

**LAB MANUAL  
FOR  
FULL STACK DEVELOPMENT  
Semester - 1  
[Subject Code: 23OMC108]**

**Master of Computer Applications**



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## MCA 1<sup>st</sup> Semester – Full Stack Development Laboratory

Program	Master of Computer Applications
Semester	1
Course Title	Full Stack Development Laboratory
Course Code	23OMC108
Course Credits	2
Course Type	Laboratory

### 1. Course Summary

The aim of this course is to gain the skills and knowledge necessary to build simple web applications as well as full-stack web applications using modern and scalable web technologies and increase employability as a full-stack developer. The students are taught the basics of HTML, CSS, JavaScript, PHP, and the basic components of Full Stack development using MERN stack widely used in the industry for developing web pages. Students will learn the use of XHTML and CSS for developing presentable web pages. They will also be able to create dynamic web pages by applying event-handling mechanisms using JavaScript. Students will understand the concepts of cookies and sessions in PHP for creating large web applications. Students will learn to develop simple ReactJS applications.

### 2. Course Outcomes (COs)

After the successful completion of this course, the student will be able to:

- CO-1. Demonstrate the usage of XHTML tags, and CSS for developing presentable web pages [L-3]
- CO-2. Develop dynamic web pages by applying event-handling mechanisms using JavaScript [L-5]
- CO-3. Demonstrate the use of COOKIES and SESSION in PHP [L-3]
- CO-4. Develop simple ReactJS applications. [L-5]

### 3. Course Contents – Full Stack Development Laboratory Programs List

Sr No.	Programs	Page No.
1	Create an XHTML page that provides information about the MCA department, at Graphic Era University. The XHTML page must use the following tags: <ul style="list-style-type: none"> <li>• Links - Anchor tag</li> <li>• Images</li> <li>• Tables</li> </ul> (If needed use other tags for better presentation)	4
2	Create an XHTML page that demonstrates the usage of lists and tables	7
3	Create an XHTML page that displays a Form with all types of controls (Text Boxes, Radio buttons, Checkboxes, Dropdown, Submit, and Reset buttons) with proper formatting.	10
4	Develop a web page and demonstrate the usage of inline style, internal style, and external style sheets using CSS.	15
5	Write a JavaScript function called "MaxandMinofArray" that accepts an array of integers as a parameter and displays the largest and smallest number in the array. Test the function with different inputs. Embed the JavaScript function within the XHTML document.	18
6	Write a JavaScript function called "SumofDigits" that accepts a number as a parameter and returns the sum of all digits of that number. Test the function with different inputs. Write the JavaScript function in a separate .js file	21
7	Create an XHTML document with two buttons. Write a JavaScript function that triggers an alert message when the button is clicked. It should display the message "First button is clicked" or "Second button is clicked" depending on the button being clicked.	24
8	Create an XHTML page with 3 paragraphs displayed using different colors. Implement a JavaScript function that changes the font color of a paragraph to blue when a user hovers over it and reverts it back to the original color when the mouse leaves.	27
9	Create an XHTML document with a form that collects the mobile number. On submitting the form validate the input using an event handler. The mobile number should be a 10-digit number. On validating display, a success or failure message using "alert()".	30

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10	Write a PHP program using COOKIE to store the current date and time and on reopening the same web page display the "Last visited date and time".	
11	Write a PHP program to demonstrate the use of SESSIONS to increment a count on each page refresh, and display the same on the web page.	
12	Create a React Application to display the message “Developing using ReactJS, Graphic Era University”.	

## Full Stack Development Laboratory Programs

7. Create an XHTML document with two buttons. Write a JavaScript function that triggers an alert message when the button is clicked. It should display the message "First button is clicked" or "Second button is clicked" depending on the button being clicked.

Program 7 :

"prg7-buttonevents.html"

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE html >
<html>
<head>
  <title>Forms - Button click event handling example</title>
</head>
<body>

  <h3> Handling events on button click in XHTML forms </h3>
  <form action="#" method="post" >

    <!-- Input - Button -->
    <br/>
    <p> <b> Creating buttons using input type = "button" </b> </p>

    <label for="btn1"><b> First Button : </b></label>
    <input type="button" id="btn1" name="btn1"
      value="First Button"
      onclick="alert(' First Button is clicked')" />

    <label for="btn2"><b> Second Button : </b></label>
    <input type="button" id="btn2" name="btn2"
      value="Second Button"
      onclick="alert(' Second Button is clicked')" />

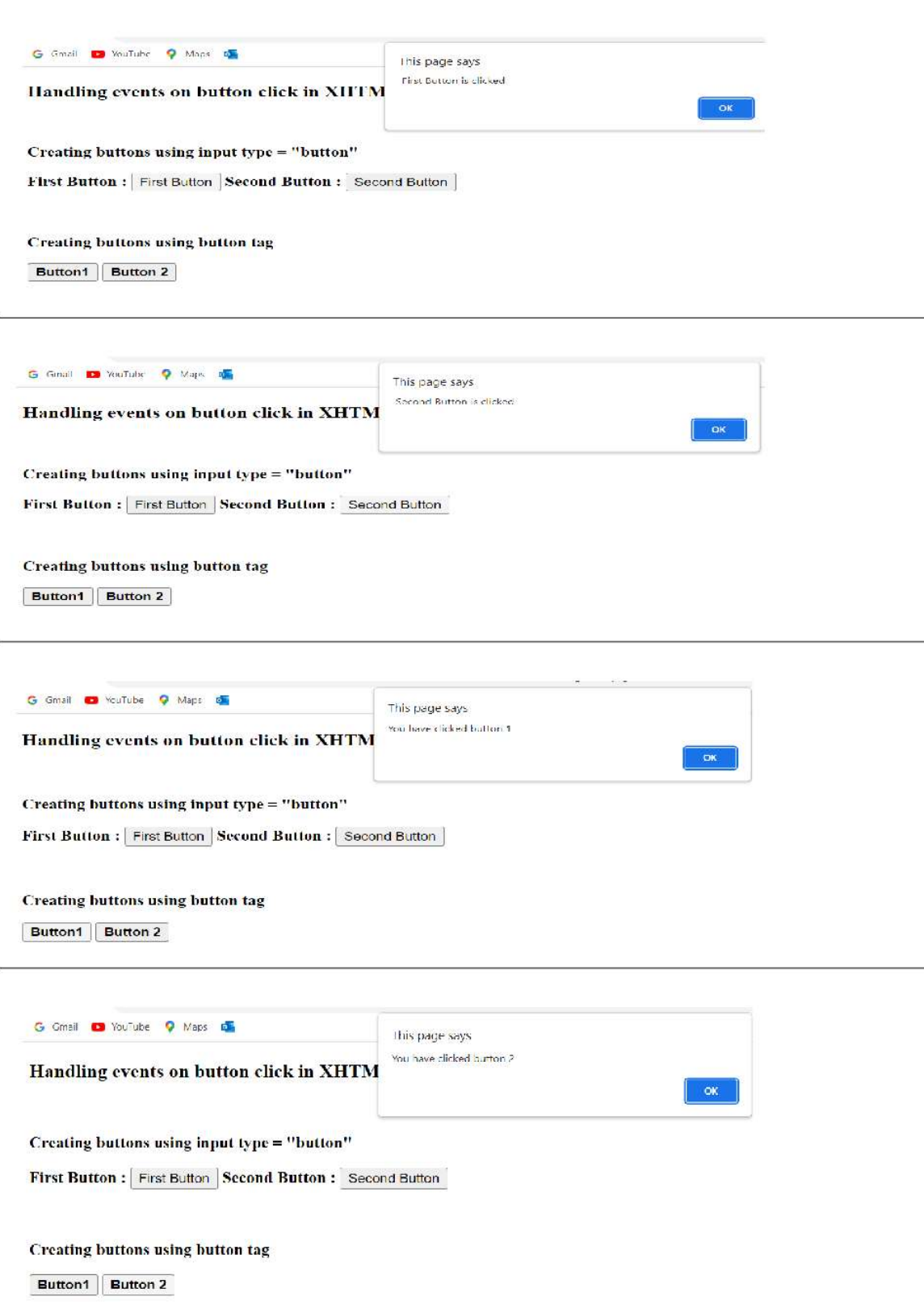
    <br /><br /> <br/>
```

```
<!-- buttons -->

<p> <b>Creating buttons using button tag </b><p>
  <button type="button"
    onclick="alert('You have clicked button 1')" >
    <b> Button1 </b>
  </button>
  <button type="button"
    onclick="alert('You have clicked button 2')" >
    <b> Button 2 </b>
  </button>

</form>
</body>
</html>
```

## Program 7 – Output:



**Handling events on button click in XHTML**

Creating buttons using input type = "button"


First Button :  Second Button :

Creating buttons using button tag

This page says:  
First Button is clicked.

OK

---



**Handling events on button click in XHTML**

Creating buttons using input type = "button"


First Button :  Second Button :

Creating buttons using button tag

This page says:  
Second Button is clicked.

OK

---



**Handling events on button click in XHTML**

Creating buttons using input type = "button"


First Button :  Second Button :

Creating buttons using button tag

This page says:  
You have clicked button 1.

OK

---



**Handling events on button click in XHTML**

Creating buttons using input type = "button"

First Button :  Second Button :

Creating buttons using button tag

This page says:  
You have clicked button 2.

OK



8. Create an XHTML page with 3 paragraphs displayed using different colors. Implement a JavaScript function that changes the font color of a paragraph to blue when a user hovers over it and reverts it back to the original color when the mouse leaves.

**Program 8 :**

"prg8-3paras.html"

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE html>
<html>

<head>
  <title>Example of event handling - using javascript in XHTML
</title>
</head>

<body>
  <script type="text/javascript" >

    /* onmouseover event handler */
    function onhoverchangeColor(pid)
    {
      var x = document.getElementById(pid);
      x.style.color = 'blue';
    }

    /* onmouseout event handler */
    function revertColor(pid)
    {
      var x = document.getElementById(pid);
      x.style.color = 'black';
    }
  </script>
```



```
<h2> Event handling - Changing color on mouse hover and out </h2>

/* First paragraph */

<p style="background-color:orange;font-size:26pt" id="p1"
    onmouseover="onhoverchangeColor('p1')"
    onmouseout="revertColor('p1');" >
    This is first paragraph
</p>

/* Second paragraph */

<p style="background-color:pink;font-size:26pt" id="p2"
    onmouseover="onhoverchangeColor('p2')"
    onmouseout="revertColor('p2');" >
    This is second paragraph
</p>

/* Third paragraph */

<p style="background-color:yellow;font-size:26pt" id="p3"
    onmouseover="onhoverchangeColor('p3')"
    onmouseout="revertColor('p3');" >
    This is third paragraph
</p>

</body>
</html>
```

**Program 8 – Output:**

On Mouse hover the color of the text changes to blue and on mouse out it reverts back to its original color black

**Event handling - Changing color on mouse hover and out**

This is first paragraph

This is second paragraph

This is third paragraph

**Event handling - Changing color on mouse hover and out**

This is first paragraph

This is second paragraph

This is third paragraph

**Event handling - Changing color on mouse hover and out**

This is first paragraph

This is second paragraph

This is third paragraph

9. Create an XHTML document with a form that collects the mobile number. On submitting the form validate the input using an event handler. The mobile number should be a 10-digit number. On validating display, a success or failure message using "alert()".

**Program 9 :**

"prg9-mobileno.html"

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE html>
<html>
  <head>
    <title>Validating 10-digit Mobile Number </title>
    <script type="text/javascript" src="prg9-validmobileno.js">
    </script>
  </head>
  <body>
    <h3> 10-digit Mobile Number Validation </h3>

    <form id ="f1" method="get" action="">

      <label><b>Mobile Number: </b>
        <input type="text" id="t1" maxlength="10" />
      </label>

      <p><input type="submit" value="submit"/></p>
    </form>

    <script language="javascript">
      document.getElementById("f1").onsubmit=validatemobileno;
    </script>

  </body>
</html>
```


"prg9-validamobileno.js"


```
function validatemobileno()
{
    var x = document.getElementById("t1");


    /* Validating a 10-digit mobile number not starting with zero */


    if(x.value.match(/[1-9]{1}[0-9]{9}/) )
        alert("Valid Mobile Number ");
    else
        alert("Invalid Mobile Number : Cannot start with zero");
}
```

**Program 9 – Output:**

 Gmail

 YouTube

 Maps





### 10 digit Mobile Number Validation


Mobile Number:


This page says

Invalid Mobile Number : Cannot start with zero

 Gmail

 YouTube

 Maps



### 10 digit Mobile Number Validation

Mobile Number:

This page says

Valid Mobile Number