

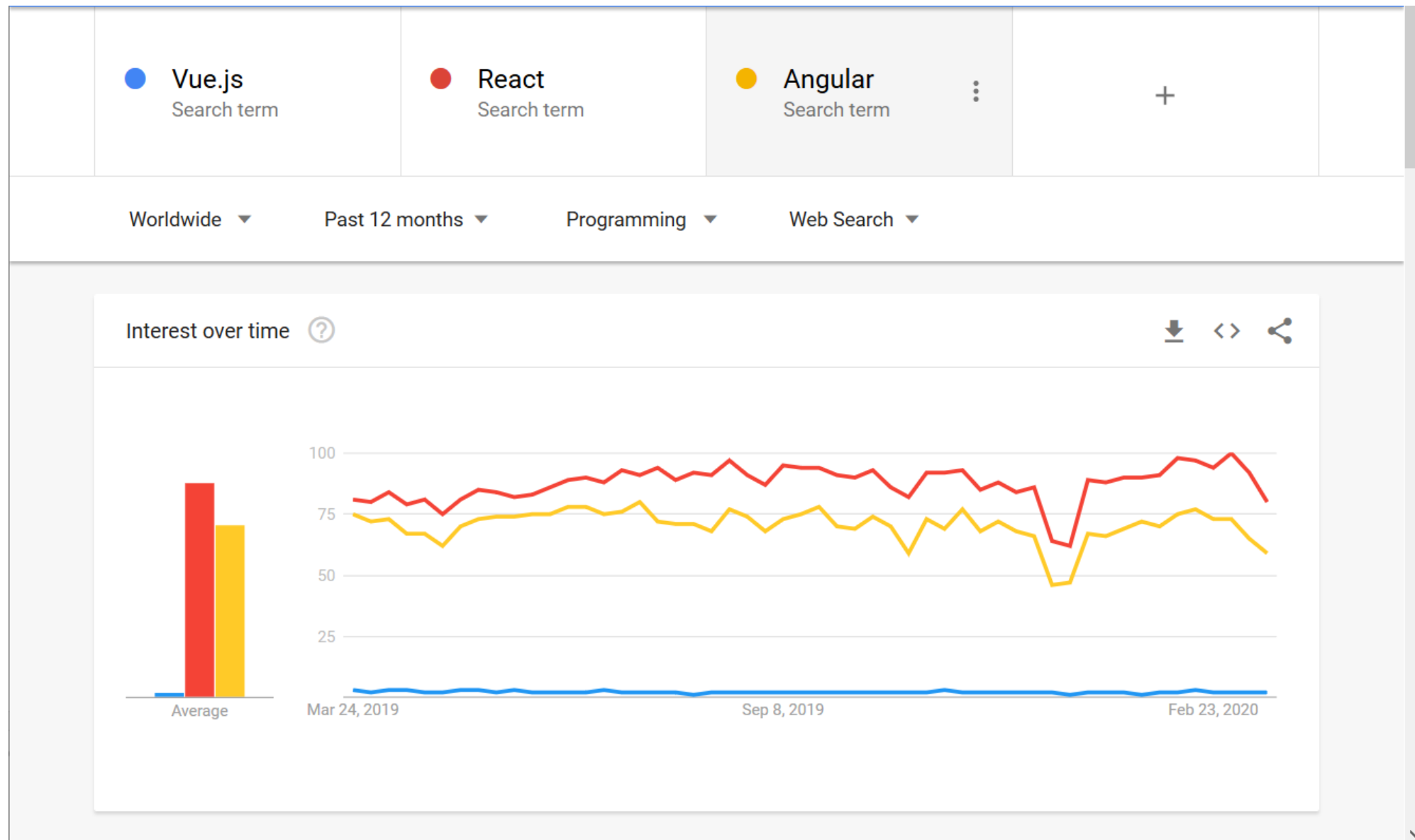
Getting Started

Content

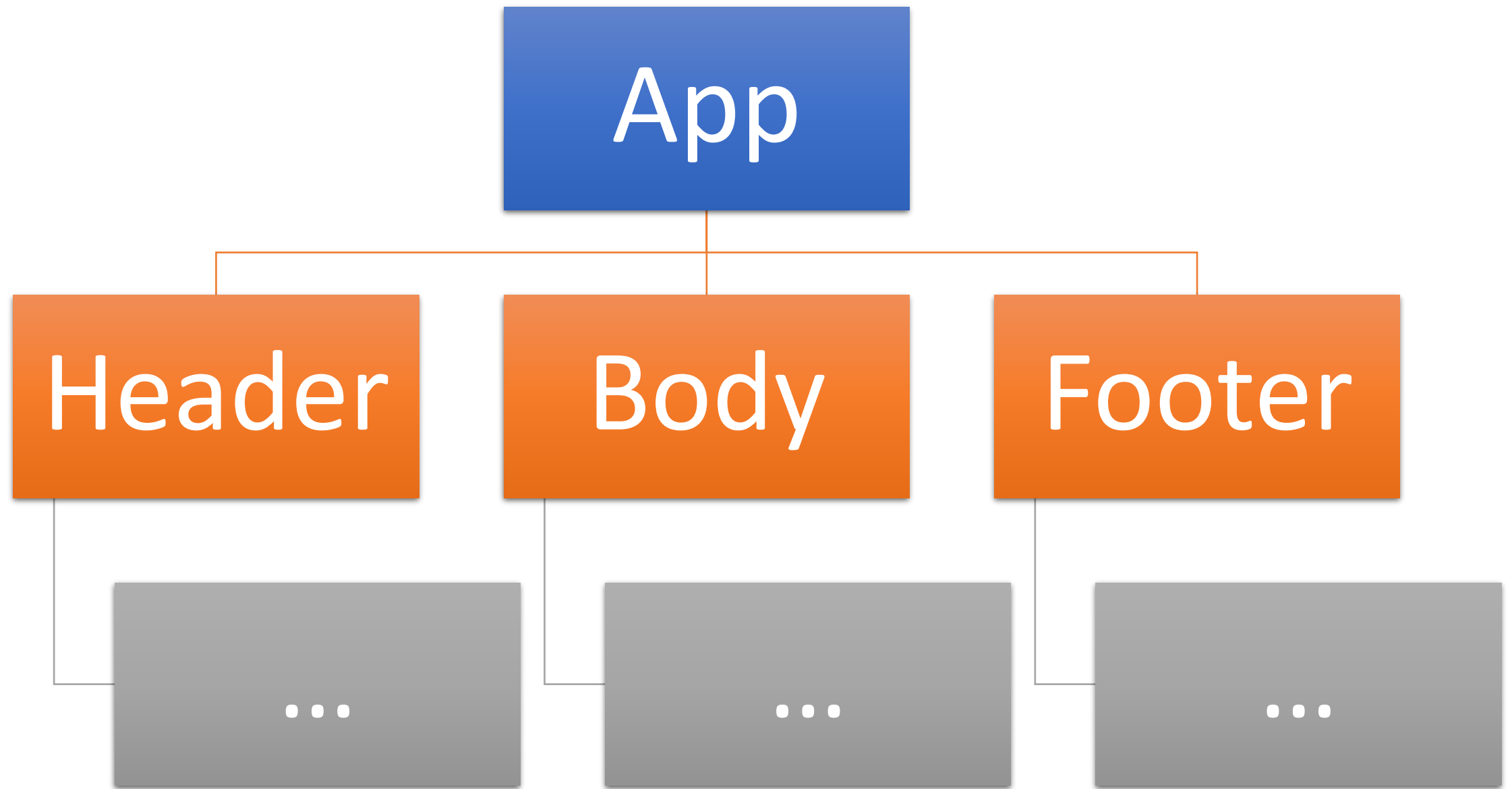
1. What is React?
2. Setting Up the Development Environment
3. Writing First React Code
4. Your First React App
5. Hello World
6. Full-stack Architecture

1. What is React?

- React is a JavaScript library for building user interfaces
- It is maintained by Facebook and a community of individual developers and companies.
- React can be used as a base in the development of single-page or mobile applications.
- Author: Jordan Walke
- Initial release: May 29, 2013



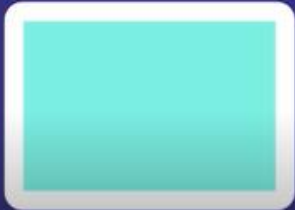
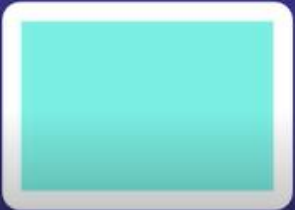
- The heart of all React Operations are components, a component is essentially a piece of a user interface.
- When building react projects, we will build a bunch of independent, isolated, and reusable components, and then compose them to build complex user interfaces.
- Every React application has at least one component, which we refer to as the root component.



```
class aComponent {  
    state = {};  
    render() {  
    }  
}
```

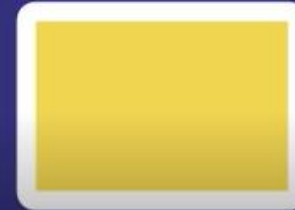
Virtual DOM

React Element



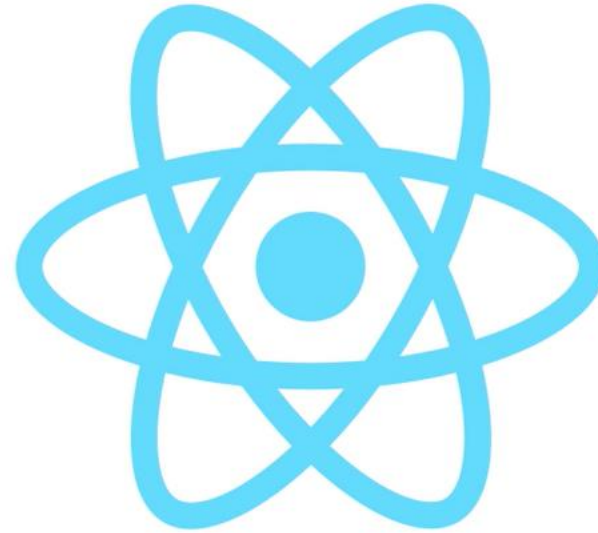
Real DOM

DOM Element





Framework



View Library

2. Setting Up the Development Environment

- Download & install NodeJs using the following link:
<https://nodejs.org/en>
- Download & install Visual Studio Code using the following links: <https://code.visualstudio.com/download>
- Run Visual Studio Code tool
- Select View → Terminal (or **Ctrl+`**) then type below command to install “create-react-app” package.

```
npm install -g create-react-app
```



EXTENSIONS: MARKETPLACE



Simple React Snippets

Simple React Snippets 1.2.2

Dead simple React snippets you will actu...

Burke Holland

Install

ES7 React/Redux/GraphQL/React... 2.7.0

Simple extensions for React, Redux and ...

dsznajder

Install

snippets 0.0.1

ReactJS snippets created by GoBystrok.

GoBystrok ReactJS

Install

React Native Tools 0.14.2

Debugging and integrated commands fo...

Microsoft

Install

Angular Snippets (Version 9) 9.1.2

Angular version 9 snippets by John Papa



Welcome X



Start

[New file](#)[Open folder...](#)[Add workspace folder...](#)

Customize

Tools and languages

Install support for JavaS...

Settings and keybindings

TERMINAL



1: powershell v



```
PS D:\Study\React\demo> npm i -g create-react-app
```



0 0




{..} : Scanning..





- In Visual Studio Code. Open “Extensions” panel on the left, then search & install the following extensions
 - Simple React Snippets
 - Prettier - Code formatter
 - Auto Import - ES6, TS, JSX, TSX
 - Auto Close Tag


EXTENSIONS: MARKETPLACE


Auto


**Auto Rename Tag** 0.1.1 2.5M ★ 3
Auto rename paired HTML/XML tag
Jun Han


**Auto Close Tag** 0.5.6 2.5M ★ 4
Automatically add HTML/XML close tag, same as ...
Jun Han


**Auto Import** 1.5.3 857K ★ 4.5
Automatically finds, parses and provides code act...
steoates


**Auto Complete Tag** 0.1.0 317K ★ 4
Extension Packs to add close tag and rename pair...
Jun Han


**Auto-Open Markdown Preview** 0.0.4 175K ★ 4
Open Markdown preview automatically when op...
hnw

**Auto-Using for C#** 0.7.15 67K ★ 4.5
Provides intellisense for and imports references fr...
Fudge

**Auto Comment Blocks** 1.0.1 73K ★ 4.5
Provides block comment completion for Javadoc...
kky

**css-auto-prefix** 0.1.7 83K ★ 5
Autoprefixes certain attributes in CSS
sporiley

**Auto Scroll** 1.0.3 7K ★ 5
auto scroll to the end of file
Pejman Nikram

**Typings auto installer** 1.2.0 29K ★ 5
Any time you save either package ison or bower i

Extension: Auto Close Tag ×

Auto Close Tag

formulahendry.auto-close-tag

Jun Han | 2,592,968 | ★★★★★ | Repository

Automatically add HTML/XML close tag, same as Visual Studio IDE or Sublime Text

Disable ▾

Uninstall

This extension is enabled globally.

Details

Feature Contributions

Changelog

Auto Close Tag

Visual Studio Marketplace

v0.5.6

installs 2593214

rating average: 4.17/5 (70 ratings)

build passing

Automatically add HTML/XML close tag, same as Visual Studio IDE or Sublime Text does.

Note

From VS Code 1.16, it has [built-in close tag support](#) for HTML, Handlebars and Razor files. This extension is enabled for other languages like XML, PHP, Vue, JavaScript, TypeScript, JSX, TSX and so on. It is configurable.

Features

- Automatically add closing tag when you type in the closing bracket of the opening tag

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: powershell ▾ + □ ✕ ^

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

meet.google.com is sharing your screen.

Stop sharing Hide



File

Edit

Selection

View

Go

Run



Extension: Simple React Snippets - demo - ...



EXTENSIONS: MARKETPLACE



Prettier - Code formatter

**Prettier - Code formatter** 3.20.0

Code formatter using prettier

Esben Petersen

Install

**Prettier - Code formatter** 3.14.1

Code formatter using prettier

Prettier

Install

**Prettier - Code formatter** 1.1.22

Code formatter using prettier

Simon Siefke

Install

**Code Runner** 0.9.17

Run C, C++, Java, JS, PHP, Python, Perl, R...

Jun Han

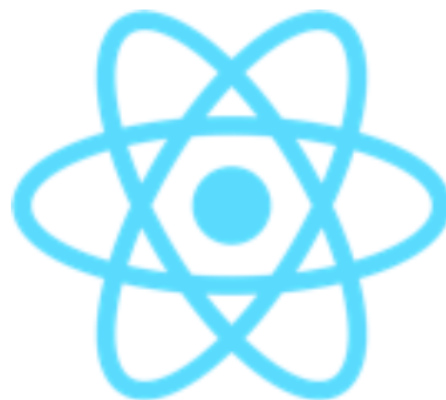
Install

Chinese (Simplified) Language... 1.43.11

中文(简体)



Extension: Simple React Snippets X



Simple React Sni

Burke Holland | 424,8

Dead simple React snippets y...

Disable ▼

Uninstall

This extensior

TERMINAL



1: powershell ▼



```
PS D:\Study\React\demo> npm i -g create-react-app
```



0 0



{..} : Scanning..



EXTENSIONS: MARKETPLACE

Prettier - Code formatter

Prettier - Code formatter 3.20.0

Code formatter using prettier

Esben Petersen

Prettier - Code formatter 3.14.1

Code formatter using prettier

Prettier

Install

Prettier - Code formatter 1.1.22

Code formatter using prettier

Simon Siefke

Install

Code Runner 0.9.17

Run C, C++, Java, JS, PHP, Python, Perl, R...

Jun Han

Install

Chinese (Simplified) Language Pack 1.43.11

中文(简体)

Microsoft

Install

JS-CSS-HTML Formatter 0.2.3

Format ,prettify and beautify JS, CSS, HT...

lonefy

Install

Code Spell Checker 1.8.0

Spelling checker for source code

Street Side Software

Install

EditorConfig for VS Code 0.14.4

EditorConfig Support for Visual Studio C...

EditorConfig

Install

JavaScript (ES6) code snippets 1.7.2

Code snippets for JavaScript in ES6 syntax

charalampos karypidis

Install

Japanese Language Pack for Visual Studio Code 1.43.6

日本語

Settings

Search settings

User Workspace

Commonly Used

Text Editor

Cursor

Find

Font

Formatting

Diff Editor

Minimap

Suggestions

Files

Workbench

Window

Features


Application

Extensions

Formatting

Format On Paste

☐ Controls whether the editor should automatically format the pasted content. A formatter must be available and the formatter should be able to format a range in a document.

 **Format On Save**

☒ Format a file on save. A formatter must be available, the file must not be saved after delay, and the editor must not be shutting down.

Format On Type

☐ Controls whether the editor should automatically format the line after typing.

Diff Editor

Ignore Trim Whitespace

☒ When enabled, the diff editor ignores changes in leading or trailing whitespace.


Max Computation Time


Timeout in milliseconds after which diff computation is cancelled. Use 0 for no timeout.


5000


EXTENSIONS: MARKETPLACE


Auto Import - ES6, TS, JSX, TSX


**Auto Import** 1.5.3 856K 4.5
Automatically finds, parses and provides code act...
steoates


**JavaScript (ES6) code snippets** 1.7.2 3.1M 5
Code snippets for JavaScript in ES6 syntax
charalampos karypidis Install


**Auto Import - ES6, TS, JSX, TSX** 1.4.3 132K 4
Automatically finds, parses and provides code act...
Sergey Korenuk


**Auto Rename Tag** 0.1.1 2.5M 3
Auto rename paired HTML/XML tag
Jun Han


**Auto Close Tag** 0.5.6 2.5M 4
Automatically add HTML/XML close tag, same as ...
Jun Han

**Import Cost** 2.12.0 562K 3.5
Display import/require package size in the editor
Wix Install


**TSLint (deprecated)** 1.0.44 2.4M 5
TSLint for Visual Studio Code
egamma Install

**Auto Import - ES6 & TS** 1.3.3 49K 3.5
Automatically finds, parses and provides code act...
Martin Oppitz Install

**JS JSX Snippets** 10.1.0 132K 5
Simple extensions for React, Redux in JS with bab...
sky ran Install

**React-Native/React/Redux sni...** 2.0.3 370K 5
Code snippets for React-Native/React/Redux es6/

Extension: Auto Import - ES6, TS, JSX, TSX



Auto Import - ES6, TS, JSX, TSX

nuclear.vscode-extension-auto-imp

Sergey Korenuk | 132,525 | ★★★★☆ | License

Automatically finds, parses and provides code actions and code completion for all available imp...

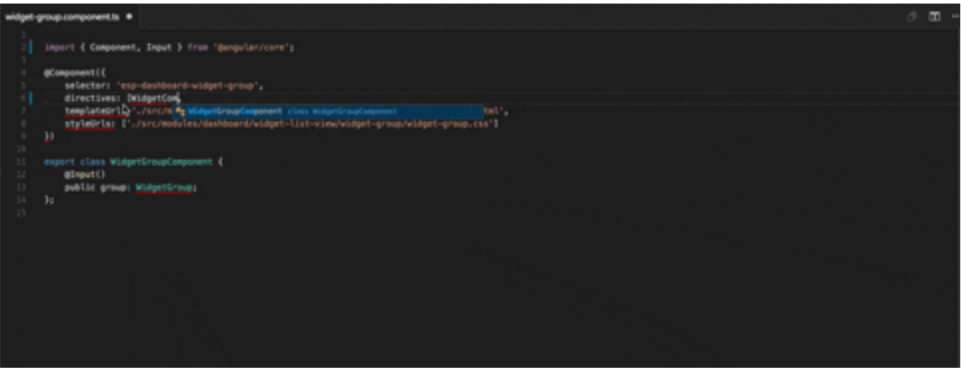
Disable Uninstall This extension is enabled globally.

Details

Feature Contributions

Auto Import - ES6, TS, JSX, TSX (VSCode Extension)

Automatically finds, parses and provides code actions and code completion for all available imports. Works with JavaScript (ES6) and TypeScript (TS). Forker from old repo [vscode-extension-auto-import](#)



PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

1: powershell

+

□

✖

^

✖

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS D:\Teaching\React\coreui>

0 0 {.: 147



File Edit Selection View Go Run ...

Welcome - demo - Visual Studi...



EXPLORER



OPEN EDITORS

× Welcome

DEMO

> OUTLINE



Welcome ×



Start

New file

Open folder...

Add workspace folder...

Customize

Tools and languages

Install support for JavaScript, Pyt...

Settings and keybindings

TERMINAL ...

1: powershell ▾



PS D:\Study\React\demo> npm i -g create-react-app



0



0

{..} : Scanning..





3. Writing First React Code

- Create a new folder named “SimpleReact”
- In Visual Studio Code, select File → Open Folder...
- Init NodeJs project
 - In terminal type: `npm init`
 - Follow instruction to complete
- Using command “`npm i`” to install below packages
 - `@babel/standalone`
 - `react`
 - `react-dom`

File: css/style.css

- Create a new CSS file named “style.css” in css folder
- Create a new style as below

```
.person {  
    display: inline-block;  
    margin: 10px;  
    padding: 10px;  
    border: 1px solid  #eee;  
    box-shadow: 0 2px 2px  #ccc;  
    width: 200px;  
}
```

File: index.html

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>Document</title>
7      <link href="css/style.css" rel="stylesheet"/>
8  </head>
9  <body>
10     <div class="person">
11         <h3>Nguyễn Văn Thanh</h3>
12         <p>Age: 28</p>
13     </div>
14     <div class="person">
15         <h3>Trần Thanh Danh</h3>
16         <p>Age: 29</p>
17     </div>
18 </body>
19 </html>
```

Test on browser

Nguyễn Văn Thanh

Age: 28

Trần Thanh Danh

Age: 29

Adding React library

```
9  <body>
10  <div class="person">
11    <h3>Nguyễn Văn Thanh</h3>
12    <p>Age: 28</p>
13  </div>
14  <div class="person">
15    <h3>Trần Thanh Danh</h3>
16    <p>Age: 29</p>
17  </div>
18
19  <script src="node_modules/@babel/standalone/babel.min.js"></script>
20  <script src="node_modules/react/umd/react.production.min.js"></script>
21  <script src="node_modules/react-dom/umd/react-dom.production.min.js"></script>
22  <script type="text/babel">
23    </script>
24  </body>
25  </html>
```

Creating React Object

```
9   <body>
10     <div id="p1"></div>
11 >   <div class="person"> ...
14     </div>
15
16     <script src="node_modules/@babel/standalone/babel.min.js"></script>
17     <script src="node_modules/react/umd/react.production.min.js"></script>
18     <script src="node_modules/react-dom/umd/react-dom.production.min.js"></script>
19     <script type="text/babel">
20       function Person() {
21         return (
22           <div class="person">
23             <h3>Nguyễn Văn Thanh</h3>
24             <p>Age: 28</p>
25           </div>
26         );
27       }
28       ReactDOM.render(<Person />, document.querySelector('#p1'));
29     </script>
30   </body>
31 </html>
```

Passing properties

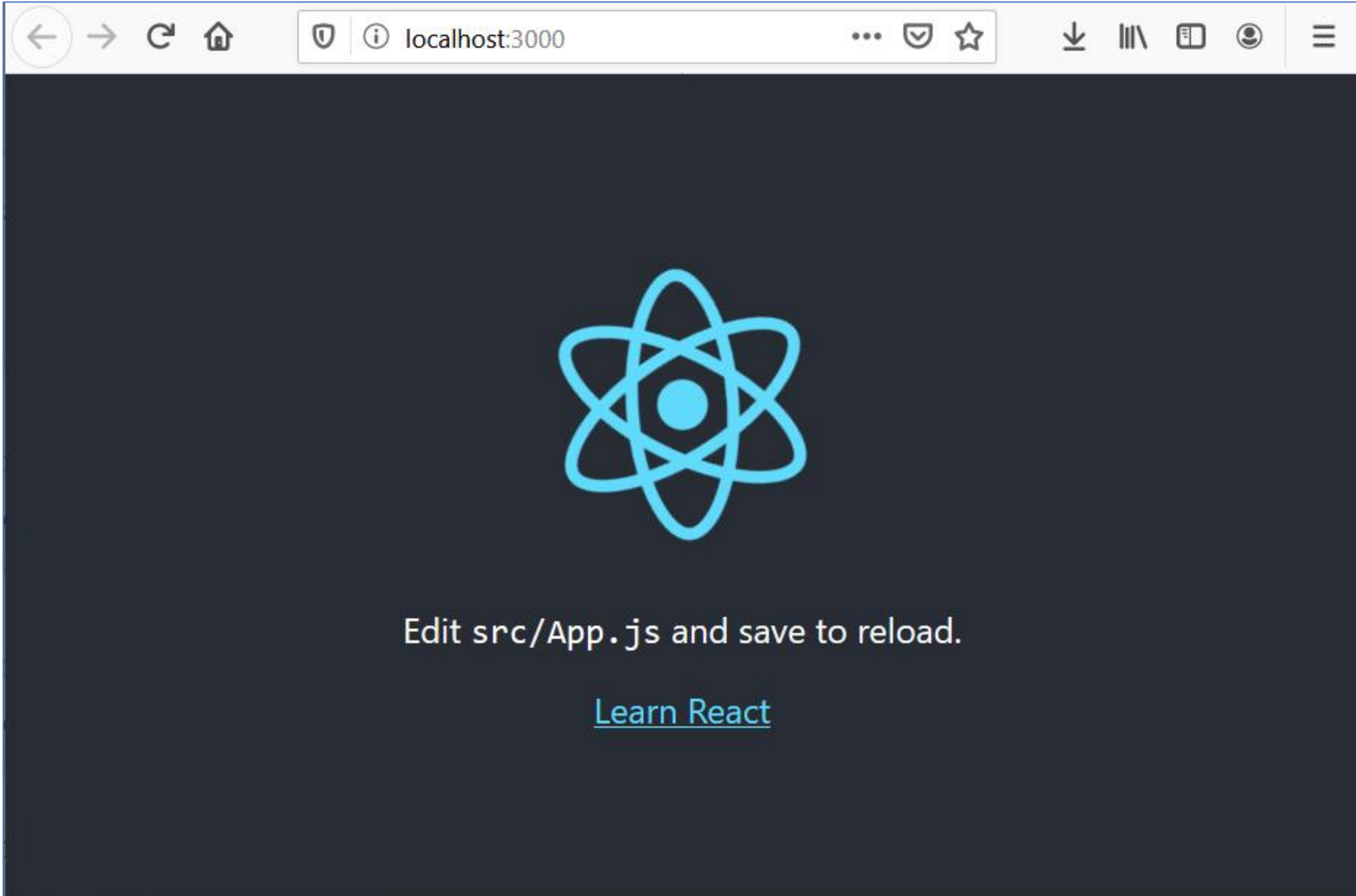
```
9  <body>
10    <div id="p1"></div>
11  > <div class="person"> ...
14    </div>
15
16    <script src="node_modules/@babel/standalone/babel.min.js"></script>
17    <script src="node_modules/react/umd/react.production.min.js"></script>
18    <script src="node_modules/react-dom/umd/react-dom.production.min.js"></script>
19  <script type="text/babel">
20    function Person(props) {
21      return (
22        <div class="person">
23          <h3>{props.name}</h3>
24          <p>Age: {props.age}</p>
25        </div>
26      );
27    }
28    ReactDOM.render(<Person name="Nguyễn Văn Thanh" age="28" />, document.querySelector('#p1'));
29  </script>
30 </body>
31 </html>
```


Applying objects

```
9  <body>
10    <div id="app"></div>
11
12    <script src="node_modules/@babel/standalone/babel.min.js"></script>
13    <script src="node_modules/react/umd/react.production.min.js"></script>
14    <script src="node_modules/react-dom/umd/react-dom.production.min.js"></script>
15    <script type="text/babel">
16      function Person(props) {
17        return (
18          <div class="person">
19            <h3>{props.name}</h3>
20            <p>Age: {props.age}</p>
21          </div>
22        );
23      }
24      var app = (
25        <div>
26          <Person name="Nguyễn Văn Thanh" age="28" />
27          <Person name="Trần Thanh Danh" age="29" />
28        </div>
29      );
30      ReactDOM.render(app, document.querySelector('#app'));
31    </script>
32  </body>
```

4. Your First React App

- Create a new project folder to store react apps.
- Use command prompt, jump to created folder.
- Run command: `create-react-app react-demo` to create a new project
- Open Visual Studio Code, select File → Open Folder...
- Browse to project folder.
- Open “Terminal” panel then type command below
- Type
 - `npm start`



5. Hello World

- Delete all files in “src” folder
- Create a new file named “index.js”, then type below code

```
1  import React from "react";
2  import ReactDOM from "react-dom";
3
4  const el = <h1>Hello World !</h1>;
5  ReactDOM.render(el, document.getElementById("root"));
6
```

- Type “npm start” in “Terminal” to run project



EXPLORER



OPEN EDITORS

✕ JS index.js src M

PROJECT-DEMO

> node_modules

> public

▼ src

JS index.js M

.gitignore

{ } package-lock.json

{ } package.json

i README.md

> OUTLINE

> NPM SCRIPTS

JS index.js ✕



src > JS index.js > ...

```
1 import React from "react";
2 import ReactDOM from "react-dom";
3
4 const el = <h1>Hello World !</h1>;
5 ReactDOM.render(el, document.getElementById("root"));
6
```

PROBLEMS

TERMINAL

...

1: node



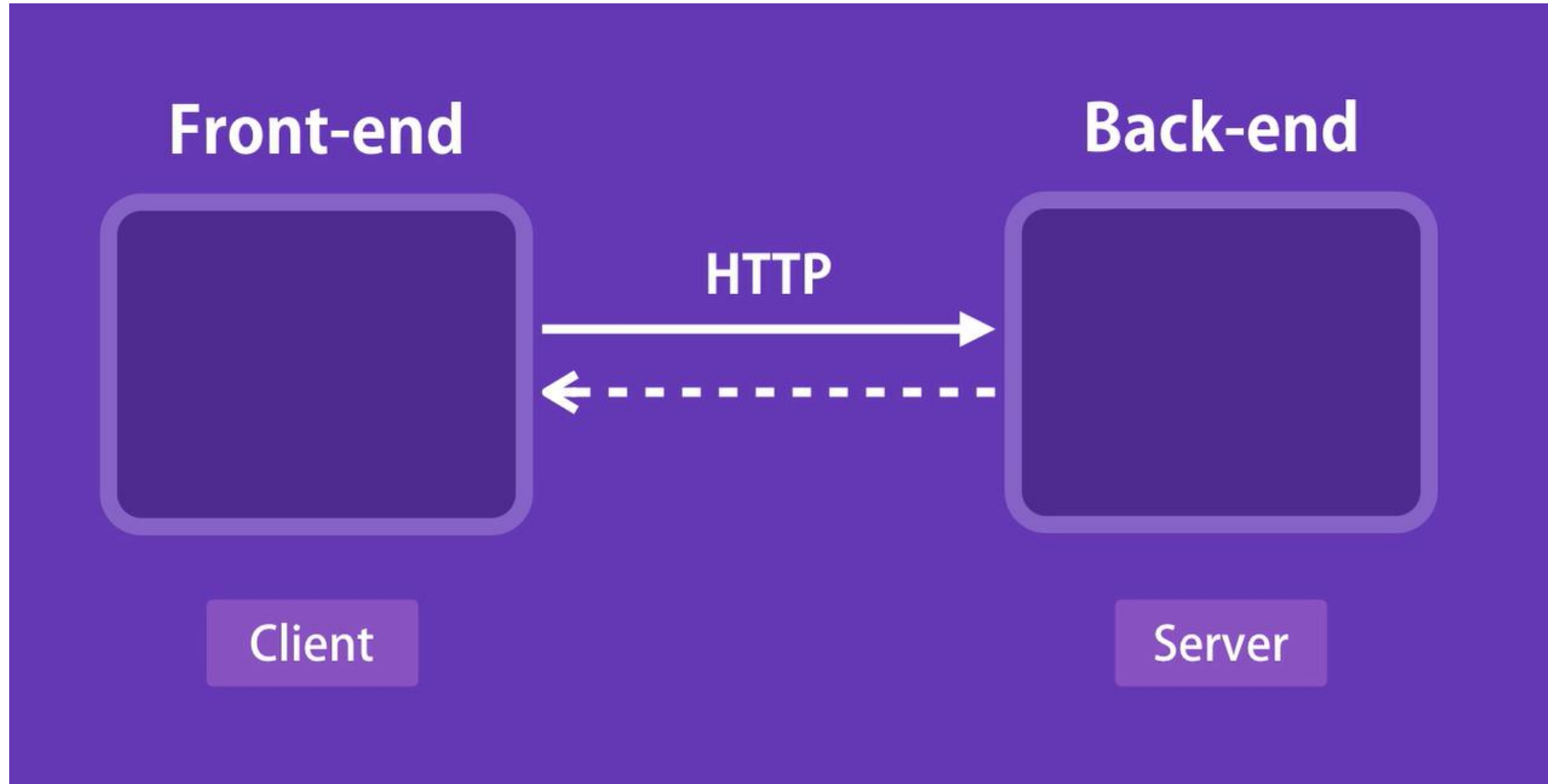
Local: http://localhost:3000

On Your Network: http://192.168.117.1:3000

Note that the development build is not optimized.
To create a production build, use `npm run build`.



5. Full-stack Architecture



Back-end

- C# (ASP.NET)
- Java/Kotlin (Spring Boot)
- PHP (Laravel)
- NodeJS (Express)
- Python (Django/Flask)
- ...