# CS3215: Web Technology TY Div C n D AY 2022-23

## Study Material for Section-II-Part-II- React

### Learning React JS [ Component Based Architecture]

**Prerequisites:**

**HTML5, CSS3, BOOTSTRAP4.0, jQuery, JSON, DOM, JavaScript, ES6, Node.js, npm- node package manager**

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**T**op 5 most popular server-side programming languages are:

**Java, C#, PHP, Python, and Node JS**

**Which server-side language is better?**

Java, C#, Go and Kotlin represent the top contenders and provide almost the same level of performance across the board.

**Serverside** - C++, Java , Golang and Kotlin

**Client Side** - Angular and React

**React** is a front-end framework or the "View" in MVC.

**When the user clicks around and changes the app's data, the view should "react" or change with those user events**.

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**What is React JS? - It is simple javascript library**

**Declarative, Component Based and Learn Once, Write Anywhere**

**React** - A javascript library for building user interfaces

- it is declarative, efficient, and flexible javascript library for **building reusable UI components**

**SPA** - Single Page Applications

**React:** Building user interfaces specifically for single-page applications. It's used for handling the **view layer** for web and mobile apps. React also allows us to create **reusable UI components**

Earlier (Home Page, About Us Page, Contact Us Page.....) --- Unnecessary loading for each page along with required libraries **------- It affects overall performance------increases time complexity**

**AJAX** - Bringing data from server **without refreshing .....without reloading.** Click a button and get a data from server.

**What is component and props in React?**

**Components are like JavaScript functions.**

**They accept arbitrary inputs (called "props") and return React elements describing what should appear on the screen. Props is a property.**

```
function Welcome(props) {

  return <h1>Hello, {props.name}</h1>;

}
```

```
function App() {
  return (
    <div>
      <Welcome name="Sara" />
      <Welcome name="Cahal" />
      <Welcome name="Edite" />
    </div>
  );
}
```

---

**SPA** - Will load single template with different components. You can change individual component **in the same page.** You can load different components dynamically as run time.

**Component** - build one generic code.

**Reusable Component** - **You can build your own component ( we call it as power of React JS)**

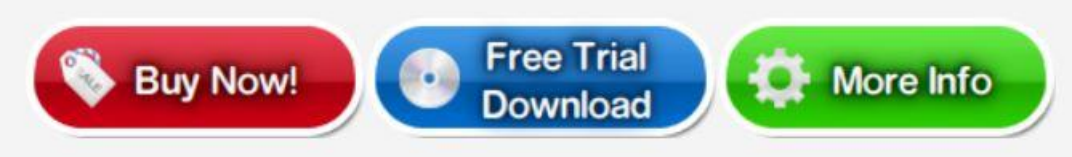
In React, a reusable component is a piece of UI that can be used in various parts of an application to build more than one UI instance. For instance, we can have a button component display with different colors in several parts of our application. Although it is the same button component when we provide it with a dataset (e.g color, or a function), it modifies itself and outputs a UI instance of the element.

This pattern of creating React components is necessary for scaling. It helps save time by ensuring less code is written, development is faster, the codebase is simpler, and maintenance is stress-free.

**Example of reusable component:**

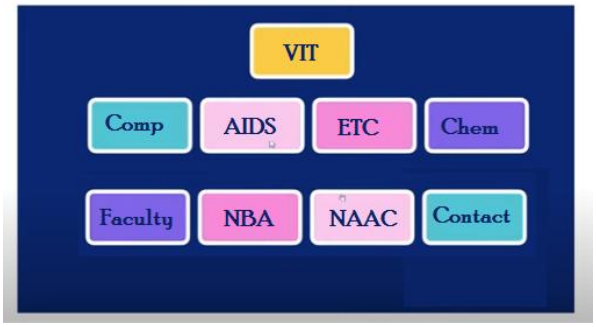
**Reused with different colors and shapes:**

**Example: II**

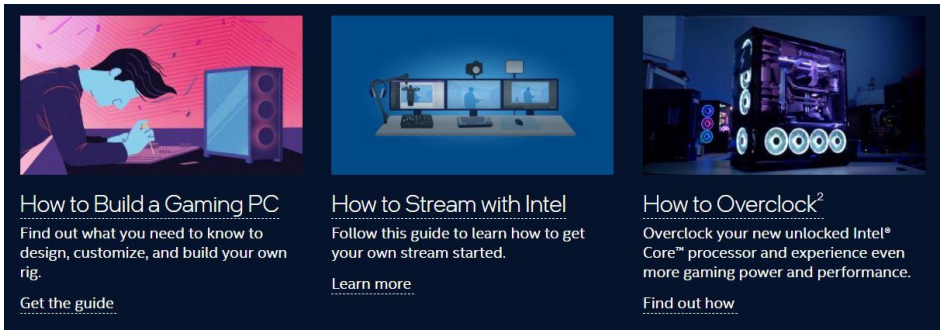



**Example: III**


**Example: IV**




**Example V:**




**Components are: VIT, Comp, Chem, NBA, NAAC**

**Main Menu**, Navigation Bar, Profile, Trends, Feedback, Tweet, Contact Us

**Example -** Create Navbar and use it in html as <navbar/> at multiple times.

<li>

. componet-----html + variables

</li>

---

## How to install and use React JS

**Software Required:**

Node.Js ---- it will install npm -----node package manager

Google:  Node js

**Node.js**

https://nodejs.org

download latest version **16.13.1** and install it.

On my machine I have:  **v14.17.5**

**How to check the version:** Run the command node -v at command prompt

C:> **node -v**  : v14.17.5

C:> npm -v  : 6.14.14

**For coding** : VS Code Editor.....Visual Studio Code

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# How to create React JS project?

react js  in google search

**https://reactjs.org**

React – A JavaScript library for building user interfaces

Get started

**Create a New React App**

Create a  folder named **react** on I drive :  I:/react

Create new react project **student-cv** by typing:

I:/react>**npx** create-react-app student-cv

May take several minutes to create react application

**npx** on the first line is not a typo — it's a package runner tool that comes with npm 5.2+. Create React App doesn't handle backend logic or databases; it **just creates a frontend build pipeline**, so you can use it with any backend you want.

**May get an error :** No package.json found

Resolve it by using following command:

I:/react>student-cv>npm init --yes

**Start the development server:**

I:/react>student-cv> npm start

**It will invoke browser with:** localhost:3000

**Stop project** - ^C

Please Note:

```
I:\react>npx create-react-app cv-divA
npx: installed 67 in 23.73s
Cannot create a project named "cv-divA" because of npm naming restrictions:

  * name can no longer contain capital letters

Please choose a different project name.
```

**Open VS Code** - File - Open Folder -- Goto I drive ..react folder and open student-cv folder

**IDE Supports following things:**

**Node Modules** - All dependencies

**Public** - consists of **index.html** page and photos

**src** - for javascript files.....index.js

In index.js

```
ReactDOM.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>,
  document.getElementById('root')
```

ReactDOM.render( <App /> document.getElementById('root'));

This means React components implement a `render()` method that takes input data and returns what to display. It takes the data from **root.**

**React-DOM:** React-DOM is a complimentary library to React which glues React to the browser DOM. Whenever we use **component, classes, elements**, etc. we're using **React** and whenever we use methods like render() or findDOMNode() we're using **React-DOM.**

**Auto-configuration:**

**React-scripts** is a set of scripts from the create-react-app starter pack. create-react-app helps you kick off projects without configuring, so you do not have to setup your project by yourself. react-scripts **start sets up the development environment and starts a server, as well as hot module reloading**.

**<StrictMode>** is a tool for highlighting potential problems in an application. Like Fragment , StrictMode does not render any visible UI. It activates additional checks and warnings for its descendants.

**Note:** Strict mode checks are run in development mode only; they do not impact the production build.

**Here App is our html.....and it will be referred via root.**

### where root is taken from index.html

```
<noscript>You need to enable JavaScript to run this app.</noscript>
    <div id="root"></div>
```

### app.js

This is functional app which we want to develop....it consists of html scripts

```
function App() {
  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>
        <a
          className="App-link"
          href="https://reactjs.org"
          target="_blank"
          rel="noopener noreferrer"
        >
          Learn React
        </a>
      </header>
    </div>
  );
}
```

```
function App() {
  return (<h1> "My first REACT  JS Application" </h1>)

}
```

Therefore: the nested hierarchy is:  [ Render.js( App.js( Component.js()))]

React need parent element otherwise gives error

```
function App() {
  return (<h1> My first REACT  JS Application </h1>
    <h1> My first REACT  JS Application </h1>
    <h1> My first REACT  JS Application </h1
```

```
}
```

It will give error as

"JSX expressions must have one parent element.",

Therefore put it in one parent .....say by using  as below

```
<div><h1> My first REACT  JS Application </h1>
  <p> My first REACT  JS Application </p>
  <p> My first REACT  JS Application </p>
  </div>
```

---

You  can create your app:

Create folder component in src

Create file Header.js in it

```
import React from "react";

function Header() {
    return (
    <div>
       <h1> Header </h1>
       <p> This is header component </p>
    </div>
        );
}

export default Header;       // export it mandatory
```

import React from 'react'  is a default import.

and call it in App.js

```
import React from "react";
import logo from './logo.svg';
import './App.css';
import Header from "./Components/Header"   // import it    // reusable component

function App() {
  return (
  <div>
    <Header />              // reusable component
    <hr />
    <Header />               // reusable component
    <hr />
    <h1>This is my first react application</h1>
    <p>This is my first react application</p>
```

```
    <p>This is my first react application</p>
    <hr />
    <Header />              // reusable component
    <hr />
  </div>
  );
}

export default App;
```

We can apply background color to our reusable component as

```
import React from "react";

function Header() {
    return (
     <div style={{background:"yellow"}}>
       <h1> Header </h1>
       <p> This is header component for learning purpose </p>
    </div>
        );

}

export default Header;
```

You can pass the parameters : give separate name to each component of Header as below

parameter **name** is passed. It is done by using property name="Manik Dhore"

```
function App() {
  return (

  <div>
     <Header name="Manik Dhore" />
    <hr />
    <Header name="Ruchi Dhore" />
    <hr />
    <h1>This is my first react application</h1>
    <p>This is my first react application</p>
    <p>This is my first react application</p>
    <hr />
    <Header name="Disha Dhore" />
    <hr />
  </div>
  );

}
```

```
function Header({name}) {
    return (
    <div style={{background:"yellow",padding:20}}>
       <h1> Header </h1>
       <h1> {name} </h1>
       <p> This is header component for learning purpose </p>
    </div>
```

```
        );
```

You can give different titles in place of Header such as

Manik Dhore, Ruchi Dhore, Disha Dhore

Similarly we have used title property to provide different names to reusable components.

```
function Header({name,title}) {
    return (
    <div style={{background:"yellow",padding:20,width:400}}>
       <h1> {name}</h1>
       <h1> {title} </h1>
       <p> This is header component for learning purpose </p>
    </div>
        );
```

```
function App() {
  return (

  <div>
    <Header name="Manik Dhore" title="First CV" />
    <hr />
    <Header name="Ruchi Dhore" title="Second CV" />
    <hr />
    <h1>This is my first react application</h1>
    <p>This is my first react application</p>
    <p>This is my first react application</p>
    <hr />
    <Header name="Disha Dhore" title="Third CV" />
    <hr />
  </div>
  );
```

---

---

New simple application using React js

## Create a New React App

Created folder  react on I drive :  I:/react

Created new react project student-cv by typing:

I:/react>npx create-react-app studentcv

Note: It installs packages:  react, react-dom, react-script, cra-templates,

Three moderate severe vulnerabilities found

```
I:\react>npm audit fix
npm ERR! code EAUDITNOPJSON
npm ERR! audit No package.json found: Cannot audit a project without a package.j
son

npm ERR! A complete log of this run can be found in:
npm ERR!     C:\Users\Dhore\AppData\Roaming\npm-cache\_logs\2021-10-03T04_25_02_
440Z-debug.log
```

Vulnerabilities are resolved using

I:/react>studentcv>npm init --yes

and npm  i --package-lock-only

Go to  App.js

```
function App() {
  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>
        <a
          className="App-link"
          href="https://reactjs.org"
          target="_blank"
          rel="noopener noreferrer"
        >
          Learn React
        </a>
      </header>
    </div>
  );
}
```

Replace html component by "Simple CV Application"

```
import logo from './logo.svg';
import './App.css';

function App() {
  return (
    <div><h3>Simple CV Application</h3></div>
  );
}

export default App;
```

**Using React ReactStrap**

**- Reactstrap is a React component library for Bootstrap**

Goto  google  ....type  reactstrap  -----you will get

## reactstrap - React Bootstrap 4 components

https://reactstrap.github.io

click on this link

Next ---- **install reactstrap** -----This is bootstrap for react.

I:/react>studentcv>npm install bootstrap reactstrap

**Then Import Bootstrap in your application code: in index.js**

```
import 'bootstrap/dist/css/bootstrap.min.css';
```

**Now let us create button using react**

**click on components** in reactstrap and see the list of readymade components

```
import React from "react";
import './App.css';
import { Button } from "reactstrap"

function App() {
  return (<div>
    <h1>This is bootstrap component</h1>
    <Button>First React Button </Button>
  </div>
  )
  }

export default App;
```

Button Properties: color, size : lg sm , active, disabled, outline, block level

```
import './App.css';
import {Button} from "reactstrap";

function App() {
  return (
    <div><h3>Simple CV Application</h3>
    <h1>This is bootstrap component</h1>
    <Button> First React Button </Button>
    <Button color="primary"> First React Button </Button>
    <Button color="primary" size="lg"> First React Button </Button>
    <Button color="primary" size="lg" active> First React Button </Button>
    <Button color="primary" size="lg" disabled> First React Button </Button>
    <Button color="primary" size="lg" outline> First React Button </Button>
    <Button color="primary" size="sm" outline> First React Button </Button>
    <Button color="primary" size="lg" block> First React Button </Button>
    </div>
  );
}

export default App;
```

**Using: React Toastify ----------used for prominent notifications to the user.**

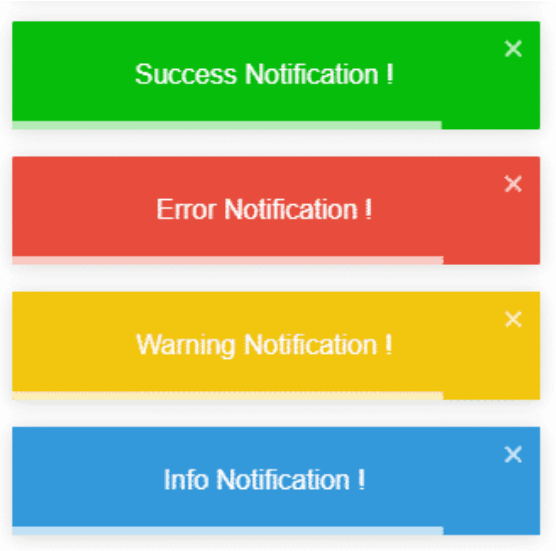
Goto google ....type react tostify -----you will get

**What is Toast? [ ToastContainer ]**

A toast in terms of an application is a floating container that can be shown anywhere **over the content** to display some message in the form of notification. These are shown to draw the attention of the user as it can have some important information.

**React Toastify: [ ToastNotification]**

Toastify creates awesome toast notifications with animations and full colors for different message types. There are tons of configuration options available to customize its behavior.




## fkhadra/react-toastify: React notification made easy - GitHub

https://github.com › fkhadra › react-toastify

This is used for notification.

Install react toastify

```
$ npm install react-toastify                save was used in older versions
```

**Then Import react-toastify in your application code: in index.js**

```
import 'react-toastify/dist/ReactToastify.css';
```

**Go to documentation in react toastify website**: you will see: ToastContainer, toast Emitter

### Toast Container

```
<ToastContainer
```

```
position="top-left"

autoClose={5000}

hideProgressBar={false}

newestOnTop={false}

closeOnClick

rtl={false}

pauseOnFocusLoss

draggable

pauseOnHover

/>
```

**Toast Emitter**

```
toast('🦄 Wow so easy!', {

position: "top-left",

autoClose: 5000,

hideProgressBar: false,

closeOnClick: true,

pauseOnHover: true,

draggable: true,

progress: undefined,

});
```

In app js

```
import {ToastContainer, toast} from "react-toastify"
```

```
import React from "react";
import './App.css';
import { Button } from "reactstrap"
import {ToastContainer, toast} from "react-toastify"

function App() {
  const btnHandle =()=> {
    toast("This is my first notification using React Toastify");
  };
  return (<div>
    <ToastContainer />
    <h1>This is bootstrap component</h1>
    <Button color="warning" outline onClick={btnHandle}> First React Message </Button>
  </div>
  )
  }
```

```
export default App;
```

For success button use success.done and position

```
function App() {
  const btnHandle =()=> {
    toast.success("Done", {
      position: "top-center"
    });
  };
```

latest one

```
const btnHandle =()=> {
    //toast("notification using React Toastify");
    //toast.success("Sucessful");
    toast.success("Done", {position: "top-center"});
    //toast.success("Sucessful", {position: toast.POSITION.TOP_CENTER});
    };
```

you can also use toast.error

---

---

## Using react axios

**react axios - used to support web services ----url and rest api**

## npm install axios

**Creating a new project**

-- use Header Component

-- Create one more file  home.js

Use of Jumbotorn, Container and Button from reactstrap

```
import React from "react";
import { Jumbotron, Container, Button } from "reactstrap"
```

```
const Home = () => {
    return <div>
        <Jumbotron className="text-center">
            <h1 className="display-3"> Learning React</h1>
            <p> This is Web Technology Assignment for Third Year Engineering Students</p>
            <Container>
                <Button color="primary" outline></Button>
            </Container>
            </Jumbotron>
        </div>
};

export default Home;
```

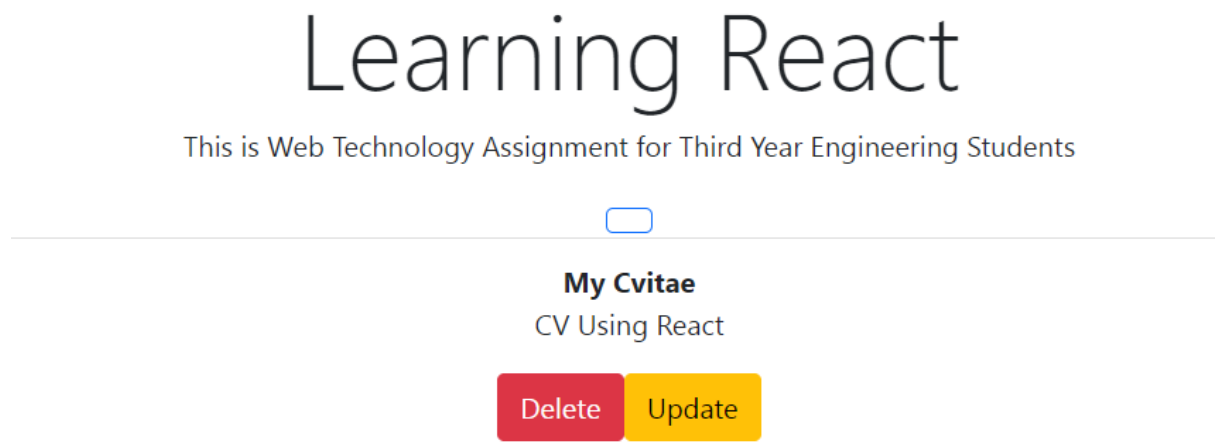
call this Home component in App.js

```
import React from "react";
import './App.css';
import { Button } from "reactstrap"
import {ToastContainer, toast} from "react-toastify"
import Home from "./components/Home";

function App() {
    return (<div>
    <ToastContainer />
     <Home />
  </div>
  )
  }

export default App;
```

Making a Component - Card for Cv

```
import React from "react";
import {Card,
    CardBody,
    CardSubtitle,
    CardText,
    Button,
    Container,
    } from "reactstrap";

const Cv=()=>{
    return(
        <Card className="text-center">
            <CardBody className="text-center">
               <CardSubtitle className="fw-bold">My Cvitae</CardSubtitle>
            <CardText>CV Using React </CardText>
            <Container className="text-center">
                <Button color="danger">Delete</Button>
                <Button color="warning ml-auto">Update</Button>
            </Container>
            </CardBody>
        </Card>
    )
```

```
}

export default Cv;
```




private long id;

private String fname;

private String lname;

private int age;

Cv component

```
import React from "react";
import {Card,
    CardBody,
    CardSubtitle,
    CardText,
    Button,
    Container,
    } from "reactstrap";

const Cv=({cv})=>{
    return(
        <Card className="text-center">
            <CardBody className="text-center">
               <CardSubtitle className="fw-bold">{cv.title}</CardSubtitle>
            <CardText>{cv.id} </CardText>
            <CardText>{cv.fname}  </CardText>
            <CardText>{cv.lname}  </CardText>
            <CardText>{cv.age}  </CardText>
            <CardText>{cv.cgpa}  </CardText>
            <Container className="text-center">
                <Button color="danger">Delete</Button>
                <Button color="warning ml-auto">Update</Button>
```

```
            </Container>
            </CardBody>
        </Card>
    )

}

export default Cv;
```

App.js

```
import React from "react";
import './App.css';
import { Button } from "reactstrap"
import {ToastContainer, toast} from "react-toastify"
import Home from "./components/Home";
import Cv from "./components/Cv";

function App() {
    return (<div>
    <ToastContainer />
     <Home />
     <Cv
     cv={{title:"TYDIV-A",id:"10",fname:"Manikrao",lname:"Laxmanrao",age:"55",cgpa:"9.4"}}/>
  </div>
  )
  }
export default App;
```

Small Change

```
import React from "react";
import {Card,
    CardBody,
    CardSubtitle,
    CardText,
    Button,
    Container,
    } from "reactstrap";

const Cv=({cv})=>{
    return(
        <Card className="text-center">
            <CardBody className="text-center">
               <CardSubtitle className="fw-bold">My cv</CardSubtitle>
               <CardText>{cv.id} {cv.fname} {cv.lname} {cv.age}{cv.cgpa}  </CardText>

            <Container className="text-center">
                <Button color="danger">Delete</Button>
                <Button color="warning ml-auto">Update</Button>
            </Container>
            </CardBody>
        </Card>
    )
}

export default Cv;
```

```
function App() {
    return (<div>
    <ToastContainer />
     <Home />
     <Cv
     cv={{id:"10",fname:"Manikrao",lname:"Dhore",age:"55",cgpa:"9.4"}}/>
  </div>
  )
  }
export default App;
```

Now let us create multiple CVS

Create one more file as Allcv.js

```
import React, { useState } from "react"
import Cv from "./Cv"

const Allcv=()=>{
    const [cvs,setCv]=useState([
        {id:"10",fname:"Manikrao",lname:"Dhore",age:"55",cgpa:"9.4"},
        {id:"20",fname:"Mohit",lname:"Bahadure",age:"24",cgpa:"9.6"}
    ]);
    return(
        <div>All CVs
        <p>List of CVs as follows </p>
        {
            cvs.length>0? cvs.map((item)=><Cv cv={item} />): "No CVs available"
        }
        </div>
    );
};
export default Allcv;
```

App,js will be

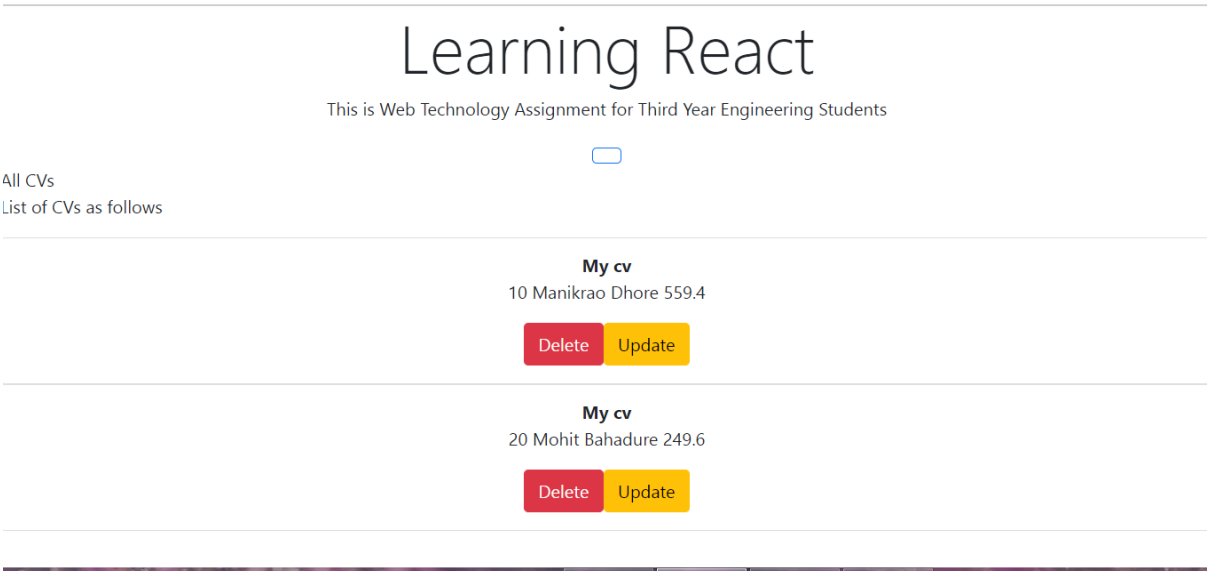
```
import React from "react";
import './App.css';
import { Button } from "reactstrap"
import "react-toastify/dist/ReactToastify.css";
import {ToastContainer, toast} from "react-toastify"
import Home from "./components/Home";
import Cv from "./components/Cv";
import Allcv from "./components/Allcv";

function App() {
    return (<div>
    <ToastContainer />
     <Home />
     <Allcv />
     </div>
  )
  }
export default App;
```

Final Allcv.js

```
import React, { useState } from "react"
import Cv from "./Cv"

const Allcv=()=>{
    const [cvs,setCv]=useState([
        {id:"10",fname:"Manikrao",lname:"Dhore",age:"55",cgpa:"9.4"},
        {id:"20",fname:"Mohit",lname:"Bahadure",age:"24",cgpa:"9.6"}
    ]);
    return(
        <div>All CVs
        <p>List of CVs as follows </p>
        {
            cvs.length>0? cvs.map((item)=><Cv cv={item} />): "No CVs available"
        }
        </div>
    );
};
export default Allcv;
```

Final App.js

```
import React from "react";
import './App.css';
import { Button } from "reactstrap"
import "react-toastify/dist/ReactToastify.css";
import {ToastContainer, toast} from "react-toastify"
import Home from "./components/Home";
import Cv from "./components/Cv";
import Allcv from "./components/Allcv";

function App() {
    return (<div>
    <ToastContainer />
     <Home />
     <Allcv />
     </div>
  )
  }

export default App;
```



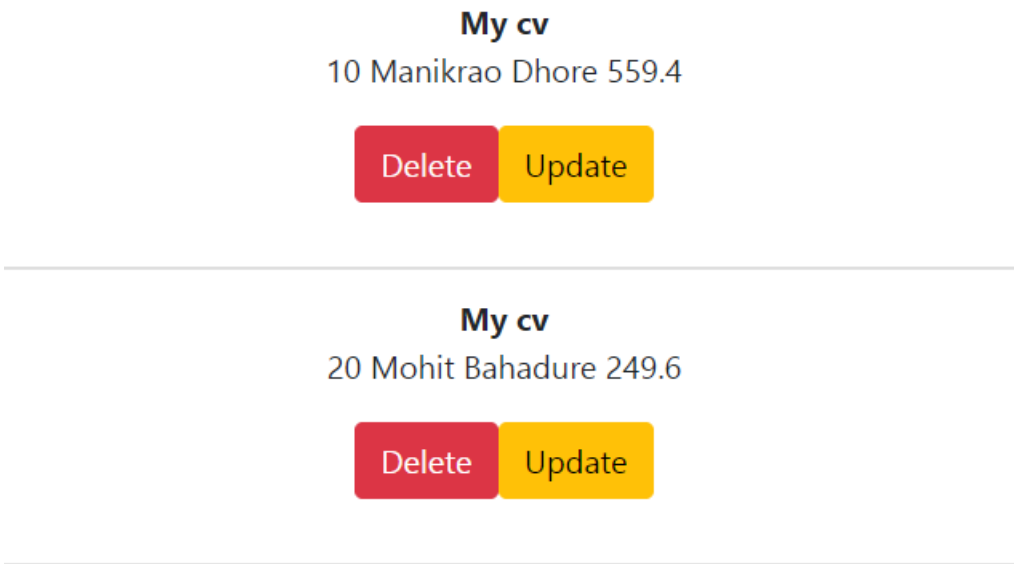

Addcv.js

```
import { Fragment } from "react/cjs/react.production.min";
import { Form, FormGroup, Input, Button, Container } from "reactstrap";

const Addcv=()=>{
    return<Fragment>
        <h4 className="text-center my-3">Add New CV Details</h4>
        <Form>
            <FormGroup>
                <label for="GRNo">Roll No</label>
                <Input
                type="text"
                placeholder="Enter GR Number"
                name="GRNo"
                id="GRNo" />
            </FormGroup>
            <FormGroup>
                <label for="FirstName">First Name</label>
                <Input
                type="text"
                placeholder="Enter First Name"
                name="FirstName"
                id="FirstName" />
            </FormGroup>
            <FormGroup>
                <label for="LastName">Last Name</label>
                <Input
                type="text"
                placeholder="EnterLast Name"
                name="Last Name"
                id="Last Name" />
            </FormGroup>
            <FormGroup>
                <label for="Age">Age</label>
                <Input
                type="text"
                placeholder="Enter Age"
                name="Age"
                id="Age" />
            </FormGroup>
            <FormGroup>
```

```
                <label for="Cgpa">CGPA</label>
                <Input
                type="text"
                placeholder="Enter CGPA"
                name="Cgpa"
                id="Cgpa" />
            </FormGroup>
            <Container className="text-center">
            <Button color="success"> Add CV </Button>
            <Button color="warning ml-2"> Clear </Button>
            </Container>
        </Form>
    </Fragment>

}
export default Addcv;
```

```
import React from "react";
import './App.css';
import { Button } from "reactstrap"
import "react-toastify/dist/ReactToastify.css";
import {ToastContainer, toast} from "react-toastify"
import Home from "./components/Home";
import Cv from "./components/Cv";
import Allcv from "./components/Allcv";
import Addcv from "./components/Addcv";

function App() {
    return (<div>
    <ToastContainer />
     <Home />
     <Allcv />
     <Addcv />
     </div>
  )
  }

export default App;
```

```
import React from "react";
import './App.css';
import { Button, Col, Container, Row } from "reactstrap"
import "react-toastify/dist/ReactToastify.css";
import {ToastContainer, toast} from "react-toastify"
import Home from "./components/Home";
import Cv from "./components/Cv";
import Allcv from "./components/Allcv";
import Addcv from "./components/Addcv";
import Header from "./components/Header";

function App() {
    return (<div>
    <ToastContainer />
       <Container>
         <Header />
         <Row>
           <Col md={4}><h3>This is Menu Side</h3></Col>
           <Col md={8}><h3>This is Content Side </h3></Col >
         </Row>
       </Container>

     </div>
  )
  }

export default App;
```




---

Header.js

```
function Header({name,title}) {
    return (
    <div>
```

```
        <Card className="my-2 bg-warning">
            <CardBody>
            <h2 className="text-center my-3">Welcome To React-Node JS n Spring Boot project </h2>
            </CardBody>
        </Card>

    </div>
        );

}

export default Header;
```

App.js

```
function App() {
  return (<div>
  <ToastContainer />
       <Container>
         <Header />
         <Row>
           <Col md={4}><h3>Menu</h3></Col>
           <Col md={8}><h3 className="text-center">Content Area </h3></Col >
         </Row>
        </Container>
 </div>
)
}


export default App;
```

Menu.js

```
import React from "react"
import { ListGroup, ListGroupItem } from "reactstrap";

const Menu=()=>{
    return(
<ListGroup>
    <ListGroupItem tag="a" href="#!" action>
        Home
    </ListGroupItem>
</ListGroup>
    )
}

 export default Menu;
```

App.js

```
function App() {
  return (<div>
  <ToastContainer />
       <Container>
         <Header />
         <Row>
           <Col md={4}><Menu /></Col>
           <Col md={8}><h3 className="text-center">Content Area </h3></Col >
         </Row>
        </Container>
 </div>
)
}
```

Menu.js

```
import React from "react"
import { ListGroup, ListGroupItem } from "reactstrap";

const Menu=()=>{
    return(
<ListGroup>
    <ListGroupItem tag="a" href="#!" action>
        Home
    </ListGroupItem>
    <ListGroupItem tag="a" href="#!" action>
        ADD CV
    </ListGroupItem>
    <ListGroupItem tag="a" href="#!" action>
        ALL CV
    </ListGroupItem>
    <ListGroupItem tag="a" href="#!" action>
        UPDATE CV
    </ListGroupItem>
    <ListGroupItem tag="a" href="#!" action>
        DELETE CV
    </ListGroupItem>
    <ListGroupItem tag="a" href="#!" action>
        SEARCH CV
    </ListGroupItem>
    <ListGroupItem tag="a" href="#!" action>
        CREATE VIEWS
    </ListGroupItem>
    <ListGroupItem tag="a" href="#!" action>
        CONTACT US
    </ListGroupItem>
</ListGroup>
    )
}

 export default Menu;
```

App.js

```
function App() {
  return (<div>
  <ToastContainer />
       <Container>
         <Header />
         <Row>
           <Col md={3}><Menu /></Col>
           <Col md={9}><Home /></Col >
         </Row>
       </Container>
 </div>
)
}
```

App.js  use of Router

```
import React from "react";
import './App.css';
import { Button, Col, Container, Row } from "reactstrap"
import "react-toastify/dist/ReactToastify.css";
import {ToastContainer, toast} from "react-toastify"
import { BrowserRouter as Router, Route, Routes } from "react-router-dom";
import Home from "./components/Home";
import Cv from "./components/Cv";
import Allcv from "./components/Allcv";
import Addcv from "./components/Addcv";
import Header from "./components/Header";
import Menu from "./components/Menu";

function App() {
  return (<div>
```

```
    <Router>
    <ToastContainer />
       <Container>
         <Header />

         <Row>
           <Col md={3}><Menu /></Col>
           <Col md={9}>
           <Routes>
              <Route path="/" element={<Home />}></Route>
              <Route path="/add-cv" element={<Addcv />}></Route>
           </Routes>
          </Col >
         </Row>
        </Container>
   </Router>

 </div>
)
}

export default App;
```

Menu.js

```
import React from "react"
import { Link } from "react-router-dom";
import { ListGroup, ListGroupItem } from "reactstrap";

const Menu=()=>{
    return(
<ListGroup>
    <Link
    className="list-group-item list-group-item-action"
    tag="a"
    to="/"
    action>
        Home
    </Link>
    <Link className="list-group-item list-group-item-action"
     tag="a"
     to="/add-cv"
     action>
        ADD CV
    </Link>
    <Link className="list-group-item list-group-item-action"
    tag="a"
    to="all-cv"
    action>
        ALL CV
    </Link>
    <Link className="list-group-item list-group-item-action"
    tag="a"
    to="update-cv"
    action>
        UPDATE CV
    </Link>
    <Link className="list-group-item list-group-item-action"
```

```
     tag="a"
     to="delete-cv"
     action>
        DELETE CV
    </Link>
    <Link className="list-group-item list-group-item-action"
     tag="a"
     to="search-cv"
     action>
        SEARCH CV
    </Link>
    <Link className="list-group-item list-group-item-action"
     tag="a"
     to="create-views"
     action>
        CREATE VIEWS
    </Link>
    <Link className="list-group-item list-group-item-action"
     tag="a"
     to="contact-us"
     action>
        CONTACT US
    </Link>
</ListGroup>
    )
}

 export default Menu;
```

```
import React from "react";
import './App.css';
import { Button, Col, Container, Row } from "reactstrap"
import "react-toastify/dist/ReactToastify.css";
import {ToastContainer, toast} from "react-toastify"
import { BrowserRouter as Router, Route, Routes } from "react-router-dom";
import Home from "./components/Home";
import Cv from "./components/Cv";
import Allcv from "./components/Allcv";
import Addcv from "./components/Addcv";
import Header from "./components/Header";
import Menu from "./components/Menu";

function App() {
  return (<div>
    <Router>
    <ToastContainer />
       <Container>
         <Header />

         <Row>
           <Col md={3}><Menu /></Col>
           <Col md={9}>
           <Routes>
              <Route path="/" element={<Home />}></Route>
              <Route path="/add-cv" element={<Addcv />}></Route>
              <Route path="/all-cv" element={<Allcv />}> </Route>
           </Routes>
```

```
          </Col >
         </Row>
        </Container>
   </Router>

 </div>
)
}

export default App;
```