Scenario:

A startup wants a simple front-end dashboard to display static

information such as welcome messages and course details. The team

decides to use React for building reusable UI components.

1. How would you set up a new React project using tools like Create

React App or Vite?

To set up a new React project, follow these steps:

Step 1: Install Node.js on the system.

Step 2: Open Command Prompt or Terminal.

```
npx create-react-app dashboard
cd dashboard
npm start
```

2. What is the role of package.json in a React project?

package.json is an important file in a React project.

1. Stores project details (name, version)

2. Manages dependencies like React

3.Contains scripts to run the project

4. Helps install required libraries

Without package.json, a React project cannot run properly.

3. How do you create a functional component in React?

A functional component is created using a JavaScript function that returns JSX.

Example :

```
function Welcome() {

  return <h1>Welcome to Dashboard</h1>;

}

export default Welcome;
```

4. How are components rendered inside the main App component?

Answer

Components are rendered inside the App component by importing and using them as HTML-like tags.

```
import Welcome from "./Welcome";

function App() {

return (

 <div>

<Welcome />

 </div>

  );

}

export default App;
```

5. What are the benefits of breaking the UI into small reusable

Components?

Breaking UI into small components

Improves code reusability
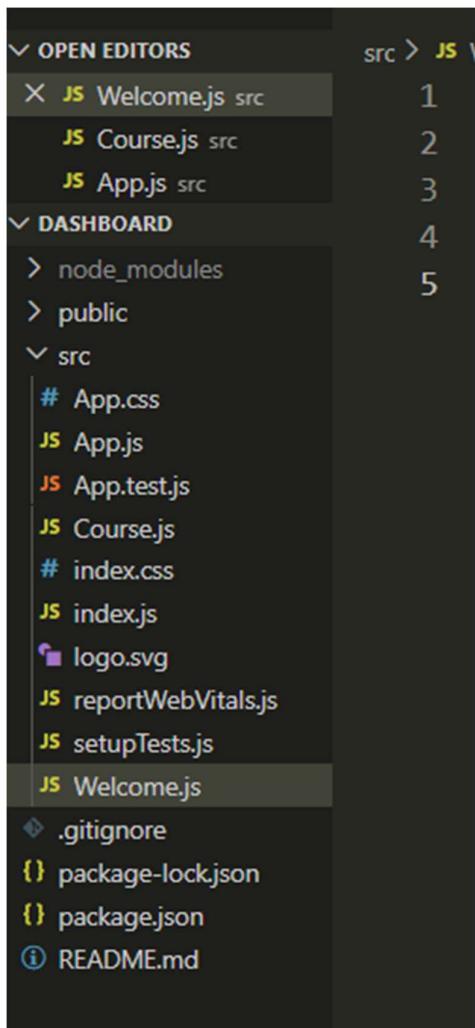
Makes code easy to understand

Simplifies maintenance

Reduces errors

Helps

Structure:

Welcome.js:

```
function Welcome(props) {

  return <h1>{props.message}</h1>;

}
```

export default Welcome;

course.js:

```
function Course(props) {

  return (

    <div>

      <h2>{props.title}</h2>

      <p>Course Name: {props.name}</p>

      <p>Duration: {props.duration}</p>

    </div>

  );

}


export default Course;


app.js:

import { render, screen } from '@testing-library/react';

import App from './App';


test('renders learn react link', () => {

  render(<App />);

  const linkElement = screen.getByText(/learn react/i);

  expect(linkElement).toBeInTheDocument();

});
```
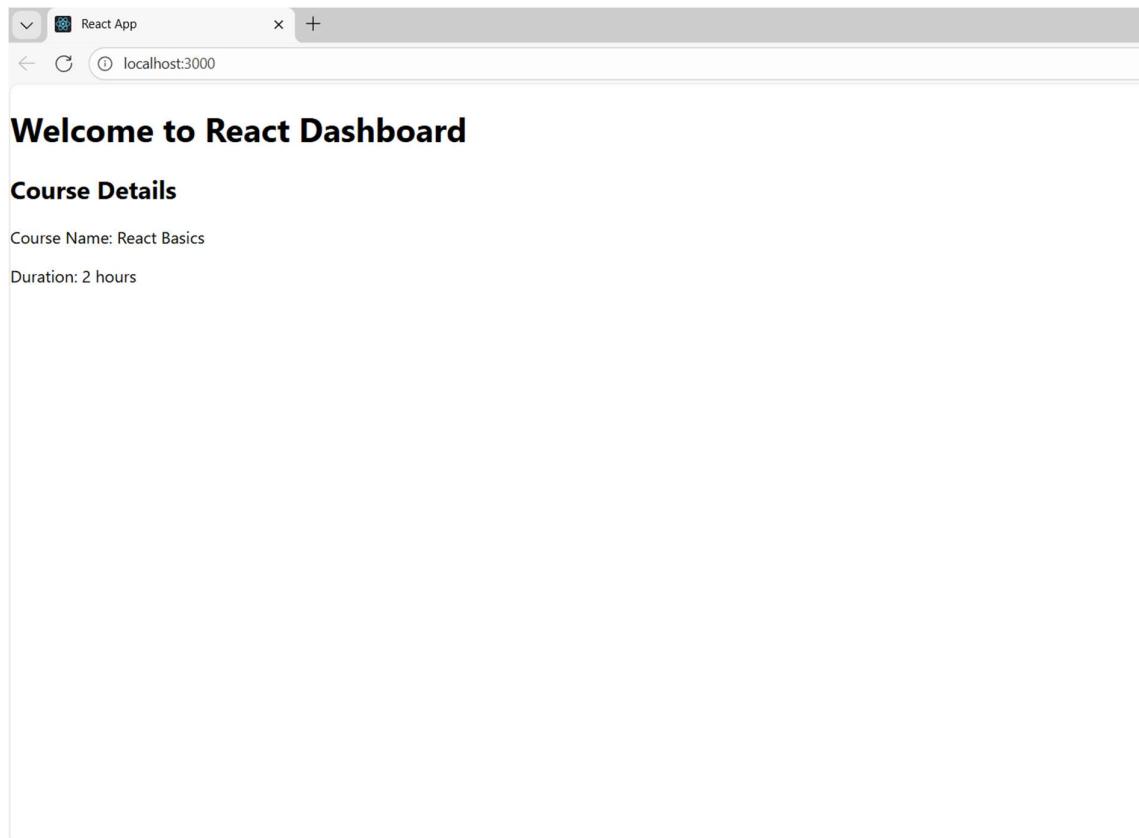
Output:

Welcome to React Dashboard

Course Details

Course Name: React Basics

Duration: 2 hours