Components

What a component is, how to write one as a function, how to use (render) it, the naming rule, and reusability -- with simple examples.

Beginner 8 min

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Read online: https://www.learnforgex.com/en/topics/components

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Components

In the JSX lesson, we saw React's syntax. Now let's look at what we actually use JSX inside: **components**. In React, everything is built out of components -- this lesson covers what a component is and how to write and use one, with simple examples.

What Is a Component?

A component is a small, independent piece of a UI -- a button, a card, even an entire page can be a component. As we mentioned in What Is React?, a React application is really just many small components put together.

Writing a Component as a Function

At its simplest, a component is a JavaScript function that returns JSX:

```
// At its simplest, a component is a JavaScript function that returns JSX.
// The difference: its name starts with an UPPERCASE letter -- React treats
// names starting with a lowercase letter as normal HTML tags like "div",
// "h1", and recognizes names starting with an uppercase letter as a
// component you wrote.
function Welcome() {
  return <h1>Hello!</h1>;
}

console.log(Welcome());
```

That's it. There's no new syntax or special keyword -- just a regular function that returns JSX.

Using a Component (Rendering It)

Using a component (this is called "rendering" it) means writing it as a tag inside JSX:

```
// USING (rendering) a component means writing it into JSX like an HTML tag:
// <Welcome />. A component can also be used inside another component --
// just like App uses Welcome here.
function Welcome() {
  return <h1>Hello!</h1>;
}

function App() {
  return (
    <div>
      <Welcome />
      <p>This is my first page built with React.</p>
    </div>
  );
}

console.log(App());
```

`<Welcome />` works just like writing `<h1>` or `<div>` -- the only difference is that this one is a component you wrote. A component can also be used inside another component, like `App` using `Welcome`.

The Component Naming Rule

How does React tell a component apart from a regular HTML tag? Simple: by whether the name starts with an uppercase or lowercase letter.

```
// React tells components and normal HTML tags apart by their capitalization:
// - Starts with a lowercase letter ("div", "button") -> a normal HTML tag.
// - Starts with an uppercase letter ("Welcome", "UserCard") -> your component.

function userCard() {
  // Because this function starts with a lowercase letter, even if you write
  // <userCard /> in JSX, React will try to interpret it as an unknown HTML
  // tag rather than as a component -- this is why component names must
  // ALWAYS start with an uppercase letter.
  return <div>Incorrect naming example</div>;
}

function UserCard() {
  // This is correct: a name that starts with an uppercase letter.
  return <div>Correct naming example</div>;
}

console.log(userCard(), UserCard());
```

A name starting with a lowercase letter (`div` , `button` , `userCard`) is treated by React as a regular HTML tag. That's why component names must always start with an uppercase letter (`Welcome` , `UserCard`). Forgetting this is one of the most common mistakes in this lesson.

Reusable Components

The biggest benefit of a component: write it once, use it as many times as you want.

```
// The biggest benefit of a component: write it ONCE, use it AS MANY TIMES
// AS YOU WANT. We can reuse the same Button component in different places
// over and over -- no need to rewrite the same HTML/CSS each time.
function Button() {
  return <button>Click</button>;
}

function Toolbar() {
  return (
    <div>
      <Button />
      <Button />
      <Button />
    </div>
  );
}

console.log(Toolbar());
```

The same `Button` component is used three times -- no need to rewrite the same HTML each time. In the next lesson (Props), we'll see how to customize the same component with DIFFERENT data on each use.

Summary and Glossary

A component is a function that returns JSX. Its name must start with an uppercase letter, it's used as a tag inside JSX, and it can be written once and reused as many times as needed.

Glossary

Component — A JavaScript function that returns JSX, describing a small, independent piece of a UI.

Rendering — Using a component inside JSX (like `<Welcome />`).

Function Component — A component written as a function (the most common kind of component in React today).