Mini Project: Finishing Up

Cart Component

What is the Array map() function in javascript?
The map() method creates a new array with the results of calling a function for every array element. The map() method loops on an array and calls the function for each element once.
Note: map() does not work the function for an empty array.

```
var numbers = [49, 64, 81, 4];

function myFunction() {
  x = numbers.map(Math.sqrt);
}
```

2,3,4,5

Output

What are the keys in React?
Keys are special characters that are used in React while rendering a list of elements. Keys quickly identify which items are deleted, changed or updated. In other words, keys are used to identify items in a list uniquely.
The second thing that should be remembered is that string is should always be taken as a key or if we have components with the same object properties then we can take ID as a key.

Using Keys with Components
Imagine a situation where you have created a different list item and is extracting the list items from that section. In that case, you will need to assign the key to the component you are returning from the iterator and not

from the list items. That is, you should give the keys to <Component /> and not to <li>. A good practice is to avoid mistakes remembering that anything you return from within the map () function is required to become a key.

Props

What are Props?
Props are a special keyword in React for properties that are used to pass arguments or properties from one component to another. Props are immutable and are passed in unidirectional flow (from parent to child).

State and Props:
The main difference between the state and the props is that the props do not change. That's why the container component should define state that can be reviewed and modified, while parts of the child should only transmit data from the state using props.

Using State and Props together:
The following example shows how to use state and props together in your app. We are defining the state in our parent component and passing it down to the child component using props. Inside the render function, we are setting headerProp and contentProp used in child components.

```
import React from 'react';

class App extends React.Component {
    constructor(props) {
        super(props);
        this.state = {
            head: "Header",
            data: "Content"
        }
    }
    render() {
        return (
            <div>
                <Header headerProp = {this.state.head}/>
                <Content contentProp = {this.state.data}/>
            </div>
        );
    }
}
```

State V/S Props:

State	Props
States are mutable with this.setState	Props are immutable
The state is set and then updated by the object.	Props determine the view upon creation and then remains static.
States are confined to a single component.	Props can be passed as attributes from parent component to child component.
States have less performance than props.	It has better performance.
Syntax: this.state.something	Syntax: this.props.something

Filter() Function

The filter() function created an array of filtered data that pass a condition. Filer () function does not work if the array is empty and filter() function does not change the original values of an array.

Difference between Functional And Class Components

Class Components	Functional Component
Class components require a render function to create a component and render it.	Functional component are plain javascript function that doesn't require render function and take arguments as props and return React component.
It must have render() function for returning HTML.	No render function is required.
They can implement logic and state and hence are called Stateful components.	No state is required to render these components so they are called stateless components. They are basically responsible for rendering UIs.
React lifecycle methods can't be used.	React lifecycle methods are used.

Summarising It

Let's summarise what we have learnt in this module:

- Learned about ArrayMap() function and looping of elements.
- Learned about keys in javascript
- Learned about props in detail and differentiated between state and props.
- Differentiated between functional and class components.
- Learnt about filter() function in brief.

Some References:

- React props

https://flaviocopes.com/react-props/

- Props v/s State

 https://flaviocopes.com/react-state-vs-props/

- Why do I need Keys in React Lists?

https://medium.com/@adhithiravi/why-do-i-need-keys-in-react-lists-dbb522188bbb