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");
}
```

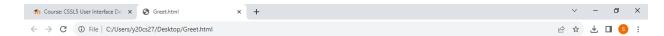
```
PS Z:\ReactJS> node leap.js
Current Year is 2023
Not leap Year
PS Z:\ReactJS>
```

#### 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 style="color:green"> Time is {hours} hours now and {msg} </h1>;
   }
   function Welcome() {
    return <Greet/>;
   }
```

```
const container = document.getElementById('root');
  const root = ReactDOM.createRoot(container);
  root.render(<Welcome/>)
  </script>
  </body>
  </html>
```



Time is 16 hours now and Good Evening! Have Some Tea and Snacks



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

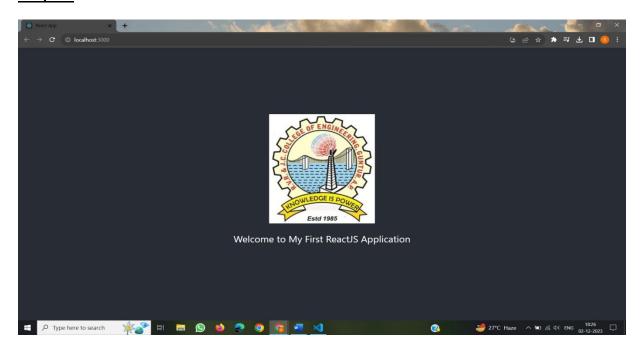
# **Source Code**:

}

```
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();
```



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

**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);
}
<u>Index.js</u>
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();
```



# This is the example of external CSS

This is the example of Inline CSS



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**:

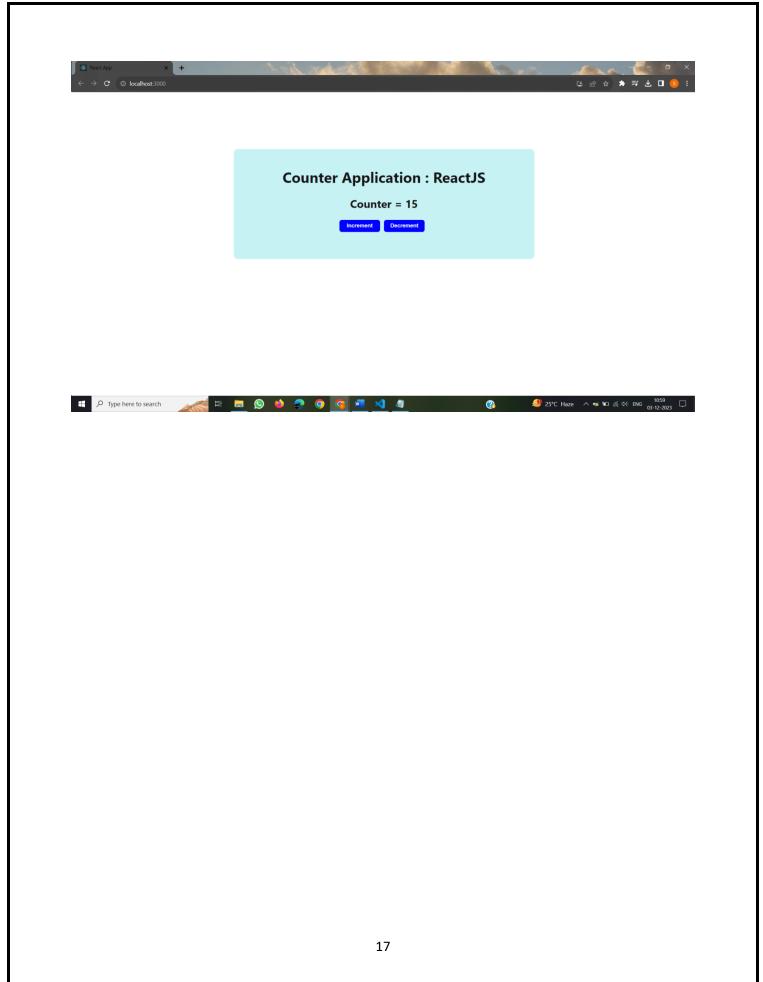
#### Counter.js

```
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'));
```

```
root.render(
<React.StrictMode>
 <Counter/>
</React.StrictMode>
);
reportWebVitals();
Output:
                    Counter Application : ReactJS
                          Counter = 27
                         Increment Decrement
16
```



# 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"
   }
];
```

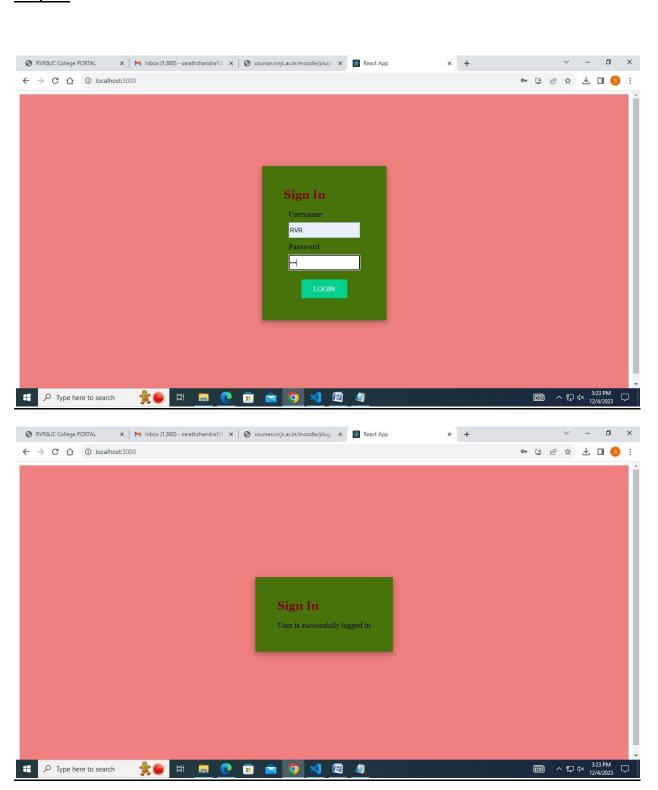
```
const errors = {
 uname: "Invalid Username",
 pass: "Invalid Password"
};
const handleSubmit = (event) => {
 event.preventDefault();
 var { uname, pass } = document.forms[0];
 const userData = data.find((user) => user.username === uname.value);
 if (userData) {
  if (userData.password !== pass.value) {
   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">
```

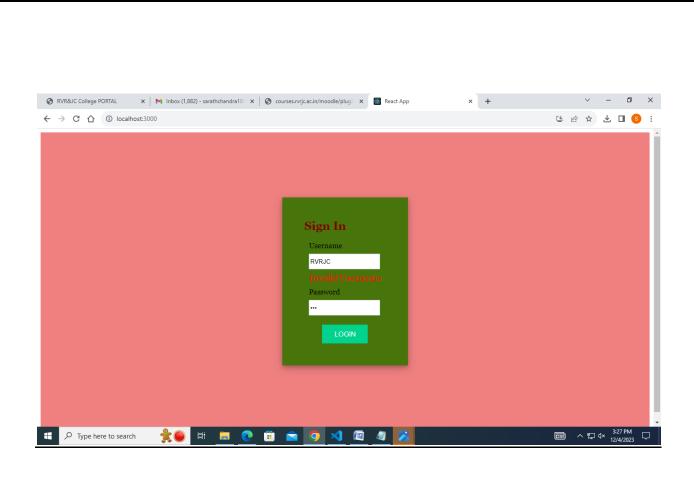
```
<form onSubmit={handleSubmit}>
   <div className="input-container">
    <label>Username </label>
    <input type="text" name="uname" required />
    {renderErrorMessage("uname")}
   </div>
   <div className="input-container">
    <label>Password </label>
    <input type="password" name="pass" required />
    {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();
```





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

#### Registration.js

**Source Code**:

```
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><input className='input' placeholder='Name' onChange={(e)=>
<b>Name
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>Email
              : </b><input className='input' placeholder='Email' onChange={(e)=>
setEmail(e.target.value)}/><br/>
<b>Password
                : </b><input className='input' type='password' placeholder='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;
```

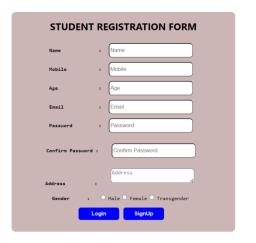
```
align-items: center;
 justify-content: center;
  font-size: calc(10px + 2vmin);
  color: white;
 }
 .App{
 float: left;
  padding-left: 200px;
 padding-top: 200px;
 }
.input{
  width: 200px;
 height: 30px;
  margin: 1% 2%;
  border-radius: 8px;
}
.main{
  background-color: rgb(203, 181, 181);
  width: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

```
.input1{
  margin:1% 1%;
}
.main1{
  padding-right: 250px;
}
<u>Index.js</u>
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();
```



R.V.R & J.C College of Engineering







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)}/>
```

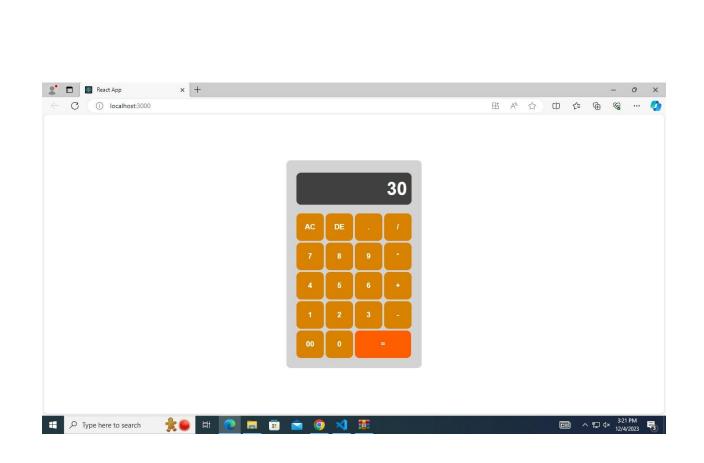
```
<input type="button" value="8" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="9" onClick={e => setValue(value + e.target.value)}/>
      <input type="button" value="*" onClick={e => setValue(value + e.target.value)}/>
     </div>
     <div>
      <input type="button" 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;
}
```

#### Index.js





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",

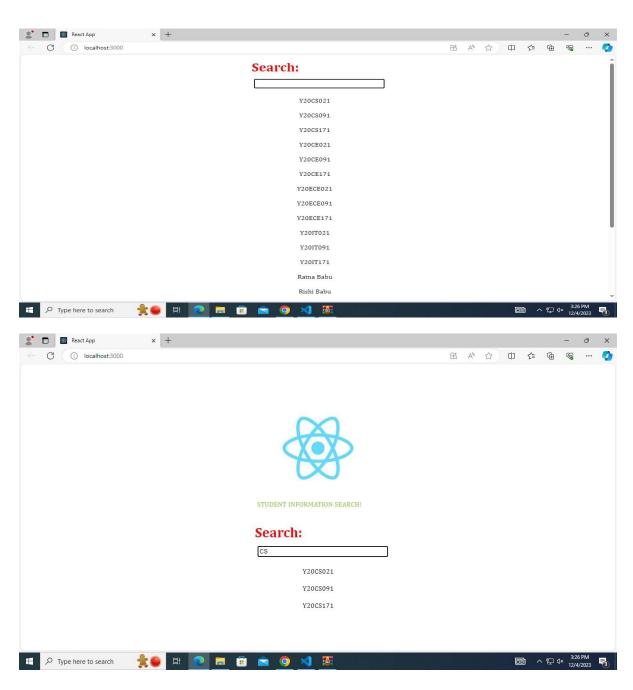
```
"Deepak",
 "Jyothi",
 "Rama Raju",
 "Sunil",
 "Sitha",
 "Ramana",
 "Ratna Raju"
];
const [filterList, setFilterList] = useState(list);
const handleSearch = (event) => {
 if (event.target.value === "") {
  setFilterList(list);
  return;
 }
 const filteredValues = list.filter(
  (item) =>
   item.toLowerCase().indexOf(event.target.value.toLowerCase()) !== -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%;
 }
<u>Index.js</u>
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:



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>
```

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<Calendar/> </React.StrictMode> ); reportWebVitals(); Output: React App × + ← C ① localhost:3000 田 A ☆ 中 春 @ … 🥠 No Date is selected December 2023 MON TUE WED THU FRI SAT SUN 11 12 13 14 15 16 17 ## 🔎 Type here to search React App ← C (i) localhost:3000 田 A 公 中 4 唐 8 … 🥠 The selected Date is Sun Jan 01 2023 January 2023 MON TUE WED THU FRI SAT SUN 23 24 25 26 27 28 29

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Type here to search

# 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>
```

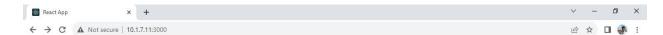
<Router/>

);

</React.StrictMode>

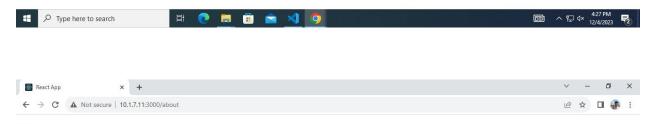
reportWebVitals();

#### Output:



### **Home Page**

- HomeAboutContact Us



# **About Page**

