Assignment 6A

Roll No 71   Batch T14

Aim : WAP to implement the concept of props and state. Create a functional component and pass current date as props and in class component on button click display both date and time with change font and co

Theory :

In React, props and state are fundamental concepts that allow components to manage and share data. Props (short for properties) are used to pass data from a parent component to a child component, while state is used to manage data that can change over time and affect a component's behavior and rendering.

Props (Properties):

Props are a way to pass data from a parent component to a child component in React. They allow components to communicate and share information.

• Unidirectional Flow: Data in React flows unidirectionally: from parent to child. Parent components can pass data down to their children through props, but child components cannot directly modify the props they receive.

• Immutable: Props are immutable, meaning that once they are passed to a component, their values cannot be changed by that component. This ensures a clear and predictable data flow.

• Passing Data: To pass props, you add attributes to the JSX representation of a component when you render it. The child component can access the passed data through this.props inside its class definition.

• Use Cases: Props are useful for sharing data, settings, configuration, or even callback functions from a parent component to a child component. This enables the creation of reusable and modular components.

Implementing Props:

1. Defining a Parent Component: To implement props, start by creating a parent component that will pass data (props) to its child component.

2. Passing Props: In the parent component's render method, render the child component and pass data to it as props. Props are passed as attributes in JSX.

3. Receiving Props in Child Component: In the child component, access the props passed from the parent using this.props. You can use these props to display data or influence the behavior of the child component.

State:

State is a way for components to maintain and manage internal data that can change over time, influencing a component's rendering and behavior.

- Local to Component: Unlike props, which are passed from parent components, state is local to the component that owns it. Each class component can have its own state.

- Mutable: Unlike props, state can be changed within a component. However, it must be updated using the setState() method provided by React to ensure proper rendering and component lifecycle management.

- Rerendering: When state changes, React automatically re-renders the component and its children to reflect the updated data in the user interface.

- Initializing State: State is initialized in a component's constructor using this.state. It's an object that holds the initial values of the data you want to track.

- Updating State: To update state, you should never directly modify this.state. Instead, use the setState() method. This ensures that React's internal mechanisms are aware of the change and can manage rendering efficiently.

- Async Updates: setState() is asynchronous. React batches state updates to optimize performance. If you want to use the updated state immediately after calling setState(), you can provide a callback as the second argument.

- Use Cases: State is suitable for managing dynamic data within a component, such as user input, toggling UI elements, or maintaining any data that can change during the component's lifecycle.

Implementing State:

- Initializing State: To implement state, define a constructor in your class component and use the this.state object to initialize your initial state values.

- Updating State: To update state, use the this.setState() method. This method takes an object as an argument, where you specify the properties you want to update and their new values.

- Rendering State: Use the state values in your component's render method. This will allow your UI to reflect the changes in state

Conclusion:

Understood the concept of props and state. Implemented it in program where date was passed as props and state was used to change the style.