RoU-69

FSD

Assignment (3)

Aim
Design an interactive front end application using React by implementing templating using components, State and Props, Class, Events. It must be responsive to scale across different platforms

Objective
To develop responsive, interactive front-end application using React.js that effectively demonstrate the fundamental concepts of component based architecture, state management and event handling. The application will serve as a practical exercise in building a scalable user interface by implementing templating with components, managing dynamic data with State and props and handling user interaction with events, ensuring a seamless user experience across various devices and screen sizes.

Theory:
Explain the role of State and props in react. How they do differ, and what is the primary purpose of each in managing data flow within component-based application
State and Props are both plain JavaScript objects that hold information which influences the output of a component's render. The primary difference is that props are passed to a component from its parent, making them immutable for receiving component, while State is managed within component itself

and can be changed overtime. The purpose of props is to allow components to communicate and pass data down the component tree, ensuring unidirectional data flow. The purpose of state is to allow a component to manage its own ~~interact~~ internal data, which can change in response to user actions or other events causing component to re-render.

What is React component?
React component is a reusable self-contained piece of code that represents a part of user interface. It takes in props and returns a react element that describes what should appear on the screen.
Class components are ES6 classes that extend react.component and have a render() method.
Functional components are javascript function that returns a react element.
The advantage of using a functional component with Hooks like useState and useEffect over a class component ~~simpler~~ include:

- Simple and more concise code
- Improved readability
- Better performance

9) Describe concept of "templating using components" in react?
Templating using components" is the practice of breaking down a user interface into small, reusable and independent components. Instead of writing a single, large HTML file,

you can create a tree of components, where each component is responsible for rendering a specific part of UI. This approach is superior to traditional web development methods that rely on monolithic HTML files because:

1) Reusability:
2) Maintainability
3) Modularity
4) Data flow

Q) How do you handle user events in react?
User events in React are handled by defining event handler, which are functions that are called when a specific event occurs. You can attach these event handlers to elements using camelCase attribute names such as onClick for buttonClick.
Code to demonstrate how event handler can be used to update a component's state:

```
import React, {useState} from 'react';
function counter() {
const [count, setCount] = useState(0);
const handleClick = () => {
setCount(count+1);
};
return(
<div>
<p> You clicked {count} times </p>
<button onClick = {handleClick}>
Click me
</button>
</div>
```

);
}
export default counter

Q] What is responsive web design?

Responsive web design is an approach to web development that aims to make web pages render well on a variety of devices and screen sizes. This ensures that user experience is consistent and accessible, regardless of whether they are using a desktop, tablet or phone

# Problem Statement:

~~Design webpage accordin~~

Create a responsive, interactive photo carousel application using React

8/11/25

Late