

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

Master of Computer Applications



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MCA 1st 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"> • Links - Anchor tag • Images • Tables (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.	
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	
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.	
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.	
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()".	

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

1. Create an XHTML page that provides information about the MCA department, at Graphic Era University. The XHTML page must use the following tags:
 - Links - Anchor tag
 - Images
 - Tables
 (if needed use other tags for better presentation)

Program 1: "Prg1-main.html"

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE html>
<html>
  <head>
    <title>Demonstration of tables, images and links in XHTML
    </title>
  </head>
  <body >
    <h3 align="left">Demonstration of tables, images and links in
XHTML
    </h3> <br />

    <table border="2" cellpadding="10" cellspacing="5" >
      <tr>
        <th> MCA department </th>
        <td>
          <a href="https://geu.ac.in/course/mca/">Information of
MCA
          Department </a>
        </td>
      </tr>
      <tr>
        <th> Graphic Era - Gallery </th>
        <td> <a href="prg1-imagesofgeu.html"> Gallery </a>
        </td>
      </tr>
      <tr>
        <th> Clickable Image as Hyperlink </th>
        <td>
          <a href = "https://geu.ac.in/" target="_self" >
            
          </a>
        </td>
      </tr>
    </table>
  </body>
</html>
```

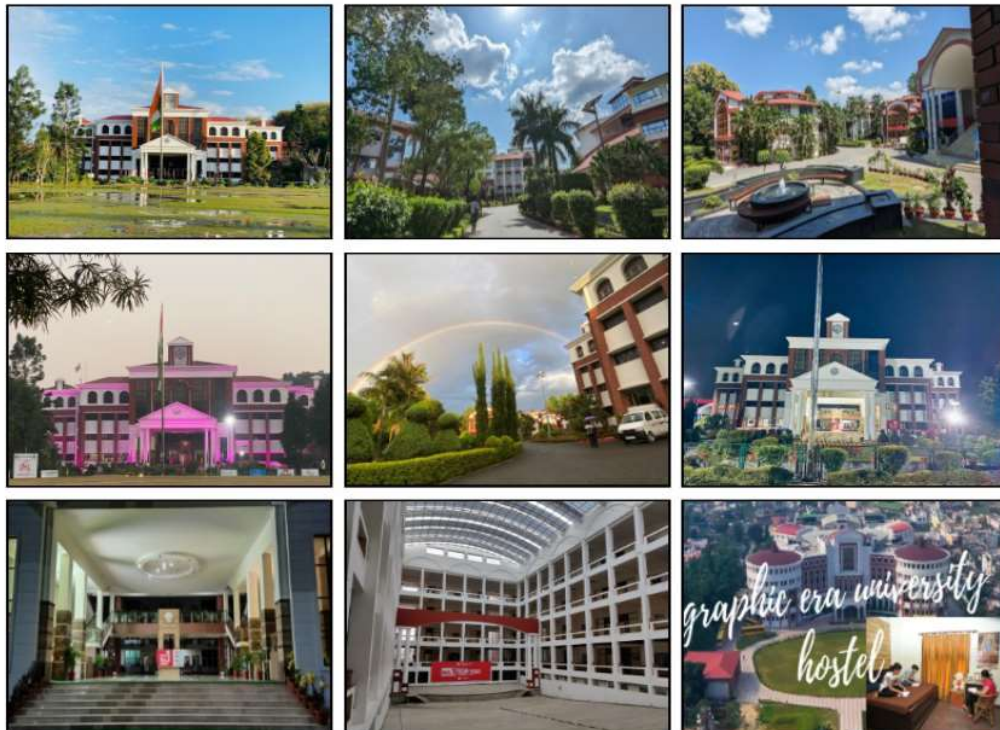
"Prg1-imagesofgeu.html"

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE html>
<html>
<head>
  <title>Example of using images in XHTML </title>
</head>
<body>
  <p><b> Graphic Era University </b></p>
  <table cellpadding="5">
    <tr>
      <td> 
      </td>
      <td> 
      </td>
      <td> 
      </td>
    </tr>
    <tr>
      <td> 
      </td>
      <td> 
      </td>
      <td> 
      </td>
    </tr>
    <tr>
      <td> 
      </td>
      <td> 
      </td>
      <td> 
      </td>
    </tr>
  </table>
</body>
</html>
```


Program 1 – Output :

Demonstration of tables, images and links in XHTML

MCA department	Information of MCA department
Graphic Era - Gallery	Gallery
Clickable Image as Hyperlink	

Graphic Era University

2. Create an XHTML page that demonstrates the usage of lists and tables.**Program 2 –****"Prg2-tableandlist.html"**

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE html>
<html>
  <head>
    <title>Example of Table and Lists in XHTML</title>
  </head>
  <body>
    <!-- use of border, cellpadding, cellspacing attributes with table tag
    -->

    <table border="2" cellpadding="10" cellspacing="5" >
      <caption><b> Example of Table and Lists in XHTML </b></caption>
      <tr>
        <!-- Use of colspan and background attributes -->

        <td colspan="3" background="geuhospital1.png">
          <h2>Graphic Era University</h2>
        </td>

      </tr>
      <tr>
        <td rowspan="2" >UG Courses</td> <!-- Use of rowspan
attribute -->
        <td > Commerce/Management & others </td>
        <td>
          <ol type="I">
            <li> BA </li>
            <li> BBA</li>
            <li> BCA </li>
          </ol>
          <!-- Use of ordered list -->
        </td>
      </tr>
    </table>
```



```

        </td>
    </tr>

    <tr>
        <td>Computer Science & others </td>
        <td>
            <ul>
                <!-- Use of unordered list
-->
                <li>BCA</li>
                <li> BTech </li>
            </ul>
        </td>
    </tr>


    <tr>
        <td rowspan="2">PG Courses</td>    <!-- Use of rowspan
attribute -->
        <td>Management </td>
        <td>
            <ul>
                <li> MBA </li>
            </ul>
        </td>
    </tr>

    <tr>
        <td>Computer Science & others </td>
        <td>
            <ul>
                <!-- Use of unordered
list -->
                <li> MCA </li>
                <li> MSc </li>
            </ul>
        </td>
    </tr>

```

```
</table>
</body>
</html>
```

Program 2 - Output:

Example of Table and Lists in XHTML		
		
UG Courses	Commerce/Management & others	I. BA II. BBA III. BCA
	Computer Science & others	<ul style="list-style-type: none">• BCA• BTech
PG Courses	Management	<ul style="list-style-type: none">• MBA
	Computer Science & others	<ul style="list-style-type: none">• MCA• MSc

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.

Program 3:

"prg3-formwithallcontrols.html"

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE html >
<html>
<head>
    <title>Form Controls Example</title>
</head>
<body>
    <h2> A form with all types of form elements    </h2>
    <form action="#" method="post" >

        <!-- Input - textbox -->

        <label for="input_text"><b>Input Text: </b></label>
        <input type="text" id="input_text" name="input_text" />
        <br /><br />

        <!-- Input - password -->

        <label for="input_password"><b>Input Password </b></b></label>
        <input type="password" id="input_password"
name="input_password" />
        <br /><br />

        <!-- Input - textarea - -->
```

```
<label for="textarea_input"><b>Textarea: </b></b></label><br />
<textarea id="textarea_input" name="textarea_input" rows="4"
    cols="50">
</textarea>
<br /><br />

<!-- Input - radio button -->

    <label for="input_radiooption1"><b> Radio Buttons : Option
1:</b>
    </label>
    <input type="radio" id="input_radiooption1"
name="input_radiooption"
    value="option1" />

    <label for="input_radiooption2"><b> Option 2:</b></label>
    <input type="radio" id="input_radiooption2"
name="input_radiooption"
    value="option2" />

    <label for="input_radiooption3"><b> Option 3:</b></label>
    <input type="radio" id="input_radiooption3"
name="input_radiooption"
    value="option3" />

    <label for="input_radiooption4"><b> Option 4:</b></label>
    <input type="radio" id="input_radiooption4"
name="input_radiooption"
    value="option4" /> <br /><br />

<!-- Input - checkboxes -->

    <label for="input_checkbox1"><b>Checkboxes - Checkbox 1:
</b></label>
    <input type="checkbox" id="input_checkbox1"
```

```

name="input_checkbox1" />

    <label for="input_checkbox2"><b>Checkbox 2: </b></label>
    <input type="checkbox" id="input_checkbox2"
name="input_checkbox2" />

    <label for="input_checkbox3"><b>Checkbox 3: </b></label>
    <input type="checkbox" id="input_checkbox3"
name="input_checkbox3" />

    <label for="input_checkbox4"><b>Checkbox 4: </b></label>
    <input type="checkbox" id="input_checkbox4"
name="input_checkbox4" />
    <br /><br />

<!-- Input - drop-down -->

<label for="input_select"><b>Select from drop down:</b></label>
<select id="input_select" name="input_select">
    <option value="option1">Option 1</option>
    <option value="option2">Option 2</option>
    <option value="option3">Option 3</option>
    <option value="option4">Option 4</option>
    <option value="option5">Option 5</option>
    <option value="option6">Option 6</option>
</select>
<br /><br /><br /> <br /><br /> <br /><br /> <br />

<!-- Input - Button -->

<label for="input_button1"><b> Button 1: </b></label>
<input type="button" value="Input type=Button 1" />

<label for="input_button2"><b>Button 2: </b></label>
<input type="button" value="Input type=Button 2" /><br

```



```
/><br />

<!-- submit and reset buttons -->

<label for="submit_button"><b>Submit Button:</b></label>
<input type="submit" id="submit_button" name="submit_button"
      value="Submit" />

<label for="reset_button"><b>Reset Button: </b></label>
<input type="reset" id="reset_button" name="reset_button"
      value="Reset" />
<br />

<!-- buttons -->

<p><b>Buttons using button tag </b></p>
<button type="button" >
    <b> Clickable Button1 </b>
</button>
<button type="button" >
    <b> Clickable Button 2 </b>
</button>

</form>

</body>
</html>
```

Program 3 - Output:

--

A form with all types of form elements

Input Text:

Input Password

Textarea:

Radio Buttons : Option 1: ☒ Option 2: ☐ Option 3: ☐ Option 4: ☐

Checkboxes - Checkbox 1: ☒ Checkbox 2: ☒ Checkbox 3: ☐ Checkbox 4: ☐

Select from drop down:

Option 4 ▾

Option 1

Option 2

Option 3

Option 4

Option 5

Option 6

Button 1: Button 2:

Submit Button: Reset Button:

Buttons using button tag

4. Develop a web page and demonstrate the usage of inline style, internal style, and external style sheets using CSS.

Program 4 –

"prg4-Styles.html"

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE html>
<html>
  <head>
    <style type="text/css">

      @import url(pr4styles.css);          <!-- external level -->

      p.p1 {                                <!-- document level -->
        color:blue;
        font-size:16pt;
        font-weight:bold;
      }

      p.p3 {
        font-size:24pt;
        font-weight:bold;
        color:purple;
      }

      #p4 {
        color:red;
      }
    </style>
  </head>
  <body>
    <!-- inline-level css -->
    <p style="color:red;background-color:cyan;font-size:20pt">
      Welcome to GEU (inline style)
    </p>
```

```
<p class="p1"> Document Level Style used here </p>

<p class="p3"> External Style used here</p>

<p id="p4" style="font-size:12pt"> Levels and precedence
<br />
      (inline-level has precedence over document and document
has
      precedence than external)
</p>

</body>
</html>
```

"pr4styles.css"

```
p3 {
    font-size:20pt;
    font-weight:bold;
    color:blue;
}
#p4 {
    color:green;
    font-size:18pt
}
```


Program 4 - Output:

Welcome to GEU (inline style)

Document Level Style used here

External Style used here

Levels and precedence

(inline level has precedence than document and document has precedence than external)