

demo1-use-context: Example using useContext() Hook demo1-use-context: Files Required:

| 1. index.html | 2. index.js |
|-----------------------|------------------------|
| 3. studentContext.ts | 4. sourseContext.ts |
| 5. App.js | 6. StudentComponent.js |
| 7. CourseComponent.js | 8. TestComponent.js |

1. index.html

2. index.js

```
import React from "react";
import ReactDOM from "react-dom";
import App from "./App";

ReactDOM.render(<App />, document.getElementById("myroot"));
```

3. studentContext.js

```
import React from "react";
//1.Create the Context
const studentContext = React.createContext();
//2. Define the initialState
const initialState = {
 studentId: 101,
 studentName: "Dandes",
 email: "dandes@jlc.com",
 phone: 55555,
};
export const MyStudentProvider = (props) => {
  return(
      //3.Specify the Provider
      <studentContext.Provider value={initialState}>
      {props.children}
      </studentContext.Provider>
   );
 }
//4. Export the Cntext
//export const MyStudentContext = studentContext;
//4. Export the Consumer
export const MyStudentConsumer = studentContext.Consumer;
```



4. courseContext.js

```
import React from "react";
   import { useState } from "react";
   //1.Create the Context
   const courseContext = React.createContext();
   export const MyCourseProvider = (props) => {
     //2. Define the State
     const [courseInfo,setCourseInfo] = useState(
       {
         courseId: "C-11",
         courseName: "Spring MicroServices",
         cost: 18000,
         trainer: "Srinivas Dande",
      }
     );
      return(
         //3.Specify the Provider
         <courseContext.Provider value={courseInfo}>
         {props.children}
         </courseContext.Provider>
      );
     }
   //4. Export the Context
   export const MyCourseContext = courseContext;
   //4. Export the Consumer
   //export const MyCourseConsumer = courseContext.Consumer;
5. <u>App.js</u>
   import React, { Component } from "react";
   import "bootstrap/dist/css/bootstrap.min.css";
   import { MyStudentProvider } from "./StudentContext";
   import { MyCourseProvider } from "./CourseContext";
   import StudentComponent from "./StudentComponent";
   import CourseComponent from "./CourseComponent";
   import TestComponent from "./TestComponent";
```



```
class App extends Component {
   render() {
    return (
     <MyStudentProvider>
      <MyCourseProvider>
     <div className="container">
      <StudentComponent/>
      <CourseComponent/>
      <hr/>
      <TestComponent/>
     </div>
     </MyCourseProvider>
     </MyStudentProvider>
    );
   }
   export default App;
6. StudentComponent.js
   import React from "react";
   import { useContext } from "react";
   import { MyStudentConsumer } from "./studentContext";
   const StudentComponent = (props) => {
    const mystudentData = useContext(MyStudentConsumer);
    const { studentId, studentName, email, phone } = mystudentData;
    return (
     <div className="container">
          <br /> <b><u>
            <h2 className="text-center"> Student Info</h2> </u> </b>
          <br />
          <div>
           <h3> Student ID : {studentId}</h3>
           <h3> Student Name : {studentName}</h3>
           <h3> Email Id: {email}</h3>
           <h3> Phone No : {phone}</h3>
          </div>
         </div>
         );
    }
```

export default StudentComponent;



7. <u>CourseComponent.js</u>

```
import React from "react";
import { useContext } from "react";
import { MyCourseContext } from "./courseContext";
const CourseComponent = () => {
 const mycourseData = useContext(MyCourseContext);
 const { courseId, courseName, cost, trainer } = mycourseData;
    return(
       <div className="container">
       <br /> <b><u>
         <h2 className="text-center"> Course Info</h2> </u> </b>
       <br />
       <div>
       <h3> Course Id: {courseId}</h3>
          <h3> Course Name : {courseName}</h3>
          <h3> Cost : {cost}</h3>
          <h3> Trainer: {trainer}</h3>
       </div>
      </div>
     );
    }
```

export default CourseComponent;

8. <u>TestComponent.js</u>



```
<br/>
<br/>
<div>
<h3> Student ID : {studentId}</h3>
<h3> Student Name : {studentName}</h3>
<h3> Email Id: {email}</h3>
<h3> Phone No : {phone}</h3>
<h3> Course Id: {courseId}</h3>
<h3> Course Name : {courseName}</h3>
<h3> Cost : {cost}</h3>
<h3> Trainer : {trainer}</h3>
</div>
</div>
)
}
```

export default TestComponent;

<u>demo2-use-context-reducer: Example using useContext() and useReducer() Hooks demo2-use-context-reducer: Files Required:</u>

| 1. index.html | 2. index.js |
|-------------------|-----------------------|
| 3. courseTypes.js | 4. courseContext.ts |
| 5. App.js | 6. CourseComponent.js |

1. index.html

2. index.js

```
import React from "react";
import ReactDOM from "react-dom";
import App from "./App";
```

ReactDOM.render(<App />, document.getElementById("myroot"));

3. courseTypes.js

```
export const UPDATE_CNAME="UPDATE_CNAME";
export const UPDATE_PRICE="UPDATE_PRICE";
export const UPDATE_DURATION="UPDATE_DURATION";
export const UPDATE_TRAINER="UPDATE_TRAINER";
```



4. courseContext.js

```
import React, { useReducer } from "react";
import {UPDATE CNAME, UPDATE PRICE} from './courseTypes';
import {UPDATE_DURATION,UPDATE_TRAINER} from './courseTypes';
//1.Create the Context
const courseContext = React.createContext(null);
//2.Define Initial State
const initialState= {
 courseId: "C-101",
 courseName: "Master React ",
 price: 10000,
 duration: "50 Hrs",
 trainer: "SD"
}
//3. Define the Reducer
const myreducer = (currentState,action) => {
console.log("C","[courseContext]",action.type,action.payload);
switch(action.type){
 case UPDATE_CNAME:
    return {
      ...currentState,
     courseName:action.payload
   };
 case UPDATE_PRICE:
   return {
     ...currentState,
      price:action.payload
   };
 case UPDATE_DURATION:
   return {
      ...currentState,
      duration:action.payload
   };
 case UPDATE_TRAINER:
   return {
     ...currentState,
      trainer:action.payload
   };
   default:
   return currentState
```



```
export const MyCourseProvider = (props) => {
      //4.use the useReducer() Hook
    const [courseData,courseDispatch] = useReducer(myreducer,initialState);
      return(
         //5.Specify the Provider
         <courseContext.Provider value={</pre>
           {courseData:courseData,
           courseDispatch:courseDispatch
          }>
         {props.children}
         </courseContext.Provider>
      );
     }
   //6. Export the Context
   export const MyCourseContext = courseContext;
5. <u>App.js</u>
   import React, { Component } from "react";
   import "bootstrap/dist/css/bootstrap.min.css";
   import { MyCourseProvider } from "./CourseContext";
   import CourseComponent from "./CourseComponent";
   class App extends Component {
    render() {
     return (
      <MyCourseProvider>
      <div className="container">
      <CourseComponent/>
      </div>
      </MyCourseProvider>
   export default App;
```



6. CourseComponent.js

```
import React, { useContext } from "react";
import { MyCourseContext } from "./courseContext";
import { UPDATE_CNAME, UPDATE_PRICE } from './courseTypes';
import { UPDATE_DURATION, UPDATE_TRAINER } from './courseTypes';
const CourseComponent = (props) => {
const mycourseConsumer = useContext(MyCourseContext);
const { courseData, courseDispatch } = mycourseConsumer;
const { courseId, courseName, price, duration, trainer } = courseData;
const updateCourseName = (updatedCname) => {
console.log("A", "CourseComponent - updateCourseName", updatedCname);
courseDispatch({
type: UPDATE_CNAME,
payload: updatedCname
});
}
const updatePrice = (updatedPrice) => {
console.log("A", "CourseComponent - updatePrice", updatedPrice);
courseDispatch({
type: UPDATE_PRICE,
payload: updatedPrice
});
}
const updateDuration = (updatedDuration) => {
console.log("A", "CourseComponent - updateDuration", updatedDuration);
courseDispatch({
type: UPDATE DURATION,
payload: updatedDuration
});
}
const updateTrainer = (updatedTrainer) => {
console.log("A", "CourseComponent - updateTrainer", updatedTrainer);
courseDispatch({
type: UPDATE TRAINER,
payload: updatedTrainer
});
}
```



```
return (
<div className="container">
<br />
<b><u>
<h3 className="text-center"> Course Info</h3> </u> </b>
<br />
<div>
<h4> Course Id: {courseId}</h4> 
<
<h4> Course Name : {courseName}</h4> 
<button onClick={updateCourseName.bind(this, "Master React 16")} className="btn</pre>
btn-success">
Update Course Name
</button>
<h4> Price : {price}</h4> 
<button onClick={updatePrice.bind(this, 13000)} className="btn btn-success">
Update Price
</button>
<h4> Duration: {duration}</h4> 
<button onClick={updateDuration.bind(this, "75 Hrs")} className="btn btn-success">
Update Duration
</button>
```





<u>demo3-use-ref-hook</u>: Example using useRef() Hook <u>demo3-use-ref-hook</u>: Files Required:

| 1. index.html | 2. index.js |
|---------------|----------------------|
| 3. App.js | 4. LoginComponent.js |

- 1. index.html
- 2. index.js
- 3. App.is

4. LoginComponent.js

```
import React, { useEffect, useRef } from "react";
const LoginComponent = () => {
const usernameInput= useRef();
const passowrdInput= useRef();
const verifyUser = () => {
console.log("verifyUser()");
console.log("UN: ",usernameInput.current.value);
console.log("PW: ",passowrdInput.current.value);
}
useEffect( () => {
//usernameInput.current.focus();
passowrdInput.current.focus();
},[]);
return(
<div className="container">
```



```
Username 
<input ref={usernameInput} type="text" name="username"/> 
 Password 
<input ref={passowrdInput} type="password" name="password"/>

<button onClick={verifyUser.bind(this)}> Login Now </button> 
</div>
);
}
```

export default LoginComponent;

<u>demo4-memo-function: Example using React.memo() function</u> <u>demo4-memo-function: Files Required:</u>

| 1. index.html | 2. index.js |
|----------------------|----------------------|
| 3. App.js | 4. PriceComponent.js |
| 5. OfferComponent.js | |

1. index.html

2. index.js

3. <u>App.is</u>

```
import React from "react";
import "bootstrap/dist/css/bootstrap.min.css";
import { useState } from "react";
import PriceComponent from "./PriceComponent";
const App = () => {
console.log("[App] - Rendered");
const [courseName,setCourseName] = useState("React JS");
const [coursePrice,setCoursePrice] = useState(10000);
```



```
const updateName = () => {
if(courseName === "React JS"){
setCourseName("React JS 16");
}else{
setCourseName("React JS");
}
}
const updatePrice = () => {
if(coursePrice===10000){
setCoursePrice(12000)
}else{
setCoursePrice(10000)
}
}
return (
<div className="container">
Course Name 
{courseName} 
<button onClick={updateName.bind(this)} className="btn btn-success">
Update Name
</button>
Course Price 
{coursePrice} 
<button onClick={updatePrice.bind(this)} className="btn btn-success">
Update Price
</button>
<PriceComponent price={coursePrice}/>
</div>
);
export default App;
```



4. PriceComponent.js

export default React.memo(PriceComponent);

5. OfferComponent.js

export default React.memo(OfferComponent);



<u>demo5-use-callback-hook</u>: Example using useCallback() Hook <u>demo5-use-callback-hook</u>: Files Required:

| 1. index.html | 2. index.js |
|-----------------------|-----------------------|
| 3. App.js | 4. TestComponent.js |
| 5. HeaderComponent.js | 6. CourseComponent.js |
| 7. ButtonComponent.js | |

1. index.html

2. index.js

3. App.is

```
import React from "react";
import "bootstrap/dist/css/bootstrap.min.css";
```

import TestComponent from "./TestComponent";

4. TestComponent.js

```
import React, { useState,useCallback} from "react";
```

```
import HeaderComponent from './HeaderComponent'; import CourseComponent from './CourseComponent'; import ButtonComponent from './ButtonComponent';
```

```
const TestComponent = (props) => {
console.log("[TestComponent] - Rendered");
```

```
const [reactPrice,setReactPrice] = useState(10000)
const [angularPrice,setAngularPrice] = useState(10000);
const [devOpsPrice,setDevOpsPrice] = useState(10000);
```

```
/*
const updateReactPrice = () => {
console.log("updateReactPrice");
setReactPrice(reactPrice+2000);
}
```



```
const updateAngularPrice = () => {
console.log("updateAngularPrice");
setAngularPrice(angularPrice+2000);
const updateDevOpsPrice = () => {
console.log("updateDevOpsPrice");
setDevOpsPrice(devOpsPrice+2000);
}
*/
const updateReactPrice = useCallback(
() => {
console.log("updateReactPrice");
setReactPrice(reactPrice+2000);
[reactPrice], [
);
const updateAngularPrice = useCallback(
() => {
console.log("updateAngularPrice");
setAngularPrice(angularPrice+2000);
},[angularPrice]
);
const updateDevOpsPrice = useCallback(
() => {
console.log("updateDevOpsPrice");
setDevOpsPrice(devOpsPrice+2000);
},[devOpsPrice]
);
return(
<div className="container">
<HeaderComponent />
<br/>
<CourseComponent courseName="React" price={reactPrice}/> 
<ButtonComponent clickHandler={updateReactPrice} courseName="React">
Update React Price
</ButtonComponent>
```



```
<CourseComponent courseName="Angular" price={angularPrice}/> 
  <ButtonComponent clickHandler={updateAngularPrice} courseName="Angular">
  Update Angular Price
  </ButtonComponent>
  <CourseComponent courseName="DevOps" price={devOpsPrice}/> 
  <ButtonComponent clickHandler={updateDevOpsPrice} courseName="DevOps">
  Update DevOps Price
  </ButtonComponent>
  </div>
  );
  }
  export default TestComponent;
5. <u>HeaderComponent.js</u>
  import React from "react";
  const HeaderComponent = (props) => {
    console.log("[HeaderComponent] - Rendered");
    return (
     <div className="container">
       <h5> useCallback() Hook Demo</h5>
     </div >
    );
  }
  // export default HeaderComponent;
  export default React.memo(HeaderComponent);
```



6. CourseComponent.js

7. ButtonComponent.js



demo6-use-memo-hook: Example using useMemo() Hook demo6-use-memo-hook: Files Required:

| 1. index.html | 2. index.js |
|---------------|-------------|
| 3. App.js | 4. |

1. index.html

2. index.js

3. App.js

```
import React from 'react';
import { useState, useMemo } from 'react';
function App() {
const [numbers, setNumbers] = useState({ firstNum: 10, secondNum: 10 })
 const result = useMemo(() => {
 console.log("Function called for doing Math");
 return numbers.firstNum + numbers.secondNum;
}, [numbers.firstNum, numbers.secondNum]);
 const result = () => {
  console.log("Function called for doing Math");
  return numbers.firstNum + numbers.secondNum;
};
*/
 const changeNumbers = () => {
 setNumbers({
  firstNum: numbers.firstNum + 5,
  secondNum: numbers.secondNum
 });
}
return (
  <div className="container">
   <h2>Sum: {numbers.firstNum} + {numbers.secondNum} = {result}</h2>
   <button onClick={() => changeNumbers()}>Change Numbers</button>
   </div>
 </div>
);
export default App;
```



<u>demo7-custom-hook-1</u>: Writing Custom Hooks <u>demo7-custom-hook-1</u>: Files Required:

| 1. index.html | 2. index.js |
|----------------------|--------------------|
| 3. App.js | 4. useDocTitle.js |
| 5. HelloComponent.js | 6. HaiComponent.js |

1. index.html

2. index.js

3. App.is

4. useDocTitle.js

```
import { useEffect } from "react";

const useDocTitle = (color, count) => {

    useEffect(() => {

        document.title = `You clicked ${color} button ${count} times`;

    }, [count]);
}

export default useDocTitle;
```



5. HelloComponent.js

```
import React, { useState } from "react";
import useDocTitle from "./useDocTitle";
const HelloComponent = () => {
 const [count, setCount] = useState(0);
 const updateCounter = () => {
   setCount(count + 1);
 useDocTitle("Green", count);
 return (
   <div className="container">
     <br />
     <h2> I am Hello Component - {count}</h2>
     <br />
     <button onClick={updateCounter} className="bg-success">
       You clicked me {count} times
     </button>
   </div >
 );
}
```

export default **HelloComponent**;

6. HaiComponent.js

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

const HaiComponent = () => {
    const [count, setCount] = useState(0);

    const updateCounter = () => {
        setCount(count + 1);
    }

    useDocTitle("Red", count);

return (
    <div className="container">
```



export default HaiComponent;

<u>demo8-custom-hook-2</u>: Writing Custom Hooks <u>demo8-custom-hook-2</u>: Files Required:

| 1. index.html | 2. index.js |
|----------------------|--------------------|
| 3. App.js | 4. useCounter.js |
| 5. HelloComponent.js | 6. HaiComponent.js |

1. index.html

2. index.js

3. App.is

```
import React, { Component } from "react";
import "bootstrap/dist/css/bootstrap.min.css";
```

import HelloComponent from "./HelloComponent"; import HaiComponent from "./HaiComponent";



4. useCounter.js

```
import { useState } from "react";
   const useCounter = (initialCount = 0, value) => {
    const [count, setCount] = useState(initialCount);
    const doIncrement = () => {
      setCount(count + value);
    }
    const doDecrement = () => {
      setCount(count - value);
    }
    const doReset = () => {
      setCount(initialCount);
    }
    return [count, doIncrement, doDecrement, doReset];
   export default useCounter;
5. HelloComponent.is
   import React from "react";
   import useCounter from "./useCounter";
   const HelloComponent = () => {
    const [count, doIncrement, doDecrement, doReset] = useCounter(0, 1);
    return (
      <div className="container">
        <br />
        <h2> I am Hello Component - {count}</h2>
        <button onClick={doIncrement}> Increment/button> &nbsp;
        <button onClick={doDecrement}> Decrement</button> &nbsp;
        <button onClick={doReset}> Reset </button>
      </div >
    );
   }
   export default HelloComponent;
```



6. HaiComponent.js

demo9-custom-hook-3: Writing Custom Hooks

demo9-custom-hook-3: Files Required:

| 1. index.html | 2. index.js |
|------------------|-----------------|
| 3. App.js | 4. useAxios.js |
| 5. CourseList.js | 6. BooksList.js |
| 7. AddBook.js | 8. MyBook.js |
| 9. DeleteBook.js | |

1. index.html

2. index.js

3. <u>App.is</u>

```
import React from "react";
import "bootstrap/dist/css/bootstrap.min.css";
import { BookList } from './BookList';

//import { CourseList } from './ CourseList;
//import { AddBook } from "./AddBook";
//import { MyBook } from "./MyBook";
//import { DeleteBook } from "./DeleteBook";

export const App = () => {
  return (
```



```
<div className="container">
      <br />
    <CourseList />
            Test these One by One
     { /*
     <BookList />
     <AddBook/>
      <MyBook mybookId="400"/>
      <MyBook mybookId="400"/>
      <MyBook mybookId="400"/>
     <DeleteBook mybookId="388"/>
     <DeleteBook mybookId="388"/>
     */ }
     </div >
    );
   }
4. useMvAxios.is
   import { useState, useEffect } from 'react';
   import axios from 'axios';
   axios.defaults.baseURL = "https://www.coursecube.com/jlc-bookstore";
   export const useMyAxios = (axiosParams) => {
     const [response, setResponse] = useState([]);
     const [error, setError] = useState(");
     const [loading, setLoading] = useState(true);
     const processRequest = async (params) => {
       try {
         const result = await axios.request(params);
         setResponse(result.data);
         console.log("useMyAxios : Result : ", result.data);
       } catch (error) {
         setError(error);
       } finally {
         setLoading(false);
     };
        useEffect(() => {
          processRequest(axiosParams);
        }, []); // execute only once
     return { response, error, loading };
   };
```



5. CourseList.js

```
import React from "react";
import "bootstrap/dist/css/bootstrap.min.css";
import { useMyAxios } from "./useMyAxios";
export const CourseList = () => {
const { response, loading, error } = useMyAxios({
  method: 'GET',
  url: '/mini-courses',
});
const mycourseList = response.map(
  mycourse => {
  return (
  {mycourse.courseId} 
  {mycourse.courseName} 
  {mycourse.duration} 
  {mycourse.trainer} 
  {mycourse.enrollments} 
  <button className="btn btn-success"> View Details </button>
  );
  }
);
const mycourseListToDisplay = (
  <thead>
   Course ID
   Course Name
   Duration
   Trainer
   Enrollments
  </thead>
  {mycourseList}
  );
```



```
const messageToDisplay = <h3>{error.message} </h3>;
  let toDisplay = null;
  if (loading) {
        toDisplay = (<h3>Loading...Please Wait...</h3>);
  }
  else {
     if (error) {
        toDisplay = messageToDisplay;
     } else {
        toDisplay = mycourseListToDisplay;
     }
  }
  return (
  <div className="container">
  <br />
  {toDisplay}
  </div >
  );
  }
6. BookList.is
  import React from "react";
  import "bootstrap/dist/css/bootstrap.min.css";
  import { useMyAxios } from "./useMyAxios";
  export const BookList = () => {
  const { response, loading, error } = useMyAxios({
  method: 'GET',
  url: 'https://www.coursecube.com/jlc-bookstore/mybooks',
  data: {
  },
  });
  const mybooksList = response.map((mybook) => {
  return (
     {mybook.bookId} 
     {mybook.bookName} 
     {mybook.author} 
     {mybook.price} 
     {mybook.category}
```



```
{mybook.publications} 
  <button className="btn btn-success"> View Details </button>
  );
});
const mybooksListToDisplay = (
  <thead>
   Book ID
   Book Name
   Author
   Price
   Category
   Publications
  </thead>
  {mybooksList}
  );
const messageToDisplay = <h3>{error.message} </h3>;
let toDisplay = null;
if (loading) {
  toDisplay = (<h3>Loading...Please Wait...</h3>);
}
else {
  if (error) {
  toDisplay = messageToDisplay;
  } else {
  toDisplay = mybooksListToDisplay;
  }
}
return (
<div className="container">
<br />
{toDisplay}
</div >
);
```



7. AddBook.js

```
import React from "react";
   import "bootstrap/dist/css/bootstrap.min.css";
   import { useMyAxios } from "./useMyAxios";
   export const AddBook = () => {
     const { response, loading, error } = useMyAxios({
       method: 'POST',
       url: '/addBook',
      headers: {
        accept: '*/*'
       },
       data: {
         bookName: "Learn Java15",
         author: "Dande",
         price: 999,
         category: "Java",
         publications: "JLC"
      },
     });
     console.log("Response : ", response);
     return (
       <div className="container">
         {response}
       </div >
     );
   }
8. MyBook.js
   import React from "react";
   import "bootstrap/dist/css/bootstrap.min.css";
   import { useMyAxios } from "./useMyAxios";
   export const MyBook = (props) => {
     const { response, loading, error } = useMyAxios({
       method: 'GET',
       url: \mybook/\foots\foots\foots\rightarrow\,
```

});



```
console.log("MyBook - Response : ", response);
const mybook= response;
return (
  <div className="container">
  {mybook.bookId} 
  {mybook.bookName} 
  {mybook.author} 
  {mybook.price} 
  {mybook.category} 
  {mybook.publications} 
  </div >
);
}
import React from "react";
import "bootstrap/dist/css/bootstrap.min.css";
import { useMyAxios } from "./useMyAxios";
```

9. <u>DeleteBook.is</u>

```
export const DeleteBook = (props) => {
 const { response, loading, error } = useMyAxios({
   method: 'DELETE',
   url: \deleteBook/\{props.mybookId}\,\
 });
 console.log("MyBook - Response : ", response);
 return (
    <div className="container">
     {response}
    </div >
 );
}
```