Skills Network

Working with Arrays in React Components

IBM

What you will learn

Define arrays and their importance in React components

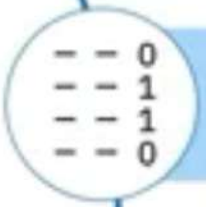
Describe how to declare arrays in React

Describe how to traverse arrays in React components

Describe how to work with arrays in React

Defining an array

A data structure in JavaScript



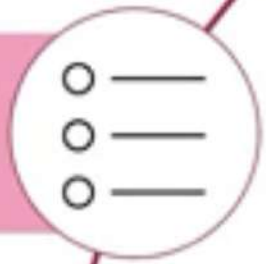
Stores multiple values in a single variable

Comma-separated list of elements within []

Include numbers, strings, objects

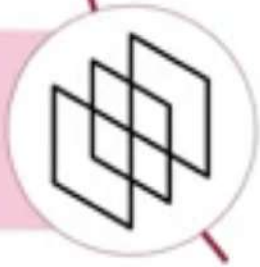
Arrays in React

Manage lists of data



Build dynamic and interactive user interfaces

Rendered by components



Array literal

```
const numbers = [1, 2, 3, 4, 5];
const names = ['Alice', 'Bob', 'Charlie'];
```

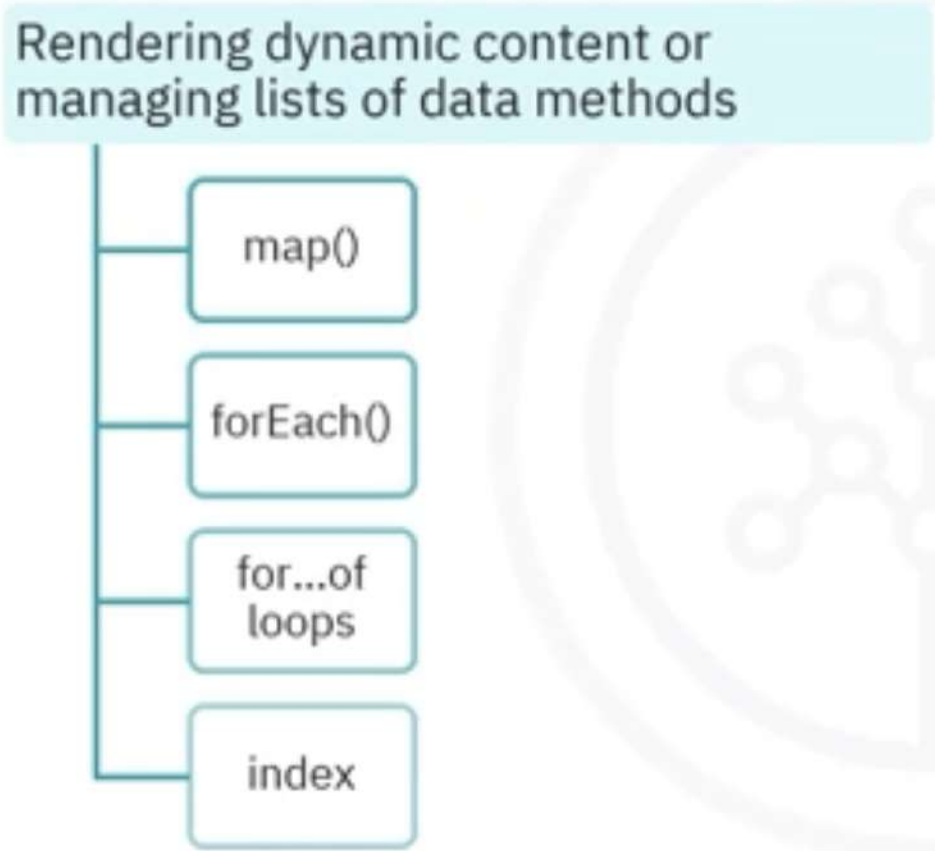
Stateful array

```
import React, { useState } from 'react';
const MyComponent = () => {
  const [todos, setTodos] = useState(['Learn React', 'Build Project']);
 // Stateful array initialized with default values
 // Other component logic...
}
```

Dynamically constructed arrays

```
const numbers = [];
for (let i = 0; i < 10; i++) {
  numbers.push(i);
}
```

Traversing arrays in React components



map() method

```
const items = ['Apple', 'Banana', 'Orange'];
const itemList = items.map((item, index) =>
  <li key = { index } > { item }</li>);
  return <ul>{ itemList }</ul>;
```

forEach() method

```
const numbers = [1, 2, 3, 4, 5];
numbers.forEach((number) => {
  console.log(number);
});
```

for...of loop

```
const items = ['Apple', 'Banana', 'Orange'];
for (const item of items) {
  console.log(item);
}
```

Render a list

```
import React from 'react';
function ArrayComponent() {
  const items = ['Autumn', 'Spring', 'Summer','Winter'];
  return (
    <div>
      <h1> Season Names</h1>
      <ul>
        {items.map((item, index) => (<li key={index}>{item}</li>))}
      </ul>
    </div>
  );
}
export default ArrayComponent;
```

Output

Season Names

- Autumn Remove
- Spring Remove
- Summer Remove
- Winter Remove

Add / remove items

```
import React, { useState } from 'react';
function MyComponent() {
  const [items, setItems] = useState(['Autumn','Spring','Winter','Summer']);
  const [inputValue, setInputValue] = useState('');
  const addItem = () => {
    setItems([...items, inputValue]);
    setInputValue('');
  };
  const removeItem = (index) => {
    const newItems = [...items];
    newItems.splice(index, 1);
    setItems(newItems);
  };
//continued on next slide
```

Return JSX

```
//continued from previous slide
  return (
    <div>
      <h1>Seasons</h1>
      <ul>
        {items.map((item, index) => (
          <li key={index}>{item}
            <button onClick={() => removeItem(index)}>Remove</button>
          </li>
        ))}
      </ul>
      <input type="text" value={inputValue}
        onChange={(e) => setInputValue(e.target.value)} />
      <button onClick={addItem}>Add</button>
    </div>
); }
export default MyComponent;
```

Add/remove output

Add/remove output

Conditional array rendering

```
import React, { useState } from 'react';
function ArrayComponent() {
  const [items, setItems] = useState(['React','Vue','Angular','Vanilla ']);
  return (
    <div>
      <h1>Front-end Languages</h1>
      {items.length > 0 ? (
        <ul>
          { items.map((item, index) => (
          <li key={index}>{item}</li>)) }
        </ul>
      ) : (
        <p>No Front-end language is available</p>
      )}
    </div>
  ); }
export default ArrayComponent;
```

Conditional rending output

Non-empty array

Front-end Languages

- React
- Vue
- Angular
- Vanilla

Empty array

No front-end language available

Recap

In this lesson, you learned that:

- Arrays are basic data structures that are often used to store groups of items in a single variable
- Some important array methods are `map()` and `forEach()`
- Methods such as `push()`, and `splice()` can be used to add and remove elements
- Arrays are a powerful data structure for quickly changing and traversing data