1. Create user define date npm module by using node.js and access date npm package module to read the year is leap year or not.

Source code:

```
Second.js

exports.date=function(){
    return new Date().getFullYear();
}

leap.js

const year=require('./second');
console.log('Current Year is',year.date());
if(year.date()%400==0 || (year.date()%4==0&& year.date()%100!=0)){
    console.log("Leap Year");
}
else{
    console.log("Not leap Year");
}
```

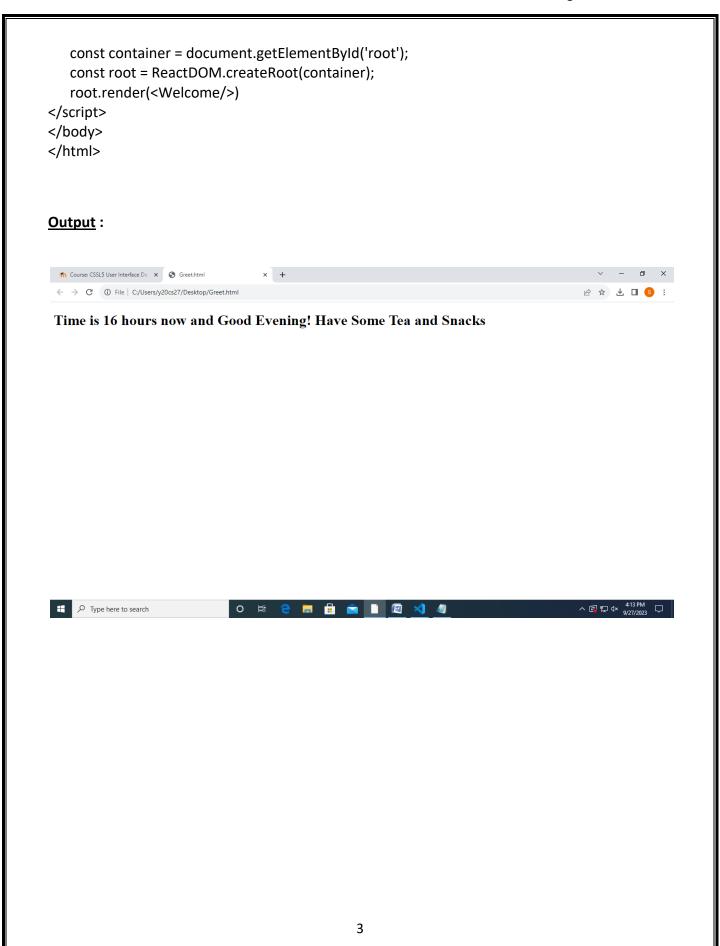
Output:

```
PS Z:\ReactJS> node leap.js
Current Year is 2023
Not leap Year
PS Z:\ReactJS>
```

2.Create nested function component by using CDN's (without react environment)

Source Code:

```
<!DOCTYPE html>
<html>
<head>
<script src="https://unpkg.com/react@18/umd/react.development.js" crossorigin></script>
<script src="https://unpkg.com/react-dom@18/umd/react-dom.development.js"
crossorigin></script>
<script src="https://unpkg.com/@babel/standalone/babel.min.js"></script>
</head>
<body>
<div id="root"></div>
<script type="text/babel">
   function Greet() {
  let date=new Date();
  let hours=date.getHours();
  let msg;
  if(hours>5 && hours<12){
  msg='Good Morning! Have a nice Day Ahead';
  }
  else if(hours>=12 && hours<16){
  msg="Good Afternoon! It's Too Hot here, Don't Go Outside";
  }
  else if(hours>=16 && hours<21){
  msg='Good Evening! Have Some Tea and Snacks';
  else if(hours=>21){
  msg='Good Night! Have a Sweet Dreams';
   return <h1> Time is {hours} hours now and {msg} </h1>;
   }
   function Welcome() {
    return <Greet/>;
```



3. Create and develop reactJS app folder structure using npx and npm utilities and display the welcome react app message

Source Code:

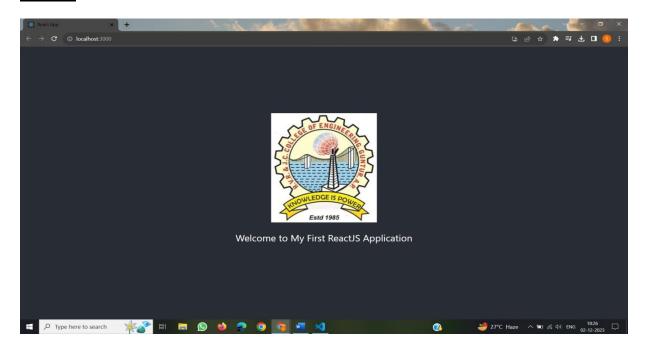
}

```
App.js
import rvr from './rvr.jpg';
import './App.css';
function App() {
return (
<div className="App">
<header className="App-header">
<img src={rvr} className="App-logo" alt="rvr" />
>
     Welcome to My First ReactJS Application
</header>
</div>
);
}
export default App;
App.css
.App {
text-align: center;
```

```
.App-logo {
 height: 40vmin;
 pointer-events: none;
}
.App-header {
 background-color: #282c34;
 min-height: 100vh;
 display: flex;
 flex-direction: column;
 align-items: center;
justify-content: center;
 font-size: calc(10px + 2vmin);
 color: white;
}
Index.js
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App from './App';
import reportWebVitals from './reportWebVitals';
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
<React.StrictMode>
```

<App />
</React.StrictMode>
);
reportWebVitals();

Output:



4. Create React 2 types of Components (Class Component and Functional Component) and demonstrate each Component

Source Code:

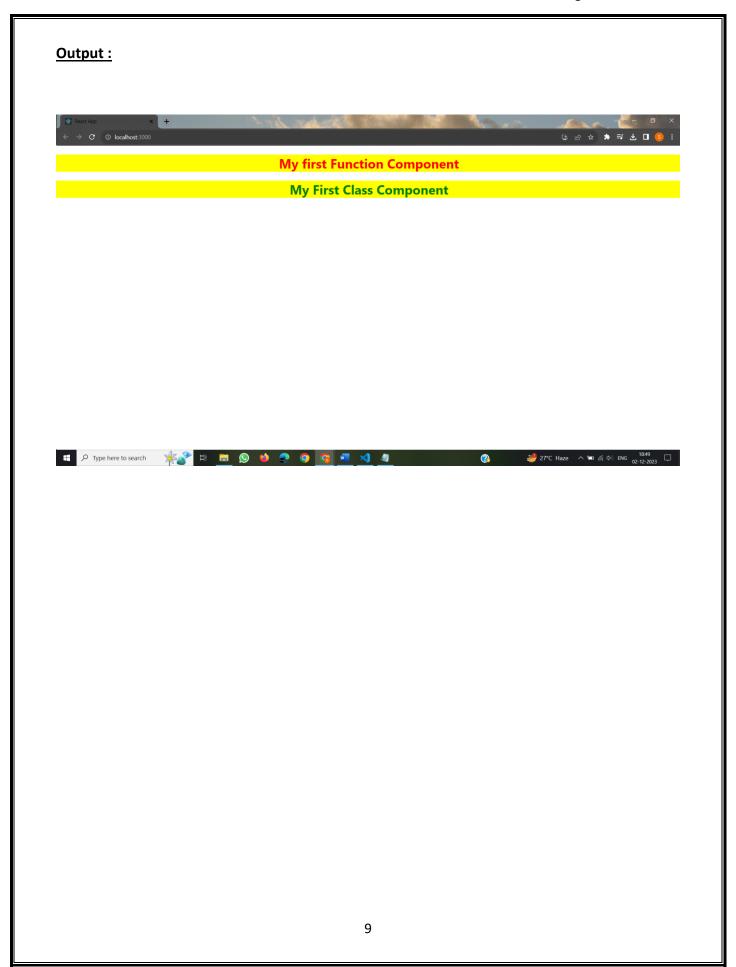
ClassComp.js

```
import React from 'react';
class Class1 extends React.Component{
    render(){
        return (<h1 style={{textAlign:"center",backgroundColor:"yellow",color:"green"}}>My First Class Component</h1>);
    }
}
export default Class1;
```

FunctionalComp.js

```
function Func1(){
    return (
    <h1
        style={{
            color:"red",
            backgroundColor:"yellow",
            textAlign:"center"</pre>
```

```
}}
>My first Function Component</h1>
   );
}
export default Func1;
Index.js
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import reportWebVitals from './reportWebVitals';
import Func1 from './FunctionalComp.js';
import Class1 from './ClassComp.js'
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
<React.StrictMode>
<Func1/>
<Class1/>
</React.StrictMode>
);
reportWebVitals();
```



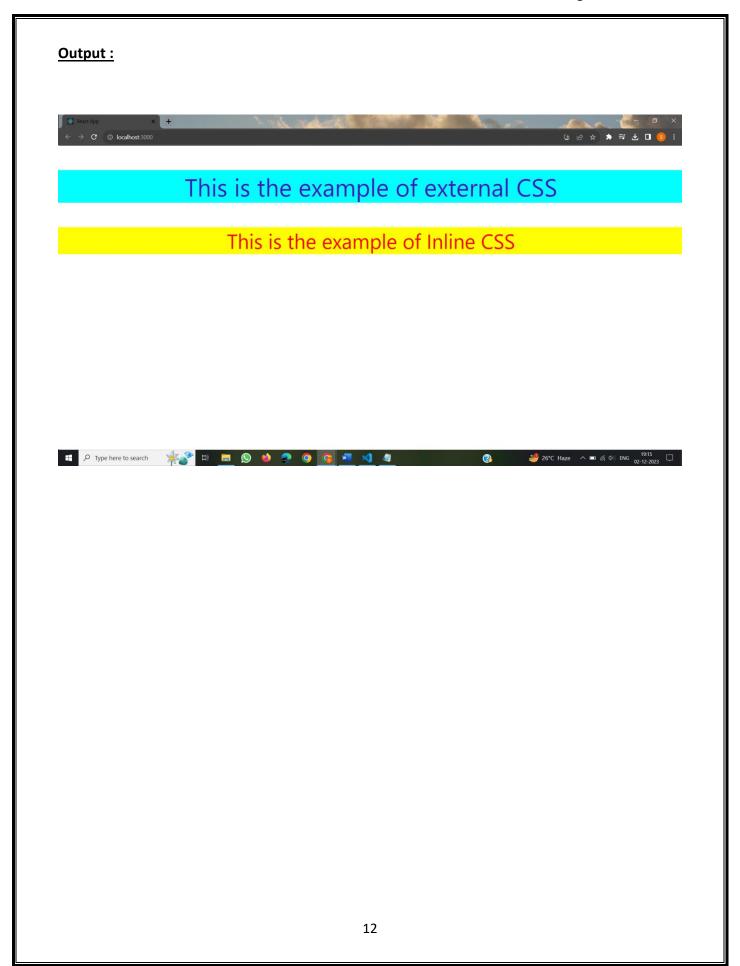
5. Create React application by using different style components in React

Source Code:

Style.js

```
import React from 'react';
import './style1.css';
const style2={
  fontSize:'50px',
 textAlign: 'center',
 backgroundColor:"yellow",
  color: 'red'
};
class Class2 extends React.Component{
  render(){
    return (
<div>
This is the example of external CSS
This is the example of Inline CSS
</div>
   );
}
export default Class2;
```

```
Style1.css
.style1
{
  font-size: 60px;
  text-align: center;
  background-color: aqua;
  color: rgb(71, 21, 187);
}
Index.js
import React from 'react';
import ReactDOM from 'react-dom/client';
import reportWebVitals from './reportWebVitals';
import Class2 from './Class2';
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
 <React.StrictMode>
  <Class2/>
 </React.StrictMode>
);
reportWebVitals();
```



6. Create a simple Counter application using ReactJS which increments and decrements count dynamically on screen as user clicks on the button by using props and states concept

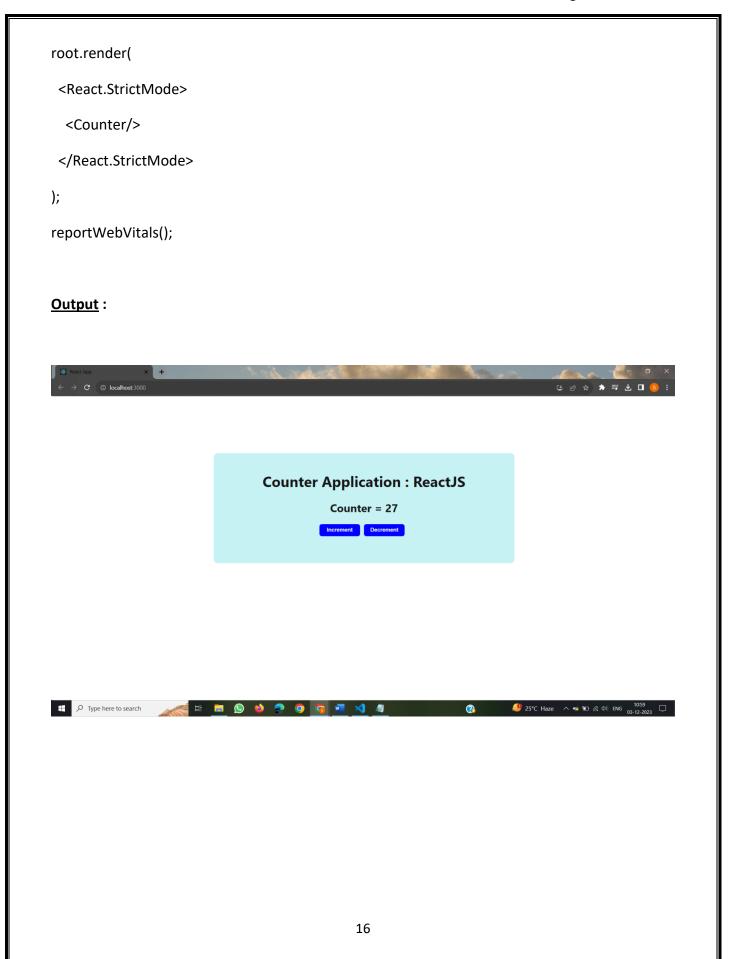
Source Code:

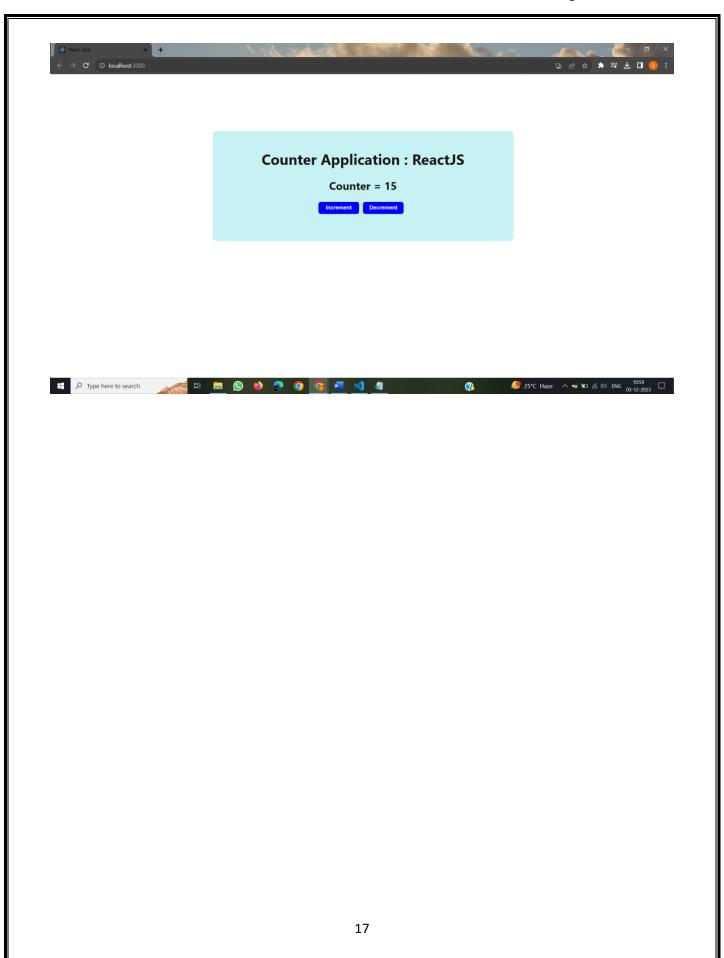
Counter.js

```
import React from "react";
import "./Counter.css";
class Counter1 extends React.Component{
  constructor(){
    super();
    this.state={
      counter:0
    };
  }
  Incr=()=>{
    this.setState({
      counter:this.state.counter+1
    });
  };
  Decr=()=>{
    this.setState({
      counter:this.state.counter-1
    });
  }
```

```
render(){
    const mystyle={
      textAlign:"center"
    }
    return(
<center>
<div className="main" >
<h1 style={mystyle}>Counter Application : ReactJS</h1>
<h2 style={mystyle}>Counter = {this.state.counter}</h2>
<div style={mystyle}><button className="button" onClick={this.Incr} >Increment</button>
<button className="button" onClick={this.Decr}>Decrement/button>
</div>
</div>
</center>
}
export default Counter1;
Counter.css
.main{
  border-radius: 8px;
  font-size: 18px;
  background-color: rgba(197, 242, 244, 0.979);
  width: 700px;
```

```
height: 230px;
  border-radius: 10px;
  color: rgb(21, 20, 22);
  margin: 140px;
  padding: 20px;
}
.button{
  color: rgb(238, 247, 247);
  background-color: blue;
  text-align: center;
  margin-right: 10px;
  font-weight: bold;
  width: 100px;
  height: 30px;
  border-radius: 6px;
  border: 2px solid blue;
}
Index.js
import React from 'react';
import ReactDOM from 'react-dom/client';
import reportWebVitals from './reportWebVitals';
import Counter from './ Counter ';
const root = ReactDOM.createRoot(document.getElementById('root'));
```





7. Create a simple Login Form single page application using ReactJS

Source Code:

Login.js

```
import React, { useState } from "react";
import "./Login.css";
function App6() {
 const [errorMessages, setErrorMessages] = useState({});
 const [isSubmitted, setIsSubmitted] = useState(false);
 const data = [
   username: "chrb",
   password: "abc"
  },
   username: "rishi",
   password: "def"
  },
    username: "RVR",
    password: "def"
];
```

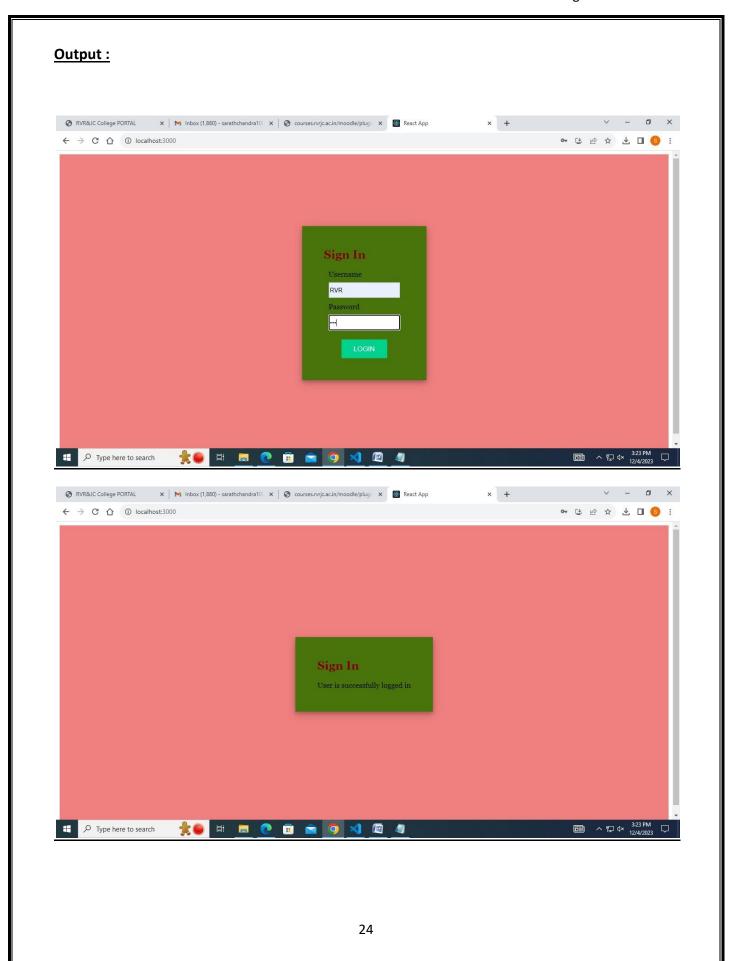
```
const errors = {
 uname: "Invalid Username",
 pass: "Invalid Password"
};
const handleSubmit = (event) => {
 event.preventDefault();
 var { uname, pass } = document.forms[0];
 const userData = data.find((user) => user.username === uname.value);
 if (userData) {
  if (userData.password !== pass.value) {
   setErrorMessages({ name: "pass", message: errors.pass });
  } else {
   setIsSubmitted(true);
  }
 } else {
  setErrorMessages({ name: "uname", message: errors.uname });
 }
};
const renderErrorMessage = (name) =>
 name === errorMessages.name && (
  <div className="error">{errorMessages.message}</div>
 );
 const WebForm = (
 <div className="form">
```

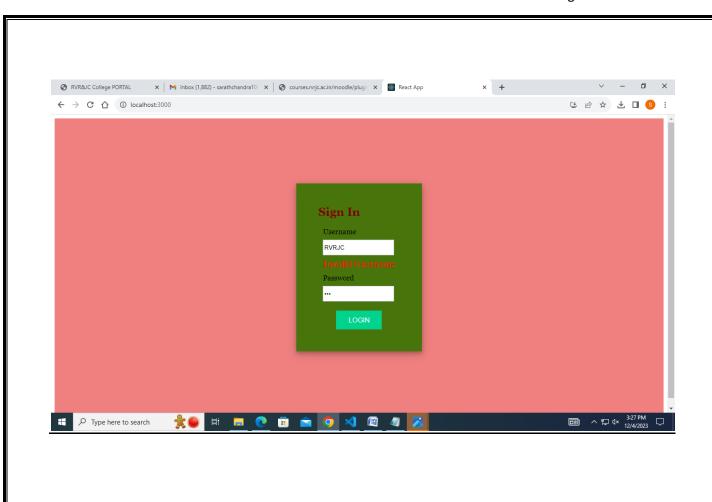
```
<form onSubmit={handleSubmit}>
   <div className="input-container">
    <label>Username </label>
    <input type="text" name="uname" required />
    {renderErrorMessage("uname")}
   </div>
   <div className="input-container">
    <label>Password </label>
    <input type="password" name="pass" required />
    {renderErrorMessage("pass")}
   </div>
   <div className="button-container">
    <input type="submit" value="LOGIN"/>
   </div>
  </form>
 </div>
);
return (
 <div className="main1">
  <div className="login-form">
   <div className="title">Sign In</div>
   {isSubmitted ? <div>User is successfully logged in</div> : WebForm}
  </div>
 </div>
```

```
);
export default Login;
Login.css
.main1{
  font-family: sans-serif;
  display: flex;
  align-items: center;
  justify-content: center;
  flex-direction: column;
  height: 100vh;
  font-family: Georgia, Times, "Times New Roman", serif;
  background-color: lightcoral;
 }
 input[type="text"],
 input[type="password"] {
  height: 30px;
  width: 150px;
  border: 1px solid rgba(0, 0, 0, 0.2);
 }
 input[type="submit"] {
  margin-top: 10px;
  width: 100px;
  font-size: 15px;
```

```
background: #01d28e;
 border: 2px solid #01d28e;
 color: #fff;
 padding: 10px 20px;
input[type="submit"]:hover {
 background: #6cf0c2;
.button-container {
 display: flex;
justify-content: center;
.login-form {
 background-color: rgb(71, 117, 12);
 padding: 3rem;
 box-shadow: 0 4px 8px 0 rgba(0, 0, 0, 0.2), 0 6px 20px 0 rgba(0, 0, 0, 0.19);
}
.list-container {
 display: flex;
.error {
 color: red;
font-size: 20px;
```

```
.title {
  font-size: 25px;
  margin-bottom: 20px;
  color:maroon;
  font-weight: bold;
 }
 .input-container {
  display: flex;
  flex-direction: column;
  gap: 8px;
  margin: 10px;
Index.js
import React from 'react';
import ReactDOM from 'react-dom/client';
import reportWebVitals from './reportWebVitals';
import Login from './Login';
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
 <React.StrictMode>
  <Login/>
 </React.StrictMode>
);
reportWebVitals();
                                              23
```





8. Create a simple Registration form with different input elements using event handling

Source Code:

Registration.js

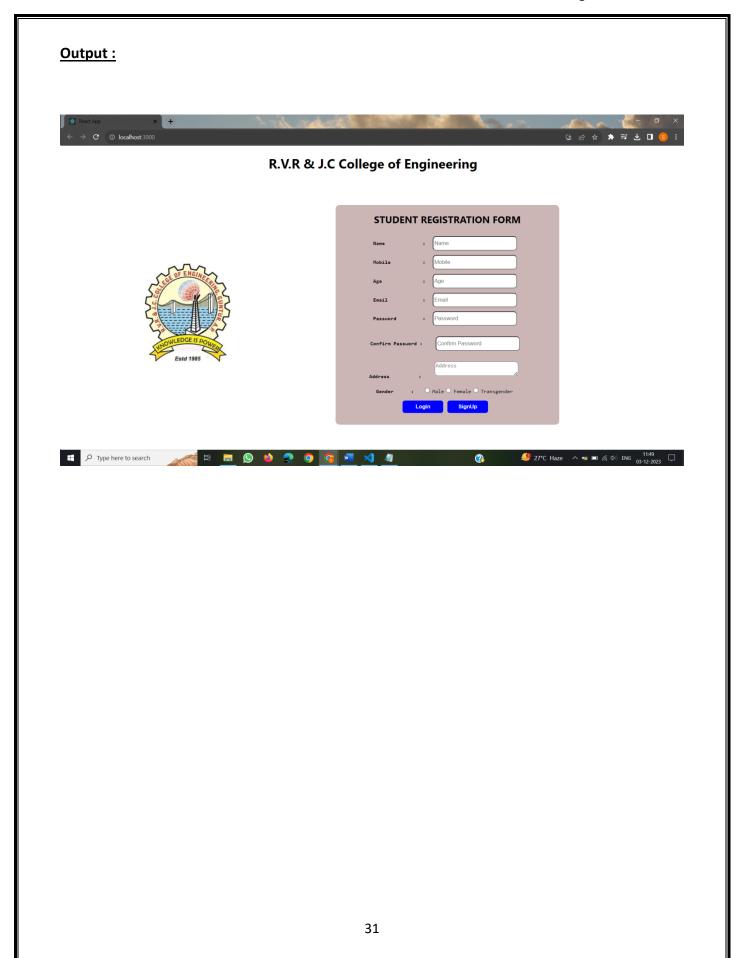
```
import rvr from './rvr.jpg'
import './Registration.css'
import {useState} from 'react'
function Registration(){
  const [Name,setName]=useState("")
  const [Mobile,setMobile]=useState("")
  const [Age,setAge]=useState("")
  const [Email,setEmail]=useState("")
  const [Password,setPassword]=useState("")
  return (
<center>
<h1>R.V.R & J.C College of Engineering</h1>
<div className='main1'>
<div className='App'>
<header className='App-header'>
<img src={rvr} className='App-logo' alt='rvr'/>
</header>
</div>
<div className='main'>
```

```
<h2>STUDENT REGISTRATION FORM</h2>
<form>
<b>Name
               : </b><input className='input' placeholder='Name' onChange={(e)=>
setName(e.target.value)}/><br/>
<b>Mobile
               : </b><input className='input' placeholder='Mobile' onChange={(e)=>
setMobile(e.target.value)}/><br/>
<b>Age
             : </b><input className='input' placeholder='Age' onChange={(e)=>
setAge(e.target.value)}/><br/>
              : </b><input className='input' placeholder='Email' onChange={(e)=>
<b>Email
setEmail(e.target.value)}/><br/>
                : </b><input className='input' type='password' placeholder='Password'
<b>Password
onChange={(e)=> setPassword(e.target.value)}/><br/>
<b>Confirm Password : </b><input className='input' type='password' placeholder='Confirm
Password' onChange={(e)=> setPassword(e.target.value)}/><br/>
<b>Address
               : </b>
<textarea rows="4" cols="31" className='input' placeholder='Address' onChange={(e)=>
setPassword(e.target.value)}/><br/>
<div className='gender'>
<b>Gender : </b>
<input type='radio' className='input1' name='gender'/>Male
<input type='radio' className='input1' name='gender'/>Female
<input type='radio' className='input1' name='gender'/>Transgender <br/>
</div>
<button type='submit' className='button'>Login</button>
<button type='submit' className='button'>SignUp</button>
```

```
</form>
</div>
</div>
</center>
}
export default Registration;
Registration.css
. button \{\\
  color: rgb(238, 247, 247);
  background-color: blue;
  text-align: center;
  margin-right: 10px;
  font-weight: bold;
  width: 100px;
  height: 30px;
  border-radius: 6px;
  border: 2px solid blue;
}
.App-header {
  min-height: 8vh;
  display: flex;
  flex-direction: column;
                                               28
```

```
align-items: center;
  justify-content: center;
  font-size: calc(10px + 2vmin);
  color: white;
 .App{
  float: left;
  padding-left: 200px;
  padding-top: 200px;
 }
.input{
  width: 200px;
  height: 30px;
  margin: 1% 2%;
  border-radius: 8px;
}
.main{
  background-color: rgb(203, 181, 181);
  width: 550px;
  height: 540px;
  border-radius: 10px;
  margin: 60px;
  float: right;
}
```

```
.input1{
  margin:1% 1%;
}
.main1{
  padding-right: 250px;
}
Index.js
import React from 'react';
import ReactDOM from 'react-dom/client';
import reportWebVitals from './reportWebVitals';
import Registration from './ Registration ';
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
 <React.StrictMode>
  < Registration />
 </React.StrictMode>
);
reportWebVitals();
```



9. Build basic arithmatic calculator by using ReactJS. Use Statehook with button events.

Source Code:

Calculator.js

```
import React, { useState } from 'react';
import './Calculator.css';
function Calculator() {
 const [value, setValue] = useState(");
 return (
  <div className="container">
   <div className="calculator">
    <form action="">
     <div className='display'>
      <input type= "text" value={value}/>
      </div>
     <div>
      <input type="button" value="AC" onClick={e => setValue(")}/>
      <input type="button" value="DE" onClick={e => setValue(value.slice(0, -1))}/>
      <input type="button" value="." onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="/" onClick={e => setValue(value + e.target.value)}/>
     </div>
     <div>
      <input type="button" value="7" onClick={e => setValue(value + e.target.value)}/>
```

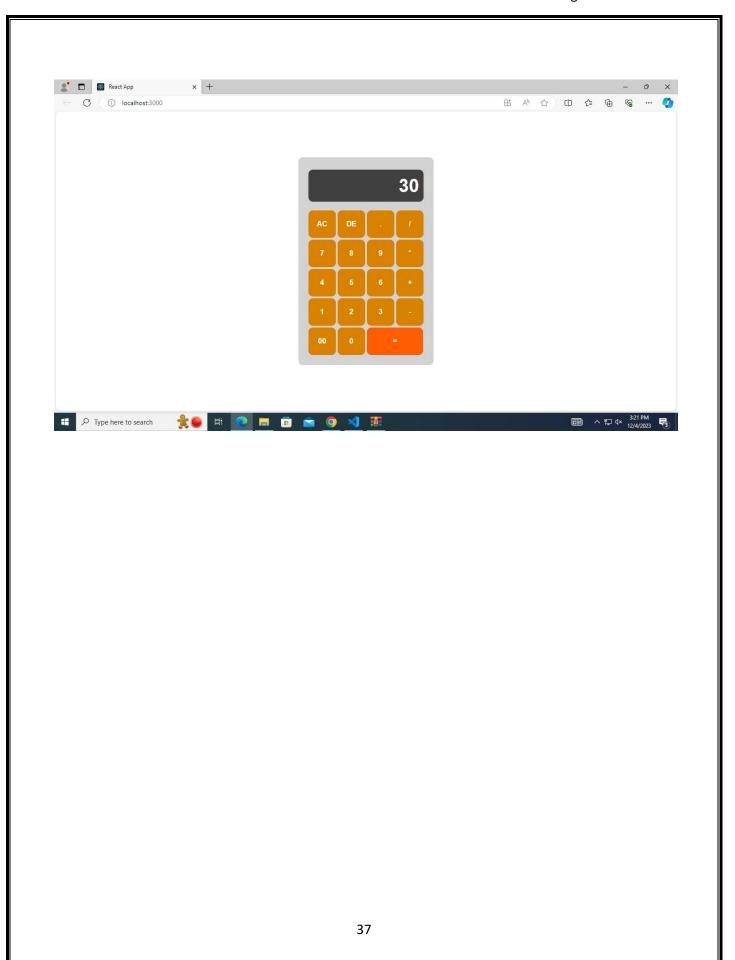
```
<input type="button" value="8" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="9" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="*" onClick={e => setValue(value + e.target.value)}/>
     </div>
     <div>
      <input type="button" value="4" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="5" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="6" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="+" onClick={e => setValue(value + e.target.value)}/>
     </div>
     <div>
      <input type="button" value="1" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="2" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="3" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="-" onClick={e => setValue(value + e.target.value)}/>
     </div>
     <div>
      <input type="button" value="00" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="0" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="=" className='equal' onClick={e =>
setValue(eval(value))}/>
     </div>
    </form>
   </div>
```

```
</div>
);
}
export default Calculator;
Calculator.css
.container {
  width: 100%;
  height: 100vh;
  display: flex;
  align-items: center;
  justify-content: center;
  background: linear-gradient(140deg, rgb(255, 255, 255), rgb(255, 255, 255));
 }
 .calculator {
  padding: 20px;
  border-radius: 10px;
  background-color: rgb(211, 211, 211);
 }
 form input {
  outline: 0;
  width: 60px;
  height: 60px;
  font-size: 16px;
```

```
background-color: rgb(216, 130, 0);
 margin: 2px;
 border-radius: 10px;
 color: white;
 font-weight: bolder;
 cursor: pointer;
}
form input[type="button"]:hover {
 background-color: rgb(255, 94, 0);
form .display {
 display: flex;
justify-content: flex-end;
 margin: 5px 0px 15px 0px;
}
form .display input {
 text-align: right;
 font-size: 40px;
 padding: 5px 10px;
 background-color: rgb(64, 64, 64);
}
form input.equal{
 width: 123px;
```


Output:





10.Build student name search form filter with basic search functionalities by using array.filter method and filter utilities.

Source Code:

Search.js

```
import React, { useState } from "react";
import logo from './logo.svg';
import "./Search.css";
function Search() {
 const list = [
  "Y20CS021",
  "Y20CS091",
  "Y20CS171",
  "Y20CE021",
  "Y20CE091",
  "Y20CE171",
  "Y20ECE021",
  "Y20ECE091",
  "Y20ECE171",
  "Y20IT021",
  "Y20IT091",
  "Y20IT171",
  "Ratna Babu",
```

"Rishi Babu",

```
"Deepak",
 "Jyothi",
 "Rama Raju",
 "Sunil",
 "Sitha",
 "Ramana",
 "Ratna Raju"
];
const [filterList, setFilterList] = useState(list);
const handleSearch = (event) => {
 if (event.target.value === "") {
  setFilterList(list);
  return;
 }
 const filteredValues = list.filter(
  (item) =>
   item.toLowerCase().indexOf(event.target.value.toLowerCase()) !== -1
 );
 setFilterList(filteredValues);
};
return (
 <div className="app11">
  <div className="App">
  <header className="App-header">
```

```
<img src={logo} className="App-logo" alt="logo" />
   </header>
   STUDENT INFORMATION SEARCH! </div>
   <div>
    <b>Search: <input name="query" type="text" onChange={handleSearch} />
   </b></div>
   {filterList &&
    filterList.map((item, index) => (
     <div key={index}>{item}</div> //Display each item
    ))}
  </div>
);
}
export default Search;
Search.css
.app11 {
  font-family: sans-serif;
  display: flex;
  align-items: center;
  justify-content: center;
  flex-direction: column;
  gap: 20px;
  height: 100vh;
```

```
font-family: Cambria, Cochin, Georgia, Times, "Times New Roman", serif;
 }
 b{
  color:red;
  font-size:2pc;
 }
 p{
  color:yellowgreen;
 input {
  padding: 1%;
  width: 100%;
  margin: 1% 2%;
 }
Index.js
import React from 'react';
import ReactDOM from 'react-dom/client';
import reportWebVitals from './reportWebVitals';
import Search from './Search';
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
 <React.StrictMode>
  <Search/>
```

</React.StrictMode>); reportWebVitals(); Output: React App ← C (i) localhost:3000 田 A 公 口 信 庙 % … Search: Y20CS021 Y20CS091 Y20CE021 Y20CE091 Y20CE171 Y20ECE021 Y20ECE091 Y20IT021 Y20IT091 Y20IT171 Ratna Babu 💃 🍪 🖽 🔞 🛅 🖺 🗃 🧑 刘 🍱 Type here to search React App ← C (i) localhost:3000 出 A ☆ 中 ☆ ● ※ … ◆ STUDENT INFORMATION SEARCH! Search: Y20CS021 Y20CS091 Y20CS171 를 ^ 및 ↓× 3:26 PM 12/4/2023 등3 Type here to search 42

11. create a React JS calendar along with events that are triggered based on user actions.

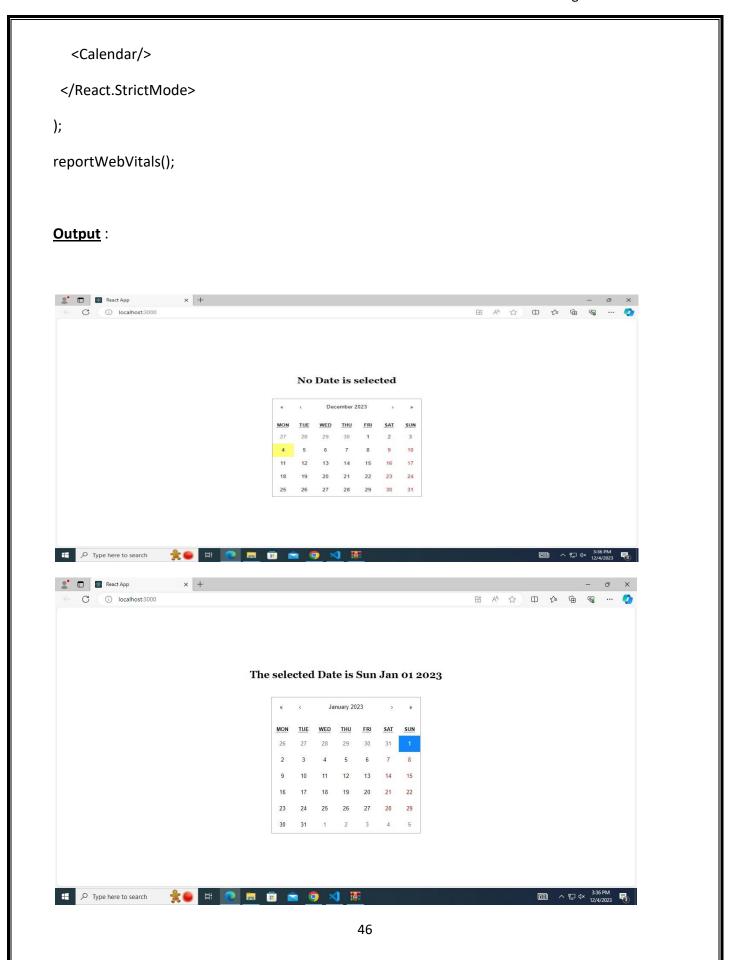
Source Code:

Calendar.js

```
import React, { useState } from "react";
import Calendar from "react-calendar";
import "react-calendar/dist/Calendar.css";
import "./Calendar.css";
function Calendar () {
 const allMonthValues = [
  "January",
  "February",
  "March",
  "April",
  "May",
  "June",
  "July",
  "August",
  "September",
  "October",
  "November",
  "December"
];
 const [selectedDate, setSelectedDate] = useState();
```

```
const [calendarText, setCalendarText] = useState(`No Date is selected`);
const handleDateChange = (value) => {
 setSelectedDate(value);
 setCalendarText(`The selected Date is ${value.toDateString()}`);
};
const handleYearChange = (value) => {
 const yearValue = value.getFullYear();
 setCalendarText(`${yearValue} Year is selected`);
};
const handleMonthChange = (value) => {
 const monthValue = allMonthValues[value.getMonth()];
 setCalendarText(`${monthValue} Month is selected`);
};
return (
 <div className="app1">
  <h2 className="calander-details">{calendarText}</h2>
  <Calendar
   onClickMonth={handleMonthChange}
   onClickYear={handleYearChange}
   onChange={handleDateChange}
   value={selectedDate}
  />
 </div>
);
```

```
}
export default Calendar;
Calendar.css
.app1 {
  display: flex;
  align-items: center;
  justify-content: center;
  flex-direction: column;
  gap: 20px;
  height: 100vh;
  color:black;
  font-family:Georgia, Times, "Times New Roman", serif;
 }
Index.js
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import reportWebVitals from './reportWebVitals';
import Calendar from './Calender/App7';
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
 <React.StrictMode>
```



12. Create a react router application by using React Router utilities

Source Code:

Router1.js

```
import "./Router1.css";
import {
  BrowserRouter as Router,
  Routes,
  Route,
  Navigate,
} from "react-router-dom";
import Home from "./Comp/Home";
import About from "./Comp/About";
import ContactUs from "./Comp/ContactUs";
function Router1() {
  return (
    <>
      <Router>
        <Routes>
          <Route
            exact
            path="/"
            element={<Home />}
```

```
/>
          <Route
            path="/about"
            element={<About />}
          />
          <Route
            path="/contactus"
            element={<ContactUs />}
          />
          <Route
            path="*"
            element={<Navigate to="/"/>}
          />
        </Routes>
      </Router>
    </>
 );
}
export default Router1;
Router1.css
.App {
text-align: center;
}
```

```
.App-logo {
 height: 40vmin;
 pointer-events: none;
}
@media (prefers-reduced-motion: no-preference) {
 .App-logo {
  animation: App-logo infinite 20s linear;
}
.App-header {
background-color: #060c01;
 display: flex;
 flex-direction: column;
 align-items: center;
justify-content: center;
font-size: calc(10px + 2vmin);
 color: white;
}
.App-link {
color: #61dafb;
}
@keyframes App-logo-spin {
from {
 transform: rotate(0deg);
```

```
to {
 transform: rotate(360deg);
}
Index.js
import React from 'react';
import ReactDOM from 'react-dom/client';
import reportWebVitals from './reportWebVitals';
import Router1 from './Router1';
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
 <React.StrictMode>
  <Router/>
 </React.StrictMode>
);
reportWebVitals();
```

