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Theory: Introduction to React

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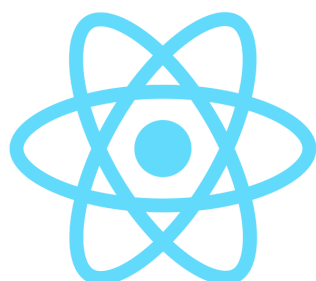
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You already know how to write code in JavaScript. This language is perfect for creating small dynamic websites, but for larger projects you would need a more powerful tool. [React](#) is a JavaScript-based library that offers you more functionality with less code and improves the overall performance. Interested? Let's get into it!

§1. What is React

React (or ReactJS) is the most popular library that was developed by Facebook for building user interfaces. It allows you to create various UI elements with their own logic and reuse them in your code. Because of its extensive functionality, there's a popular misconception that React is a framework, but the truth is that React is just a very powerful JavaScript library.

The React library has its own logo:



§2. Features

In React, you divide the application into several independent parts called **components** and combine them to create a website. We can draw an analogy with LEGO. This construction set consists of various independent parts with their own characteristics such as color or size, and if you combine them together in the right way, you will see the finished LEGO model. The same idea is true for React: if you build an application using React components in the correct way, you will see a working website as a result.

React makes your application more productive. **DOM** (Document Object Model) is an object created by the browser that represents the document structure, such as HTML tags and content. When the user clicks the button and new data is loaded, the browser gets a new DOM. Then it should refresh the entire page, even if the difference between the new DOM and the old DOM was just one word. This strategy is not optimal and leads to memory loss. To solve this problem, React uses the **React Components tree**, a lightweight DOM representation that allows you to easily update only those components that have actually been changed. In this case, if the change occurred in just one component with a `<div>` element, React will update only that `<div>` element and leave the others in their previous state. As a result, you see the updated page much faster.

It is also easier to debug the application using React. There is a pattern for nesting React child components in parent components that allows you to control the data flow. This helps the developer find errors faster and gives them a better understanding of the entire application.

As you can see, React has many important advantages, which is why programmers use it in their applications a lot.

§3. History

React was created by Jordan Walke, a software engineer at Facebook. Facebook first used it in 2011 on the News Feed, and then adapted it for Instagram a year later. The idea of React was inspired by the XHP — a simple

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HTML component framework for PHP. The library grew very quickly and was published in the open source in 2013.

Over the 7 years of its existence, React has collected more than 150,000 stars and about 1,500 members on Github. It continues to grow at more than 7,000,000 downloads weekly. It’s still trending and is ahead of *Angular* and *Vue.js* for [Web Frameworks](#). React ranks first as the [most wanted Web Framework](#) according to the 2020 Stackoverflow survey.

Today, there are [more than 1,000,000 sites](#) using React, including big companies such as Facebook, Instagram, Twitter, Netflix, Dropbox, Yandex, and others. There is no doubt about the popularity of React in the years to follow.

§4. Conclusion

If you overhear a discussion between frontend developers, you will most likely hear the word React. React has a well-deserved reputation for its advantages such as reusable components, improved performance, and easy debugging. You will be more convinced about the benefits of React when you get to know it in practice.

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