htag").style.color="blue"; }
      </script>
   </body>
</html>
```

Output



[fig.3 Initial Page]

[fig.4 When Click On Change Or Display]



[fig.5 When Click On Hide]

[fig.6 When Click On Color Change]

Thank You……