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# React Components

❮ Previous Next ❯

Components are like functions that return HTML elements.

## React Components

Components are independent and reusable bits of code. They serve the same purpose as JavaScript functions, but work in isolation and returns HTML via a render function.

Components come in two types, Class components and Function components, in this tutorial we will concentrate on Class components.

## Create a Class Component

The component has to include the `extends React.Component` statement, this statement creates an inheritance to React.Component, and gives your component access to React.Component's functions.

The component also requires a `render()` method, this method returns HTML.

## Example

Create a Class component called `Car`

```
class Car extends React.Component {
  render() {
    return <h2>Hi, I am a Car!</h2>;
  }
}
```

Now your React application has a component called Car, which returns a `<h2>` element.

To use this component in your application, use similar syntax as normal HTML: `<Car />`

## Example

Display the `Car` component in the "root" element:

```
ReactDOM.render(<Car />, document.getElementById('root'));
```

# Create a Function Component

Here is the same example as above, but created using a Function component instead.

A Function component also returns HTML, and behaves pretty much the same way as a Class component, but Class components have some additions, and will be preferred in this tutorial.

## Example

Create a Function component called `Car`

```
function Car() {
  return <h2>Hi, I am also a Car!</h2>;
}
```

Once again your React application has a Car component.

Refer to the Car component as normal HTML (except in React, components *must* start with an upper case letter):

## Example

Display the `Car` component in the "root" element:

Run Example »

# Component Constructor

If there is a `constructor()` function in your component, this function will be called when the component gets initiated.

The constructor function is where you initiate the component's properties.

In React, component properties should be kept in an object called `state`.

You will learn more about `state` later in this tutorial.

The constructor function is also where you honor the inheritance of the parent component by including the `super()` statement, which executes the parent component's constructor function, and your component has access to all the functions of the parent component (`React.Component`).

## Example

Create a constructor function in the Car component, and add a color property:

```
class Car extends React.Component {
  constructor() {
    super();
    this.state = {color: "red"};
  }
  }
}
```

Use the color property in the render() function:

### Example

```
class Car extends React.Component {
  constructor() {
    super();
    this.state = {color: "red"};
  }
  render() {
    return <h2>I am a {this.state.color} Car!</h2>;
  }
}
```

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# Props

Another way of handling component properties is by using `props`.

You will learn more about `props` in the next chapter.

### Example

Use an attribute to pass a color to the Car component, and use it in the render() function:

```
class Car extends React.Component {
  render() {
    return <h2>I am a {this.props.color} Car!</h2>;
  }
}

ReactDOM.render(<Car color="red"/>, document.getElementById('root'));
```

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## Components in Components

We can refer to components inside other components:

### Example

Use the Car component inside the Garage component:

```
  render() {
    return <h2>I am a Car!</h2>;
  }
}

class Garage extends React.Component {
  render() {
    return (
      <div>
      <h1>Who lives in my Garage?</h1>
      <Car />
      </div>
    );
  }
}

ReactDOM.render(<Garage />, document.getElementById('root'));
```

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## Components in Files

React is all about re-using code, and it can be smart to insert some of your components in separate files.

To do that, create a new file with a `.js` file extension and put the code inside it:

## Example

This is the new file, we named it "App.js":

```
import React from 'react';
import ReactDOM from 'react-dom';

class Car extends React.Component {
  render() {
    return <h2>Hi, I am a Car!</h2>;
  }
}

export default Car;
```

To be able to use the Car component, you have to import the file in your application.

## Example

Now we import the "App.js" file in the application, and we can use the Car component as if it was created here.

```
import React from 'react';
import ReactDOM from 'react-dom';
import Car from './App.js';
```

Run Example »

❮ Previous Next ❯

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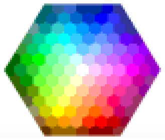

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