Assignment 03

Aim :

Design an interactive front end application using React by implementing templating using components, states and props, class, Events.

it must be responsive to scale across different platforms.

Objectives :

to develop a responsive, interactive front end application using React. is that effectively demonstrates 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 states and props, and handling user interaction with events, ensuring seamless user experience across various devices and screen sizes.

theory

Role of state and prop in React.

ans.

i) state is internal and changeable data of a component, while props are external data passed from parent to child and are read only.

ii) state is mutable and owned by the component itself.

iii) props are immutable and help make components reusable.

② React component : class vs func
ans.

i) A React component is a reusable piece of UI.

ii) class components use class, this.state, and lifecycle metho

iii) functional components are writt as functions and use hooks like useState and useEffect.

iv) functional components are preferred because they are li simpler, cleaner, avoid the this keyword, and are powerful with hooks.

③ Templating using components
ans.

i) templating in React means building UI by dividing it into small, reusable components such as navbar, card or button.

i) this it improves reusability, maintainability, handles dynamic data and makes applications scalable.

4) **Handling Events in React**
ans.

i) Events in React are written in camelCase such as onclick
ii) for example,
a button click can update state:

```
function Counter() {
  const [count, setCount] = React.
    useState(0);
  return (
    <button onclick = {() =>
      setCount (count + 1)} >
      count {count}
    </button>
  );
}
```

5) **Responsive Web Design in React**
ans.

i) Responsive design means making the layout adjust to different screen sizes like mobile, tablet and desktop.
ii) it is important for good user experience and accessibility.

iii) in React, it can be done using CSS media queries, CSS - in JS libraries or frameworks like Bootstrap and tailwind.

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