React.js

Regards: Hassan Bilal

TABLE OF CONTENTS

01 > Intro to React.js

02 > React.js features

03 > JSX

04 > Components and import and export components

05 > Types of Components

01

Intro to React.js

What is React.js ⚛ - Introduction

- A JavaScript **library** for building **user interfaces**.
- Declarative, efficient, and flexible JavaScript library.
- For building reusable UI components.
- Open-source.
- Component-based front end library.

What is React.js - History

- It was created by Jordan Walke.
- A software engineer at Facebook.
- It was initially developed and maintained by Facebook.
- Later used in its products like WhatsApp & Instagram.
- Facebook developed ReactJS in 2011 in its newsfeed section.
- Released to the public in the month of May 2013.

What is React.js - Working

- A ReactJS application is made up of multiple components.
- Each component responsible for outputting a small, reusable piece of HTML code.
- Components are the heart of all React applications.
- These Components can be nested with other components.
- To allow complex applications to be built of simple building blocks.

What is React.js - Vertual DOM

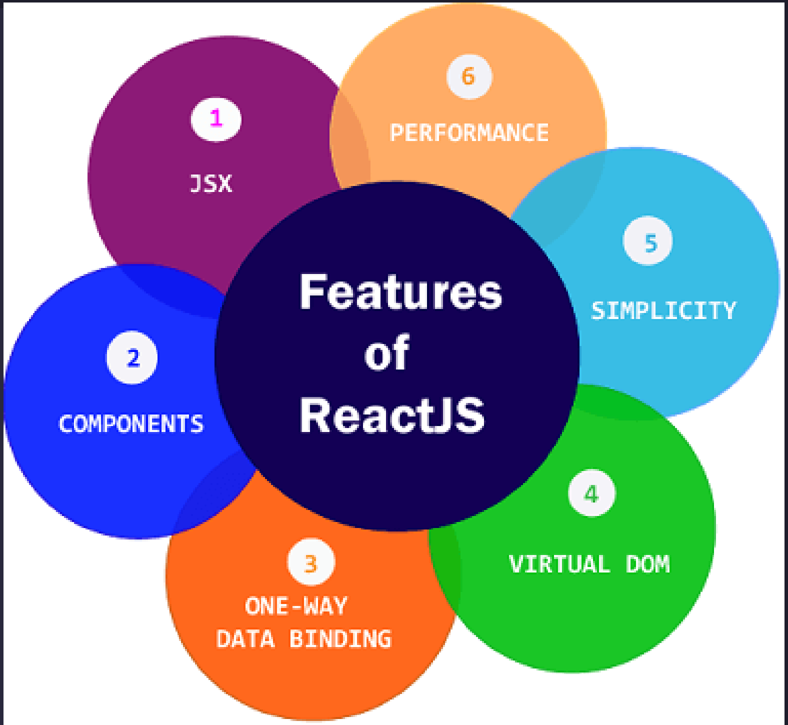
- ReactJS uses virtual DOM based mechanism.
- To fill data in real DOM.
- The virtual DOM works fast as it only changes individual DOM elements.
- Instead of reloading complete DOM every time.

02

React Features

React.js – Features

- JSX
- Components
- One-way Data Binding
- Virtual DOM
- Simplicity
- Performance



React.js – Features – JSX

- Stands for JavaScript XML.
- Its an XML or HTML like syntax used by ReactJS.
- It extends the ES6 so that HTML like text can co-exist with JavaScript react code.

React.js – Features – Components

- ReactJS is all about components.
- ReactJS application is made up of multiple components.
- Each component has its own logic and controls.
- These components can be reusable.
- Which help you to maintain the code.
- When working on larger scale projects.

React.js – Features – One-way data binding

- Unidirectional data flow is known as one-way data binding.
- ReactJS is designed in such a manner that follows unidirectional data flow.
- It give you better control throughout the application.
- If the data flow is in another direction, then it requires additional features.
- Flux is a pattern that helps to keep your data unidirectional.

React.js – Features – Virtual DOM

- A virtual DOM object is a representation of the real DOM object.
- Whenever any modifications happen in the web application, the entire UI is re-rendered in virtual DOM representation.
- Then it checks the difference between the previous DOM representation and new DOM.
- After this, Real DOM will update only the things that have actually changed.
- This makes the application faster, and there is no wastage of memory.

React.js – Features – Simplicity

- ReactJS uses JSX file which makes the application simple.
- We know that ReactJS is a component-based approach.
- Which makes the code reusable as your need.

React.js – Features – Performance

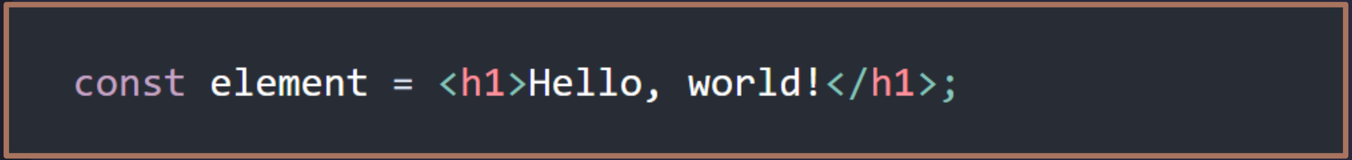
- React.js performance is because it manages a virtual DOM.
- The DOM exists entirely in memory.
- Due to this, when we create a component, we did not write directly to the DOM.
- Instead, we are writing virtual components that will turn into the DOM.
- It leads to smoother and faster performance.

03

JSX

What is JSX

- JSX stands for JavaScript XML.
- JSX allows us to write HTML in React.
- JSX allows us to write HTML elements in JavaScript.

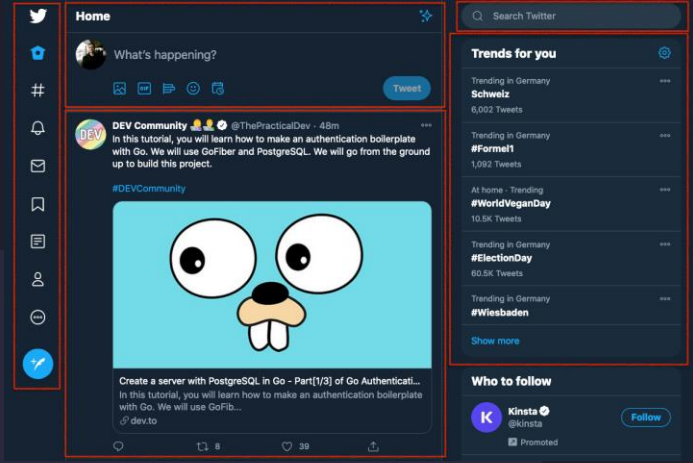


```
const element = <h1>Hello, world!</h1>;
```

04

Components

What is Component



DEV Community @ThePracticalDev · 48m
In this tutorial, you will learn how to make an authentication boilerplate with Go. We will use GoFiber and PostgreSQL. We will go from the ground up to build this project.

#DEVCommunity

Create a server with PostgreSQL in Go - Part[1/3] of Go Authenticati...
In this tutorial, you will learn how to make an authentication boilerplate with Go. We will use GoFib...
dev.to

- A component is an independent, reusable code.
- Which divides the UI into smaller pieces.
- For example, if we were building the UI of Twitter with React.
- Rather than building the whole UI under one single file.
- We can and we should divide all the sections (marked with red).
- into smaller independent pieces.
- In other words, these are components.

05

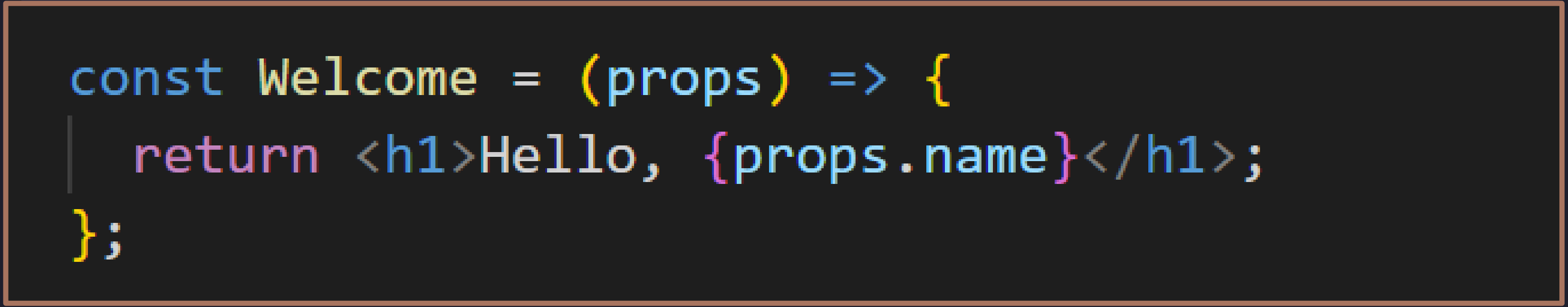
Types of Components

Types of Components

- Functional components
- Class components.

Types of Components - Functional components

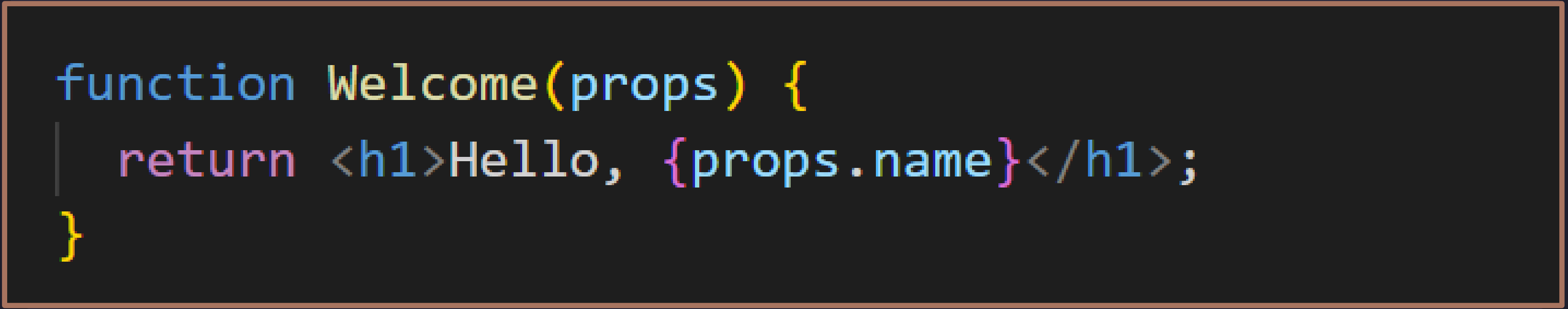
- Recommended component type in React is functional components.
- A functional component is basically a JavaScript function.
- That returns a React element (JSX).



```
const Welcome = (props) => {
  return <h1>Hello, {props.name}</h1>;
};
```

Types of Components - Functional components

- Normal function can also be used to make a component.



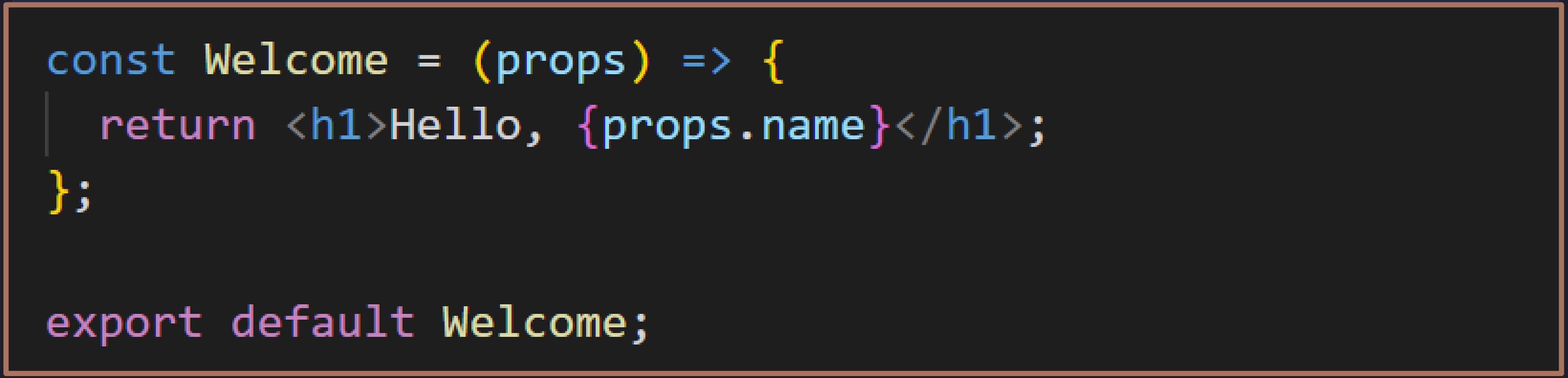
```
function Welcome(props) {
  return <h1>Hello, {props.name}</h1>;
}
```

Types of Components - Functional components

- Is a JavaScript/ES6 function.
- Must return a React element (JSX).
- Always starts with a capital letter (naming convention).
- Takes props as a parameter if necessary.

Types of Components - export components

- To be able to use a component later, you need to first export it so you can import it somewhere else:

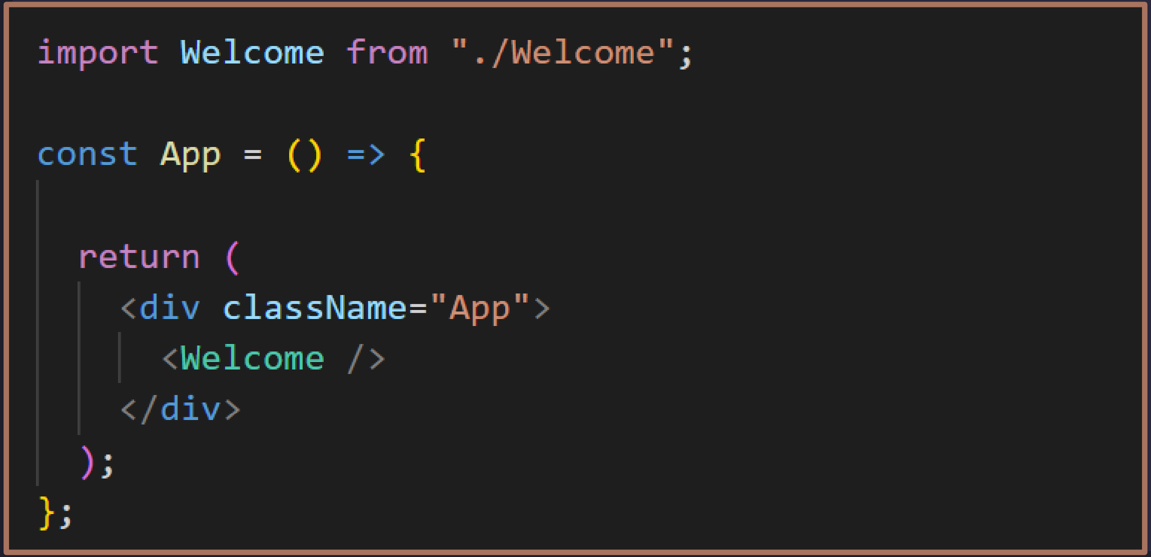


```
const Welcome = (props) => {
  return <h1>Hello, {props.name}</h1>;
};

export default Welcome;
```

Types of Components - Import components

- After exporting, you can call the component like in this example:



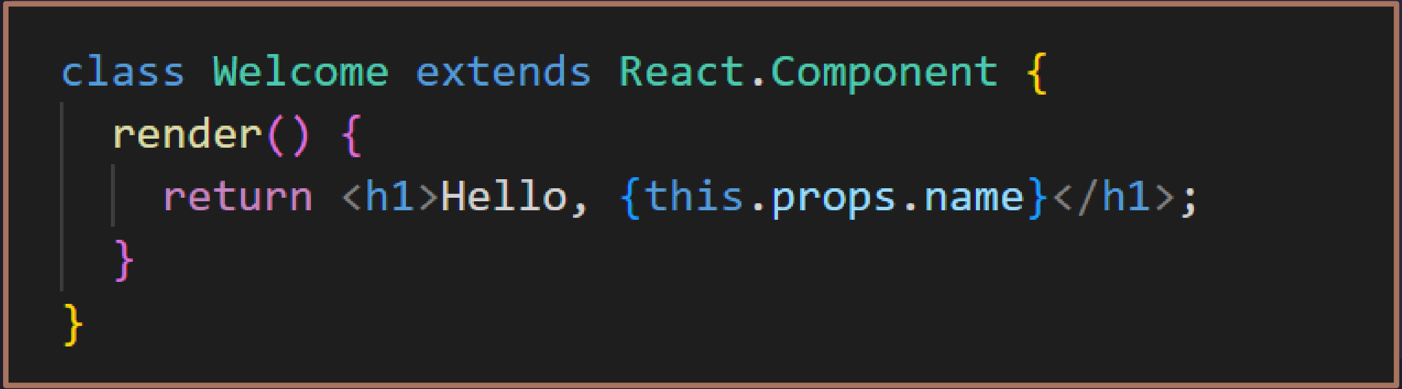
```
import Welcome from "./Welcome";

const App = () => {

  return (
    <div className="App">
      <Welcome />
    </div>
  );
};
```

Types of Components - Class components

- Are ES6 classes that return JSX.
- class components must have an additional render( ) method.
- For returning JSX



```
class Welcome extends React.Component {
  render() {
    return <h1>Hello, {this.props.name}</h1>;
  }
}
```

Types of Components - Class components

- Is an ES6 class.
- Will be a component once it ‘extends’ a React component.
- Must have a render( ) method for returning JSX.
- Takes Props (in the constructor) if needed.

<QnA>

Thanks!

Regards: Hassan Bilal