

**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.	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

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".	33
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.	35
12	Create a React Application to display the message “Developing using ReactJS, Graphic Era University”.	37

Full Stack Development Laboratory Programs

12. Create a React Application to display the message “Developing using ReactJS, Graphic Era University”.

Steps for creating a ReactJS project using "create-react-app"

1. To create a ReactJS project by using "create-react-app", at the command prompt type

```
E:\Reactexamples>create-react-app myreactapp
```

or

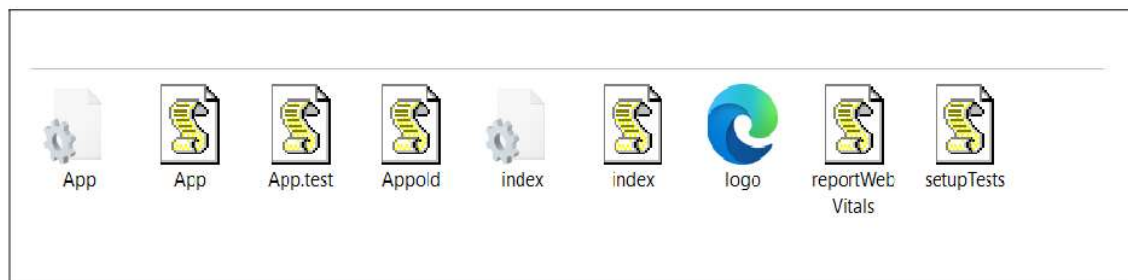
```
E:\Reactexamples>npx create-react-app myreactapp
```

This will create a new react project by the name “myreactapp”

2. Change to the new project directory created by the project **myreactapp** by giving the command at the command prompt

```
E:\Reactexamples>cd myreactapp
```

3. Open the project folder “myreactapp” using Visual Studio Code
4. The folder **E:\Reactexamples\myreactapp\src** contains the files as shown below.



5. The Graphic Era University logo “geulogo.png” file can be placed in the **E:\Reactexamples\myreactapp\src** folder
6. The **App.js** file is responsible for displaying the output screen in React. So changes can be made in the **App.js** file which is the home page to display the message on the screen.

For displaying the message “**Developing using ReactJS, Graphic Era University**”, edit the file “**App.js**” and make the changes as shown below

“App.js”

```
import logo from './geulogo.png';
import './App.css';

function App() {
  return (
    <div className="App">
      <header className="App-header">
        <img src={logo} className="App-logo" alt="logo" />
        <p>Developing using ReactJS, Graphic Era University</p>
      </header>
    </div>
  );
}
export default App;
```

7. To change the background color to “**blue**” make the following changes in the “**App.css**” file as follows

```
.App-header {
  background-color: blue;    // default is #282c34
  min-height: 100vh;
  display: flex;
  flex-direction: column;
  align-items: center;
  justify-content: center;
  font-size: calc(10px + 2vmin);
  color: white;
}
```

8. Make the following changes in **"index.js"** file as follows

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App from './App';

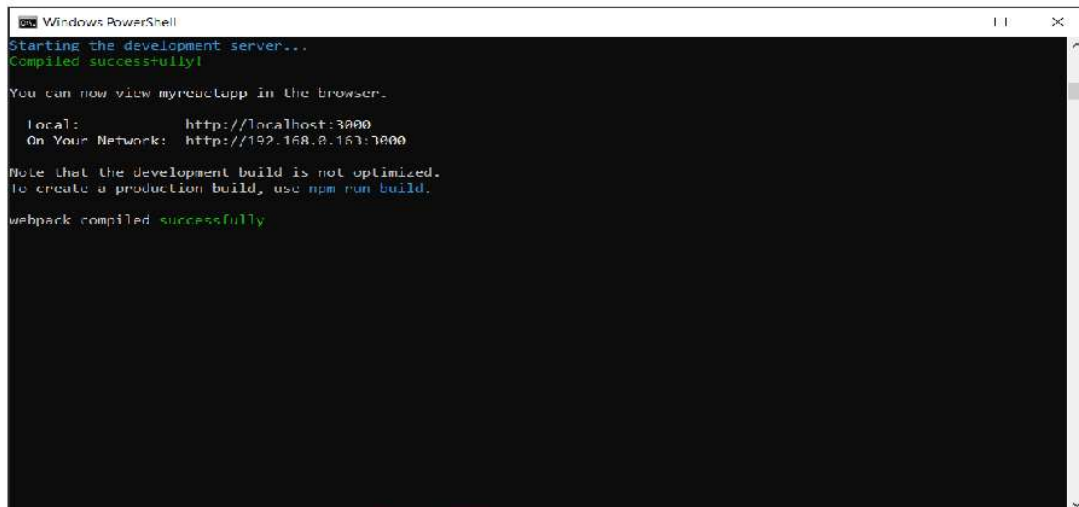
const root =
  ReactDOM.createRoot(document.getElementById('root'));

root.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>
);
```

9. **Start the server** by giving the following command at the command prompt

E:\Reactexamples\myreactapp>npm start

The server gets started and displays the messages as follows if no errors are present.



```
Windows PowerShell
Starting the development server...
Compiled successfully!

You can now view myreactapp in the browser.

  Local:            http://localhost:3000
  On Your Network:  http://192.168.0.163:3000

Note that the development build is not optimized.
To create a production build, use npm run build.

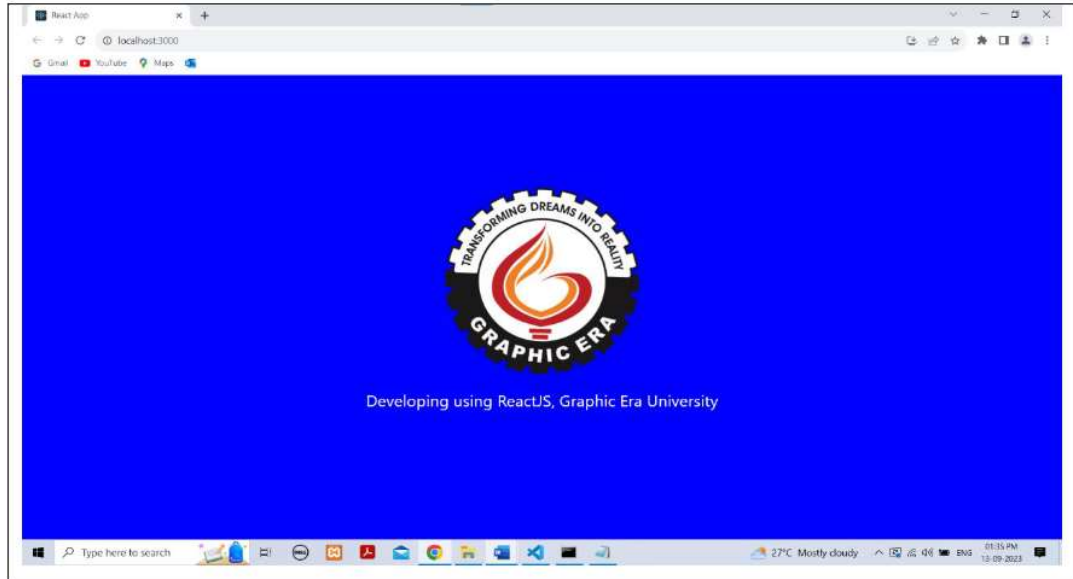
webpack compiled successfully
```

10. Run the application by opening the browser and giving the URL <http://localhost:3000>

The following output is displayed with a blue background and the message

“Developing using ReactJS, Graphic Era University”.

Program 12 – Output:



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