Tutorial No. 08

Title: Introduction to React JS.

Batch:A2 **Roll No.:16010421063** **Tutorial No:8**

Aim: To implement methods, functions to manipulate DOM element using React JS

Resources needed: Notepad++, Web Browser

Theory:

React JS

React is a declarative, efficient, and flexible JavaScript library for building user interfaces.
It lets you compose complex UIs from small and isolated pieces of code called components". We use components to tell React what we want to see on the screen. When our data changes, React will efficiently update and re-render our components.
React does not manipulate the browser's DOM directly. Instead, React creates a virtual DOM in memory, where it does all the necessary manipulating, before making the changes in the browser DOM.

We will start with React .Component example

```
class ShoppingList extends React.Component {
  render() {
    return (
      <div className="shopping-list">
        <h1>Shopping List for {this.props.name}</h1>
        <ul>
          <li>Instagram</li>
          <li>WhatsApp</li>
          <li>Oculus</li>
        </ul>
      </div>
    );
  }
}
```

Here, ShoppingList is a React component class, or React component type. A component takes in parameters, called props (short for "properties"), and returns a hierarchy of views to display via the render method.
The render method returns a description of what you want to see on the screen. React takes the description and displays the result. In particular, render returns a React element, which is a lightweight description of what to render.

Most React developers use a special syntax called "JSX" which makes these structures easier to write.
The syntax is transformed at build time to React.createElement('div').

The example above is equivalent to:

```
return React.createElement('div', {className: 'shopping-list'},
  React.createElement('h1', /* ... h1 children ... */),
  React.createElement('ul', /* ... ul children ... */)
);
```

The createElement is an inbuilt method. There are lots of methods and functions included in the reactjs API. see the details on reactjs.org API Reference.

JSX comes with the full power of JavaScript. You can put any JavaScript expressions within braces inside JSX. Each React element is a JavaScript object that you can store in a variable or pass around in your program.

Hello World Example

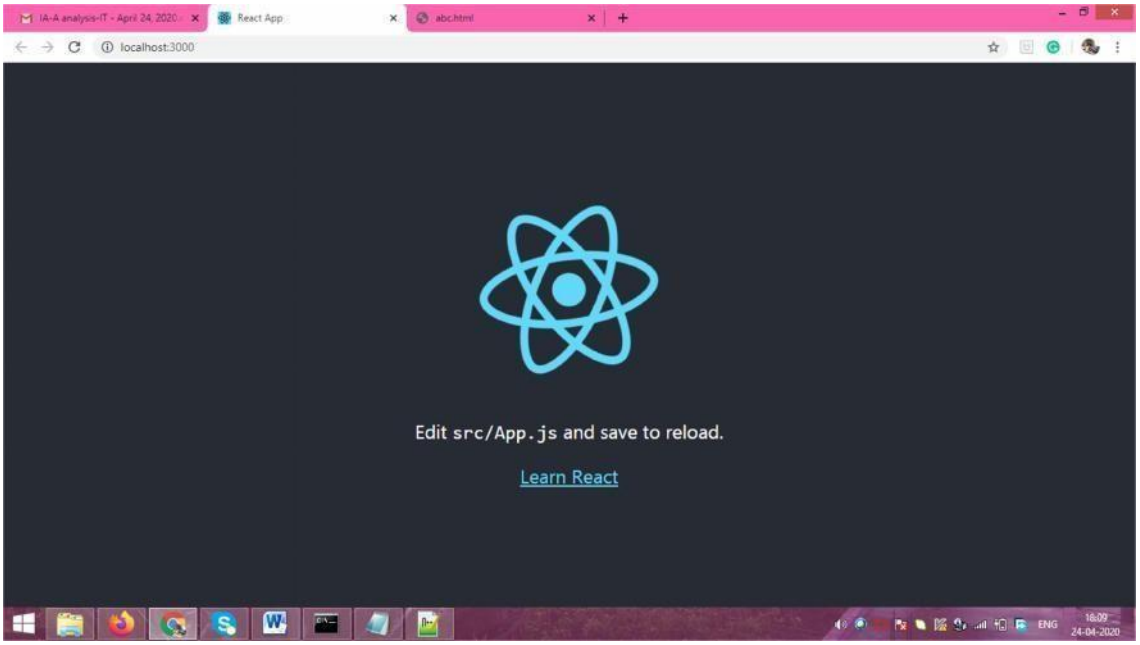
```
<!DOCTYPE html>
<html>
  <script src="https://unpkg.com/react@16/umd/react.production.min.js"></script>
  <script src="https://unpkg.com/react-dom@16/umd/react-dom.production.min.js"></script>
  <script src="https://unpkg.com/babel-standalone@6.15.0/babel.min.js"></script>
  <body>

    <div id="mydiv"></div>

    <script type="text/babel">
      class Hello extends React.Component {
        render() {
          return <h1>Hello World!</h1>
        }
      }

      ReactDOM.render(<Hello />, document.getElementById('mydiv'))
    </script>
  </body>
</html>
```

Setting up a React Environment

First of all you need to download NodeJs for your operating system version.
https://nodejs.org/en/download/
npm(node packet manager once you download NodeJs
Then follow the following commands:

1) run the command "C:\Users\Your Name>npm install -g create-react-app"
2) run the command to create an application name helloworld "C:\Users\Your Name>npx create-react-app Helloworld"
3) run this command to get to the current directory "C:\Users\Your Name>cd helloworld"
4) run this command to start the react application "C:\Users\Your Name\helloworld >npm start"

A new browser window will pop up with your newly created React App! If not, open your browser and type localhost:3000 in the address bar.



Modify the React Application

Look in the helloworld directory, and you will find a src folder. Inside the src folder there is a file called App.js, open it and make changes to any HTML part.
You will be able to see the change on the newly opened browser

App.js File

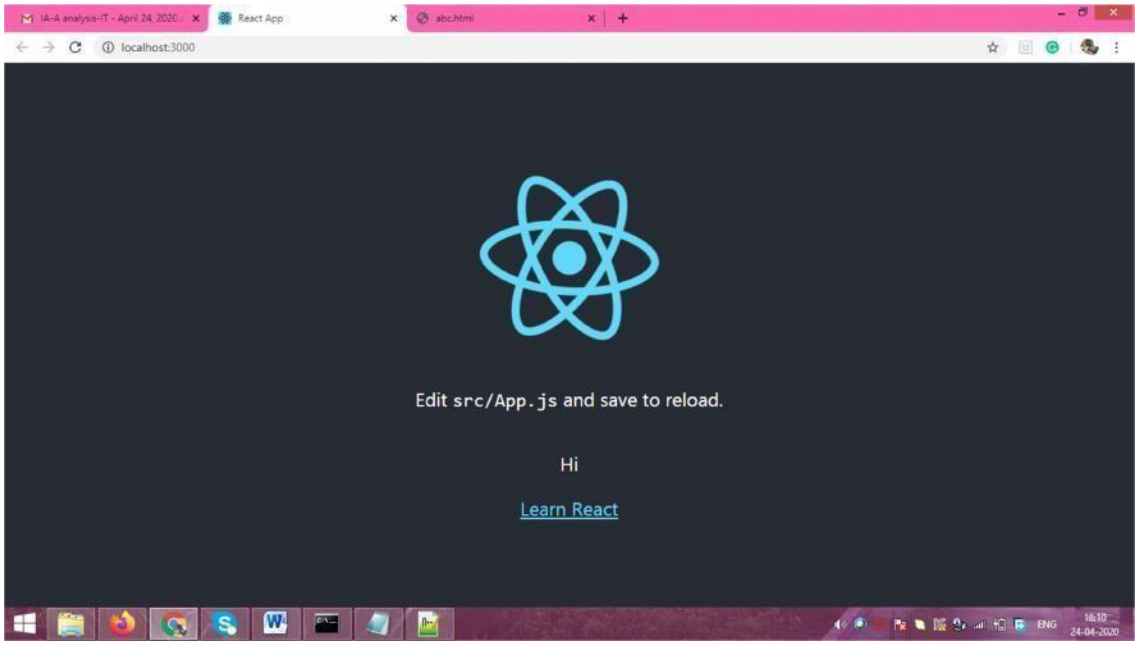
```
import React, { Component } from 'react';
import logo from './logo.svg';
import './App.css';

class App extends Component {
  render() {
    return (
      <div className="App">
        <header className="App-header">
          <img src={logo} className="App-logo" alt="logo" />
          <p>
            Edit <code>src/App.js</code> and save to reload.
          </p>
<p> Hi </p>
          <a
            className="App-link"
            href="https://reactjs.org"
```

```
          target="_blank"
          rel="noopener noreferrer"
        >
          Learn React
        </a>
      </header>
    </div>
  );
 }
}
```

export default App;

in the file “Hi” is added inside paragraph tag.

The result browser screen is as follows



Activity:

- Use React JS to change any of the HTML content.

Results: (Program printout with output)

```
import axios from "axios";
import { useSnackbar } from "notistack";
import React, { useEffect, useState } from "react";
import { useParams } from "react-router-dom";
import { url } from "../../../constants/baseUrl";
import getCommonOptions from "../../../helpers/getCommonOptions";
import ReactMarkdown from "react-markdown";
```

```
import styles from "./BlogDetails.module.css";
import CircularProgress from "@mui/material/CircularProgress";
const BlogDetails = () => {
   let { blogId } = useParams();
   const [data, setData] = useState({});
   const { enqueueSnackbar } = useSnackbar();
   const [loading, setLoading] = useState(true);

   useEffect(() => {
       const getData = async () => {
           axios
               .post(
                   `${url}blogs/getDetailBlog/`,
                   {
                       blog_id: blogId,
                   },
                   getCommonOptions()
               )
               .then((res) => {
                   setLoading(false);

                   setData(res.data);
               })
               .catch(() =>
                   enqueueSnackbar("Internal Server Error", {
variant: "error" })
               );
       };
       getData();
   }, []);
   useEffect(() => {
       console.log(data.category);
   }, [data]);

   if (loading) {
       return (
           <div className={styles.loader}>
               {/* hellloo */}
               <CircularProgress color="primary" determinate={false}
size="lg" />
           </div>
       );
   }
```

```
    return (
        <div className={styles.container}>
            <img src={`${url}${data.image}`} className={styles.image}
/>
            <div
                style={{
                    marginTop: "1rem",
                }}
            >
                <div className={styles.title}>{data.title}</div>
                <div className={styles.author}>Author-
{data.authorName}</div>
            </div>
            <div className={styles.content}>
                <ReactMarkdown>{data.content}</ReactMarkdown>
            </div>
            <div className={styles.categoryContainer}>
                <span
                    style={{
                        fontSize: "1.2rem",
                    }}
                >
                    Category-
                </span>
                {data?.category?.map((x) => (
                    <div className={styles.category}>{x.name}</div>
                ))}
            </div>
            <div className={styles.creatorSupport}>
                Hey do you like the content Creator? Now you can
support{" "}
                {data.authorName} by donating Matic
            </div>
        </div>
    );
};

export default BlogDetails;
```

Home

```
import React from "react";
import RecentPosts from "../../components/RecentPosts/RecentPosts";
import TopPosts from '../../components/TopPosts/TopPosts'
import styles from "./Home.module.css";

const Home = () => {
    return (
        <div className={styles.container}>
            <section className={styles.section}>
                <div>
                    <img src="/assets/ethereum.png" />
                </div>
                <div>
                    <h1>Making Blogging profitable with
Blockchain</h1>
                </div>
            </section>
            <RecentPosts />
            <TopPosts />
        </div>
    );
};

export default Home;
```

Recent Post

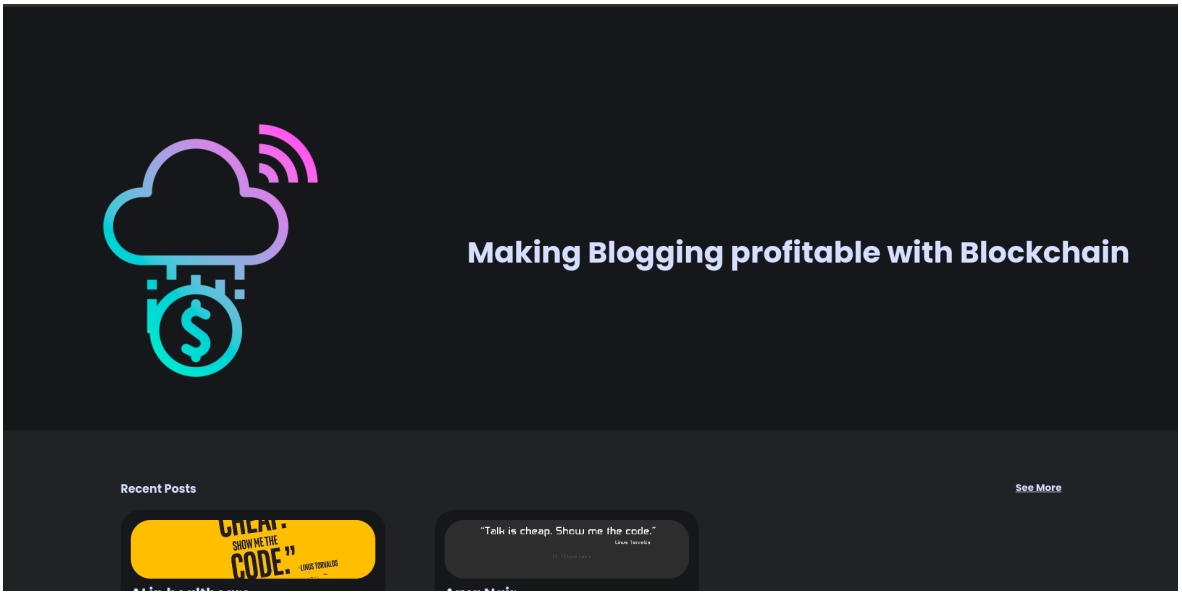
```
import React, { useEffect, useState } from "react";
import styles from "./RecentPosts.module.css";
import axios from "axios";
import { url } from "../../constants/baseUrl";
import getCommonOptions from "../../helpers/getCommonOptions";
import PostItem from "../PostItem/PostItem";

const RecentPosts = () => {
   const [blogList, setBlogList] = useState([]);

   useEffect(() => {
       const getBlogs = async () => {
           axios
               .get(`${url}blogs/getRecentBlog`, getCommonOptions())
               .then((res) => {
                   setBlogList(res.data);
               })
               .catch((err) => console.log(err));
       };
       getBlogs();
   }, []);


   return (
       <div className={styles.container}>
           <div className={styles.containerHeader}>
               <div>
                   <h3>Recent Posts</h3>
               </div>
               <div style={{ textAlign: "right", textDecoration:
"underline" }}>
                   See More
               </div>
           </div>
           <div className={styles.container2}>
               {blogList.map((item) => (
                   <PostItem item={item} />
               ))}
           </div>
       </div>
   );
};
```

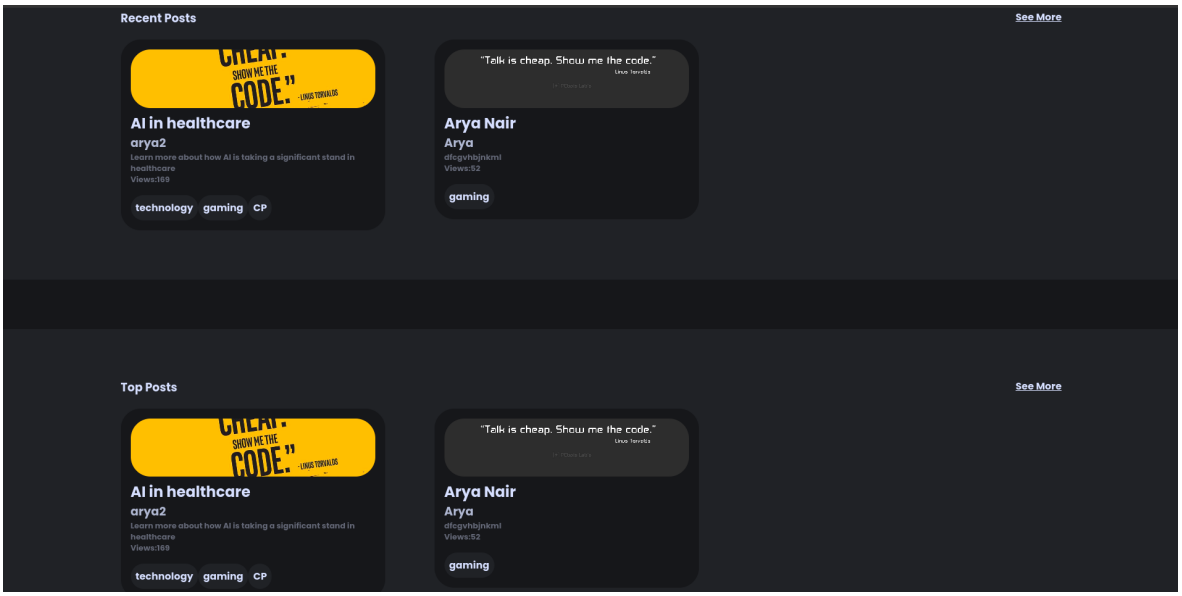
```
export default RecentPosts;
```

Top Post

```
import React, { useEffect, useState } from "react";
import styles from "./TopPosts.module.css";
import axios from "axios";
import { url } from "../../constants/baseUrl";
import getCommonOptions from "../../helpers/getCommonOptions";
import PostItem from "../PostItem/PostItem";

const TopPosts = () => {
   const [blogList, setBlogList] = useState([]);

   useEffect(() => {
       const getBlogs = async () => {
           axios
               .get(`${url}blogs/getTopBlog`, getCommonOptions())
               .then((res) => {
                   setBlogList(res.data);
               })
               .catch((err) => console.log(err));
       };
       getBlogs();
   }, []);

   return (
       <div className={styles.container}>
           <div className={styles.containerHeader}>
               <div>
                   <h3>Top Posts</h3>
               </div>
               <div style={{ textAlign: "right", textDecoration:
"underline" }}>
                   See More
               </div>
           </div>
           <div className={styles.container2}>
               {blogList.map((item) => (
                   <PostItem item={item} />
               ))}
           </div>
       </div>
```

```
    );
};

export default TopPosts;
```





Outcomes:CO 4 Implement web application using React JS, JSON and CBOR

Conclusion: (Conclusion to be based on the outcomes achieved) completed and implemented react

Grade: AA / AB / BB / BC / CC / CD /DD

Signature of faculty in-charge with date

References:

Books/ Journals/ Websites:

http://www.w3schools.com

https://www.tutorialspoint.com/angularjs/angularjs_tutorial.pdf

https://angularjs.org