Tooling

Course 7

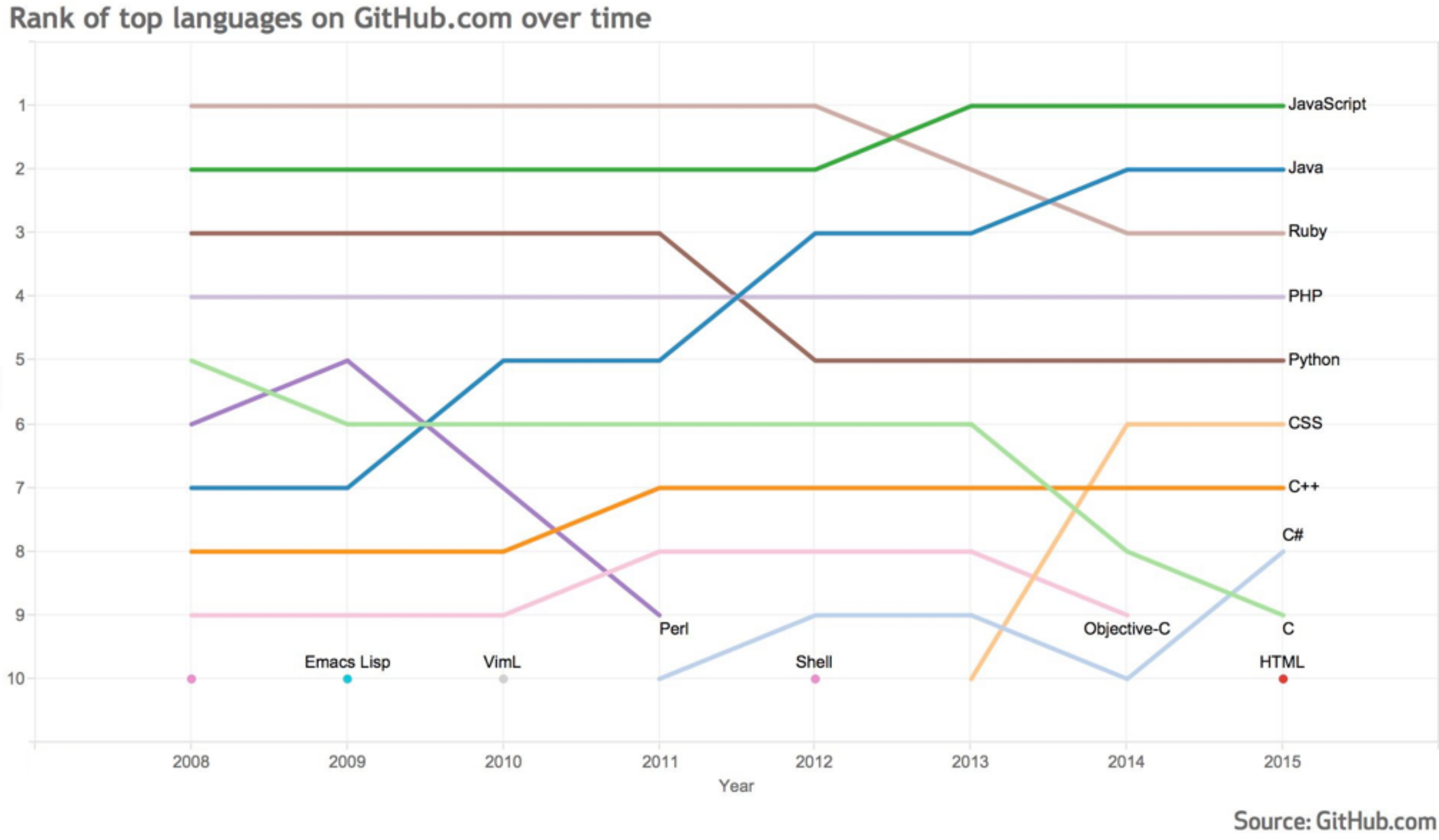
before Node

- Makefile, Ant
- C (JSmin)
- Java (yuicompressor)
- Ruby (SASS)

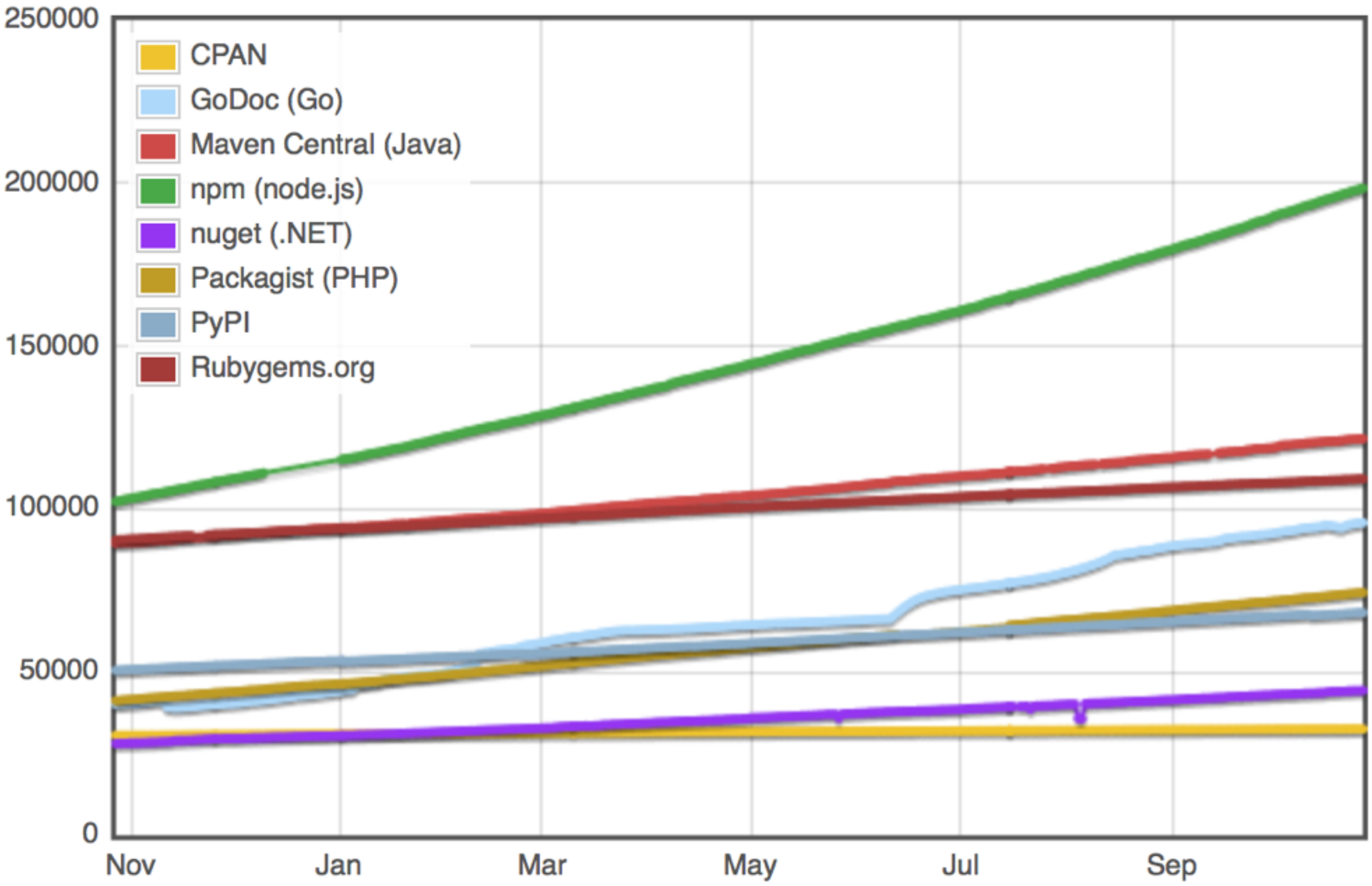
Node

Node

- Most popular server JavaScript environment
- JavaScript become most active on Github
- NPM module count is No.1



https://github.com/blog/2047-language-trends-on-github



http://www.modulecounts.com/

NPM

- by Isaac Z. Schlueter
- The node package manager
- Lot’s of develop tool of JavaScript, FE

自己的工具自己寫

node

Major Versions

- 0.10, some old package require 0.10
- 0.12, before merge io.js
- 4.x, latest

nvm

Node Version Manager

- Switch environment node version

- https://github.com/creationix/nvm

npm

npm

- `npm i`
- `npm i -g`
- `npm i --save`
- `npm i --save-dev`

Demo

package.json

- Package description of node package
- Name, Desc
- Repository
- License
- Dependencies!!

```
{
    "name": "yajs.vim",
    "version": "1.0.0",
    "description": "Yet another JavaScript syntax for Vim"
    "devDependencies": {
        "js-yaml": "*",
        "camel-case": "*",
        "is-upper-case": "*"
    },
    "license": "Same as Vim"
}
```

package.json

- npm init

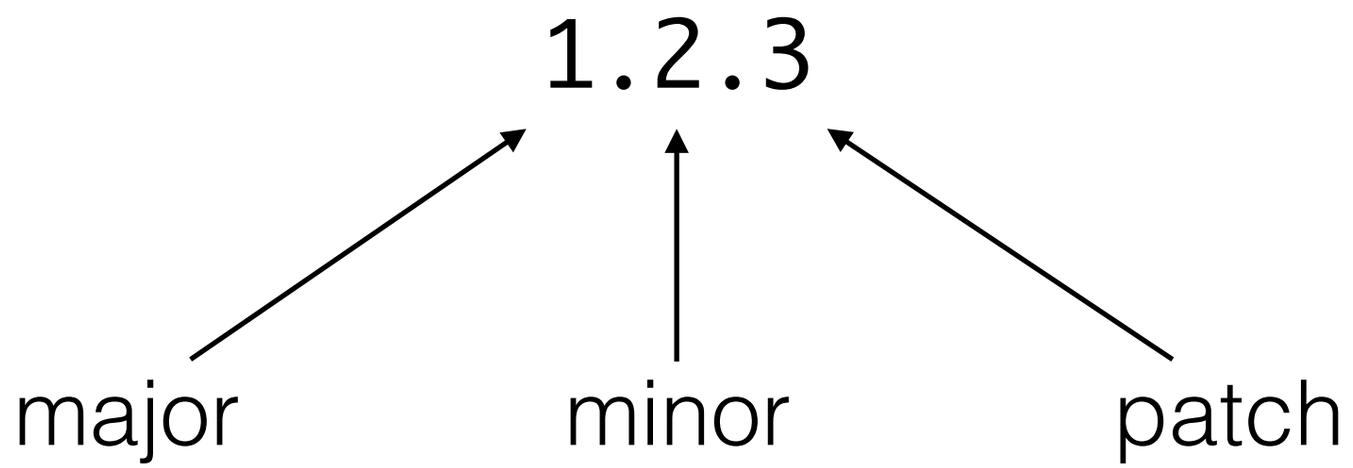
- http://browsenpm.org/package.json

semver

Semantic Versioning

- Meaningful version number

- http://semver.org/


1.2.3
major
minor
patch

node-semver

- https://github.com/npm/node-semver
- Version range syntax for semver used by npm

- 1.2.3 - 2.3.4
- 1.2.x
- ~1.2.3
- ^1.2.3

gulp

Gulp

Gulp

- Major task tool of JS

- Async task dependency

```
gulp.task('css', function () {
  var processors = [
    atImport(),
    autoprefixer({browsers: ['last 1 version']}),
    csswring
  ];
  return gulp.src('./src/styles/entry.css')
    .pipe(plumber())
    .pipe(postcss(processors))
    .pipe(rename({ basename: 'app' }))
    .pipe(gulp.dest('./static/styles'))
    .pipe(livereload());
});
```

node-glob

- by Isaac Z. Schlueter
- Match files using the patterns the shell uses, like stars and stuff.
- https://github.com/isaacs/node-glob

Minify JS

UglifyJS

UglifyJS

- by Mihai Bazon
- Higher compression ratio than Closure Compiler

Demo

Debug

Issue

- Hard to debug
- Variable names have no meaning
- No indent, line break

Source Map

Source Map

- Map between minimized and original code
- Help browser know code position of readable version

- http://www.ruanyifeng.com/blog/2013/01/javascript_source_map.html

Demo

SASS

Demo

CSS minify

CSSO

CSS Optimize

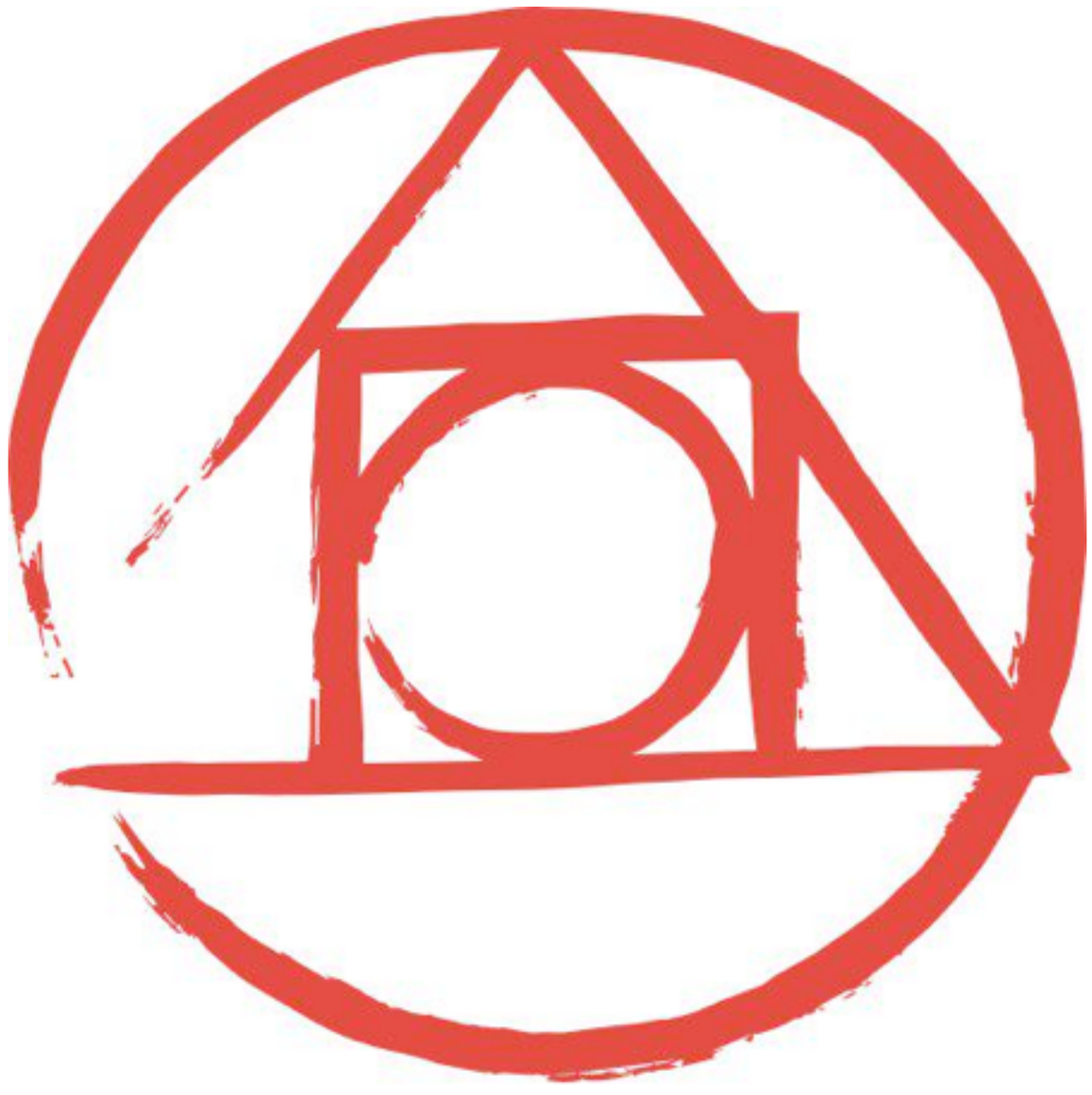
- by Vitaly Harisov
- Minify
- Support CSS3 syntax

Demo

clean-css

- https://github.com/jakubpawlowicz/clean-css

PostCSS

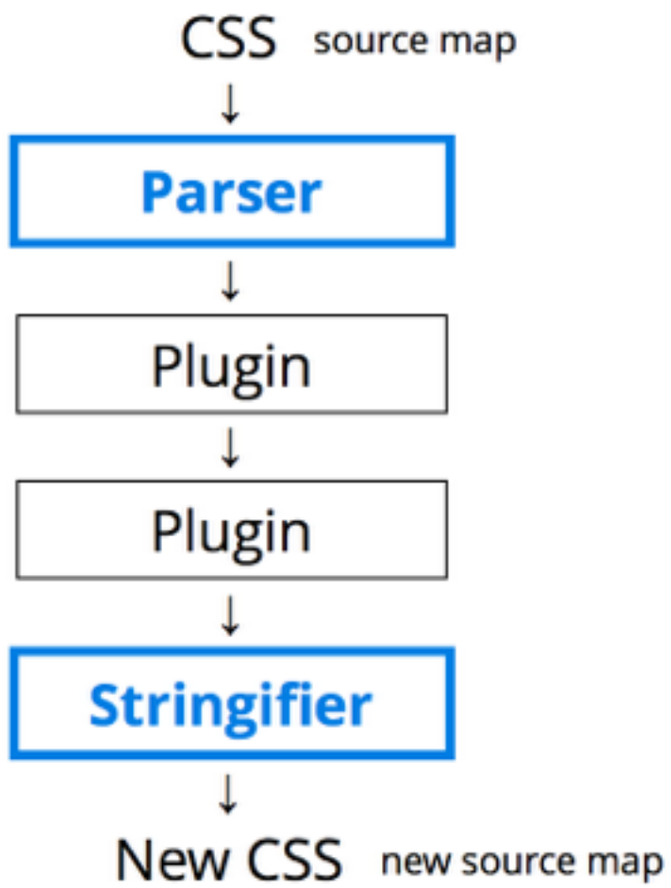


CSS Post Processor

- by Andrey Sitnik

- Feature pluggable

PostCSS


CSS
source map
Parser
Plugin
Plugin
Stringifier
New CSS
new source map

- Write CSS(feature CSS), post process to current working css

Plugins

- autoprefixer
- mqpacker
- import
- csswring

More Plugins

- cssnext
- nested
- sprites
- pantone

More More Plugins

- easing
- image-inlined
- cssfmt
- rtlcss

Demo

Hashed File Name

why

- Cache bust

- use gulp-rev, gulp-rev-all, postcss-urlrev

Demo

Gulp Watch

Watch

- Detect file change
- Do task when file on every change
- Improve development performance

Demo

LiveReload

LiveReload

- Auto trigger browser reload page

Demo

BrowserSync

Browsersync

BrowserSync

- Sync multiple browser user actions
    - For test
- Also possible to reload

JS Module

Module

- AMD (CommonJS Module/A)
- NodeJS module (CommonJS Module/1)
- ES6 module

```
define(['greetings'] , function (greetings) {

    var api = {};

    return api;
});
```

```
var greetings = require("./greetings.js");

var api = {};

module.exports = api;
```

- http://www.cnblogs.com/lvdabao/p/js-modules-develop.html

ES6 Module

```
import greetings from "./greetings.js";

var api = {};

export default api;
```

WHATWG Loader

- How browser fetch JS modules

- Still editing

Implements

- AMD, RequireJS
- NodeJS, browserify
- ES6, webpack + babel

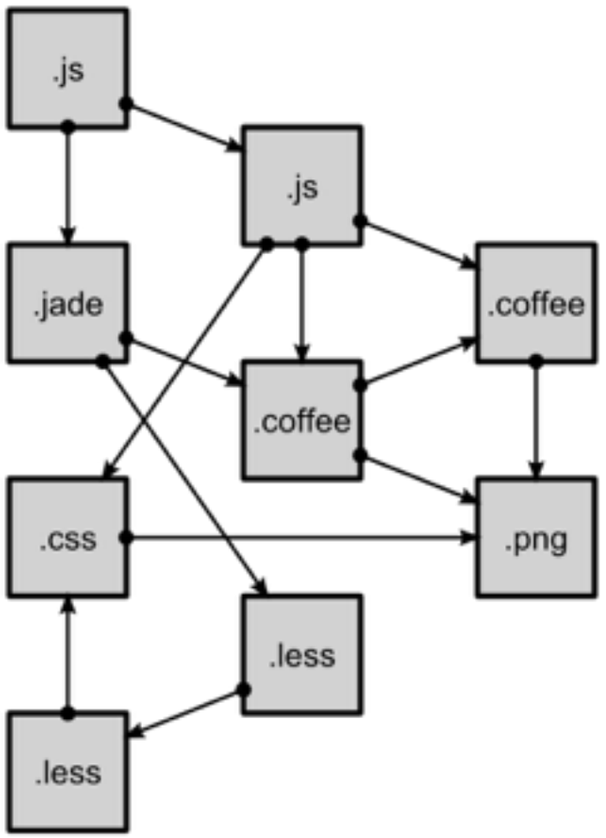
REQUIRE.JS

browserify

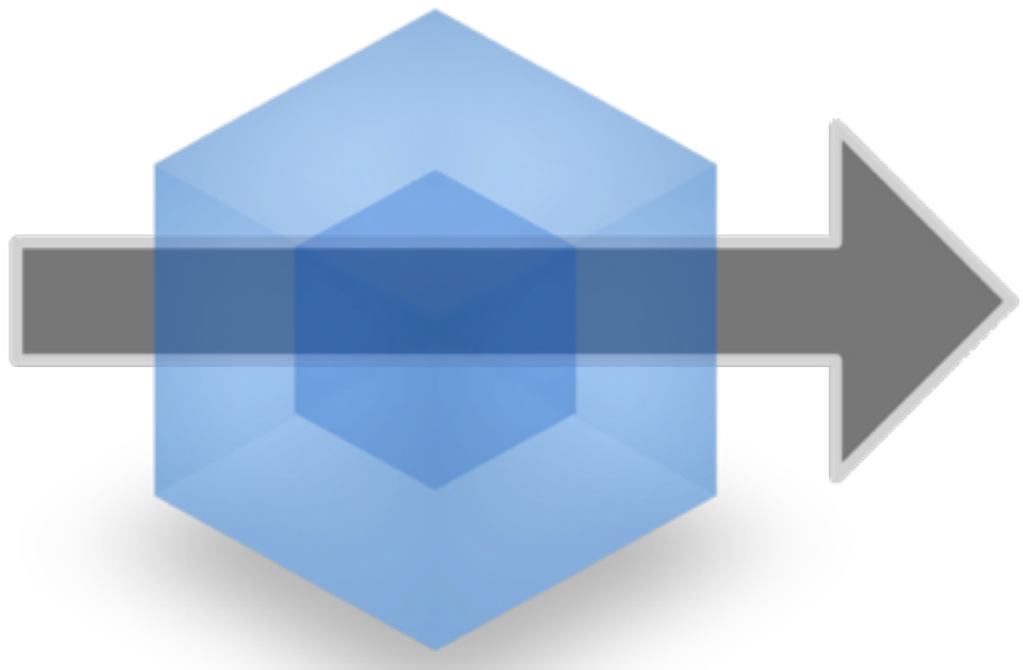
Webpack

webpack

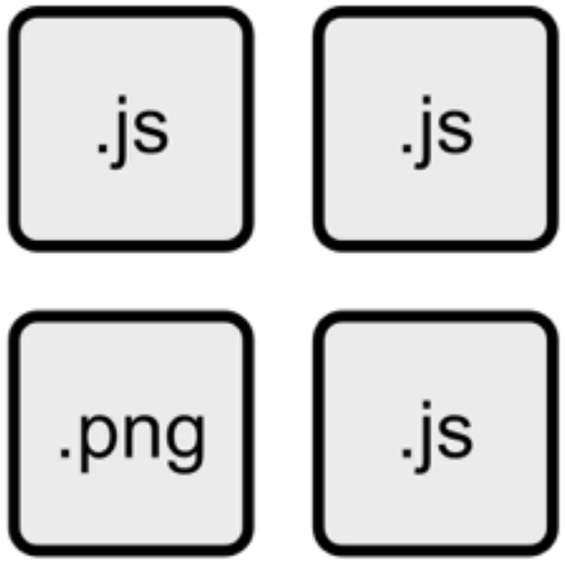
MODULE BUNDLER



modules
with dependencies



webpack
MODULE BUNDLER



static
assets

Webpack

- Module bundler
- Pluggable features
- Pack everything web required
    - Lots of loaders

Babel

BABEL

Babel

- ES.next to ES current transpiler
- Support ES6 module

Babel

- All ES6 features
- JSX
- ES7
  - async
  - comprehension
  - ...

Demo