

FRAGMENTS

In React, whenever you want to render something on the screen, you need to use a render method inside the component. This render method can return single elements or multiple elements. The render method will only render a single root node inside it at a time. However, if you want to return multiple elements, the render method will require a 'div' tag and put the entire content or elements inside it. This extra node to the DOM sometimes results in the wrong formatting of your HTML output and also not loved by the many developers.

To solve this problem, React introduced Fragments from the 16.2 and above version.

Fragments is a common pattern in React used to return multiple elements. Fragments let you group a list of children without adding extra nodes to the DOM.

So basically we use `React.Fragment` where we would normally use a wrapper `div`.

We can make use of fragments with `<React.Fragments>` syntax.

Without fragments

```
class Table extends React.Component {  
  render() {  
    return (  
      <table>  
        <tr>  
          <Columns />  
        </tr>  
      </table>  
    );  
  }  
}
```

```

class Columns extends React.Component {
  render() {
    return (
      <div>
        <td>Hello</td>
        <td>World</td>
      </div>
    );}}

```

This would result in an invalid HTML to be rendered because the wrapper div from Columns component is rendered inside the <tr>.

```

<table>
  <tr>
    <div>
      <td>Hello</td>
      <td>World</td>
    </div>
  </tr>
</table>

```

With fragments

```

class Columns extends React.Component {
  render() {
    return (
      <React.Fragment>
        <td>Hello</td>
        <td>World</td>
      </React.Fragment>
    ); }}

```

Now the Table component would render following HTML.

```
<table>
  <tr>
    <td>Hello</td>
    <td>World</td>
  </tr>
</table>
```

Fragments can also be declared with a short syntax which looks like an empty tag. Here is an example.

```
class Columns extends React.Component {
  render() {
    return (
      <>
        <td>Hello</td>
        <td>World</td>
      </>
    );
  }
}
```

React.Fragment has a shorthand syntax and its is `<>...</>`.

Typical use cases

1. Return multiple elements
2. Conditional rendering
3. Arrays – looping arrays