Lesson-End Project
Create a React Application Using All Hooks

Objective: To develop an application that displays a random number and employs the useReducer, useEffect, and custom Hooks

Tools required: Node terminal, React App, and Visual Studio Code

Prerequisites: Knowledge of creating a React app and understanding of the folder structure

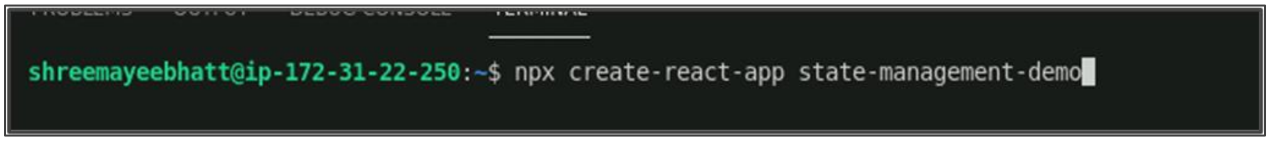
Steps to be followed:

1. Create a new **React** app
2. Create a new file called **useRandomNumber.js** in the **src** directory
3. Import **useRandomNumber** from the **useRandomNumber.js** file in **App.js**
4. Run the app and view it in the browser

Step 1: Create a new React app

1.1 Open the terminal and run the following command:

npx create-react-app state-management-demo



```
shreemayeebhatt@ip-172-31-22-250:~$ npx create-react-app state-management-demo
```

This command will create a new React app with the name **state-management-demo.**

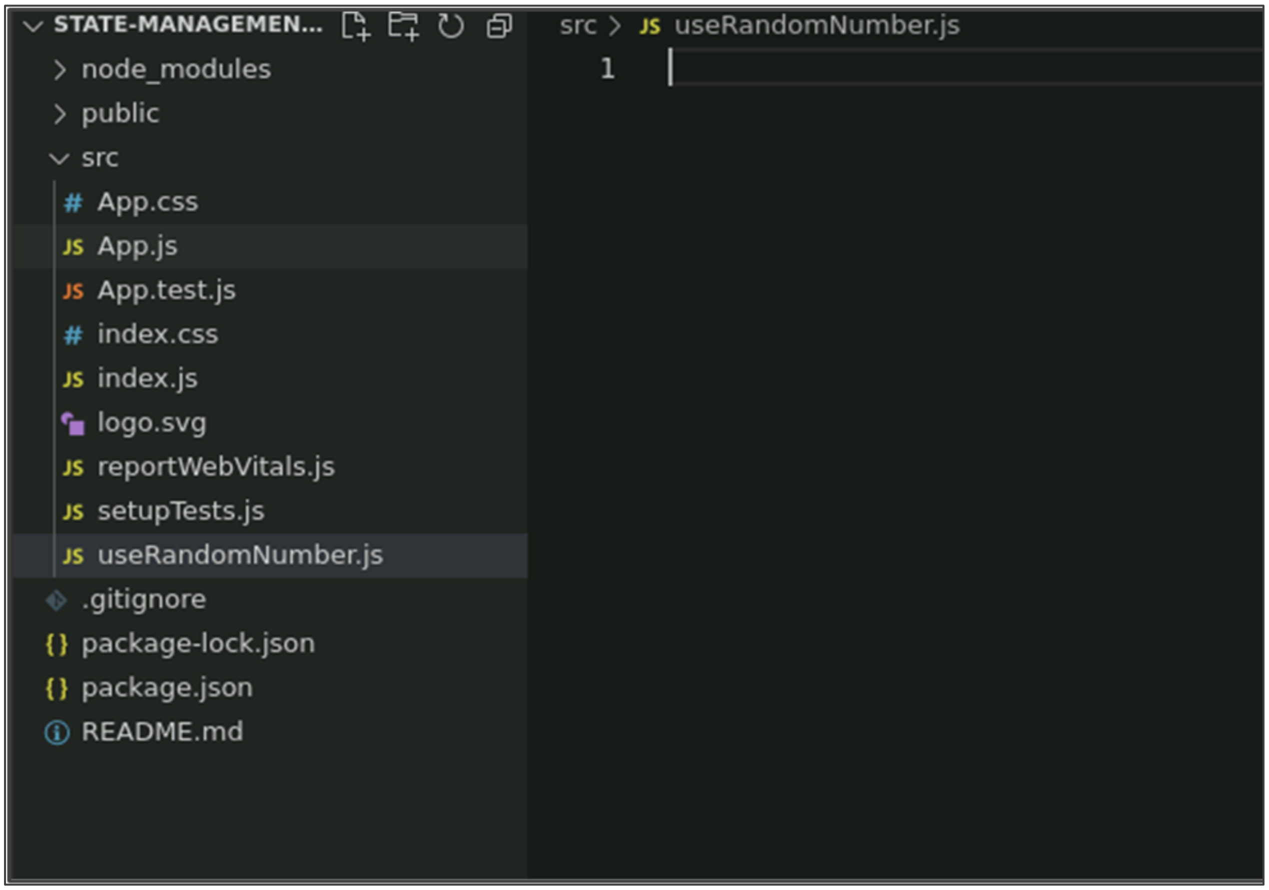
1.2 Run the **cd state-management-demo** command in the terminal

```
shreemayeebhatt@ip-172-31-22-250:~$ npx create-react-app state-management-demo
```

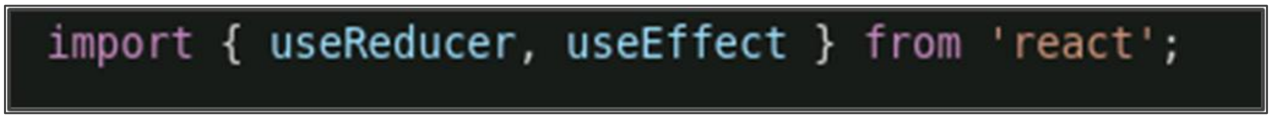
This will change the current directory to the newly created **React** app directory.

Step 2: Create a new file called useRandomNumber.js in the src directory

2.1 Open your React project **state-management-demo** in the **Visual Studio Code** and create a new file called **useRandomNumber.js** within the **src** directory



2.2 Inside the **useRandomNumber.js** file, import the **useReducer** and **useEffect** Hooks from the **React** library



```
import { useReducer, useEffect } from 'react';
```

2.3 Define the **reducer** function that takes a **state** and **action** as parameters and returns a new state based on the action type

```
const reducer = (state, action) => {
switch (action.type) {
case 'SET_NUMBER':
return { number: action.payload };
default:
return state;
}
};
```

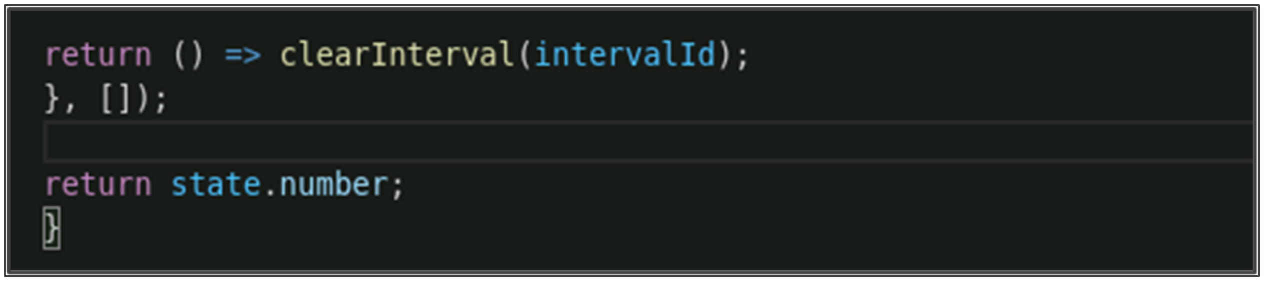
2.4 Implement the **useRandomNumber** function that utilizes the **useReducer** Hook to manage the state and dispatch actions

```
function useRandomNumber() {
const [state, dispatch] = useReducer(reducer, { number: null });
```

2.5 Inside the **useEffect** Hook, use **setInterval** to generate a random number every second and dispatch an action to update the state

```
useEffect(() => {
const intervalId = setInterval(() => {
const number = Math.floor(Math.random() * 100) + 1;
dispatch({ type: 'SET_NUMBER', payload: number });
}, 1000);
```

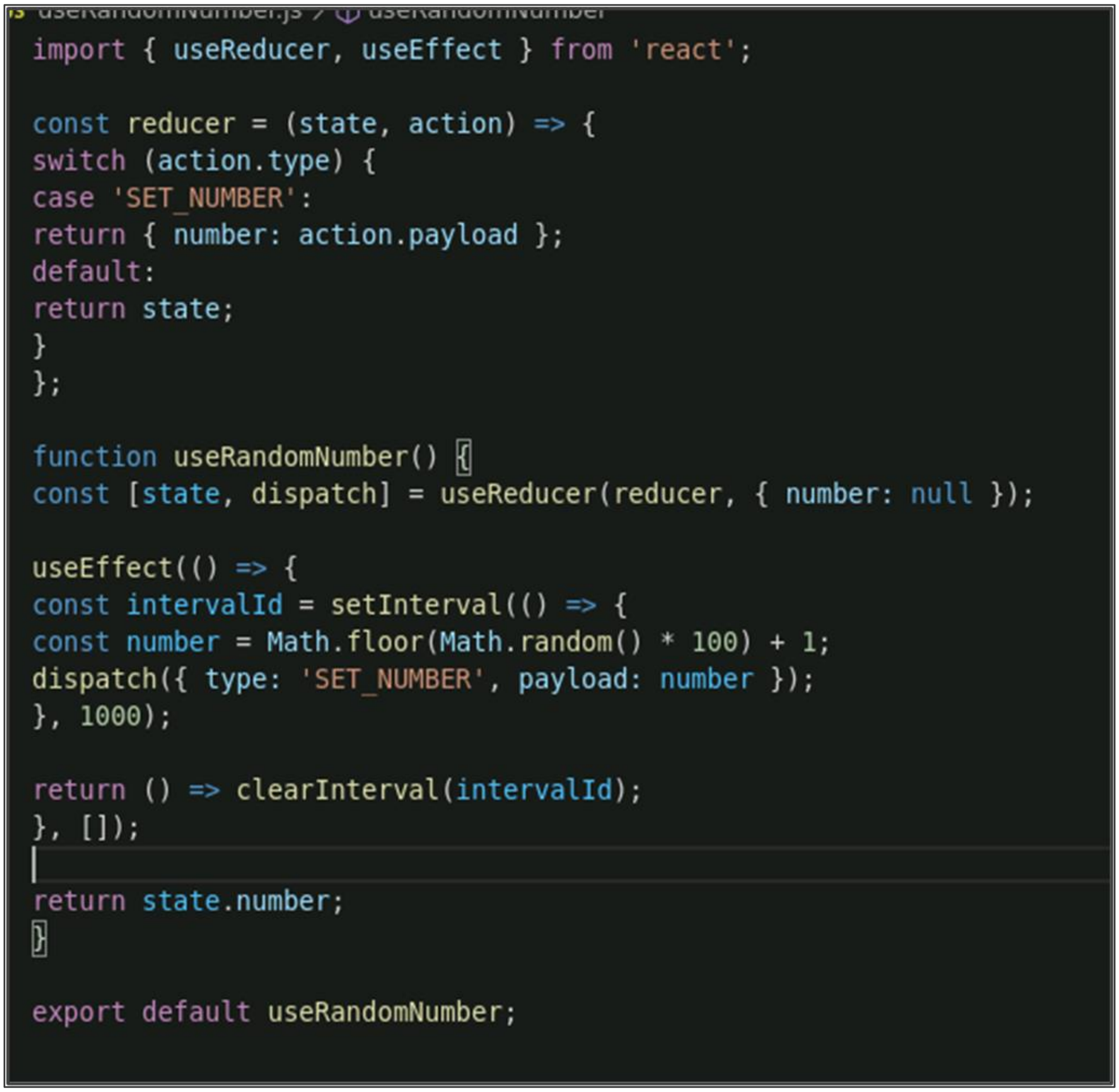
2.6 Return the current value of the **number** state



```
return () => clearInterval(intervalId);
}, []);

return state.number;
}
```

Note: Refer to the following code to configure the **useRandomNumber.js** file:

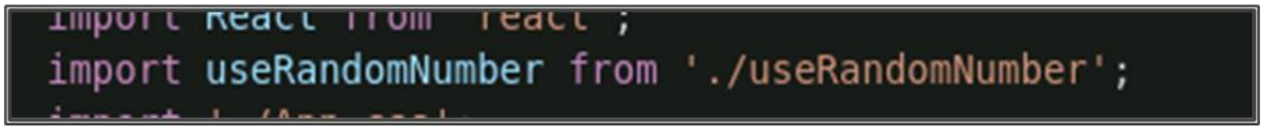
```
import { useReducer, useEffect } from 'react';

const reducer = (state, action) => {
switch (action.type) {
case 'SET_NUMBER':
return { number: action.payload };
default:
return state;
}
};

function useRandomNumber() {
const [state, dispatch] = useReducer(reducer, { number: null });

useEffect(() => {
const intervalId = setInterval(() => {
const number = Math.floor(Math.random() * 100) + 1;
dispatch({ type: 'SET_NUMBER', payload: number });
}, 1000);

return () => clearInterval(intervalId);
}, []);

return state.number;
}

export default useRandomNumber;
```



```
import { useReducer, useEffect } from 'react';

const reducer = (state, action) => {
switch (action.type) {
case 'SET_NUMBER':
return { number: action.payload };
default:
return state;
}
};

function useRandomNumber() {
const [state, dispatch] = useReducer(reducer, { number: null });

useEffect(() => {
const intervalId = setInterval(() => {
const number = Math.floor(Math.random() * 100) + 1;
dispatch({ type: 'SET_NUMBER', payload: number });
}, 1000);

return () => clearInterval(intervalId);
}, []);

return state.number;
}

export default useRandomNumber;
```

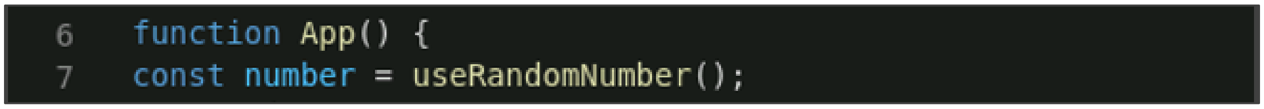
Step 3: Import useRandomNumber from the useRandomNumber.js file in App.js

3.1 Open the **App.js** file of the **state-management-demo** project and import the **useRandomNumber** Hook from the **useRandomNumber.js** file



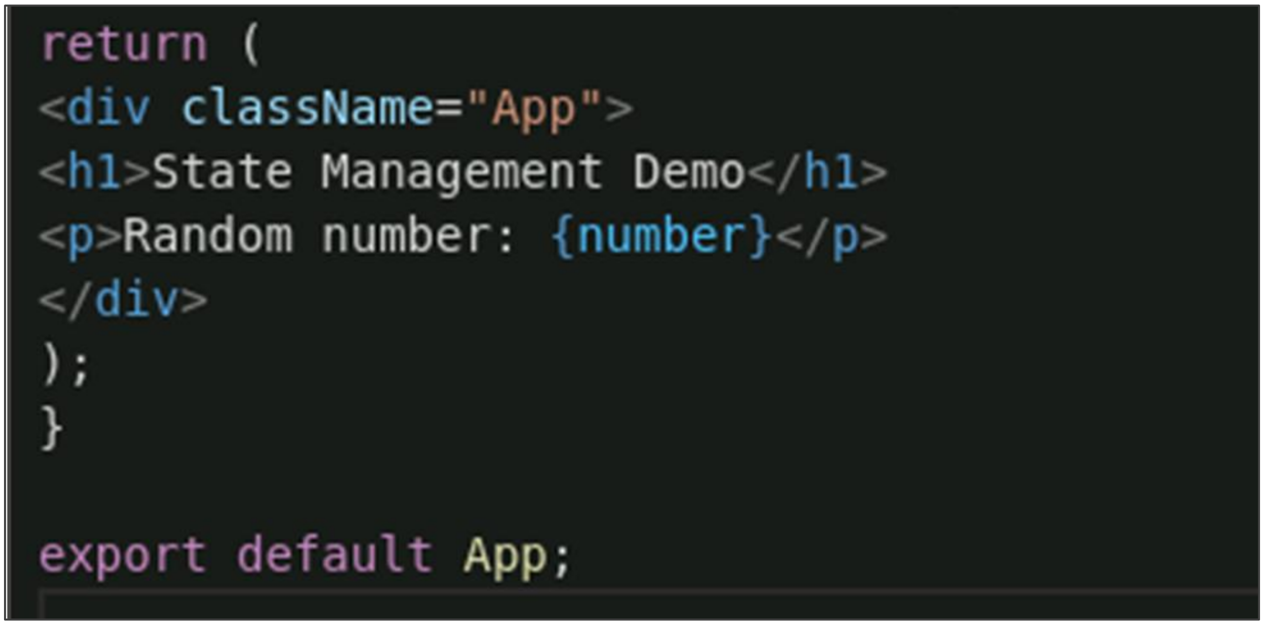
```
import React from 'react';
import useRandomNumber from './useRandomNumber';
```

3.2 Inside the **App** function component, call the **useRandomNumber** Hook and assign the returned value to the **number** variable



```
function App() {
const number = useRandomNumber();
```

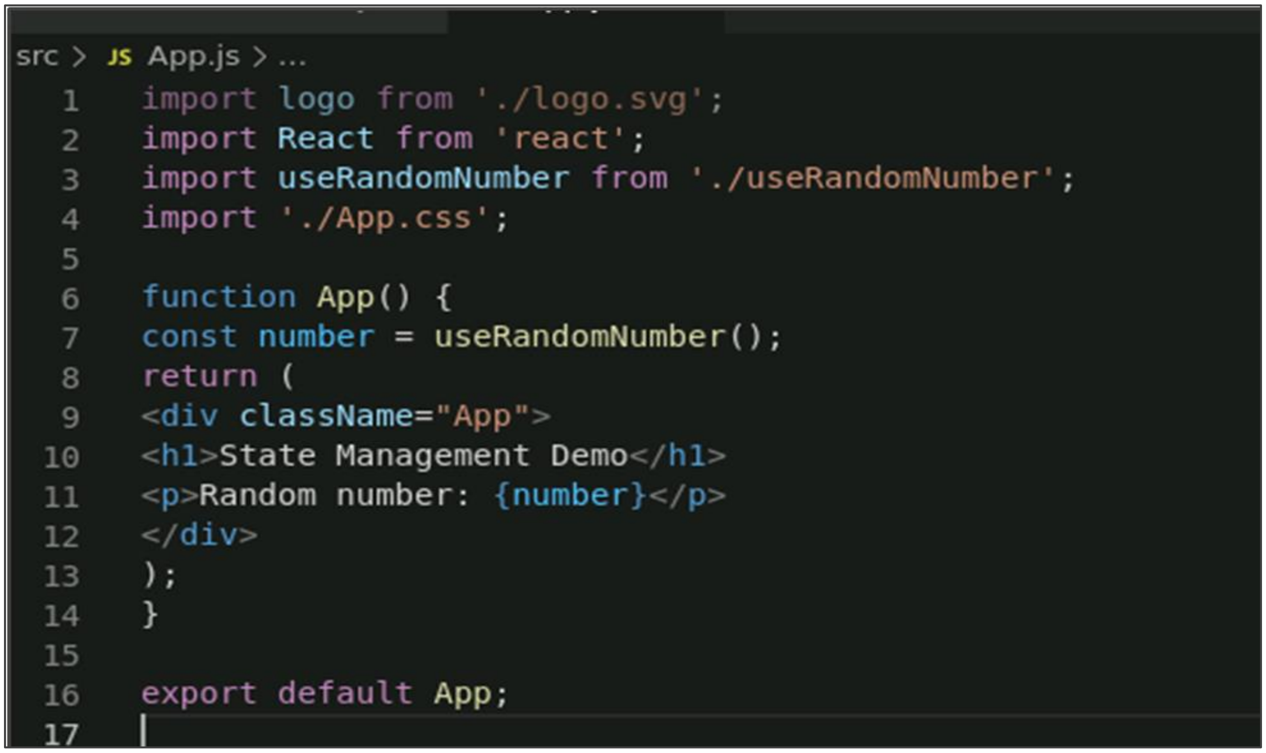
3.3 In the return statement, use the **number** variable in the JSX to display a random number



```
return (
<div className="App">
<h1>State Management Demo</h1>
<p>Random number: {number}</p>
</div>
);
}

export default App;
```

Note: Refer to the following code to configure the **App.js** file:

```
import React from 'react';
import useRandomNumber from './useRandomNumber';
import './App.css';

function App() {
const number = useRandomNumber();

return (
<div className="App">
    <h1>State Management Demo</h1>
    <p>Random number: {number}</p>
</div>

    );
    }

export default App;
```



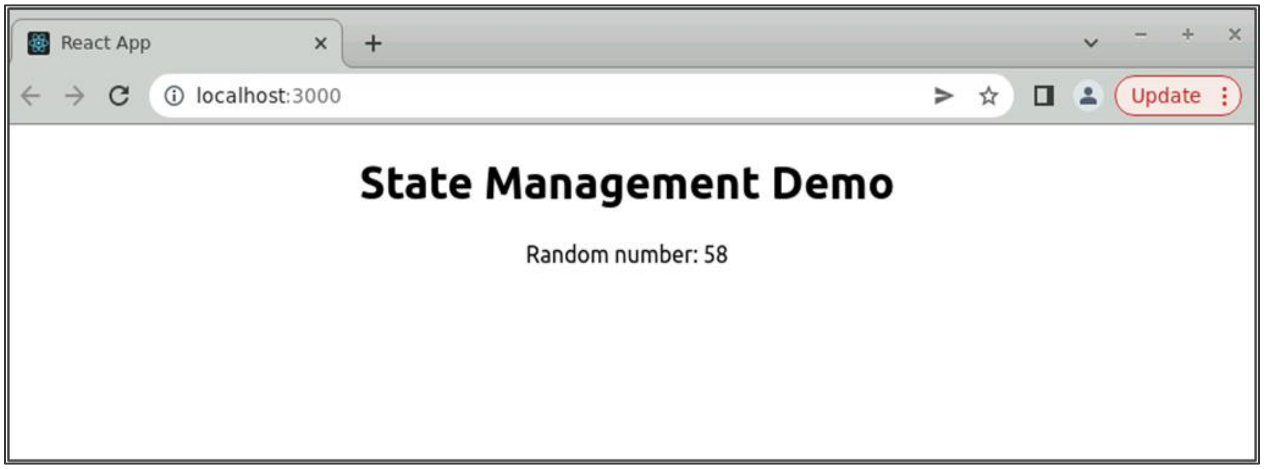
src > JS App.js > ...

```
import logo from './logo.svg';
import React from 'react';
import useRandomNumber from './useRandomNumber';
import './App.css';

function App() {
const number = useRandomNumber();
return (
<div className="App">
<h1>State Management Demo</h1>
<p>Random number: {number}</p>
</div>
);
}

export default App;

```

Step 4: Run the app and view it in the browser

4.1 In the terminal, navigate to the project directory and run the **npm start** command to start the app

4.2 Open your browser and navigate to http://localhost:3000



State Management Demo

Random number: 58

The app should be running, and you should see a simple app that displays a random number that changes every second.

With this, you've successfully created a React application to demonstrate the working of **useReducer**, **useEffect**, and custom Hooks.