

Configure for Lab



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<https://github.com/swacademy/Vue.js>

Contents

- Web Browser
 - Google Chrome
 - Mozilla Firefox
- Editor or IDE
 - Microsoft Visual Studio Code
- Node.js
- Git
- Vue.js devtools
- Vue-CLI

Google Chrome Browser

- Google Chrome Browser
 - <https://www.google.com/chrome/>
- Mozilla Firefox
 - <https://www.mozilla.org/ko/>



Editor or IDE

- Visual Studio Code

- <https://code.visualstudio.com/>

- Atom

- <https://atom.io/>

- SublimeText3

- <https://www.sublimetext.com/3>




Visual Studio Code

- <https://code.visualstudio.com/Download>

Download Visual Studio Code

Free and built on open source. Integrated Git, debugging and extensions.




↓ Windows

Windows 7, 8, 10

User Installer64 bit32 bit

System Installer64 bit32 bit

.zip64 bit32 bit



↓ .deb

Debian, Ubuntu

.deb64 bit

.rpm64 bit

.tar.gz64 bit


↓ .rpm

Red Hat, Fedora, SUSE

.deb64 bit

.rpm64 bit

.tar.gz64 bit

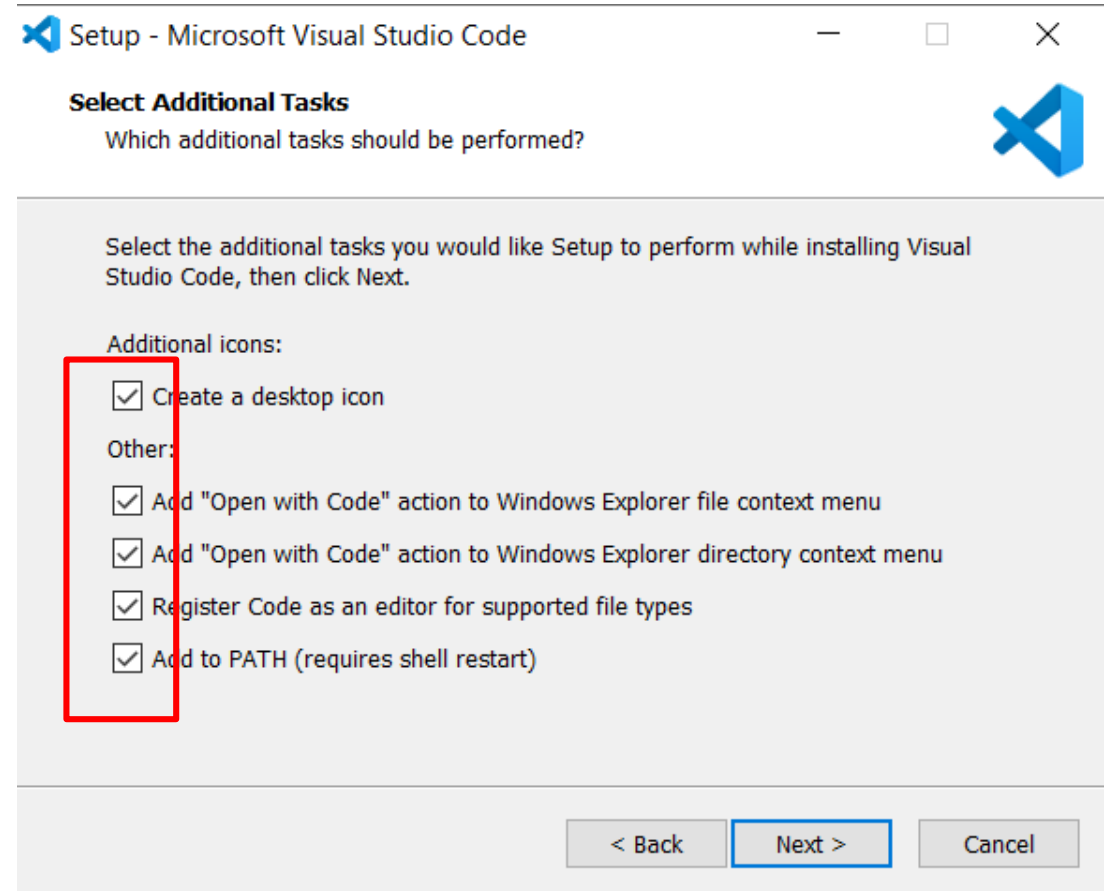
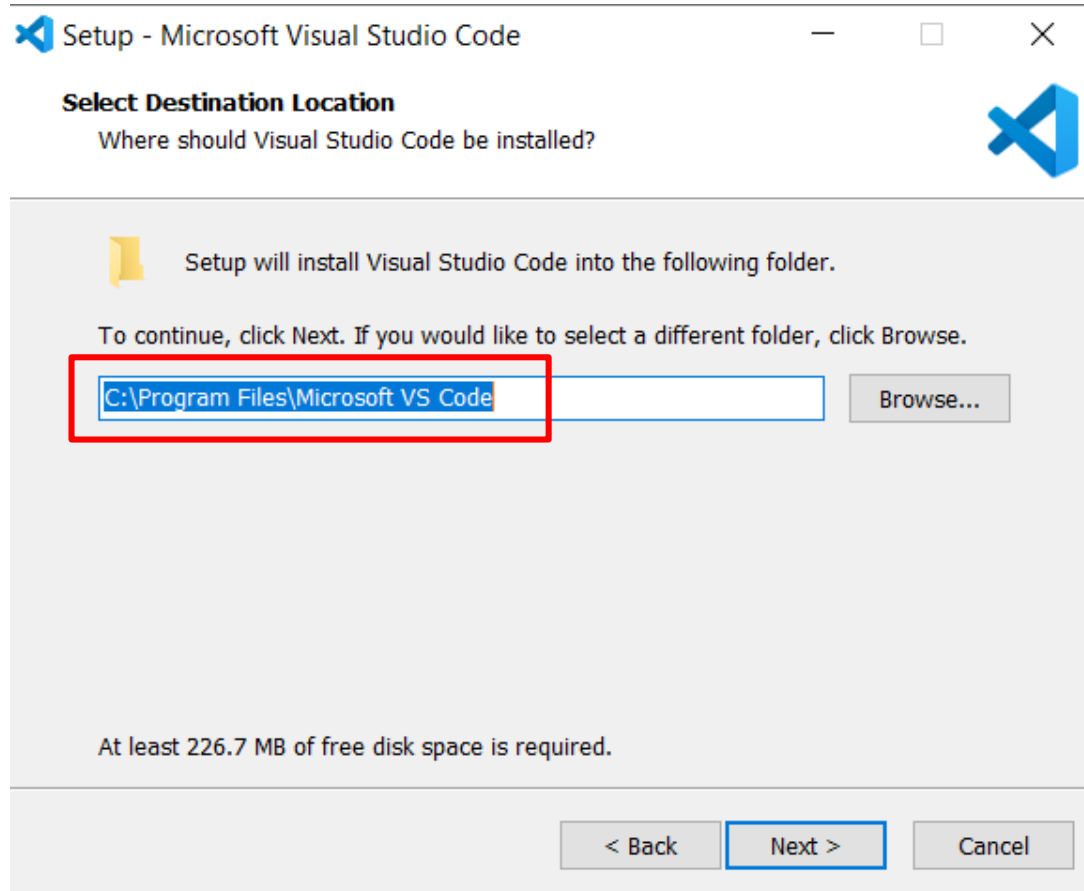


↓ Mac

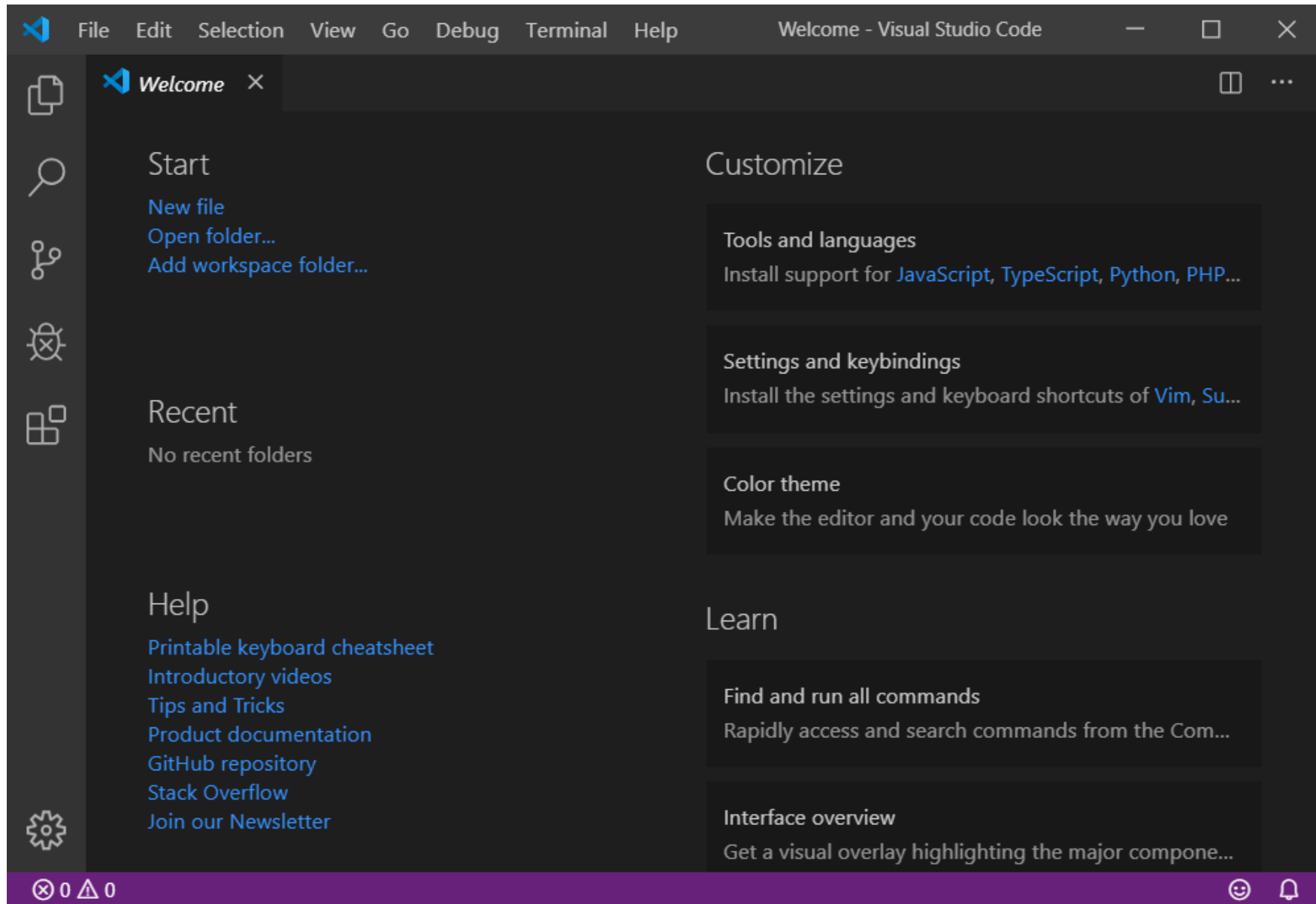
macOS 10.10+

Snap Store

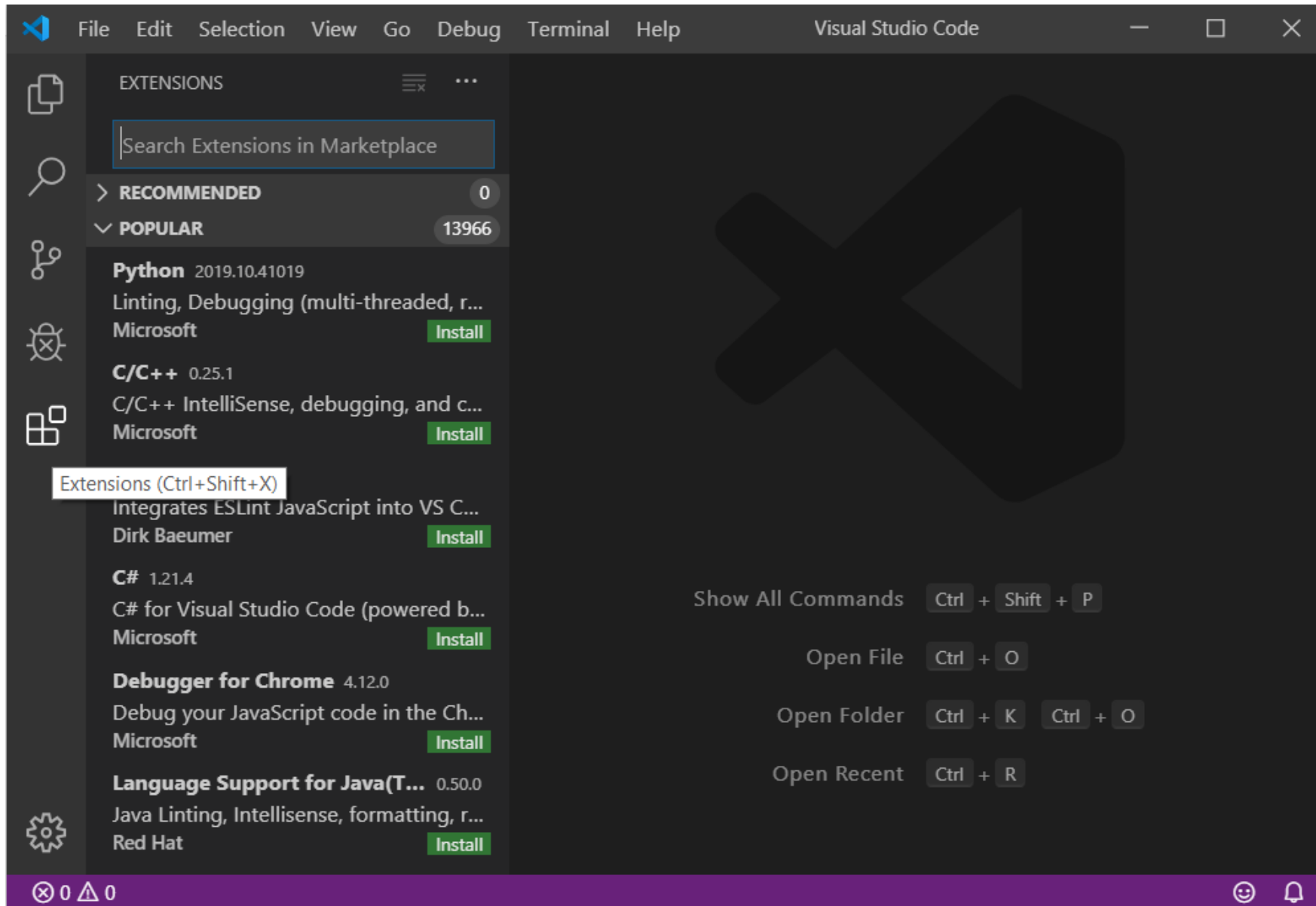
VSCode (Cont.)



VSCode (Cont.)



VSCode Extensions



VSCode Extensions (Cont.)

■ Open in Browser

- To open the current file in default browser.

■ Htmltagwrap

- Wraps selected code with HTML Tags

■ Vetur

- Vue.js code에 대한 문법 강조, 코드 자동완성, Debugging, Linting

■ Vue Peek

- Code 상에 작성되어 있는 Vue Component를 통해 해당 Component 파일을 열고 그 파일로 이동할 수 있는 기능

■ Vue 2 Snippets

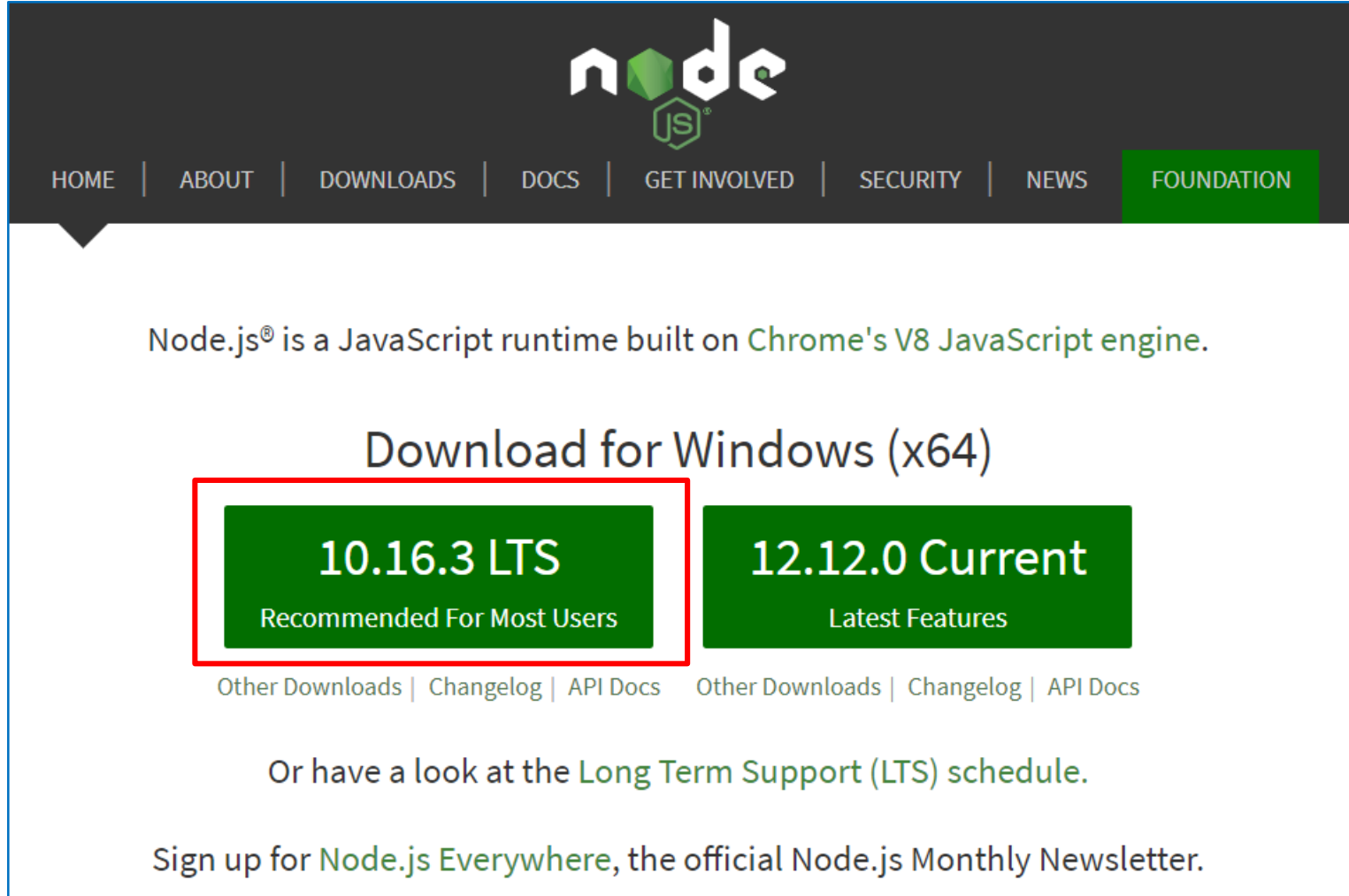
- Vue Component 작성시 수기로 작성해야할 부분을 VSCode의 Plugin에서 자동완성

VSCode Extensions (Cont.)

- Night Owl
 - VSCode color theme.
- Material Icon Theme
 - VSCode icon theme
- Live Server
 - Launch a development local Server with live reload feature for static & dynamic pages.
- ESLint
 - JavaScript code style, 문법 check 기능 제공
- Prettier
 - Code formatter
- Auto Close Tag

Node.js

- <https://nodejs.org/en/>



The screenshot shows the Node.js website homepage. At the top is a dark navigation bar with the Node.js logo and links for HOME, ABOUT, DOWNLOADS, DOCS, GET INVOLVED, SECURITY, NEWS, and FOUNDATION. The FOUNDATION link is highlighted in green. Below the navigation bar, a text block states: "Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine." This is followed by a section titled "Download for Windows (x64)". Under this title are two green buttons: "10.16.3 LTS" with the subtext "Recommended For Most Users", and "12.12.0 Current" with the subtext "Latest Features". The "10.16.3 LTS" button is highlighted with a red border. Below these buttons are two identical links: "Other Downloads | Changelog | API Docs". Further down, a text block says: "Or have a look at the Long Term Support (LTS) schedule." At the bottom, another text block says: "Sign up for Node.js Everywhere, the official Node.js Monthly Newsletter."

node

HOME | ABOUT | DOWNLOADS | DOCS | GET INVOLVED | SECURITY | NEWS | FOUNDATION

Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine.

Download for Windows (x64)

10.16.3 LTS
Recommended For Most Users

12.12.0 Current
Latest Features

Other Downloads | Changelog | API Docs Other Downloads | Changelog | API Docs

Or have a look at the Long Term Support (LTS) schedule.

Sign up for Node.js Everywhere, the official Node.js Monthly Newsletter.

Node.js (Cont.)


```
C:\Users\bluee>echo %PATH%  
C:\Program Files\Java\jdk1.8.0_221\bin;C:\Windows\system32;C:\Windows;C:  
\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\Wi  
ndows\System32\OpenSSH\;C:\Program Files\apache-maven-3.6.2\bin;C:\Progr  
am Files\apache-tomcat-9.0.26\bin;;C:\Program Files\Microsoft VS Code\bi  
n;C:\Program Files\nodejs\;C:\Users\bluee\AppData\Local\Microsoft\Window  
sApps;C:\Program Files\Bandizip\;C:\Users\bluee\AppData\Roaming\npm
```

```
C:\Users\bluee>node --version  
v10.16.3
```

```
C:\Users\bluee>npm --version  
6.9.0
```


Git


■ <https://git-scm.com/>

 **git** --fast-version-control

Git is a **free and open source** distributed version control system designed to handle everything from small to very large projects with speed and efficiency.


Git is **easy to learn** and has a **tiny footprint with lightning fast performance**. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like **cheap local branching**, convenient **staging areas**, and **multiple workflows**.






About

The advantages of Git compared to other source control systems.




Documentation

Command reference pages, Pro Git book content, videos and other material.




Downloads

GUI clients and binary releases for all major platforms.



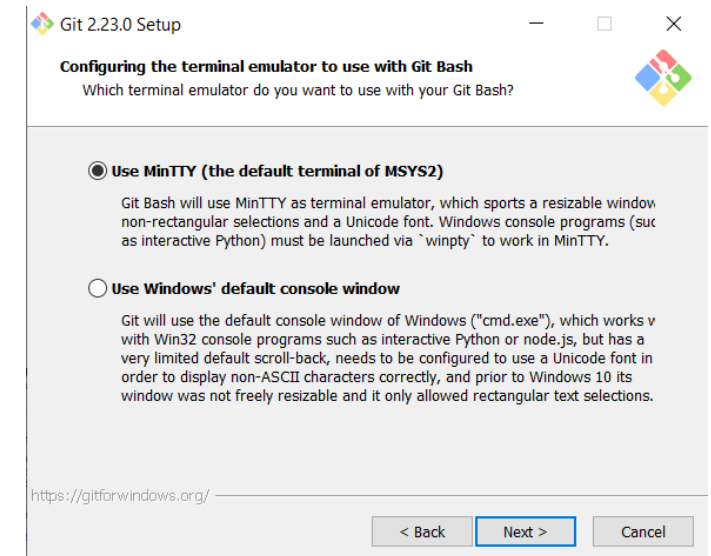
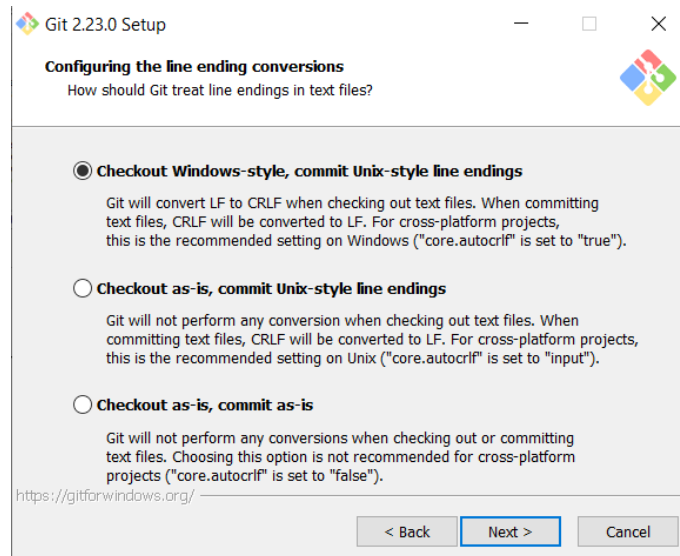
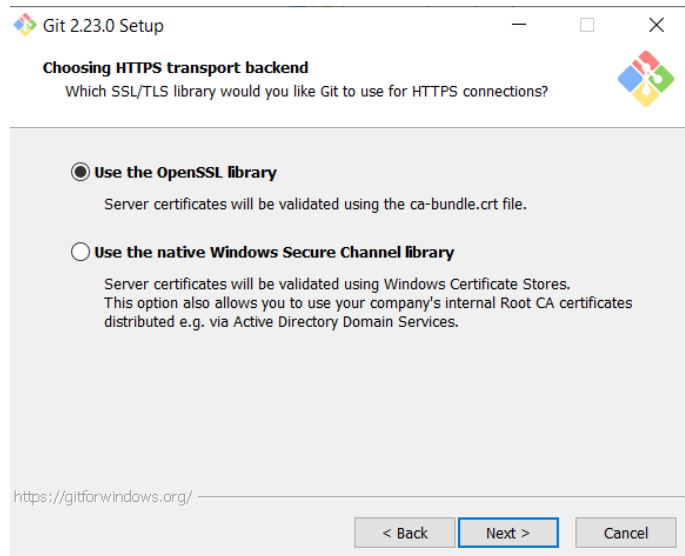
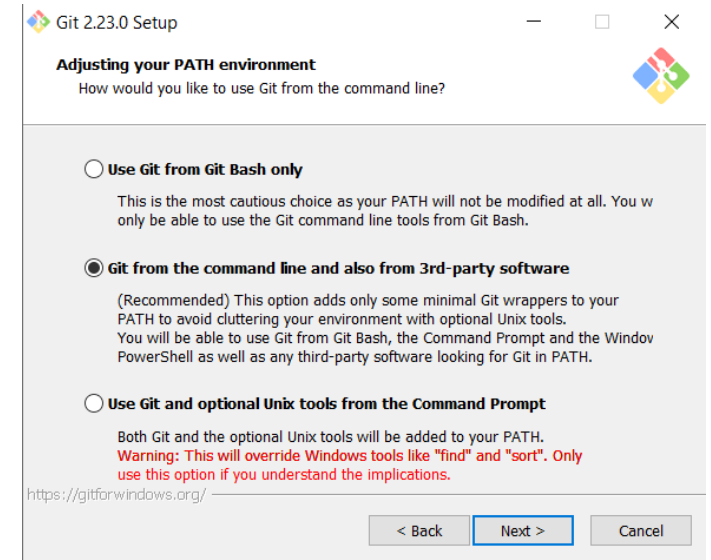
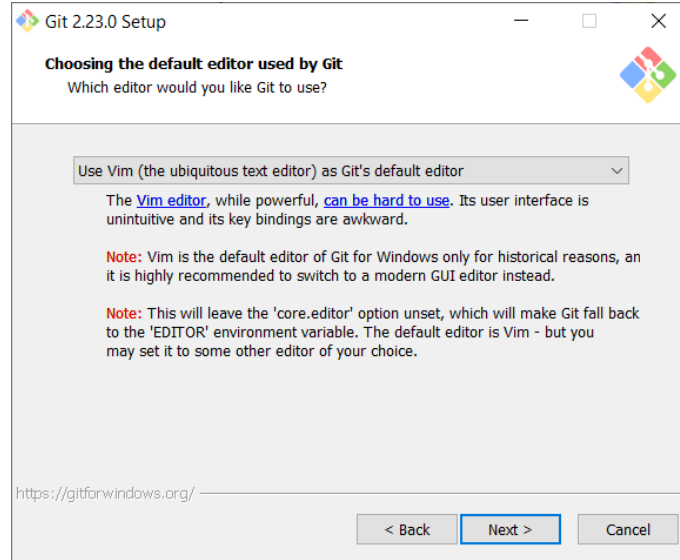
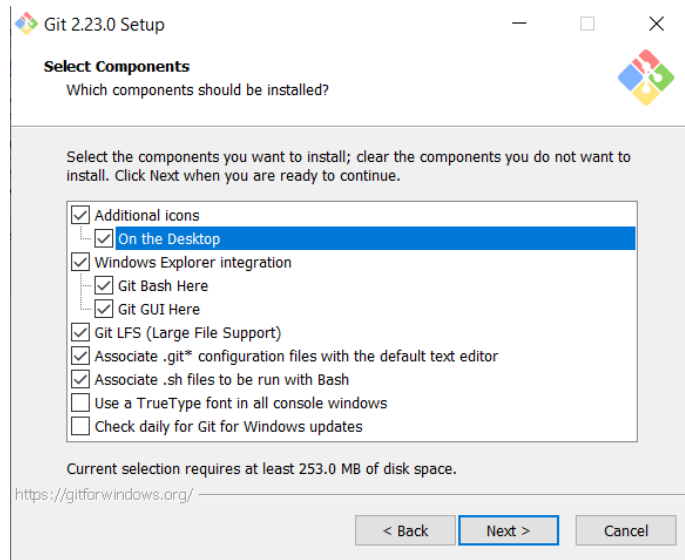
Community

Get involved! Bug reporting, mailing list, chat, development and more.

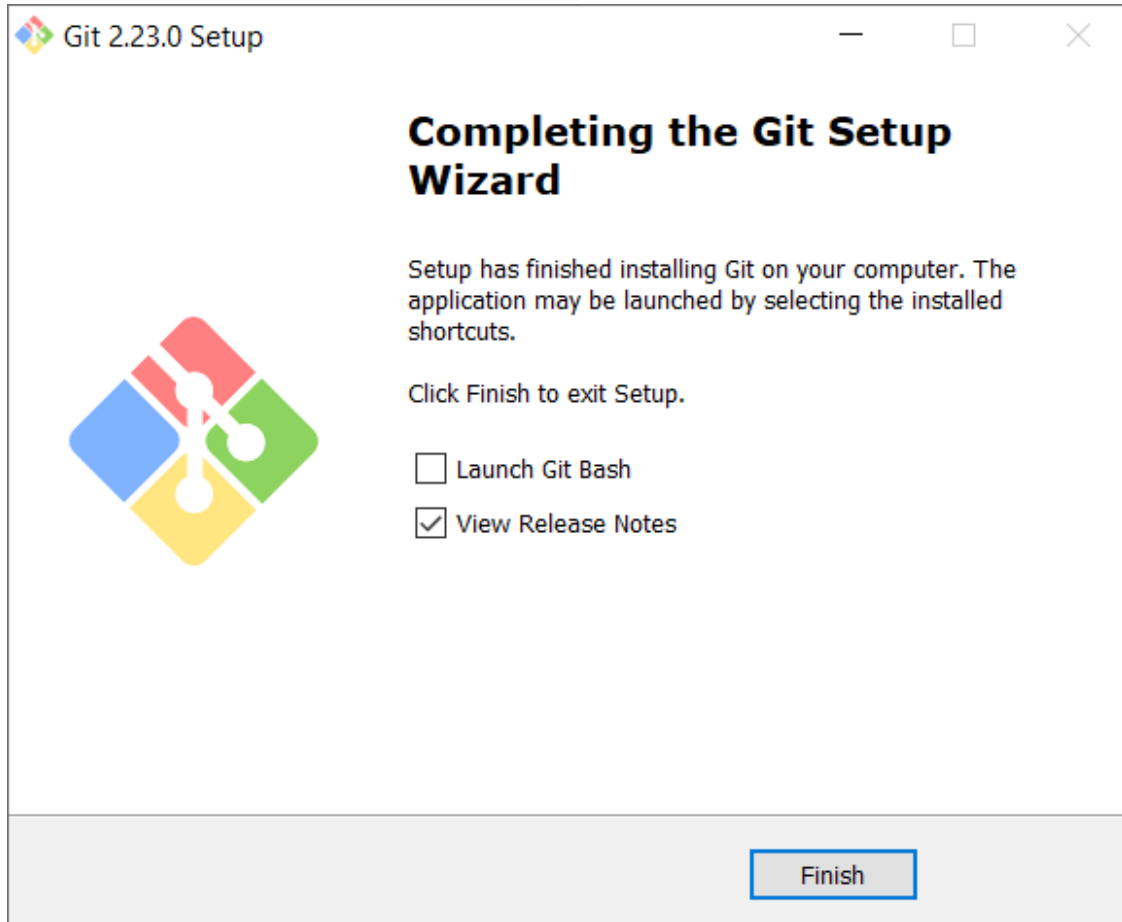


Latest source Release
2.23.0
Release Notes (2019-08-16)
Download 2.23.0 for Windows

Git (Cont.)



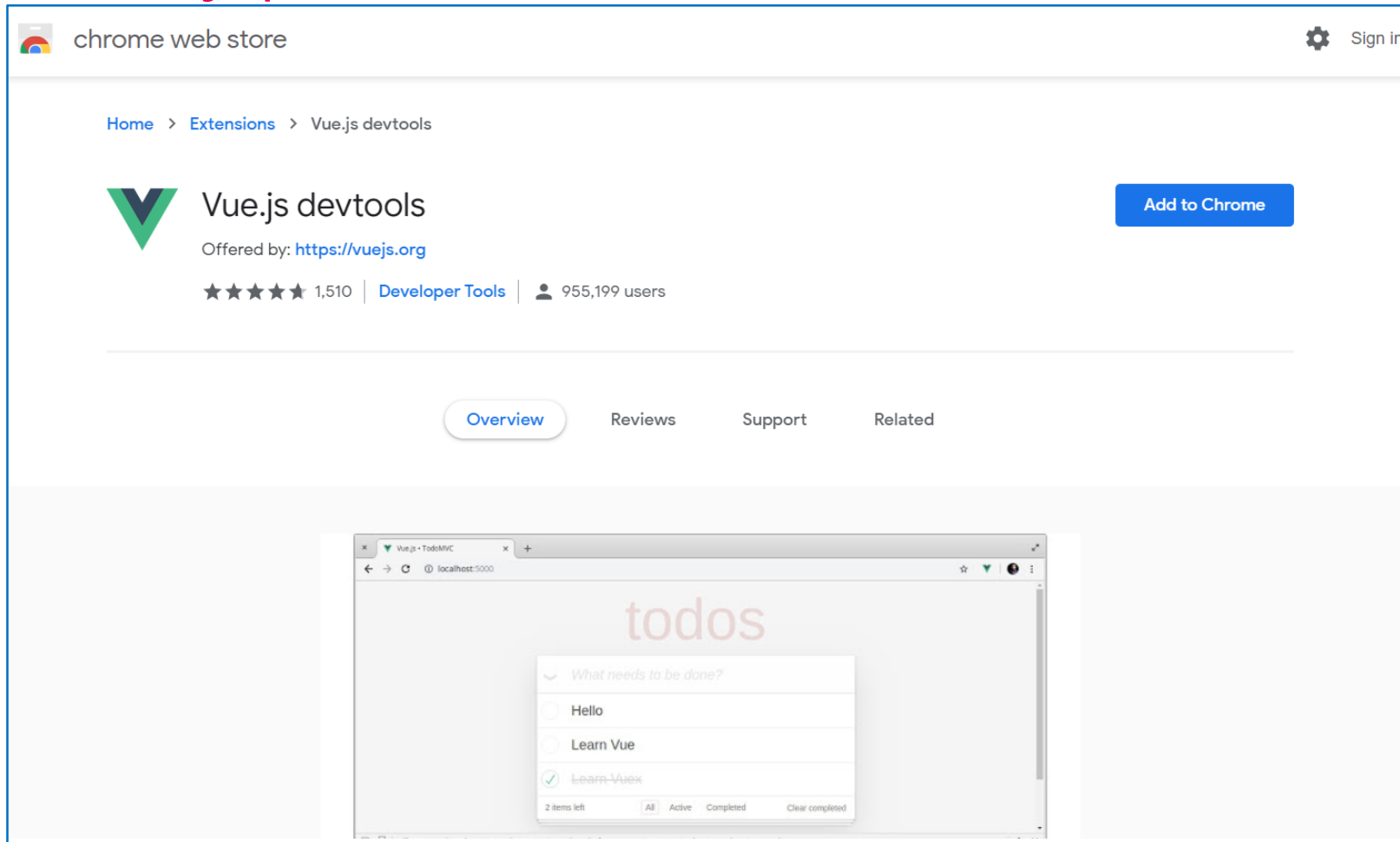
Git (Cont.)



```
C:\Users\bluee>git --version  
git version 2.23.0.windows.1
```

Vue.js devtools

- <https://chrome.google.com/webstore/detail/vuejs-devtools/nhdogjmejiglipccpnnnanhbledajbpd>



Hello, Vue.js – First Way

■ 독립 실행 Version

- Direct **<script>** Include
- Simply download and include with a script tag.
- Vue will be registered as a global variable.
- Vuejs.org에서 Download
- Development Version
 - <https://vuejs.org/js/vue.js>
 - With full warnings and debug mode
 - 341,462 Bytes
- Production Version
 - <https://vuejs.org/js/vue.min.js>
 - Warnings stripped, 33.30KB min+gzip
 - 93,675 Bytes

Hello, Vue.js – First Way (Cont.)

```
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    <meta http-equiv="X-UA-Compatible" content="ie=edge">
7    <title>Hello Vue.js</title>
8  </head>
9  <body>
10   <div id="app">
11     {{ message }}
12   </div>
13   <script src="js/vue.js"></script>
14   <script>
15     new Vue({
16       el : '#app',
17       data : {
18         message : 'Hello, Vue.js!'
19       }
20     });
21   </script>
22 </body>
23 </html>
```

Hello Vue.js – First Way (Cont.)

The screenshot shows a web browser window with the title "Hello Vue.js" and the address bar displaying "127.0.0.1:5500/hello.html". The page content is "Hello, Vue.js!". Below the browser window, the Vue.js DevTools component inspector is open, showing the "Vue" tab. The inspector displays the component tree with "<Root>" selected. The component's data is shown as:

```
data
  message: "Hello, Vue.js!"
```

Hello, Vue.js – Second Way

■ 독립 실행 CDN Version

- Direct **<script>** Include
- Simply download and include with a script tag.
- Vue will be registered as a global variable.
- CDN에서 가져오기
 - **<script src="https://cdn.jsdelivr.net/npm/vue/dist/vue.js"></script>**
 - **<script src="https://cdn.jsdelivr.net/npm/vue@2.6.0"></script>**
 - **<script type="module">**
import Vue from 'https://cdn.jsdelivr.net/npm/vue@2.6.10/dist/vue.esm.browser.js'
</script>
- You can browse the source of the NPM package at cdn.jsdelivr.net/npm/vue.

Hello, Vue.js – Second Way (Cont.)

■ 독립 실행 CDN Version

- Vue is also available on [unpkg](#) and [cdnjs](#).
- cdnjs takes some time to sync so the latest release may not be available yet.
- Make sure to :
 - Read about [the different builds of Vue](#)
 - Use the production version.
 - Replacing vue.js with vue.min.js.

Hello, Vue.js – Second Way (Cont.)

```
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   <meta http-equiv="X-UA-Compatible" content="ie=edge">
7   <title>Hello Vue.js</title>
8 </head>
9 <body>
10   <div id="app">
11     {{ message }}
12   </div>
13   <!-- development version, includes helpful console warnings -->
14   <!-- <script src="https://cdn.jsdelivr.net/npm/vue@2.6.10/dist/vue.js"></script> -->
15
16   <!-- production version, optimized for size and speed -->
17   <script src="https://cdn.jsdelivr.net/npm/vue@2.6.10"></script>
18   <script>
19     new Vue({
20       el : '#app',
21       data : {
22         message : 'Hello, Vue.js!'
23       }
24     });
25   </script>
26 </body>
27 </html>
```

Vue.js 개발 환경 선택하기

- Web Page에 Vue.js Library File을 포함하는 방법
- 배포용 Version
 - 개발자가 알아볼 수 없도록 난독화와 압축을 한 파일
 - 크기가 적고 파일을 편집기로 열었을 때 알아볼 수 없음.
 - Vue.js Project 개발을 완료하고 Web Application을 공개/배포 때 사용
 - vue.min.js
- 개발용 Version
 - Framework 내부에서 발생하는 경고 및 Debug Mode 모두 포함
 - 난독화하지 않은 File이므로 Vue.js Project 개발하면서 Vue.js 내부 동작을 살펴보기에 적합
 - vue.js
 - *Vue Devtools 사용가능*

Vue.js 개발 환경 선택하기 (Cont.)

- Web page에 Vue.js Library file을 포함할 때는 CDN 사용 권장.
- 대표적인 CDN
 - <https://unpkg.com>
 - <https://www.jsdelivr.com>
 - <https://cdnjs.com>
- CDN에서 제공하는 Library File은 Version별로 구분해서 제공됨.
- NPM에 올라온 최신 Version을 사용할 때는 unpkg.com의 CDN 권장.

Vue.js 개발 환경 선택하기 (Cont.)

■ unpkg.com

- 개발용 : <https://unpkg.com/vue@<version>/dist/vue.js>
- 배포용 : <https://unpkg.com/vue@<version>/dist/vue.min.js>
- 개발 Version에 한정해 <https://unpkg.com/vue>로 적용 가능

■ jsDelivr.com

- 개발용 : <https://cdn.jsdelivr.net/npm/vue@<version>/dist/vue.js>
- 배포용 : <https://cdn.jsdelivr.net/npm/vue@<version>/dist/vue.min.js>

■ cdnjs.com

- 개발용 : <https://cdnjs.cloudflare.com/ajax/libs/vue/<version>/vue.js>
- 배포용 : <https://cdnjs.cloudflare.com/ajax/libs/vue/<version>/vue.min.js>

■ Vue.js Project 개발시 개발 편의성을 위해 개발용 Version 권장

Vue.js 개발 환경 선택하기 (Cont.)

■ NPM 설치

- Vue.js 개발시 ES6를 사용하거나 Vue.js 프로그램을 쉽게 배포하기 위한 Bundling할 때
- npm을 사용해서 Vue.js를 설치하면 *webpack*, *Browserify*와 같은 Module Bundler를 사용할 수 있다.
- 대규모 Web Application을 개발하기에 좋다.
- npm 명령어로 Vue.js를 설치하는 것은 Node.js Project에 적용할 때만 사용해야 한다.

```
$ mkdir node_project
```

```
$ cd node_project
```

```
$ npm init
```

```
$ npm install vue
```

Vue.js 개발 환경 선택하기 (Cont.)

```
C:\VueHome\node_project>npm init
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See `npm help json` for definitive documentation on these fields
and exactly what they do.

Use `npm install <pkg>` afterwards to install a package and
save it as a dependency in the package.json file.

Press ^C at any time to quit.
package name: (node_project)
version: (1.0.0)
description:
entry point: (index.js)
test command:
git repository:
keywords:
author:
license: (ISC)
```

Vue.js 개발 환경 선택하기 (Cont.)

About to write to C:\VueHome\node_project\package.json:

```
{  
  "name": "node_project",  
  "version": "1.0.0",  
  "description": "",  
  "main": "index.js",  
  "scripts": {  
    "test": "echo \"Error: no test specified\" && exit 1"  
  },  
  "author": "",  
  "license": "ISC"  
}
```

Is this OK? (yes)

Vue.js 개발 환경 선택하기 (Cont.)

```
C:\VueHome\node_project>npm install vue
npm notice created a lockfile as package-lock.json. You should commit this file.
npm WARN node_project@1.0.0 No repository field.

+ vue@2.6.10
added 1 package from 1 contributor and audited 1 package in 1.029s
found 0 vulnerabilities

C:\VueHome\node_project>vue --version
2.9.6
```

Vue.js 개발 환경 선택하기 (Cont.)

■ Vue-CLI 설치

- Vue.js를 사용할 때 Vue 전용 CLI 도구인 Vue-CLI를 활용할 수 있다.
- Vue-CLI는 Node.js에 기반을 둔 Vue.js 프로그램의 빠른 시작과 구현을 위해 Build 설정이 포함된 Project를 생성한다.
- Vue-CLI 덕분에 Vue.js가 적용된 Node.js Project를 쉽게 만들 수 있다.
- Vue-CLI는 Project를 쉽게 Build할 수 있도록 몇 개의 Build Template을 제공한다.

Vue-CLI Version 4

- Evan You가 공식적으로 관리하는 Command line Interface 기반의 Scaffolding 도구.
- Vue.js App을 개발시 Project의 Directory 구조를 어떻게 잡을 것인지 Test, Build, Dependency 등을 어떻게 설정할 것인지에 대한 고민을 하지 않도록 Project의 기본 Template을 설정해 주는 Tool.
- Refer to <https://cli.vuejs.org/guide/cli-service.html>
- Prerequisites:
 - Node.js (>=6.x, 8.x preferred), npm version 3+ and Git.
- Installation

\$ npm install -g @vue/cli

\$ yarn global add @vue/cli

Scaffolding : 원래 '공사장 등에서 사용하는 임시 가설물'이라는 뜻. Application을 개발할 때 처음부터 개발하는 것이 아니라 기본적인 Interface와 Tool을 제공해 준다. 개발자는 이 Tool을 활용해서 전체 App을 개발할 수 있다. - 원형섭, <Vue.js 쿼 스타트>, 2017.9, 루비페이퍼, p11.

Vue-CLI Version 4 (Cont.)

■ Warning regarding Previous Versions

- The package name changed from **vue-cli** to **@vue/cli**.
- If have the previous **vue-cli** (1.x or 2.x) package installed globally, need to uninstall it first with :

```
$ npm uninstall vue-cli -g
```

or

```
$ yarn global remove vue-cli
```


Vue-CLI Version 4 (Cont.)

```
C:\Users\bluee>npm install -g @vue/cli
C:\Users\bluee\AppData\Roaming\npm\vue -> C:\Users\bluee\AppData\Roaming\npm\node_modules\@vue\cli\bin\vue.js

> core-js@3.4.1 postinstall C:\Users\bluee\AppData\Roaming\npm\node_modules\@vue\cli\node_modules\core-js
> node postinstall || echo "ignore"
```

```
_npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@1.2.9 (node_modules\@vue\cli\node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@1.2.9: wanted {"os":"darwin","arch":"any"} (current: {"os":"win32","arch":"x64"})

+ @vue/cli@4.0.5
added 31 packages from 3 contributors and updated 70 packages in 55.711s
```

Vue-CLI Version 4 (Cont.)

- After installation, will have access to the **vue** binary in command line.
- 설치 후 설치 유무 및 Version 정보 확인
\$ vue -V 혹은 **vue --version**

```
C:\VueHome\demo>vue --version
@vue/cli 4.0.5
```

Vue-CLI Version 4 (Cont.)

■ Project 생성

`$ vue create hello-vue-cli`

```
C:\VueHome>vue create hello-vue-cli

Vue CLI v4.0.5
? Please pick a preset: (Use arrow keys)
> default (babel, eslint)
   Manually select features
```

Vue-CLI Version 4 (Cont.)

■ Project 생성

```

? ?? Invoking generators...
? ?? Installing additional dependencies...

? Running completion hooks...ibutors and audited 24408 packages in 7.913s
found 0 vulnerabilities
? ?? Generating README.md...

? ?? Successfully created project hello-vue-cli.
? ?? Get started with the following commands:

$ cd hello-vue-cli
$ npm run serve

WARN Skipped git commit due to missing username and email in git config.
You will need to perform the initial commit yourself.
```

Vue-CLI Version 4 (Cont.)

■ Project 생성

```
C:\VueHome\hello-vue-cli>npm run serve

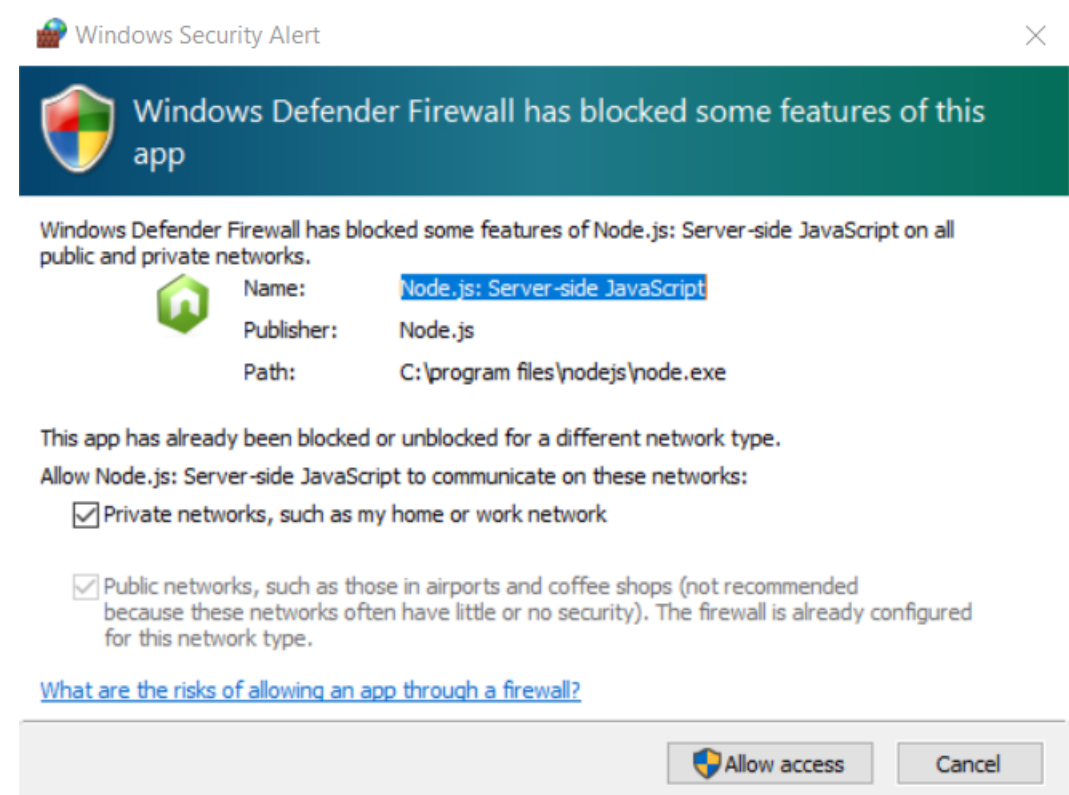
> hello-vue-cli@0.1.0 serve C:\VueHome\hello-vue-cli
> vue-cli-service serve

INFO Starting development server...
98% after emitting CopyPlugin

DONE Compiled successfully in 3781ms

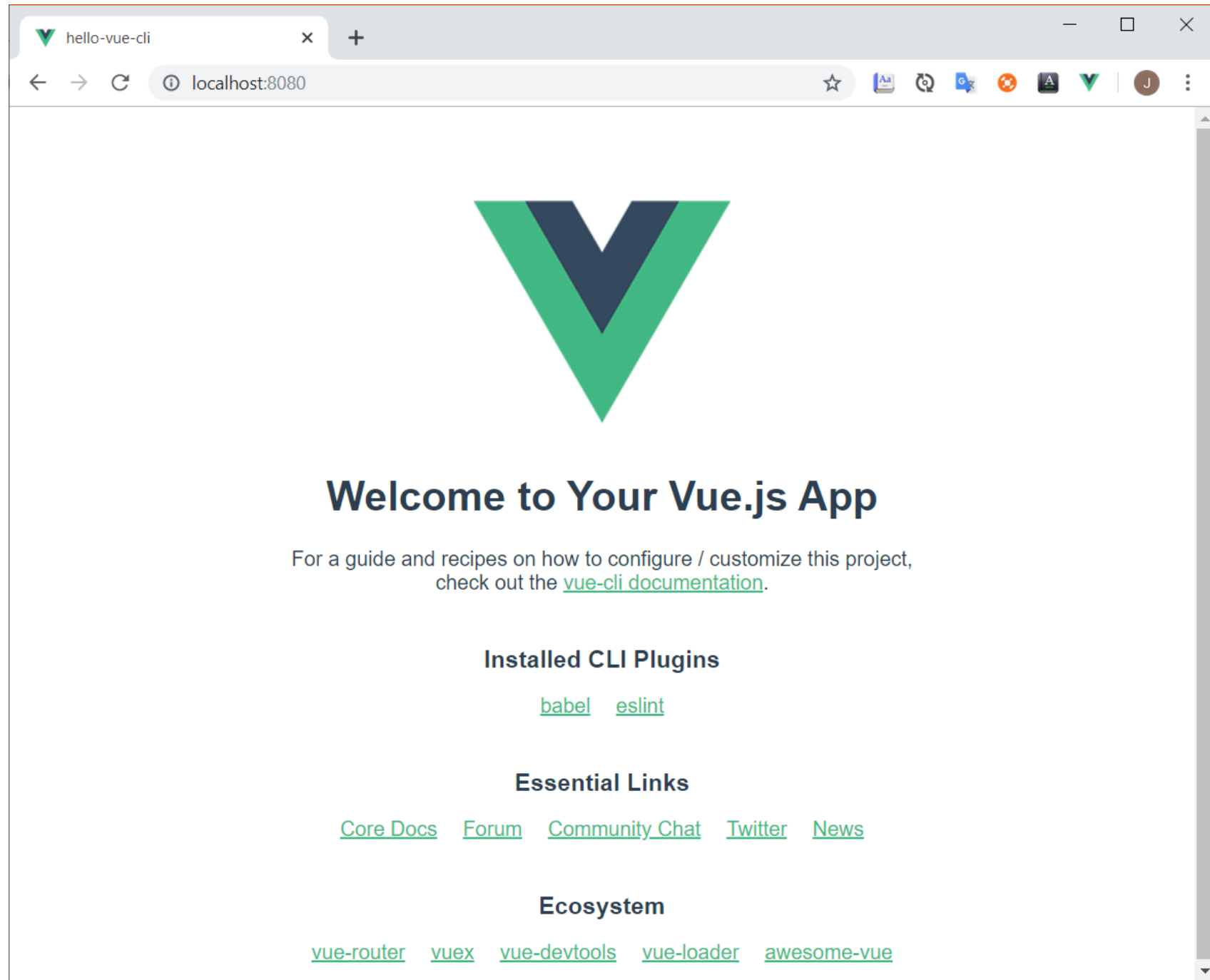
App running at:
- Local: http://localhost:8080/
- Network: http://192.168.4.214:8080/

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



Vue-CLI Version 4

■ Project 생성



Vue-CLI Version 4 (Cont.)



The screenshot shows a code editor interface with a file explorer on the left and a code editor on the right. The file explorer, titled 'EXPLORER', shows a project structure with a folder 'hello-vue-cli' containing 'node_modules', 'public', 'src', and 'js' folders, and several files including 'favicon.ico', 'index.html', '.gitignore', 'babel.config.js', 'package-lock.json', 'package.json', 'README.md', and 'hello.html'. The 'index.html' file is selected. The code editor, titled 'index.html', shows the following HTML code:

```
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5     <meta http-equiv="X-UA-Compatible" content="IE=edge">
6     <meta name="viewport" content="width=device-width,initial-scale=1.0">
7     <link rel="icon" href="%= BASE_URL %>favicon.ico">
8     <title>hello-vue-cli</title>
9   </head>
10  <body>
11    <noscript>
12      <strong>We're sorry but hello-vue-cli doesn't work properly without JavaScript enabled. Please
13    </noscript>
14    <div id="app"></div>
15    <!-- built files will be auto injected -->
16  </body>
17 </html>
```

Vue-CLI Version 2

■ Remove Vue-CLI 4.x

```
C:\Users\bluee>npm remove -g @vue/cli  
removed 1088 packages in 11.922s
```

■ Installation Vue-CLI 2.x

```
C:\Users\bluee>npm install vue-cli -g  
npm WARN deprecated vue-cli@2.9.6: This package has been deprecated in favour of @vue/cli  
npm WARN deprecated coffee-script@1.12.7: CoffeeScript on NPM has moved to "coffeescript"  
(no hyphen)  
C:\Users\bluee\AppData\Roaming\npm\vue -> C:\Users\bluee\AppData\Roaming\npm\node_modules  
\vue-cli\bin\vue  
C:\Users\bluee\AppData\Roaming\npm\vue-list -> C:\Users\bluee\AppData\Roaming\npm\node_mo  
dules\vue-cli\bin\vue-list  
C:\Users\bluee\AppData\Roaming\npm\vue-init -> C:\Users\bluee\AppData\Roaming\npm\node_mo  
dules\vue-cli\bin\vue-init  
+ vue-cli@2.9.6  
added 241 packages from 206 contributors in 15.598s
```


Vue-CLI Version 2 (Cont.)

- 설치 후 설치 유무 및 Version 정보 확인

```
C:\Users\bluee>vue --version  
2.9.6
```

- Vue-CLI 2.x로 만들 수 있는 Project Template List
\$ vue list

Vue-CLI Version 2 (Cont.)

- Vue-CLI 2.x로 만들 수 있는 Project Template List

\$ vue list

```
C:\Users\bluee>vue list
```

Available official templates:

- ❓ browserify - A full-featured Browserify + vueify setup with hot-reload, linting & unit testing.
- ❓ browserify-simple - A simple Browserify + vueify setup for quick prototyping.
- ❓ pwa - PWA template for vue-cli based on the webpack template
- ❓ simple - The simplest possible Vue setup in a single HTML file
- ❓ webpack - A full-featured Webpack + vue-loader setup with hot reload, linting, testing & css extraction.
- ❓ webpack-simple - A simple Webpack + vue-loader setup for quick prototyping.

Vue-CLI Version 2 (Cont.)

■ simple

- 가장 간단단 Project Template 유형.
- HTML file 하나만 생성.
- 내부에는 Vue.js를 CDN(Content Delivery Network)방식으로 참조하고 있음.
- 가장 단순한 방법으로 기본적인 기능을 Test 해 볼 때 사용 가능.

■ broserify

- browserify + vueify 조합으로 hot-reload, linting, 단위 Test를 지원하는 Project Template을 구성.
- 대규모 Application을 개발할 때 주로 사용

■ broserify-simple

- 빠른 Prototyping을 위한 browserify + vueify가 설정된 간단한 Template 제공

Vue-CLI Version 2 (Cont.)

■ webpack

- Webpack + vue-loader 조합의 기능에 hot-reload, linting, 단위 Test 기능을 제공하는 Project Template.
- 대규모 Application 개발에 적절.

■ webpack-simple

- 빠른 Prototyping을 위한 Webpack + vue-loader가 설정된 간단한 Template 제공

■ pwa

- PWA(Progressive Web App) 개발을 위한 Template 제공.
- Webpack과 유사하지만 몇 가지 Library가 추가되어 있음.

Vue-CLI (Cont.)

- Vue-CLI 2.x로 Project Template을 만드는 방법은 아래와 같다.

`$ vue init [Template이름] [Project 이름]`

- hellovuejs Project 생성하기

`$ vue init simple hellovuejs`

```
C:\VueHome>vue init simple hellovuejs
```

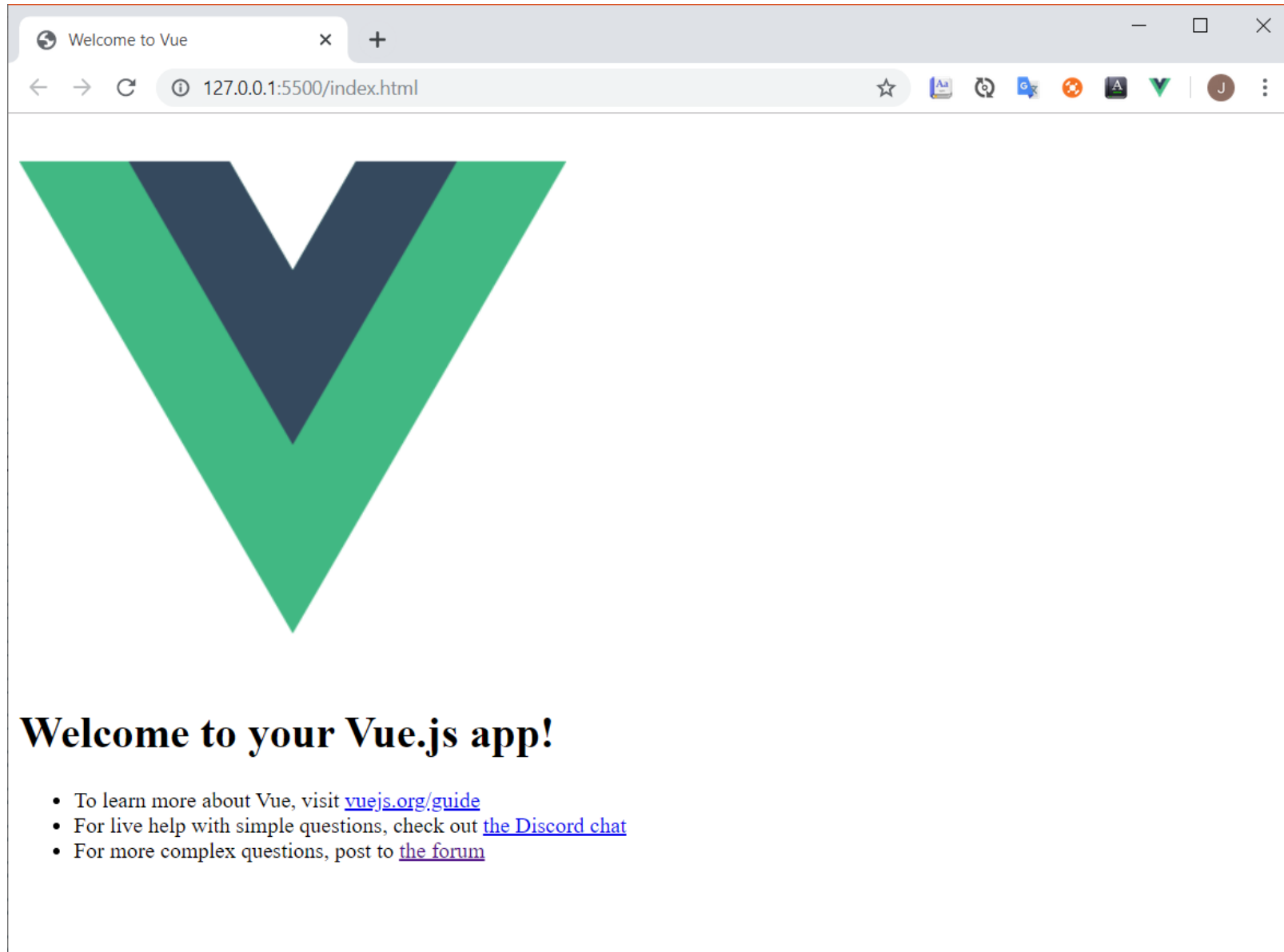
```
? name hellovuejs
```

```
vue-cli · Generated "hellovuejs".
```

Vue-CLI (Cont.)

```
index.html > html > body > div#app > ul > li
1  <!DOCTYPE html>
2  <html>
3  <head>
4    <title>Welcome to Vue</title>
5    <script src="https://unpkg.com/vue"></script>
6  </head>
7  <body>
8    <div id="app">
9      
10     <h1>{{ greeting }}</h1>
11     <ul>
12       <li>
13         To learn more about Vue, visit
14         <a :href="docsURL" target="_blank">
15           {{ humanizeURL(docsURL) }}
16         </a>
17       </li>
18       <li>
19         For live help with simple questions, check out
20         <a :href="discordURL" target="_blank">
21           the Discord chat
22         </a>
23       </li>
24       <li>
25         For more complex questions, post to
26         <a :href="forumURL" target=" blank">
```

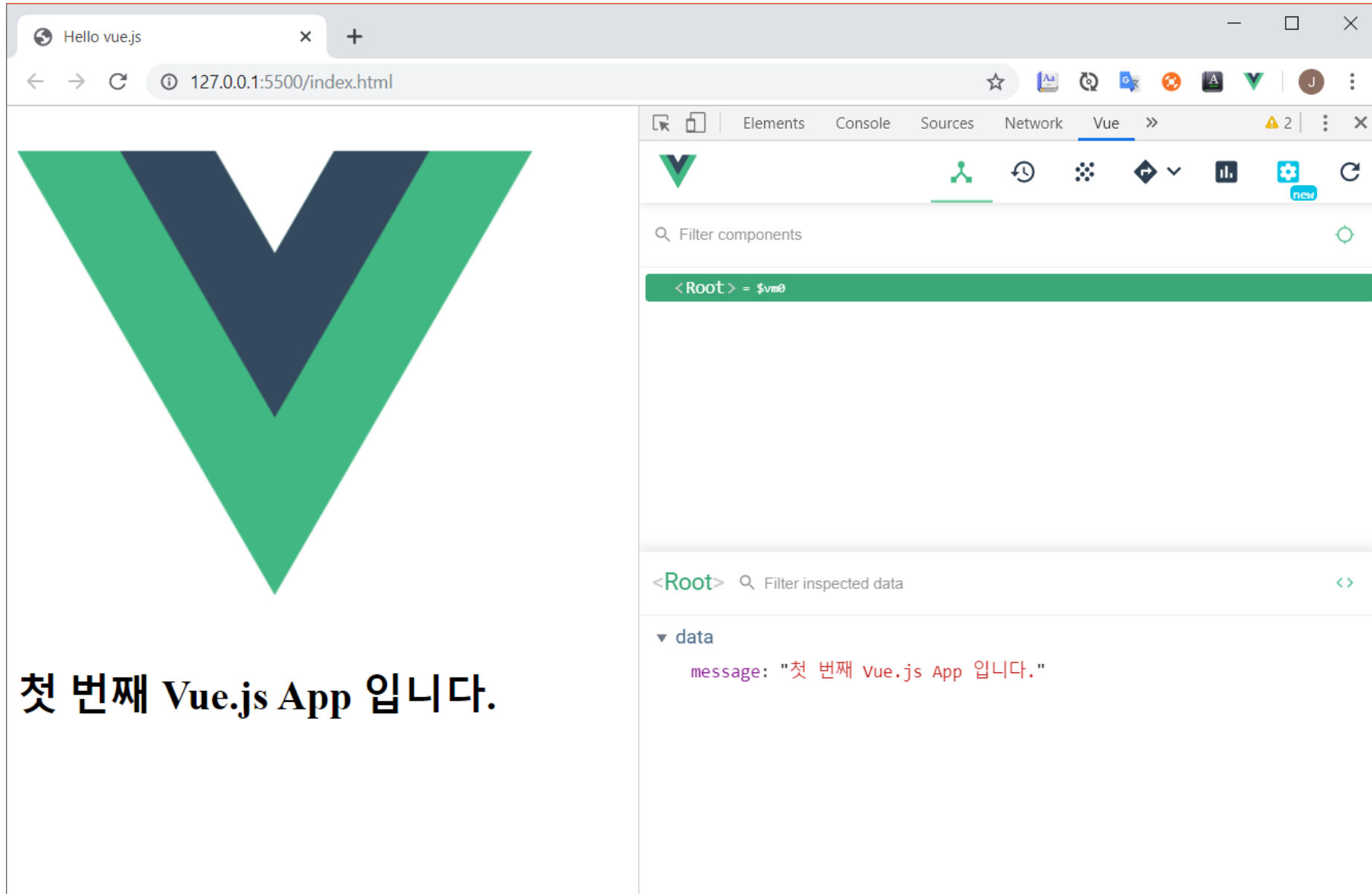
Vue-CLI (Cont.)



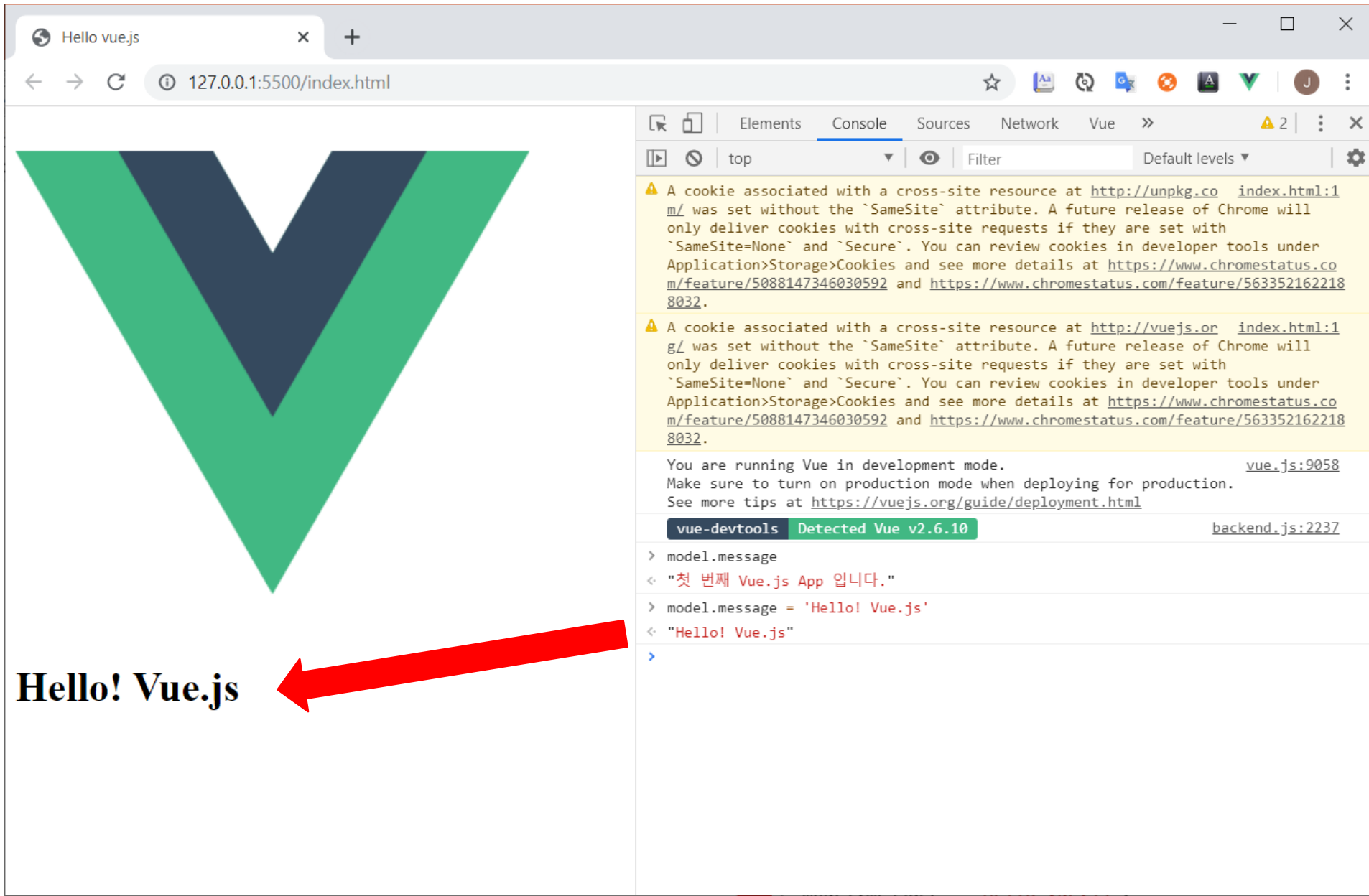
Vue-CLI (Cont.)

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  |   <title>Hello vue.js</title>
5  |   <script src="https://unpkg.com/vue"></script>
6  </head>
7  <body>
8  |   <div id="app">
9  |     
10 |     <h1>{{ message }}</h1>
11 |   </div>
12
13   <script>
14   |   var model = {
15   |     message : '첫 번째 Vue.js App 입니다.'
16   |   }
17   |   var vue = new Vue({
18   |     el: '#app',
19   |     data: model
20   |   });
21   </script>
22 </body>
23 </html>
```


Vue-CLI (Cont.)



Vue-CLI (Cont.)



The screenshot shows a web browser window with the address bar displaying "127.0.0.1:5500/index.html". The page content includes the Vue.js logo and the text "Hello! Vue.js". The browser's developer tools are open, showing the console with the following messages:

- A warning about cookies: "A cookie associated with a cross-site resource at <http://unpkg.co> `index.html:1` was set without the ``SameSite`` attribute. A future release of Chrome will only deliver cookies with cross-site requests if they are set with ``SameSite=None`` and ``Secure``. You can review cookies in developer tools under Application>Storage>Cookies and see more details at <https://www.chromestatus.com/feature/5088147346030592> and <https://www.chromestatus.com/feature/5633521622188032>."
- A warning about cookies: "A cookie associated with a cross-site resource at <http://vuejs.org> `index.html:1` was set without the ``SameSite`` attribute. A future release of Chrome will only deliver cookies with cross-site requests if they are set with ``SameSite=None`` and ``Secure``. You can review cookies in developer tools under Application>Storage>Cookies and see more details at <https://www.chromestatus.com/feature/5088147346030592> and <https://www.chromestatus.com/feature/5633521622188032>."
- A message indicating that the application is running in development mode: "You are running Vue in development mode. Make sure to turn on production mode when deploying for production. See more tips at <https://vuejs.org/guide/deployment.html>."
- A message from the Vue.js devtools: "vue-devtools Detected Vue v2.6.10"
- A message from the Vue.js devtools: "model.message"
- A message from the Vue.js devtools: "첫 번째 Vue.js App 입니다."
- A message from the Vue.js devtools: "model.message = 'Hello! Vue.js'"
- A message from the Vue.js devtools: "Hello! Vue.js"

A red arrow points from the console message "Hello! Vue.js" to the text "Hello! Vue.js" on the page.

Vue-CLI (Cont.)

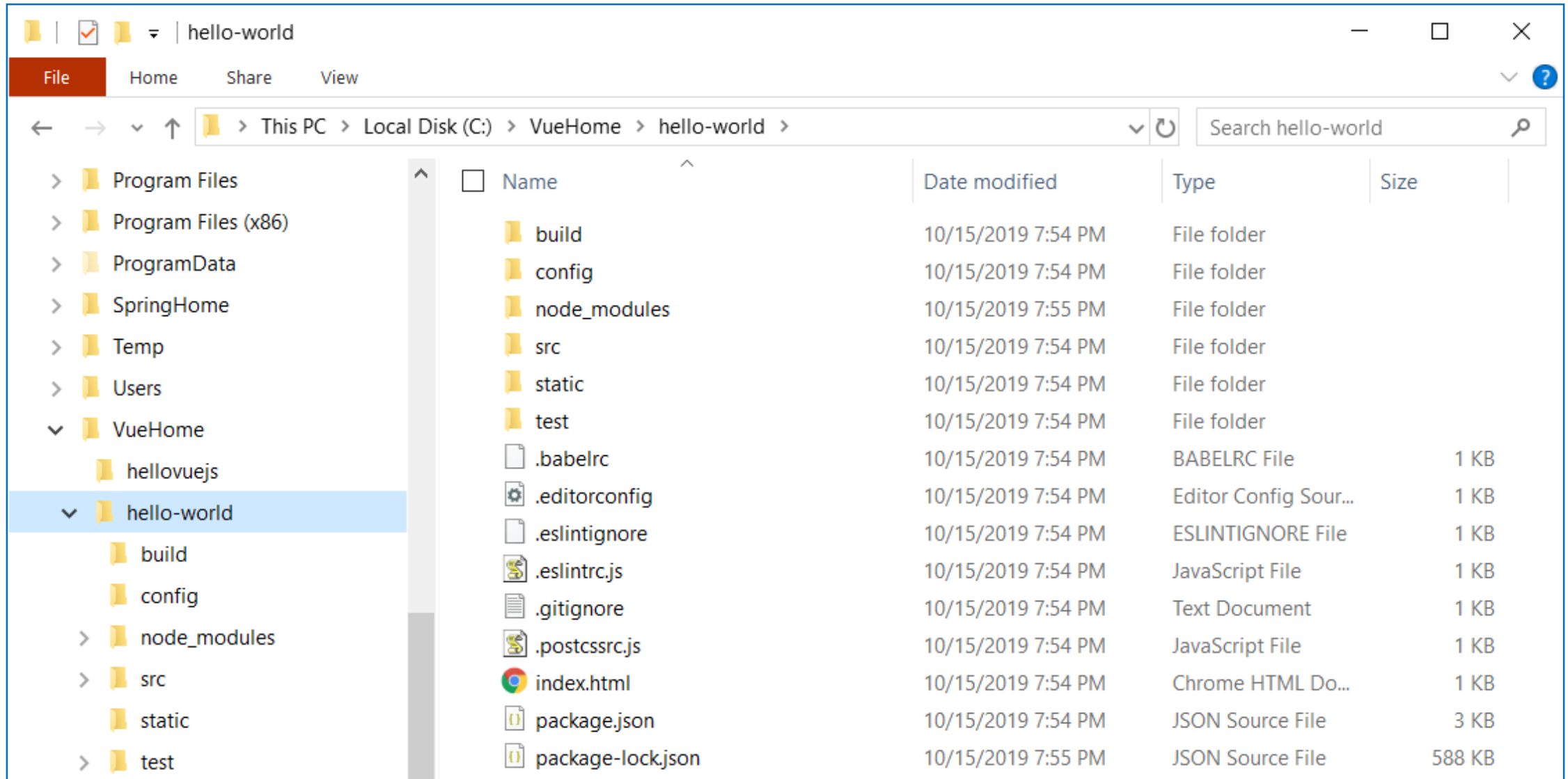
```
$ vue init webpack hello-world
```

```
C:\VueHome>vue init webpack hello-world
```

```
? Project name hello-world
? Project description A Vue.js project
? Author instructor
? Vue build standalone
? Install vue-router? Yes
? Use ESLint to lint your code? Yes
? Pick an ESLint preset Standard
? Set up unit tests Yes
? Pick a test runner jest
? Setup e2e tests with Nightwatch? Yes
? Should we run `npm install` for you after the project has been created? (recommended) npm
```

```
vue-cli · Generated "hello-world".
```

Vue-CLI (Cont.)



Vue-CLI (Cont.)

```
C:\VueHome>cd hello-world
```

```
C:\VueHome\hello-world>npm run dev
```

```
> hello-world@1.0.0 dev C:\VueHome\hello-world
```

```
> webpack-dev-server --inline --progress --config build/webpack.dev.conf.js
```

```
13% building modules 28/36 modules 8 active ...o-world\src\components\HelloWorld.vue{ parser: "babylon" } is deprecated; we now treat it as { parser: "babel" }.  
95% emitting
```

```
DONE Compiled successfully in 3968ms
```

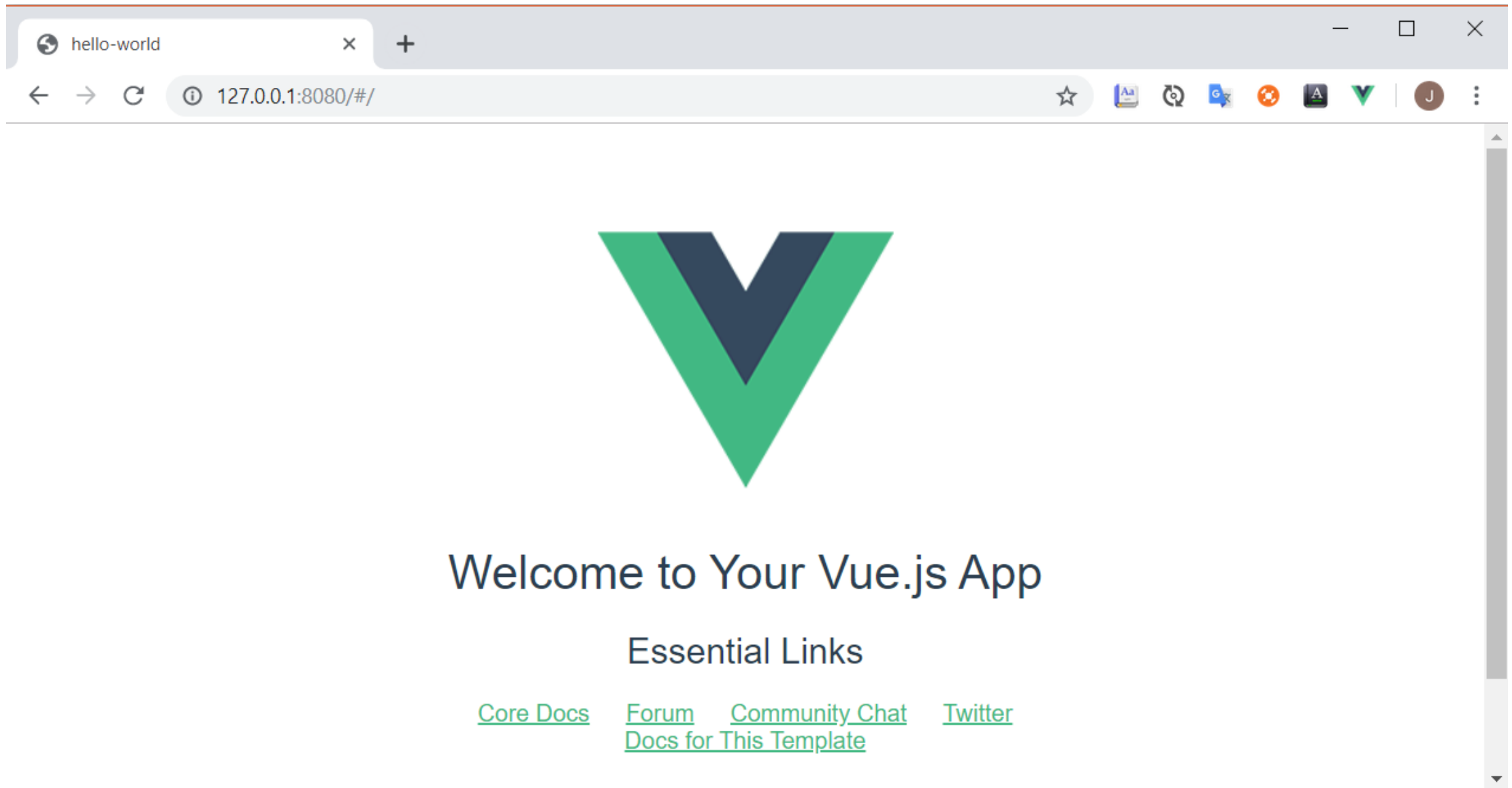
```
8:02:03 PM
```

```
I Your application is running here: http://localhost:8080
```

Vue-CLI (Cont.)



Vue-CLI (Cont.)



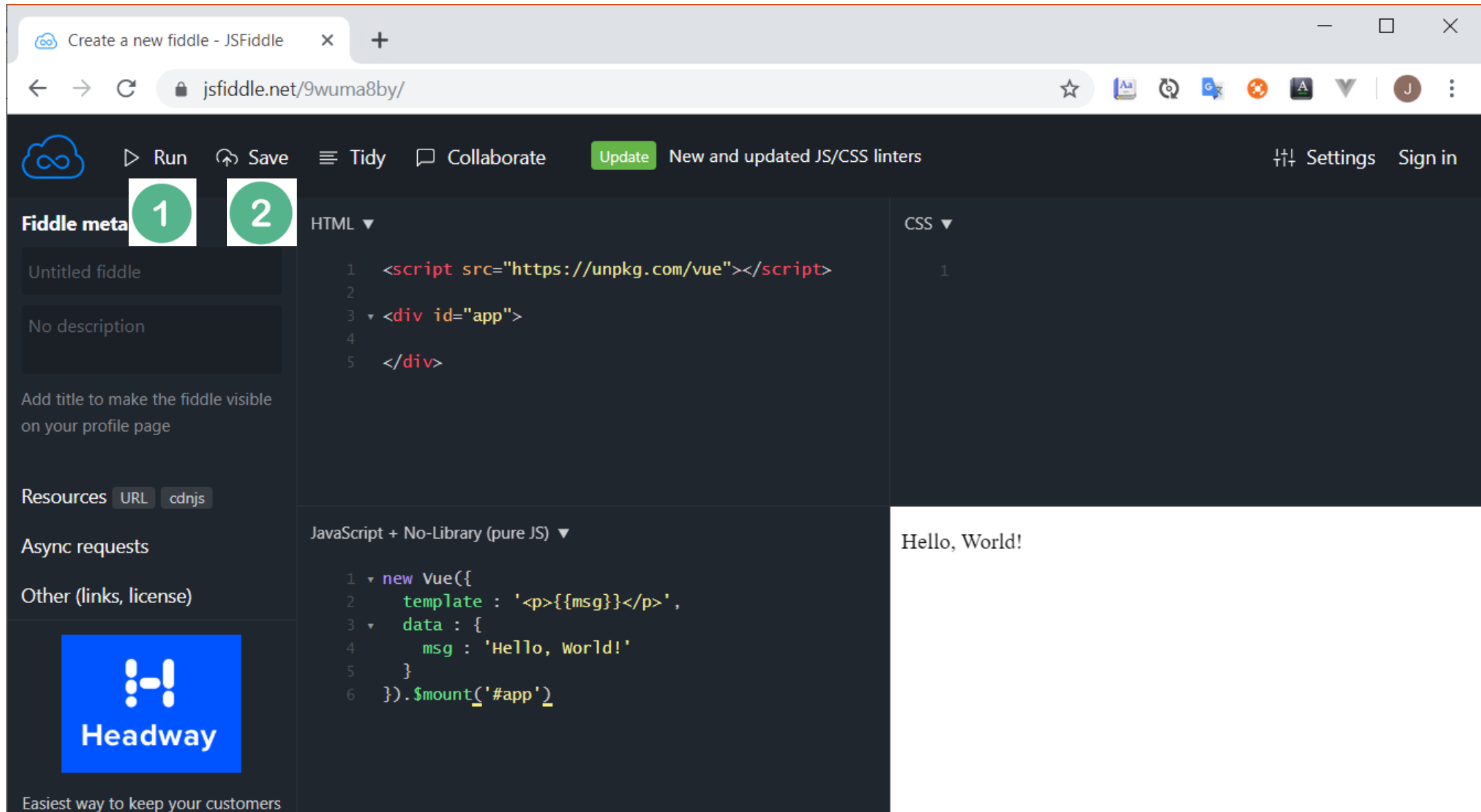
JSFiddle을 사용한 실습 방법

The screenshot shows the JSFiddle website interface. At the top, there's a navigation bar with the JSFiddle logo and a 'Close' button. Below this, the 'Start with a boilerplate:' section offers various templates like jQuery, Vue, React, React + JSX, Preact, TypeScript, CoffeeScript, SCSS, CSS Grid (responsive), Bootstrap, and PostCSS (marked as 'New'). A link to 'Show boilerplate bar less often?' is also present. The 'Links:' section includes Roadmap (vote for features), Bug tracker, About, Docs, and Service status. The 'JSFiddle is for:' section lists use cases: Demos for docs, Bug reporting (test-case) for Github Issues, Presenting code answers on Stack Overflow, Live code collaboration, and Code snippets hosting, followed by the tagline '... or just your humble code playground 🙌'.

The main editor area is divided into three panels. The left panel, titled 'Fiddle meta', contains fields for 'Untitled fiddle' and 'No description', a prompt to 'Add title to make the fiddle visible on your profile page', and sections for 'Resources' (with 'URL' and 'cdnjs' tags), 'Async requests', and 'Other (links, license)'. The middle panel is split into 'HTML' and 'JavaScript + No-Library (pure JS)' sections, both showing line 1 of their respective code. The right panel, titled 'CSS', also shows line 1. At the bottom right, there's a 'Result' section.

The top navigation bar includes 'Run', 'Save', 'Tidy', 'Collaborate', 'Update' (highlighted in green), and 'New and updated JS/CSS linters'. On the far right of the navigation bar are 'Settings' and 'Sign in' links.

JSFiddle을 사용한 실습 방법 (Cont.)



The screenshot displays the JSFiddle web application interface. The browser's address bar shows the URL `jsfiddle.net/9wuma8by/`. The interface includes a top navigation bar with options like 'Run', 'Save', 'Tidy', 'Collaborate', 'Update', and 'Settings'. On the left, the 'Fiddle meta' panel shows 'Untitled fiddle' and 'No description'. The main editor area is divided into three sections: 'HTML', 'CSS', and 'JavaScript + No-Library (pure JS)'. The 'HTML' section contains a script tag and a div with id 'app'. The 'JavaScript' section contains a Vue.js instance with a template and data. The 'CSS' section is empty. The bottom right section displays the rendered output: 'Hello, World!'. A 'Headway' logo is visible in the bottom left corner.

JSFiddle interface showing a fiddle with the following code:

```
HTML
1 <script src="https://unpkg.com/vue"></script>
2
3 <div id="app">
4
5 </div>

CSS
1

JavaScript + No-Library (pure JS)
1 new Vue({
2   template : '<p>{{msg}}</p>',
3   data : {
4     msg : 'Hello, World!'
5   }
6 }).$mount('#app')
```

The rendered output is: Hello, World!