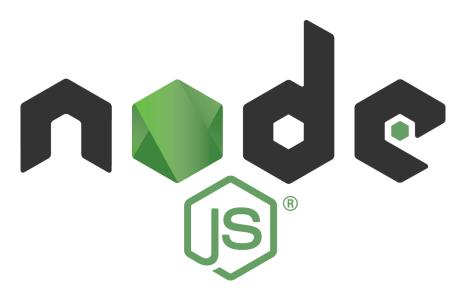plain concepts

https://nodejs.org/es/

NODE.JS

"Node.js® es un entorno de ejecución para JavaScript construido con el [motor de JavaScript V8 de Chrome](). Node.js usa un modelo de operaciones E/S sin bloqueo y orientado a eventos, que lo hace liviano y eficiente. El ecosistema de paquetes de Node.js, [npm](), es el ecosistema mas grande de librerías de código abierto en el mundo."

```
$ node app.js
```

NVM – NODE VERSION MANAGER

- <u>NVM</u> (Node Version Manager) es una aplicación que nos permite tener y gestionar varias versiones de NodeJS en el mismo sistema.

    - nvm list
    - nvm install 7.1.0
    - nvm use 7.1.0

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NPM

"Use npm to install, share, and distribute code; manage dependencies in your projects; and share & receive feedback with others."

```
$ npm install moment
```

```
$ npm uninstall underscore
```

```
$ npm install -g http-server
```

CONCEPTOS

- Repositorio
    - El repositorio central y público 'oficial' es el [Npm Registry](#).
    - Puedes crear tu propio servidor para que actúe como repositorio. También existen otras empresas que lo ofrecen como servicio para no tener que gestionarlo tu mismo.

- Paquete
    - Un paquete npm es uno o varios ficheros comprimidos en un .tgz entre los que se incluye un fichero package.json con la definición de dependencias y otros datos.
    - Un repositorio git o un directorio que incluya un fichero package.json también pueden ser considerados paquetes al poder ser referenciados como dependencias.

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CONCEPTOS

- Lista de dependencias
  - El fichero **package.json** es el standard para la declaración de dependencias 'locales'.
  - Podemos especificar diferentes tipos de dependencias (runtime, development,...) así como versiones concretas o rangos.

- El fichero **package-lock.json**
  - Declara las dependencias de forma determinista.
  - Se trata de un fichero autogenerado que no se debería editar manualmente.
  - **Commitearlo siempre.**

PACKAGE.JSON

- Nombre del proyecto
- Versión
- Scripts
- Dependencias
- Repositorio
- Autores
- Licencia

```json
{
  "name": "prueba",
  "version": "0.0.0",
  "scripts": {
    "ng": "ng",
    "start": "ng serve",
    "build": "ng build",
    "test": "ng test",
    "lint": "ng lint",
    "e2e": "ng e2e"
  },
  "private": true,
  "dependencies": {
    "@angular/animations": "~7.2.0",
    "@angular/common": "~7.2.0",
    "@angular/compiler": "~7.2.0",
    "@angular/core": "~7.2.0",
    "@angular/forms": "~7.2.0",
    "@angular/platform-browser": "~7.2.0",
    "@angular/platform-browser-dynamic": "~7.2.0",
    "@angular/router": "~7.2.0",
    "core-js": "^2.5.4",
    "rxjs": "~6.3.3",
    "tslib": "^1.9.0",
    "zone.js": "~0.8.26"
  },
  "devDependencies": {
    "@angular-devkit/build-angular": "~0.13.0",
    "@angular/cli": "~7.3.8",
    "@angular/compiler-cli": "~7.2.0",
    "@angular/language-service": "~7.2.0",
    "@types/node": "~8.9.4",
    "@types/jasmine": "~2.8.8",
    "@types/jasminewd2": "~2.0.3",
    "codelyzer": "~4.5.0",
    "jasmine-core": "~2.99.1",
    "jasmine-spec-reporter": "~4.2.1",
    "karma": "~4.0.0",
    "karma-chrome-launcher": "~2.2.0",
    "karma-coverage-istanbul-reporter": "~2.0.1",
    "karma-jasmine": "~1.1.2",
    "karma-jasmine-html-reporter": "^0.2.2",
    "protractor": "~5.4.0",
    "ts-node": "~7.0.0",
    "tslint": "~5.11.0",
    "typescript": "~3.2.2"
  }
}
```

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SCRIPTS

- Permite indicar comandos que podemos correr dentro de nuestro proyecto.
- Hay algunos scripts predefinidos:
  - **start, install, preinstall, ci, pretest, test, ...**

```
$ npm start
```

- Se pueden definir scripts propios a modo de alias

```
"scripts": {
  "minify": "node tasks/minify.js"
},
```

```
$ npm run minify
```

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SCRIPTS – NPM INIT

*npm init n*os permite crear el package.json

```
$ 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: (ang) angular
version: (1.0.0)
description:
entry point: (index.js)
test command:
git repository:
keywords:
author:
license: (ISC)
About to write to C:\Users\borja\tmp\ang\package.json:

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


Is this OK? (yes)
```

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SCRIPTS – TIPS & TRICKS

npm init –y nos saltamos el asistente inicial

```
$ npm init -y
Wrote to C:\Users\borja\tmp\package.json:

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

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SCRIPTS – TIPS & TRICKS

npx npm-why [paquete] nos muestra que dependencias usan un paquete.

```
$ npx npm-why pify
npx: installed 4 in 2.072s

  Who required pify:

  posts > @angular-devkit/build-angular > copy-webpack-plugin > find-cache-dir > make-dir > pify@3.0.0
  posts > @angular-devkit/build-angular > copy-webpack-plugin > globby > dir-glob > path-type > pify@3.0.0
  posts > @angular-devkit/build-angular > copy-webpack-plugin > globby > pify@3.0.0
  posts > @angular-devkit/build-angular > less-loader > pify@3.0.0
  posts > @angular-devkit/build-angular > node-sass > meow > read-pkg-up > read-pkg > load-json-file > pify@2.3.0
  posts > @angular-devkit/build-angular > node-sass > meow > read-pkg-up > read-pkg > path-type > pify@2.3.0
  posts > @angular-devkit/build-angular > node-sass > sass-graph > yargs > read-pkg-up > read-pkg > load-json-file > pify@2.3.0
  posts > @angular-devkit/build-angular > node-sass > sass-graph > yargs > read-pkg-up > read-pkg > path-type > pify@2.3.0
  posts > @angular-devkit/build-angular > postcss-import > read-cache > pify@2.3.0
  posts > @angular-devkit/build-angular > sass-loader > pify@3.0.0
  posts > @angular-devkit/build-angular > terser-webpack-plugin > find-cache-dir > make-dir > pify@4.0.1
  posts > @angular-devkit/build-angular > webpack > terser-webpack-plugin > find-cache-dir > make-dir > pify@4.0.1
  posts > @angular-devkit/build-angular > webpack-dev-server > del > globby > pify@2.3.0
  posts > @angular-devkit/build-angular > webpack-dev-server > del > pify@3.0.0
  posts > @angular/compiler-cli > yargs > read-pkg-up > read-pkg > load-json-file > pify@2.3.0
  posts > @angular/compiler-cli > yargs > read-pkg-up > read-pkg > path-type > pify@2.3.0
  posts > karma-coverage-istanbul-reporter > istanbul-api > istanbul-lib-report > make-dir > pify@4.0.1
  posts > karma-coverage-istanbul-reporter > istanbul-api > istanbul-lib-source-maps > make-dir > pify@4.0.1
  posts > karma-coverage-istanbul-reporter > istanbul-api > make-dir > pify@4.0.1
  posts > protractor > webdriver-manager > del > globby > pify@2.3.0
  posts > protractor > webdriver-manager > del > pify@2.3.0
```

SCRIPTS – TIPS & TRICKS

npx ntl (npm taks list) podemos ver y ejecutar todas nuestras tareas npm

```
$ npx ntl
npx: installed 111 in 10.34s
✓  Npm Task List - v3.2.4
? Select a task to run: (Use arrow keys)
> ng
  start
  build
  test
  lint
  e2e ▯
```

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SCRIPTS – TIPS & TRICKS

npm outdated nos muestra las dependencias desactualizados

```
$ npm outdated
Package                               Current   Wanted   Latest   Location
@angular-devkit/build-angular          0.13.9   0.13.9  0.800.2   posts
@angular/animations                    7.2.15   7.2.15    8.0.0   posts
@angular/cli                            7.3.9    7.3.9    8.0.2   posts
@angular/common                        7.2.15   7.2.15    8.0.0   posts
@angular/compiler                      7.2.15   7.2.15    8.0.0   posts
@angular/compiler-cli                  7.2.15   7.2.15    8.0.0   posts
@angular/core                          7.2.15   7.2.15    8.0.0   posts
@angular/forms                         7.2.15   7.2.15    8.0.0   posts
@angular/language-service              7.2.15   7.2.15    8.0.0   posts
@angular/platform-browser              7.2.15   7.2.15    8.0.0   posts
@angular/platform-browser-dynamic      7.2.15   7.2.15    8.0.0   posts
@angular/router                        7.2.15   7.2.15    8.0.0   posts
@types/jasmine                         2.8.16   2.8.16   3.3.13   posts
@types/node                             8.9.5    8.9.5   12.0.7   posts
codelyzer                               4.5.0    4.5.0    5.1.0   posts
core-js                                 2.6.5    2.6.9    3.1.3   posts
jasmine-core                           2.99.1   2.99.1    3.4.0   posts
karma                                   4.0.1    4.0.1    4.1.0   posts
karma-jasmine                           1.1.2    1.1.2    2.0.1   posts
karma-jasmine-html-reporter             0.2.2    0.2.2    1.4.2   posts
rxjs                                    6.3.3    6.3.3    6.5.2   posts
ts-node                                 7.0.1    7.0.1    8.2.0   posts
tslint                                 5.11.0   5.11.0   5.17.0   posts
typescript                              3.2.4    3.2.4    3.5.1   posts
zone.js                                0.8.29   0.8.29    0.9.1   posts
```

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SCRIPTS – TIPS & TRICKS

npm audit nos muestra las dependencias con problemas de seguridad. Podemos subsanarlas automáticamente con *npm audit fix*

```
Low               Regular Expression Denial of Service

Package           braces

Patched in        >=2.3.1

Dependency of     popper

Path              popper > rijs > rijs.resdir > chokidar > anymatch >
                  micromatch > braces

More info         https://nodesecurity.io/advisories/786

Low               Regular Expression Denial of Service

Package           braces

Patched in        >=2.3.1

Dependency of     popper

Path              popper > rijs.resdir > chokidar > anymatch > micromatch >
                  braces

More info         https://nodesecurity.io/advisories/786

found 54 vulnerabilities (2 low, 10 moderate, 42 high) in 45170 scanned packages
  run `npm audit fix` to fix 44 of them.
  7 vulnerabilities require semver-major dependency updates.
  3 vulnerabilities require manual review. See the full report for details.
```

```
$ npm audit
=== npm audit security report ===

found 0 vulnerabilities
 in 19014 scanned packages
```

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VERSIONES

Code status	Stage	Rule	Example version
First release	New product	Start with 1.0.0	1.0.0
Backward compatible bug fixes	Patch release	Increment the third digit	1.0.1
Backward compatible new features	Minor release	Increment the middle digit and reset last digit to zero	1.1.0
Changes that break backward compatibility	Major release	Increment the first digit and reset middle and last digits to zero	2.0.0

https://docs.npmjs.com/about-semantic-versioning#incrementing-semantic-versions-in-published-packages

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VERSIONES

Se puede especificar qué tipo de actualizaciones de paquetes se aceptan en base a la definición de estas en el package.json

- Patch releases: 1.0 or 1.0.x or ~1.0.4
- Minor releases: 1 or 1.x or ^1.0.4
- Major releases: * or x
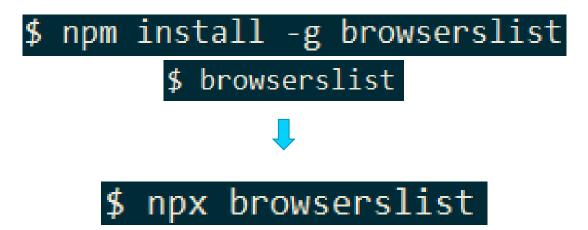
```
"dependencies": {
    "@angular/animations": "~7.2.0",
    "@angular/common": "~7.2.0",
    "@angular/compiler": "~7.2.0",
    "@angular/core": "~7.2.0",
    "@angular/forms": "~7.2.0",
    "@angular/platform-browser": "~7.2.0",
    "@angular/platform-browser-dynamic": "~7.2.0",
    "@angular/router": "~7.2.0",
    "core-js": "^2.5.4",
    "rxjs": "~6.3.3",
    "tslib": "^1.9.0",
    "zone.js": "~0.8.26"
},
```

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NPM INSTALL

```
$ npm install

$ npm install moment

$ npm install moment --save

$ npm install moment --save-dev
```

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NPX

Es un ejecutor de paquetes binarios de npm, es decir, que ejecuta entre otras cosas, una CLI, asi nos ahorramos instalar paquetes de manera global.

```
$ npm install -g browserslist
$ browserslist
```

⬇

```
$ npx browserslist
```

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¡GRACIAS!

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