FIRST, LET’S LOOK AT THE PAST
THROW A BUNCH OF HTML FILES
THROW A BUNCH OF HTML FILES

ADD A COUPLE OF CSS FILES
THROW A BUNCH OF HTML FILES

ADD A COUPLE OF CSS FILES

PUT SOME JAVASCRIPT IN ALL THIS
THROW A BUNCH OF HTML FILES

ADD A COUPLE OF CSS FILES

PUT SOME JAVASCRIPT IN ALL THIS

AND CALL IT A DAY...
COME BACK 6 MONTHS LATER

AND TRY TO REMEMBER HOW TO MAINTAIN YOUR CODE
Node.js ≠ Server-side JavaScript
Node.js
stand alone JavaScript runtime
Node.js is a stand-alone JavaScript runtime using v8, Chrome’s JavaScript engine.
Node.js
stand alone JavaScript applications
Node.js
stand alone JavaScript applications created by JavaScript developers
Node.js
stand alone JavaScript applications
created by JavaScript developers
for JavaScript developers
BRAND NEW WORLD
JAVASCRIPT DEVELOPMENT TOOLS
A GOOD DEVELOPMENT WORKFLOW HELPS YOU GET STARTED
A GOOD DEVELOPMENT WORKFLOW

- HELPS YOU GET STARTED
- MAINTAINS YOUR DEPENDENCIES
A GOOD DEVELOPMENT WORKFLOW

- HELPS YOU GET **STARTED**
- MAINTAINS YOUR **DEPENDENCIES**
- ENFORCES **BEST PRACTICES**
A GOOD DEVELOPMENT WORKFLOW

- HELPS YOU GET STARTED
- MAINTAINS YOUR DEPENDENCIES
- ENFORCES BEST PRACTICES
- PREPARES YOUR TOOLS
A GOOD DEVELOPMENT WORKFLOW

- HELPS YOU GET **STARTED**
- MAINTAINS YOUR **DEPENDENCIES**
- ENFORCES **BEST PRACTICES**
- PREPARES YOUR **TOOLS**
- FIGHTS **REGRESSIONS**
A GOOD DEVELOPMENT WORKFLOW

- HELPS YOU GET STARTED
- MAINTAINS YOUR DEPENDENCIES
- ENFORCES BEST PRACTICES
- PREPARES YOUR TOOLS
- FIGHTS REGRESSIONS
- EASES THE RELEASE PROCESS
HOW TO GET STARTED?
YEOMAN

Born in 2012

Various contributors (Employees from Google, Twitter, etc)
YEOMAN scaffolding

- structure
- compilation
- static analysis
- dependencies management
- development tools
- unit testing
YEOMAN download

> npm install -g yo

“-g” global install
Various generators:
○ Angular
○ Ember
○ Backbone

And all the other popular frameworks...
> npm install -g generator-angular
YEOMAN create an Angular project

> yo angular
Select some dependencies

Welcome to Yeoman, ladies and gentlemen!

Out of the box I include Bootstrap and some AngularJS recommended modules.

[?] Would you like to use Sass (with Compass)? Yes
[?] Would you like to include Twitter Bootstrap? Yes
[?] Would you like to use the Sass version of Twitter Bootstrap? (Y/n) Y
Choose some options

```
PS C:\Users\sbegaudeau\Desktop\web2day2014> yo angular

Welcome to Yeoman, ladies and gentlemen!

Out of the box I include Bootstrap and some AngularJS recommended modules.

[?] Would you like to use Sass (with Compass)? Yes
[?] Would you like to include Twitter Bootstrap? Yes
[?] Would you like to use the Sass version of Twitter Bootstrap? Yes
[?] Which modules would you like to include?
[X] angular-resource.js
[X] angular-cookies.js
[X] angular-sanitize.js
[X] angular-route.js
```
It creates the project

create bower.json
create package.json
create Gruntfile.js
create app/images/yeoman.png
invoke angular:common:C:\Users\sbegaudeau\AppData\Roaming\npm\node_modules\generator-angular\app\index.js
create .bowerrc
create .editorconfig
create .gitattributes
create .jshintrc
create app/.buildignore
create app/.htaccess
create app/404.html
create app/favicon.ico
create app/robots.txt
create app/views/main.html
create test/.jshintrc
create test/runner.html
create .gitignore
invoke angular:main:C:\Users\sbegaudeau\AppData\Roaming\npm\node_modules\generator-angular\app\index.js
create app/scripts/app.js
invoke angular:controller:C:\Users\sbegaudeau\AppData\Roaming\npm\node_modules\generator-angular\app\index.js
create app/scripts/controllers/main.js
create test/spec/controllers/main.js
It downloads half of the internet
It uses some dark magic
Enjoy the view, Yeoman takes care of everything...
What does the result look like?
```json
{
  "name": "eclipsecon",
  "version": "0.0.0",
  "dependencies": {
    "angular": "1.2.6",
    "json3": "~3.2.6",
    "es5-shim": "~2.1.0",
    "jquery": "~1.10.2",
    "sass-bootstrap": "~3.0.2",
    "angular-resource": "1.2.6",
    "angular-sanitize": "1.2.6",
    "angular-route": "1.2.6"
  },
  "devDependencies": {
    "angular-mocks":",
    "angular-scenario":
  }
}
```
DEV TOOLS
IT’S MAGIC!
and it will be your job to maintain it...
HAPPY?
BUT HOW DOES IT WORK?
YEOMAN HAS FRIENDS
BOWER
GRUNT
GULP
AND
OTHERS
DEPENDENCIES MANAGEMENT
BOWER

Package manager for the web

Born in 2012

Created by Twitter and other contributors over time
> npm install -g bower
Find a package: bower search

PS C:\Users\sbegaudeau\Desktop\web2day2014> bower search jquery
Search results:

jquery git://github.com/jquery/jquery.git
jquery-ui git://github.com/components/jqueryui
jquery.cookie git://github.com/carhartl/jquery-cookie.git
jquery-placeholder git://github.com/mathiasbynens/jquery-placeholder.git
jquery-file-upload git://github.com/blueimp/jQuery-File-Upload.git
jasmine-jquery git://github.com/velesin/jasmine-jquery
jquery-ui git://github.com/jquery/jquery-ui.git
jquery-mousewheel git://github.com/brandonaaron/jquery-mousewheel.git
jquery-waypoints git://github.com/imakewebthings/jquery-waypoints.git
jquery.scrollTo git://github.com/flesler/jquery.scrollTo.git
jquery-migrate git://github.com/appleboy/jquery-migrate.git
jquery-autosize git://github.com/jackmoore/autosize.git
jquery.validation git://github.com/jzaefferer/jquery-validation.git
jquery-bridget git://github.com/desandro/jquery-bridget.git
jquery.transit git://github.com/rstacruz/jquery.transit.git
Find more information: bower info

```
PS C:\Users\sbegaudeau\Desktop\web2day2014> bower info jquery
bower jquery** cached git://github.com/jquery/jquery.git#2.1.1
bower jquery** validate 2.1.1 against git://github.com/jquery/jquery.git#

{
  name: 'jquery',
  version: '2.1.1',
  main: 'dist/jquery.js',
  license: 'MIT',
  ignore: [
    '**/.*',
    'build',
    'speed',
    'test',
  ]
}
```
BOWER  Add a specific dependency

> bower install jquery#1.10.2 --save

install jquery and save this new dependency
BOWER

runtime dependencies in bower.json
"dependencies": {
  "angular": "1.2.6",
  "json3": "~3.2.6",
  "es5-shim": "~2.1.0",
  "jquery": "~1.10.2",
  "sass-bootstrap": "~3.0.2",
  "angular-resource": "1.2.6",
  "angular-sanitize": "1.2.6",
  "angular-route": "1.2.6"
},
"devDependencies": {
  "angular-mocks": "",
  "angular-scenario": "",
  "angular-route": "1.2.6"
}
BOWER Add all your dependencies

> bower install
See your dependencies: bower list

```
PS C:\Users\sbegaudeau\Desktop\web2day2014> bower list
bower check-new   Checking for new versions of the project dependencies..
web2day2014@0.0.0 C:\Users\sbegaudeau\Desktop\web2day2014
    angular@1.2.6 (latest is 1.3.0-build.2795+sha.222d473)
    angular-mocks@1.2.6 (latest is 1.3.0-build.2795+sha.222d473)
      angular@1.2.6 (latest is 1.3.0-build.2795+sha.222d473)
    angular-resource@1.2.6 (latest is 1.3.0-build.2795+sha.222d473)
      angular@1.2.6
    angular-route@1.2.6 (latest is 1.3.0-build.2795+sha.222d473)
      angular@1.2.6
    angular-sanitize@1.2.6 (latest is 1.3.0-build.2795+sha.222d473)
      angular@1.2.6
    angular-scenario@1.2.6 (latest is 1.3.0-build.2795+sha.222d473)
      angular@1.2.6
    es5-shim@2.1.0 (latest is 3.4.0)
    jquery@1.10.2 (latest is 2.1.1)
    json3@3.2.6 (latest is 3.3.1)
    sass-bootstrap@3.0.2
    jquery@1.10.2 (2.1.1 available)
```
Package management always comes with its set of problems:
Package management always comes with its set of problems:
- how can I create a new package?
Package management always comes with its set of problems:
- how can I create a new package?
- how can I host a bower repository?
Create a bower package: bower init

```
PS C:\Users\sbegaudeau\Desktop\web2day> bower init
name: web2day
version: 1.0.0
description: web2day application project
main file: web2day.js
what types of modules does this package expose? es6
keywords: web2day, awesome
authors: Stéphane Bégaudeau <stephane.begaudeau@gmail.com>
license: MIT
homepage: http://web2day-nantes.org
set currently installed components as dependencies? No
add commonly ignored files to ignore list? (Y/n) Y
```
Use bower with Git

> bower install https://myrepository.git
BOWER  Host multiple versions

> git tag -a 1.4 -m 'version 1.4'

> bower install https://myrepository.git#1.4
> bower install jquery
> bower install git://github.com/jquery/jquery.git
BOWER Registry

https://github.com/bower/registry

A simple web server listing Git repository URLs
BOWER Register

> bower register myrepository https://...git

> bower install myrepository
BUILD
EQUALLY POWERFUL
GRUNT is a bit older so its ECOSYSTEM is more mature.
Grunt and Gulp

development tools dependencies in package.json

>npm install
GRUNT
grunt.initConfig({
    lint: {
        src: 'src/<%= pkg.name %>.js'
    },
    concat: {
        src: [
            '<banner:meta.banner>',
            '<file_strip_banner:src/<%= pkg.name %>.js>'
        ],
        dest: '<%= pkg.name %>.js'
    }
});
GRUNT

Configuration in Gruntfile.js
Global install before Grunt 0.4

Updating Grunt cannot break existing projects anymore
GRUNT gruntfile.js structure

3 parts:
- Task loading
- Task configuration
- Task registration
GRUNT

An example: Static code analysis with JSHINT
'use strict';

module.exports = function (grunt) {

// Load grunt tasks automatically
require('load-grunt-tasks')(grunt);

// Define the configuration for all the tasks
grunt.initConfig({
  jshint: {
    options: {
      jshintrc: '.jshintrc',
      reporter: require('jshint-stylish')
    },
    all: [
      'Gruntfile.js',
      'app/scripts/**/*.js'
    ]
  }
});

grunt.registerTask('default', ['jshint:all']);
HOW DO YOU USE IT?

> grunt

> grunt jshint:all
GULP
gulp.src('src/main.mycss')
  .pipe(stylus())
  .pipe(rename({ ext: 'css' }));
  .pipe(autoprefixer());
  .pipe(cssmin());
  .pipe(header('/* All Right Reserved */'))
  .pipe(gulp.dest('dist'))
GULP

Configuration in Gulpfile.js
GULP gulpfile.js structure

3 parts:
- task loading
- task configuration
- task registration
GULP

```javascript
'use strict';

var gulp = require('gulp');
var wiredep = require('wiredep').stream;

// Load plugins
var $ = require('gulp-load-plugins')();

// Scripts
gulp.task('scripts', function () {
  return gulp.src('app/scripts/**/*.*.js')
    .pipe($.jshint('.jshintrc'))
    .pipe($.jshint.reporter('default'))
    .pipe($.size());
});

// Default task
gulp.task('default', function () {
  gulp.start('scripts');
});
```
GULP differences with Grunt

node.js streams (asynchronous by nature)

nice and simple api

less IO operations
scaffolding
dependency management
build
build tasks
orion
eclipse
BUILD TASKS
STATIC ANALYSIS

ggrunt-contrib-jshint
gulp-jshint

Detect coding errors in your JavaScript files
STATIC ANALYSIS

Various style of reports (checkstyle, html, etc)
Configuration in .jshtinrc
MINIFICATION

grunt-contrib-uglify
gulp-uglify

Reduce the size of JavaScript files
CSS TRIMMING

grunt-uncss
gulp-uncss-task

Remove **unused** CSS rules
TESTING

Frameworks: Jasmine & QUnit
Runner: Karma
Code Coverage: Istanbul
LIVE RELOAD

grunt-contrib-watch
gulp-livereload

Reload automatically the web application if some files have been changed
WORKFLOW

- init
- concat
- jshint
- min
- unit
- server
- endtoend
- watch
Orion

Eclipse project

Introduced in 2011 in the Eclipse Foundation
Orion

Two versions: Jetty or Node.js
Ori

Orion

npm install orion

dnode node_modules/orion/server.js
/projectpath
<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHL Stadiums</td>
<td>Stadiums of the National Hockey League</td>
</tr>
<tr>
<td>tabletop</td>
<td></td>
</tr>
</tbody>
</table>

**Projects**

- bootstrap
  - OrionEndToEnd
    - NHL Stadiums
    - tabletop
  - tabletop

<table>
<thead>
<tr>
<th>Directory</th>
<th>Last Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>bootstrap</td>
<td>17/3/2014 21:38:20</td>
</tr>
<tr>
<td>OrionEndToEnd</td>
<td>17/3/2014 21:34:02</td>
</tr>
<tr>
<td>tabletop</td>
<td>17/3/2014 21:39:04</td>
</tr>
</tbody>
</table>
PROJECTS MANAGEMENT
EDITOR
function buildContent(data) {
  var twitterLogo = "https://abs.twimg.com/a/182596364/images/resources/twitter-bird-blue-on-whites.png";
  var contentString = '<table class="table table-bordered">' +
    '<tbody>' +
    '<tr><th>Team</th>' +
    '<td data-website = "" data-team = "' + data.team + '" +
    '<td data-address = "" data-capacity = "" data-stadium = "" +
    '<td data-name = "" data-nickname = "" +
    '</tr>
    </tbody>' +
    '</table>

  return contentString;
}

function append(data) {
  var container = document.getElementById('table');
  var wrapper = document.createElement('div');
  var content = buildContent(data);
  wrapper.innerHTML = content;
  container.appendChild(wrapper);
}

function showInfo(data) {
  data.teams.forEach(function(append);
}

//var spreadsheet = 'https://docs.google.com/spreadsheet/pub?key=0A54dH1-SyDEjZocxhR3dXNob13ZEdM0J4A6xKXClB';
var spreadsheet = 'https://docs.google.com/spreadsheet/pub?key=0A5K0gOe2zHumanFq05S1XbO1S51NQJc205IuqMQ2j2ZEBK348aBkOutput=html';
TopHat.Unit({ key: spreadsheet, callback: showInfo });
FIRST CLASS

GIT SUPPORT
<html lang="en">
  <head>
    <meta charset="utf-8"/>
    <title>Title</title>
    <link rel="stylesheet" href="bootstrap.min.css"/>
    <script src="bootstrap.min.js"></script>
    <script src="tabletop.js"></script>
    <link rel="stylesheet" href="sportmapper.css"/>
    <script src="sportmapper.js"></script>
  </head>
  <body class="tablebackground">
    <div id="tables">
      
      exercises/tabletop.js
    
    </div>
  </body>
</html>
OrionEndToEnd

Tutorial on end to end web application development with Orion.

This tutorial is based around four stages:

1. Create a project in the cloud, and store it in a repository
2. Add content to the project - the libraries and references to other services our project will consume
3. Modify content - Wire the data, create the javascript objects that will interpret the data, store the application
4. Deploy - store the code, transfer the software to a server

The software we're going to build will read and interpret a published Google Spreadsheet of data that details the names and locations of stadiums in a professional sports league.

The software will display the locations of the stadiums as pins on a Google map, that we can open up and find out more things about. We'll build a little mashup of the information with a Twitter search to see what people are saying about the stadiums.
This tutorial is based around four stages:

1. Create a project in the cloud, and store it.
2. Content to the project - the libraries and services.
3. Modify content - Wire the data, create the JavaScript objects.
4. Deploy - store the code, transfer the software to a server.

The software will display the locations of the stadiums on a map.

Update project description
John Arthorne on 14/3/2014 15:54:33
SEARCH
Tabletop - 2 matches

Files 1/2 of 2 matching Tabletop

`import {Top} from './tabletop.js';

const options = {
  sheet: 'Sheet1',
  callback: (result) => {
    console.log(result);
  },
};

const tabletop = new Tabletop(options);

tabletop.on('error', (error) => {
  console.error(error);
});

const data = tabletop.getData();

console.log(data);`
PLUGINS
For a list of available commands:
- cd - Changes the current directory
- cfo - Commands for interacting with a Cloud Foundry compatible target
- clear - Clears the shell screen
- edit - Edits a file
- help - Get help on the available commands
- Is - Lists the files in the current directory
- npm - Commands for interacting with node npm
- plugins - Commands for working with plug-ins
- pwd - Prints the current directory location
- help - Commands for working with a service
public class Main {
    public static void main(String[] args) {
        System.out.println(args);
    }
}
READY TO DEPLOY
Started at http://test8.orionhub.org:8080
WHAT ABOUT ECLIPSE?
Back-end

Lot of tooling for Java development

Jetty, EclipseLink, Webtools, etc
Front-end

...
WHAT ABOUT OTHERS?
```javascript

```
### JavaScript Bower

<table>
<thead>
<tr>
<th>Package</th>
<th>Version</th>
<th>Latest</th>
</tr>
</thead>
<tbody>
<tr>
<td>angular</td>
<td>1.2.13</td>
<td>1.2.15-build.2365+sha.d07101d</td>
</tr>
<tr>
<td>angular-mocks</td>
<td>1.2.13</td>
<td>1.2.15-build.2365+sha.d07101d</td>
</tr>
<tr>
<td>angular-route</td>
<td>1.2.13</td>
<td>1.2.15-build.2365+sha.d07101d</td>
</tr>
<tr>
<td>todomvc-common</td>
<td>0.1.9</td>
<td>0.1.9</td>
</tr>
</tbody>
</table>

Node interpreter: /usr/local/bin/node

Bower executable: /usr/local/bin/bower

bower.json: /Users/user/WebStormProjects/todomvc/arc
Front-end

It’s time to contribute!
```javascript
var express = require('express');
var app = express();

app.get('/', function (req, res) {
  res.send('Hello World!')
});

var server = app.listen(3000, function () {
  var host = server.address().address
  var port = server.address().port
  console.log('Example app listening at http://%s:%s', host, port)
});
```
```javascript
var express = require('express');
var app = express();

app.get('/', function (req, res) {
  res.send('Hello World!');
});

var server = app.listen(3000, function () {
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```
```javascript
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var app = express();

app.get('/', function (req, res) {
    res.send('Hello World!');
});

var server = app.listen(3000, function () {
    var host = server.address().address;
    var port = server.address().port;
    console.log('Example app listening at http://' + host + ':' + port);
});
```
```javascript
const express = require('express');
const app = express();

app.get('/', function(req, res) {
    res.send('Hello World!')
})

const server = app.listen(3000, function () {
    const host = server.address().address
    const port = server.address().port
    console.log(`Example app listening at http://${host}:${port}`)
})
```
TO SUM UP
THANKS!

Stéphane Bégaudeau
Twitter: @sbegaudeau
Google+: +stephane.begaudeau

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