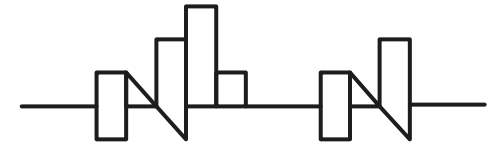




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JavaScript Developer's Tools



GitHub



YEOMAN



Outline

- JavaScript application developer's Tools
- Node.js
- NPM
- NVM
- Bower
- Git & GitHub
- Gulp & Grunt
- Yeoman
- Sublime
- Visual Studio Code



git



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GRUNT



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- Node.js is an interpreter of Javascript that runs on the server side, is based on the Google V8 engine and manages an event-oriented paradigm.
- It was made with the aim of creating highly scalable applications and websites.

Download

LTS Recommended For Most Users	Current Latest Features	
 Windows Installer <small>node-v12.2.0-x64.msi</small>	 macOS Installer <small>node-v12.2.0.pkg</small>	 Source Code <small>node-v12.2.0.tar.gz</small>

Windows Installer (.msi)

Windows Binary (.zip)

macOS Installer (.pkg)

macOS Binary (.tar.gz)

Linux Binaries (x64)

Linux Binaries (ARM)

Source Code

32-bit	64-bit
32-bit	64-bit
64-bit	
64-bit	
64-bit	
ARMv7	ARMv8
node-v12.2.0.tar.gz	

We are going to use NVM for Windows to manage Node.js program!

Node Version Manager

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Node.js evolves quickly . It is necessary to use a version manager.
Node Version Manager (NVM) is a suitable solution!

Unix like LINUX MAC

```
curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/v0.34.0/install.sh | bash
```

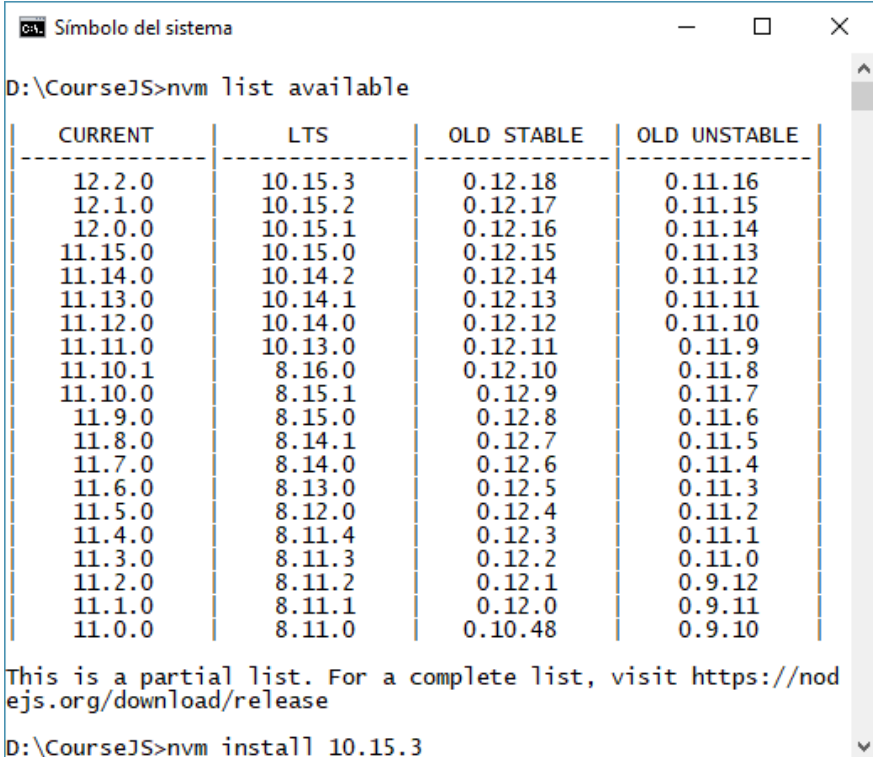
Windows version 1.1.7 Installer

Execute commands:

`nvm list available`

`nvm install 10.15.3`

`nvm use 10.15.3`



```
D:\CourseJS>nvm list available
```

CURRENT	LTS	OLD STABLE	OLD UNSTABLE
12.2.0	10.15.3	0.12.18	0.11.16
12.1.0	10.15.2	0.12.17	0.11.15
12.0.0	10.15.1	0.12.16	0.11.14
11.15.0	10.15.0	0.12.15	0.11.13
11.14.0	10.14.2	0.12.14	0.11.12
11.13.0	10.14.1	0.12.13	0.11.11
11.12.0	10.14.0	0.12.12	0.11.10
11.11.0	10.13.0	0.12.11	0.11.9
11.10.1	8.16.0	0.12.10	0.11.8
11.10.0	8.15.1	0.12.9	0.11.7
11.9.0	8.15.0	0.12.8	0.11.6
11.8.0	8.14.1	0.12.7	0.11.5
11.7.0	8.14.0	0.12.6	0.11.4
11.6.0	8.13.0	0.12.5	0.11.3
11.5.0	8.12.0	0.12.4	0.11.2
11.4.0	8.11.4	0.12.3	0.11.1
11.3.0	8.11.3	0.12.2	0.11.0
11.2.0	8.11.2	0.12.1	0.9.12
11.1.0	8.11.1	0.12.0	0.9.11
11.0.0	8.11.0	0.10.48	0.9.10

This is a partial list. For a complete list, visit <https://nodejs.org/download/release>

```
D:\CourseJS>nvm install 10.15.3
```

Node Version Manager (cont)

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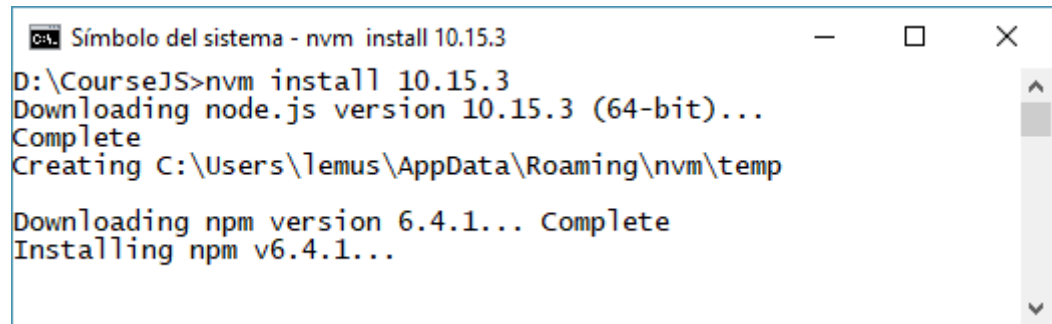
Sublime

Visual Studio Code

Using NVM it is possible to have several Node versions at the same time.

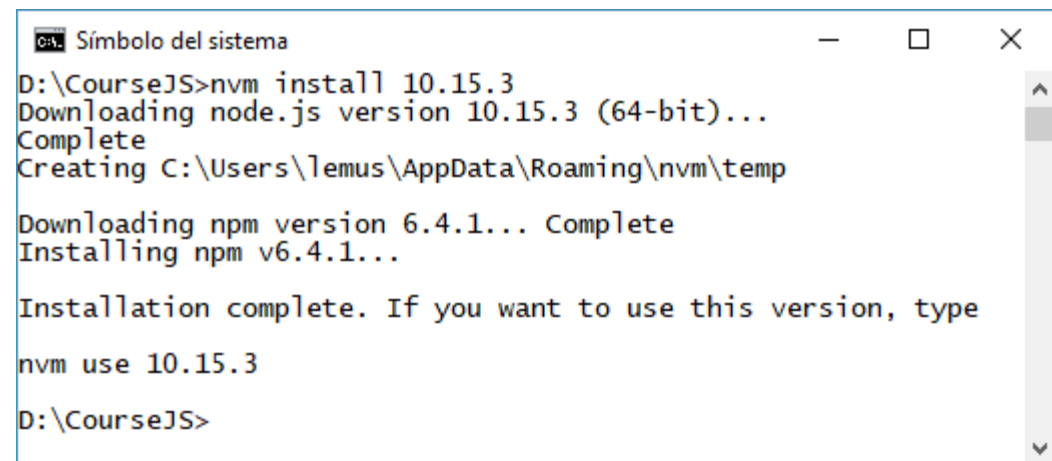
Executing `nvm use <version>` developers can switch between Node.js versions

When developing an application it is necessary to know what Node version and NPM version are user.



```
Símbolo del sistema - nvm install 10.15.3
D:\CourseJS>nvm install 10.15.3
Downloading node.js version 10.15.3 (64-bit)...
Complete
Creating C:\Users\lemus\AppData\Roaming\nvm\temp

Downloading npm version 6.4.1... Complete
Installing npm v6.4.1...
```



```
Símbolo del sistema
D:\CourseJS>nvm install 10.15.3
Downloading node.js version 10.15.3 (64-bit)...
Complete
Creating C:\Users\lemus\AppData\Roaming\nvm\temp

Downloading npm version 6.4.1... Complete
Installing npm v6.4.1...

Installation complete. If you want to use this version, type
nvm use 10.15.3
D:\CourseJS>
```

Node Version Manager (cont)

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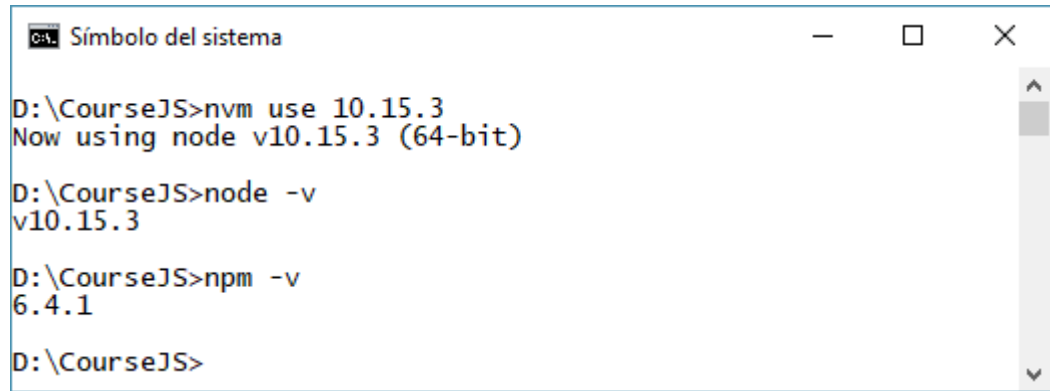
Yeoman

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When developing an application it is necessary to know what Node version and NPM version are used.

Node.js version 10.15.3 and NPM version 6.4.1 will be used in our course!



```
Símbolo del sistema
D:\CourseJS>nvm use 10.15.3
Now using node v10.15.3 (64-bit)

D:\CourseJS>node -v
v10.15.3

D:\CourseJS>npm -v
6.4.1

D:\CourseJS>
```



- NPM is the acronym of "Node Package Manager"
- One of the main reasons because NPM is popular is because it provides a fast and optimal way to acquire and organize modules
- NPM is installed when installing Nde.js [Web Site](#)

NPM

Once Node.js and NPM are installed, to start a new Node's project:
execute in Windows CLI: **npm init**

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```
npm
D:\CourseJS>mkdir Exercise01
D:\CourseJS>cd Exercise01
D:\CourseJS\Exercise01>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: (exercise01)
version: (1.0.0)
description: Minimal application
entry point: (index.js)
test command:
git repository:
keywords:
author: Lenin Lemus
license: (ISC)
About to write to D:\CourseJS\Exercise01\package.json:
{
  "name": "exercise01",
  "version": "1.0.0",
  "description": "Minimal application",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "Lenin Lemus",
  "license": "ISC"
}
Is this OK? (yes)
```

```
Símbolo del sistema
D:\CourseJS>cd Exercise01
D:\CourseJS\Exercise01>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: (exercise01)
version: (1.0.0)
description: Minimal application
entry point: (index.js)
test command:
git repository:
keywords:
author: Lenin Lemus
license: (ISC)
About to write to D:\CourseJS\Exercise01\package.json:
{
  "name": "exercise01",
  "version": "1.0.0",
  "description": "Minimal application",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "Lenin Lemus",
  "license": "ISC"
}
Is this OK? (yes)
D:\CourseJS\Exercise01>
```




Classical Hello World Application using Node.js

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- 1) Open folder d:\CourseJS\Exercise01
- 2) Create file index.js
- 3) Write inside the file index.js:
`console.log('Hello World!');`
- 4) Execute command tree /A /F d:\CourseJS
- 5) Execute command node index.js

A screenshot of a Windows Explorer window titled 'Símbolo del sistema'. The address bar shows 'D:\CourseJS\Exercise01'. The file list shows three files: 'index.js' and 'package.json' are highlighted in blue, and 'package.json' is also highlighted in yellow. The left sidebar shows the folder structure: 'D:\CourseJS' > 'Exercise01' > 'index.js' and 'package.json'.

```
tree /A /F d:\CourseJS
D:\CourseJS
├── Exercise01
│   ├── index.js
│   └── package.json
```

A screenshot of a Windows Command Prompt window titled 'Símbolo del sistema'. The command prompt shows the directory 'D:\CourseJS\Exercise01' and the command 'node index.js' being executed. The output of the command is 'Hello World!'.

```
D:\CourseJS\Exercise01>node index.js
Hello World!
D:\CourseJS\Exercise01>
```



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Adding modules

- 1) npm install --save lodash
- 2) npm install --save-dev chai
- 3) npm install --save-dev mocha
- 4) npm install --save-dev chai
- 5) npm install --save-dev grunt

```
package.json x
1  {
2    "name": "exercise01",
3    "version": "1.0.0",
4    "description": "Minimal application",
5    "main": "index.js",
6    "scripts": {
7      "test": "node ./node_modules/mocha/bin/mocha"
8    },
9    "author": "Lenin Lemus",
10   "license": "ISC",
11   "dependencies": {
12     "c3": "^0.7.0",
13     "lodash": "^4.17.11"
14   },
15   "devDependencies": {
16     "chai": "4.1.2",
17     "grunt": "1.0.0",
18     "jasmine-node": "2.0.0",
19     "mocha": "6.1.0"
20   }
21 }
```

Node check Updates

npm-check-updates upgrades your package.json dependencies to the latest versions, ignoring specified versions.

Installation: **npm install -g npm-check-updates**

NCU

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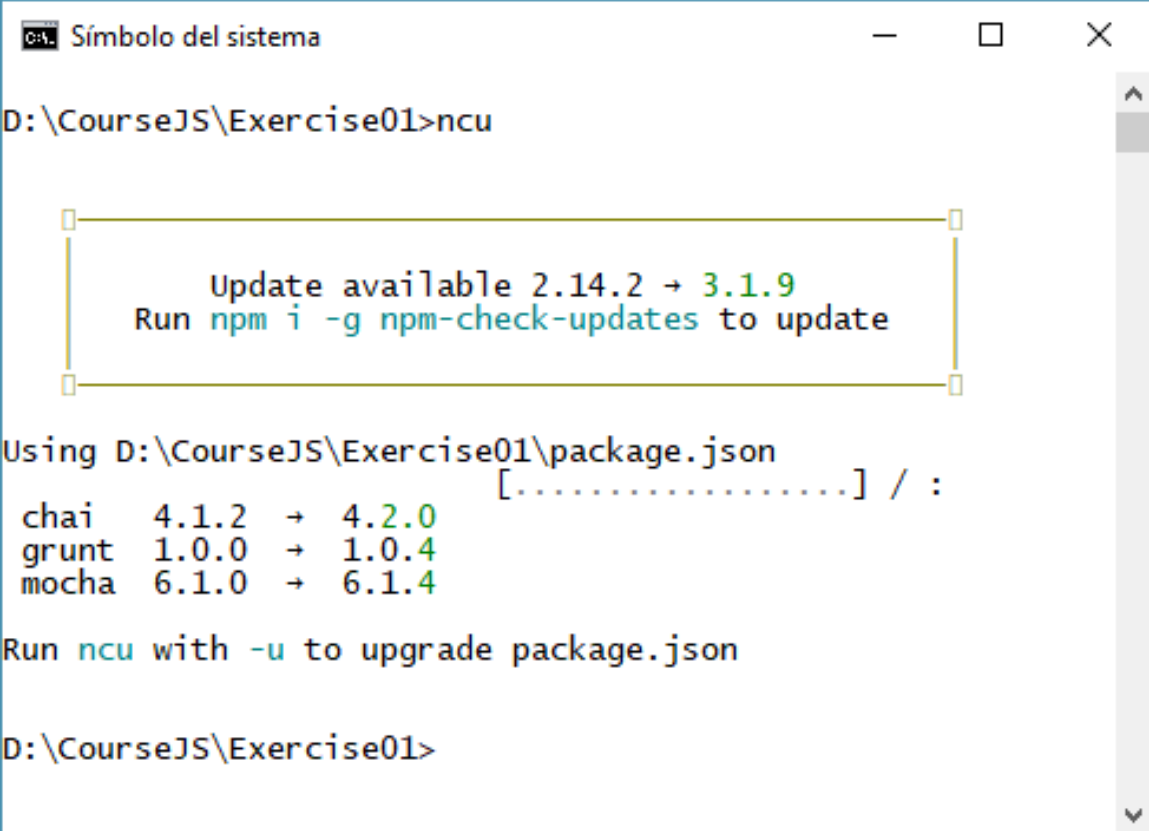
Git & GitHub

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```
Símbolo del sistema
D:\CourseJS\Exercise01>ncu

  Update available 2.14.2 → 3.1.9
  Run npm i -g npm-check-updates to update

Using D:\CourseJS\Exercise01\package.json
[.....] / :
chai    4.1.2  →  4.2.0
grunt   1.0.0  →  1.0.4
mocha   6.1.0  →  6.1.4

Run ncu with -u to upgrade package.json

D:\CourseJS\Exercise01>
```

Node check Updates (ncu)

- 1) `npm i -g npm-check-updates`
- 2) `ncu -u`

NCU

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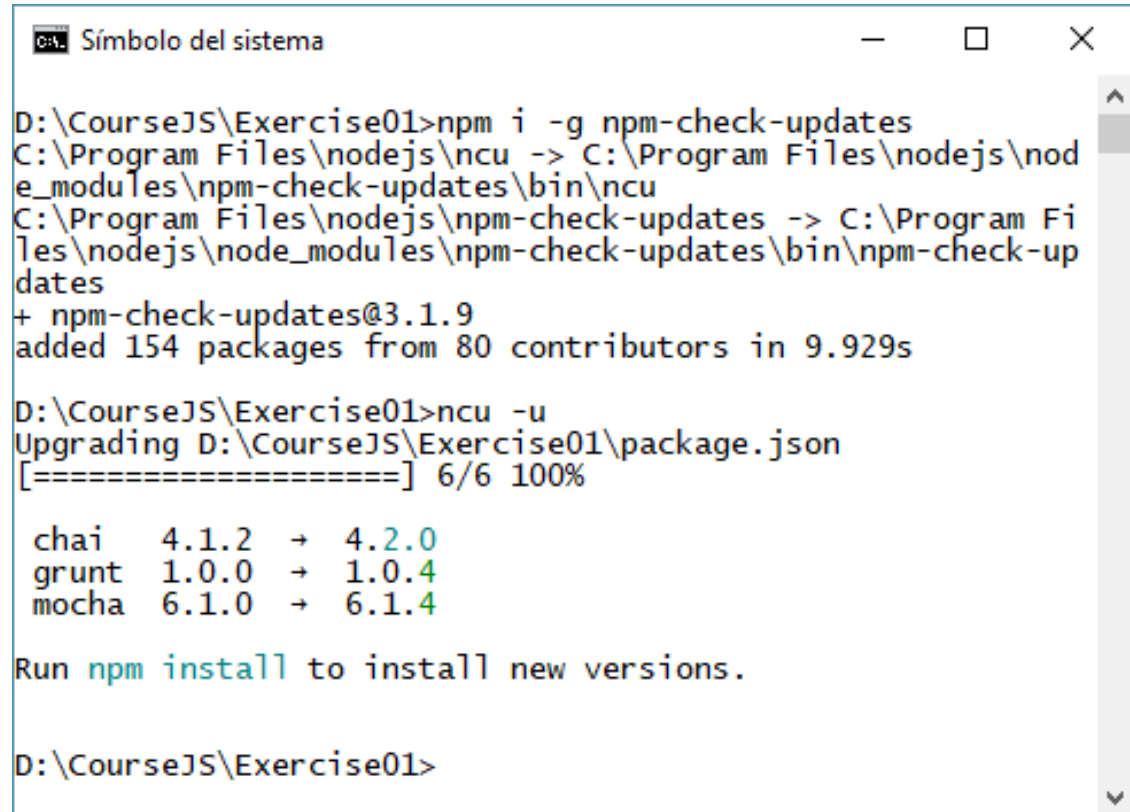
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```
Símbolo del sistema

D:\CourseJS\Exercise01>npm i -g npm-check-updates
C:\Program Files\nodejs\ncu -> C:\Program Files\nodejs\node_modules\npm-check-updates\bin\ncu
C:\Program Files\nodejs\npm-check-updates -> C:\Program Files\nodejs\node_modules\npm-check-updates\bin\npm-check-updates
+ npm-check-updates@3.1.9
added 154 packages from 80 contributors in 9.929s

D:\CourseJS\Exercise01>ncu -u
Upgrading D:\CourseJS\Exercise01\package.json
[=====] 6/6 100%

  chai  4.1.2  →  4.2.0
  grunt 1.0.0  →  1.0.4
  mocha  6.1.0  →  6.1.4

Run npm install to install new versions.

D:\CourseJS\Exercise01>
```



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Bower: A package manager for the web

Web sites are made of lots of things — frameworks, libraries, assets, and utilities. Bower manages all these things for you. Bower is a command line utility. Install it with npm.

Installation: **npm install -g bower**

Bower requires **node**, **npm** and **git**.

Example:

```
# installs the project dependencies listed in
bower.json
bower install
# registered package
bower install jquery
# GitHub shorthand
bower install desandro/masonry
# Git endpoint
bower install
git://github.com/user/package.git
# URL
bower install http://example.com/script.js
```



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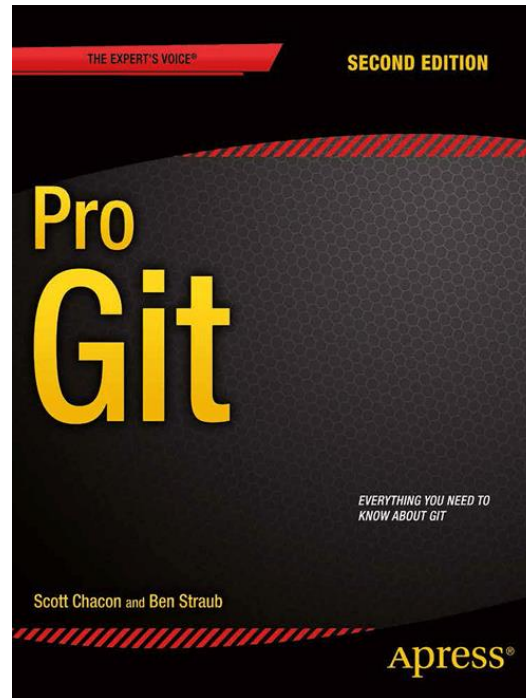
Visual Studio Code

What is version control

What is GIT?

Get Going with GIT

Quick Wins with Git





1. [What is GitHub?](#)
2. [¿Que es GitHub?](#)

GitHub

If you do not have an account create one!

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The screenshot shows a web browser window with the title 'Sign in to GitHub · GitHub'. The address bar shows a URL starting with 'http'. The page content features the GitHub Octocat logo at the top, followed by the heading 'Sign in to GitHub'. Below this is a form with two input fields: 'Username or email address' and 'Password'. A link for 'Forgot password?' is located next to the password field. A green 'Sign in' button is positioned below the password field. At the bottom of the form, there is a link for 'New to GitHub? Create an account.'.



GULP

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What is gulp.js and why use it?

Installation: `cd myproject`
`npm install --save-dev gulp`

There's no point in investing your time into learning a new tool if you don't even know what problem it solves.

Gulp solves the problem of repetition.

Many of the tasks that web developers find themselves doing over and over on a daily basis can be simplified by becoming automated.

Automating repetitive tasks = more time to do non repetitive tasks = more productivity.

Gulp is a javascript task runner that lets you automate tasks such as...

- Bundling and minifying libraries and stylesheets.
- Refreshing your browser when you save a file.
- Quickly running unit tests
- Running code analysis
- Less/Sass to CSS compilation
- Copying modified files to an output directory



GULP

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Creating a gulpfile

A gulpfile is a file that will act as a manifest to define our tasks.

Tasks that we want to execute will be found within this file.

Whenever we run the command `gulp hello-world` from the command line, we are telling gulp that we want to run the hello-world task within `gulpfile.js`.

After creating `gulpfile.js` within the root of your project, add a basic tasks.

gulpfile.js

```
var gulp = require('gulp');
```

```
gulp.task('hello-world',  
  function() {  
    console.log('hello world');  
  }  
);
```

Practical example:

Follow the instructions from the following link: [Practical Example](#)



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GRUNT: The JavaScript Task Runner

Why use a task runner?

In one word: automation.

The less work you have to do when performing repetitive tasks like minification, compilation, unit testing, linting, etc, the easier your job becomes.

After you've configured it through a [Gruntfile](#), a task runner can do most of that mundane work for you—and your team—with basically zero effort.

Why use Grunt?

The Grunt ecosystem is huge and it's growing every day.

With hundreds of plugins to choose from, you can use Grunt to automate just about anything with a minimum of effort.

If someone hasn't already built what you need, authoring and publishing your own Grunt plugin to npm is a breeze.

See how to [get started](#).



YEOMAN: THE WEB'S SCAFFOLDING TOOL FOR MODERN WEBAPPS

What's Yeoman?

Yeoman helps you to kickstart new projects, prescribing best practices and tools to help you stay productive.

Yeoman provides a generator ecosystem.

- A generator is basically a plugin that can be run with the `yo` command to scaffold complete projects or useful parts.

Through our official Generators, we promote the "Yeoman workflow".

A workflow is a robust and opinionated client-side stack, comprising tools and frameworks that can help developers quickly build beautiful web applications.

Yeoman takes care of providing everything needed to get started without any of the normal headaches associated with a manual setup.

With a modular architecture that can scale out of the box, we leverage the success and lessons learned from several open-source communities to ensure the stack developers use it as intelligent as possible.

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YEOMAN

YEOMAN's Tools

The Yeoman workflow comprises three types of tools for improving your productivity and satisfaction when building a web app: the **scaffolding tool**, the **build tool** and the **package manager**

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yo scaffolds out a new application, writing your build configuration (e.g Gulpfile) and pulling in relevant build tasks and package manager dependencies (e.g npm) that you might need for your build.



The **Build System** is used to build, preview and test your project.

Gulp and Grunt are two popular options.



The **Package Manager** is used for dependency management, so that you no longer have to manually download and manage your scripts.

npm and Bower are two popular options.



Sublime: A sophisticated text editor for code, markup and prose

[Download](#)

Among other characteristics, Sublime provides programmers with:

- Capability to make Multiple selections
- A powerful API and Package Ecosystem
- An interface that can be fully customized
- A command Palette. It holds infrequently used functionality like sorting, changing the syntax, ...
- Split editing in several windows
- Capability to make an Instant Project Switch
- Versions for Mac, Windows and Linux (Cross Platform)
- A Sublime sister product: Sublime merge
 - Sublime merge is a git Client designed with the sublime style

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Visual Studio Code:

[Download](#)

Visual Studio Code is a lightweight source code editor which runs on your desktop and is available for Windows, macOS and Linux.

It comes with built-in support for JavaScript, TypeScript and Node.js and has a rich ecosystem of extensions for other languages (such as C++, C#, Java, Python, PHP, Go) and runtimes (such as .NET and Unity)

VSC Top Extensions

Enable additional languages, themes, debuggers, commands, and more. VS Code's growing community shares their secret sauce to improve your workflow.



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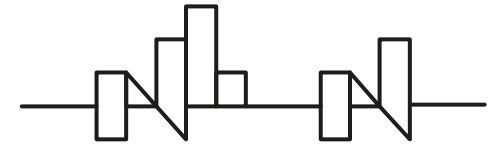
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