



AngularJS Project Setup

A Step-by-Step Guide

Presented by: Gourav Ajmani

Technical Lead, RapidValue Solutions

Contents

| | |
|---|----|
| Introduction..... | 3 |
| Install Pre-requisites | 3 |
| Install the Yeoman Toolset | 5 |
| Install a Yeoman Generator | 5 |
| AngularJS-RequireJS Generator | 6 |
| Start Preparing to Create Project | 6 |
| Configure your Generator | 6 |
| Review the Yeoman-generated Application | 8 |
| Run the Application in the Browser | 10 |
| Making the Application Perfect and De-coupled | 12 |
| Conclusion | 14 |

Introduction

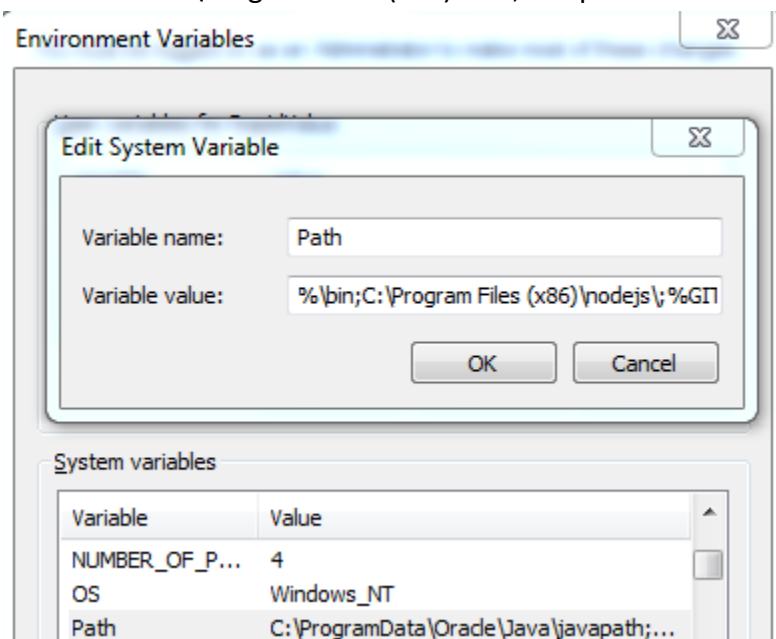
AngularJS is a popular JavaScript framework. It is intended to make the implementation of RIA (Rich Internet Applications) easier and convenient. AngularJS is created and maintained by Google. It is relatively, a new JavaScript framework, which is designed to make the front-end development as simple as possible. AngularJS is a useful tool for standardizing the web application structure and it provides a future template to ensure that the client-side applications are developed much effectively.

I have been working on AngularJS for a while now, and have read many tutorials and blogs on it. I could never find any article which gives a clear, concise and step-by-step guide to create the project structure and execute the project. So, I have written this document which will help you to create the Project structure and then execute it in a simple manner.

Install Pre-requisites

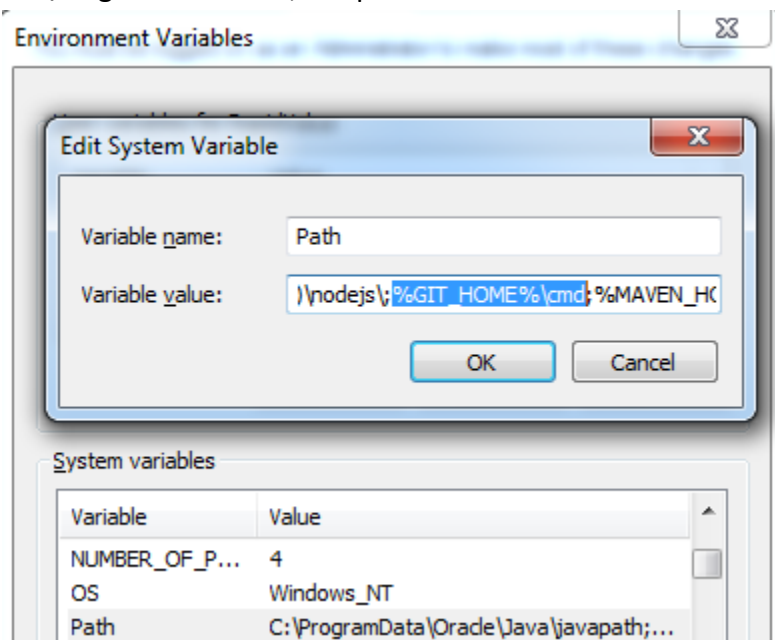
Before installing Yeoman, you will need the following:

- Node.js v0.10.x+
 - You can download it from [here](#).
 - Set the path to NodeJS in environment variable, in this example: NodeJS is installed in "C:\Program Files (x86)". So, the path looks like :



- npm (which comes bundled with Node) v2.1.0+

- GIT
 - You can download it from [here](#).
 - Set the path to GIT in environment variable. In this case, GIT got installed in "C:\Program Files". So, the path looks like:



- Check if you have [NodeJS](#) and [npm](#) installed by typing (in command prompt):

```
C:\Users\RapidValue>node --version && npm --version
v0.12.7
2.11.3
C:\Users\RapidValue>
```

- By default, [npm](#) comes along with [NodeJS](#), but you might need to update it with the latest version of it. You can update it using the command (in command prompt):

```
C:\Users\RapidValue>npm install --global npm@latest
C:\Users\RapidValue\AppData\Roaming\npm\npm -> C:\Users\RapidValue\AppData\Roaming\npm\node_modules\npm\bin\npm-cli.js
npm@2.14.2 C:\Users\RapidValue\AppData\Roaming\npm\node_modules\npm
```

Check if you have [GIT](#) installed by typing (in command prompt):

```
C:\Users\RapidValue>git --version
git version 2.5.0.windows.1
```

Install the Yeoman Toolset

- Once you have [NodeJS](#) installed, install the Yeoman Toolset, by typing (in command prompt):

```
C:\Users\RapidValue>npm install --global yo bower grunt-cli
```

It should execute/install some commands and you should be back to your command prompt without any error.

- You should confirm whether all the required installation is completed, by typing (in command prompt):

```
C:\Users\RapidValue>yo --version && bower --version && grunt --version
1.4.8
1.5.2
grunt-cli v0.1.13
C:\Users\RapidValue>
```

The above command should give you the three different versions of Yo, Bower, and Grunt respectively.

Install Yeoman Generator

You will need to spend time setting up the code for your web application, creating folder structure, defining and installing dependencies in traditional web development workflow. But, if you have Yeoman, it makes the task easier. So, install it.

- Install a generator for AngularJS projects.
 - You can install Yeoman generators, using the [npm](#) command.
 - Install [generator-angular](#) by typing (in command prompt):

```
C:\Users\RapidValue>npm install --global generator-angular@0.11.1
```

This should install [NodeJS](#) packages required for the generator.

AngularJS-RequireJS Generator

You should install generator for AngularJS-RequireJS and Karma-RequireJS.

- Install generator-angular-require and generator-karma-require.
 - You can install generator for AngularJS-RequireJS & Karma-RequireJS by typing (in command prompt)

```
C:\Users\RapidValue>npm install -g generator-karma-require generator-angular-require
```

It should execute/install some commands and you will get a command prompt without any error.

Start Preparing to Create Project

- Make a new directory (name of your application) and navigate into it.
 - A directory is created with the name "SampleAngularJsProject", in local drive "G:", and navigated there using command prompt.

```
G:\>cd SampleAngularJsProject
G:\SampleAngularJsProject>
```

- Here, you need to execute Yo for angular-require along with appName. (SampleAngularJsProject) by typing (in command prompt).

```
G:\SampleAngularJsProject>yo angular-require SampleAngularJsProject
? =====
We're constantly looking for ways to make yo better!
May we anonymously report usage statistics to improve the tool over time?
More info: https://github.com/yeoman/insight & http://yeoman.io
===== <Y/n>
```

Type or , depends on your choice, if you would like to share the usage statistic of the tool. It is preferable not to do that, so is typed.

Configure Your Generator

AngularJS generator provides an option to customize the application with the commonly developed libraries, so that it can speed up the development environment.

Here, it gives an option to use [Sass](#) (with [Compass](#)) and include [Twitter Bootstrap](#). In this, Bootstrap is included and Sass is avoided. Enter ☐ then ☒, respectively, to these options.

```
G:\SampleAngularJsProject>yo angular-require SampleAngularJsProject
? =====
We're constantly looking for ways to make yo better!
May we anonymously report usage statistics to improve the tool over time?
More info: https://github.com/yeoman/insight & http://yeoman.io
===== No

  _____
  |         |
  |  <o>    |
  |         |
  |_____|
  |
  |  < 'U' >
  |  /  A  \
  |  |  ~  |
  |  |____|
  |  |  o  |
  |  |____|
  |  |  y  |
  |_____|

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>? No
? Would you like to include Bootstrap? <Y/n> y
```

Generator will prompt to select the Angular Modules that you would like to include in the application.

```
G:\SampleAngularJsProject>yo angular-require SampleAngularJsProject
? =====
We're constantly looking for ways to make yo better!
May we anonymously report usage statistics to improve the tool over time?
More info: https://github.com/yeoman/insight & http://yeoman.io
===== No

  _____
  |< o >|
  |_____|
  |
  |< 'U' >
  |_____|
  |  A  |
  |  ~  |
  |_____|
  |  o  |
  |_____|
  |  Y  |
  |_____|

  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)? No
? Would you like to include Bootstrap? Yes
? Which modules would you like to include? (Press <space> to select)
>(*) angular-resource.js
(*) angular-cookies.js
(*) angular-sanitize.js
(*) angular-route.js
(*) angular-animate.js
(*) angular-touch.js
( ) angular-aria.js
( ) angular-messages.js
```

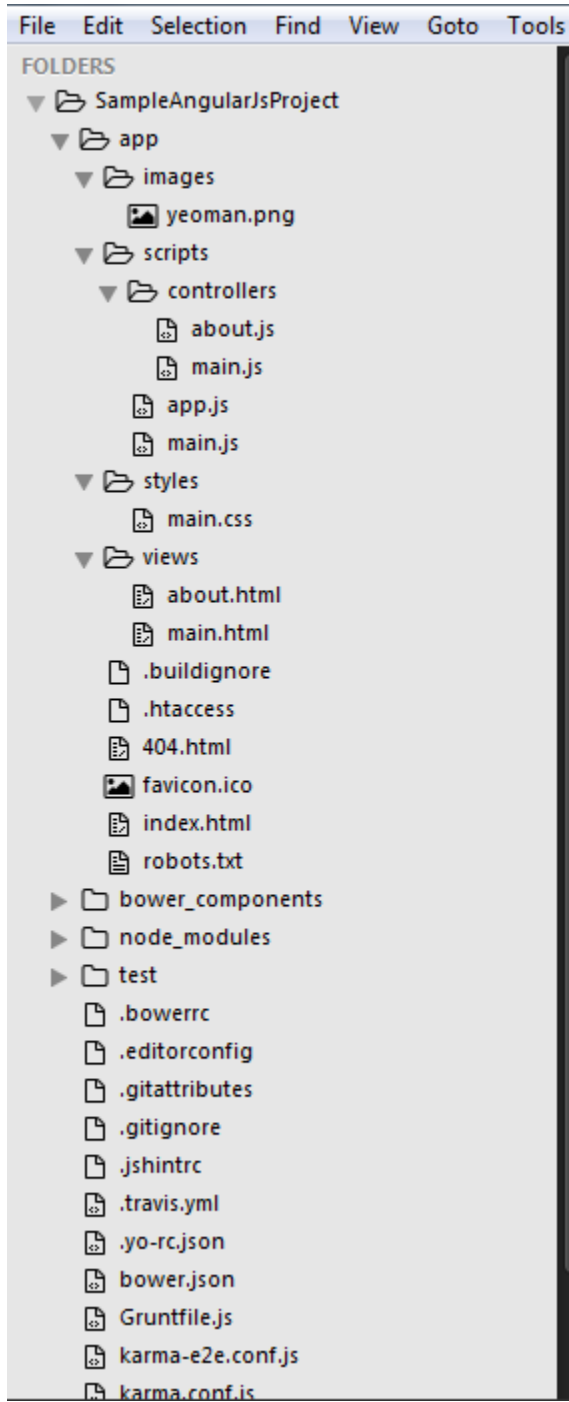
You can check/un-check the modules using / arrow key and use the bar to select it.

Let's go ahead with the default selected one (until you are keen to include the other two modules)). Press **Enter** to see what Yeoman has in store for you.

It should execute/install some commands and you should be back to your command prompt without any error.

Review the Yeoman-generated Application

Open up your ***“SampleAngularJsProject”*** directory to take a look at what was actually scaffolded. It'll look like this:



In “*SampleAngularJsProject*”, we have:

- **app**: a parent directory for our application
- **index.html**: the base html file for our Angular application
- **404.html**, **favicon.ico**, and **robots.txt**: commonly used web files so you don’t have to create them yourself
- **scripts**: JS files
- **app.js**: Entry point to Angular application code
- **controllers**: ngular controllers
- **styles**: CSS files
- **views**: directory for Angular templates
- **bower_components**, **bower.json**: our JavaScript/web dependencies, installed by Bower
- **Gruntfile.js**, **package.json**, and **node_modules**: configuration and dependencies required by our Grunt tasks
- **test**: a scaffolded out test runner and the unit tests for the project, including boilerplate tests for our controllers

Run the Application in the Browser

To run the application, you do not have to worry about setting up the web server locally. All of it is considered by Yeoman.

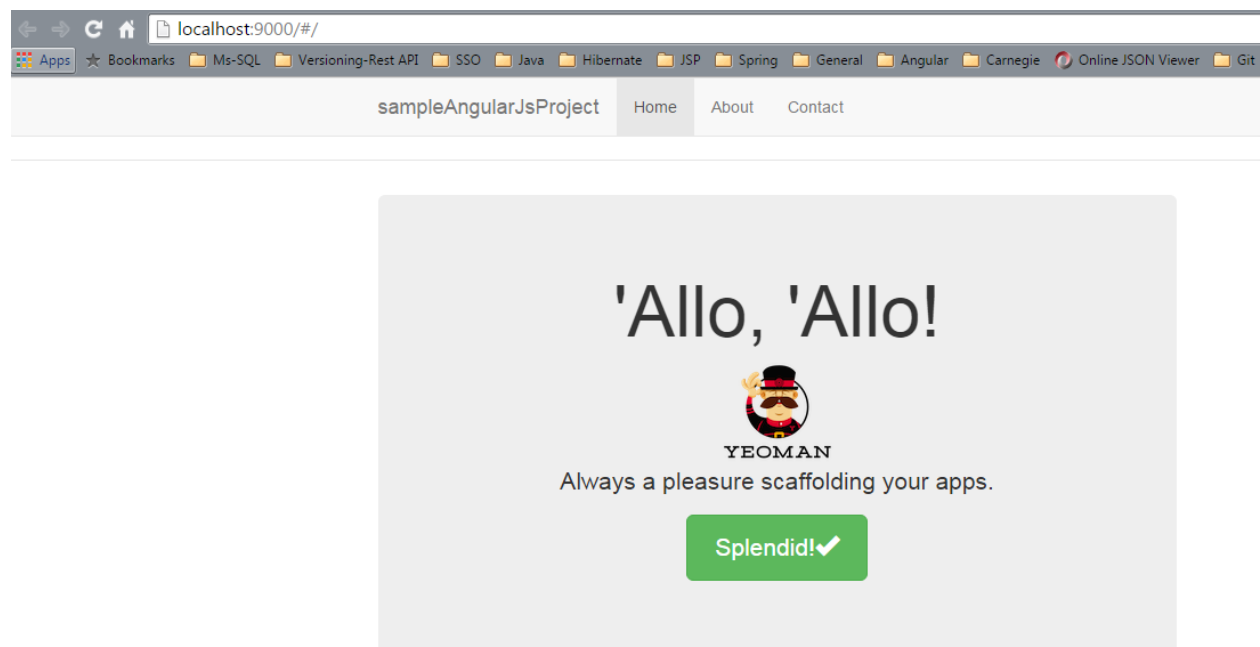
- Start the server
 - To start the server, run a grunt task to create local, node based HTTP server on localhost:9090 by typing (In command prompt):

```
G:\SampleAngularJsProject>grunt serve
Running "serve" task
Running "clean:server" (clean) task
>> 0 paths cleaned.
Running "wiredep:app" (wiredep) task
Running "bower:app" (bower) task
>> The task "bower" is deprecated for this module. Use "bowerRequirejs" instead
Updated RequireJS config with installed Bower components
Running "concurrent:server" (concurrent) task
Running "copy:styles" (copy) task
Copied 1 file
Done, without errors.

Execution Time (2015-09-10 19:23:08 UTC)
loading tasks    7ms  ██████████ 30%
copy:styles     16ms  ██████████ 70%
Total 23ms

Running "autoprefixer:server" (autoprefixer) task
Autoprefixer's process() method is deprecated and will be removed in next major release. Use postcss([autoprefixer]).process() instead
File .tmp/styles/main.css created.
Running "connect:livereload" (connect) task
Started connect web server on http://localhost:9000
Running "watch" task
Waiting...
```

And, your web browser should open up, automatically, and it should launch the newly created AngularJS web application.



- Auto-reload the changes in your files
 - Yeoman has generated an application for you in a way, so that if you make any changes in any of your file it will, automatically, force a browser refresh.
 - This is called *live reloading*.
 - Live reload has been configured in the gruntfile.js and it keeps a watch on certain set of files and it, automatically, reloads them if it detects any changes.

Making the Application Perfect and De-coupled

Yeoman has made it easy to create the Angularjs project structure and has given us an outline and idea of how the structure should look.

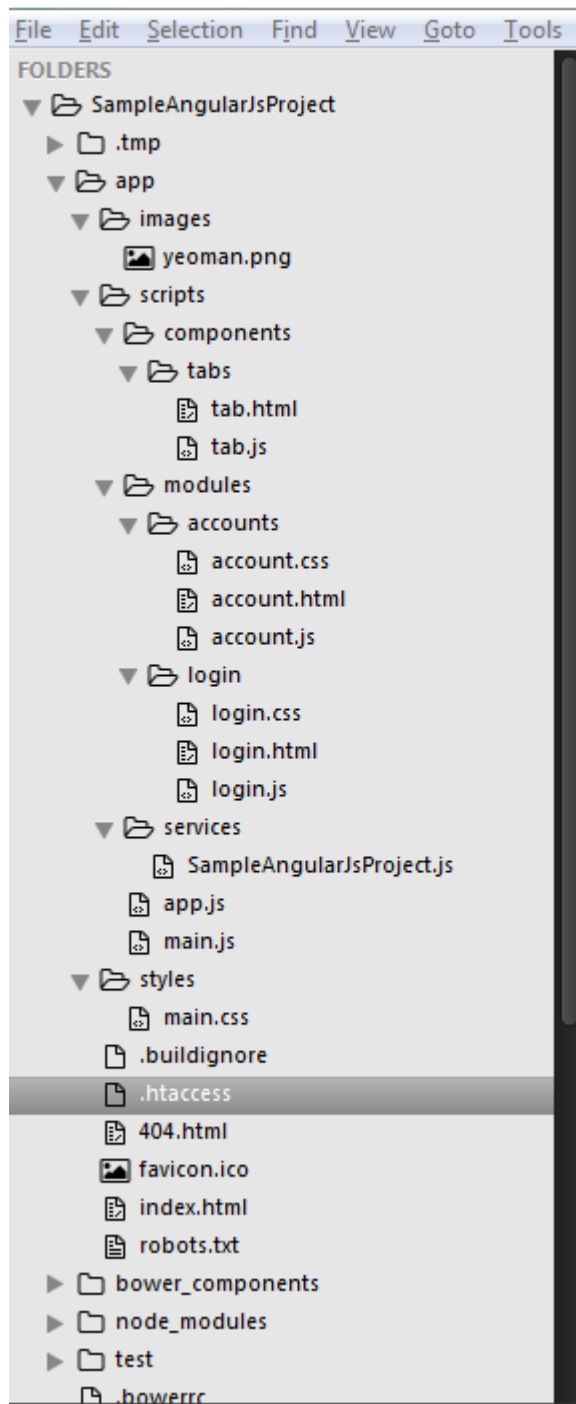
However, there are few suggestions, which you might want to consider, which will make your application more decoupled, maintainable and neat.

If you notice the project structure above, you will see “**script**” folder which has *app.js* and a nested folder named “**controllers**”, which will store all the JS files of the application. There is another folder named “**views**”, which is used to store all the html files of the application.

- This is the place where the changes need to be incorporated :
 - Instead of saving all the application JS files in “**controllers**”, it is recommended to create nested folder named “**modules**” under “**scripts**” and eliminate “**controllers**” folder.
 - Coming to “**modules**” folder, you should create the nested folder under “**modules**”, depending on the Modules you have for the application. Login module, for example.
 - So, you create a folder named “**login**” under “**modules**”. In “**login**” folder, the JS, HTML & CSS files are saved, corresponding to Login module.

By doing so, you can eliminate “**views**” folder as well, because, the HTML’s are there in the corresponding module folder.

So, the updated code structure should look like.



If you notice, there is no “controllers” & “views” folder any more but couple of other new folders, “**modules**”, “**login**” & “**accounts**”, each of which have their own JS, HTML & CSS files.

Conclusion

AngularJS is a great option which enables you to extend HTML vocabulary for your application. The environment, thus obtained, is expressive, easily readable, and fast to develop. AngularJS is an essential toolset for building the framework which is most suited to application development. It is fully extensible and works efficiently. You are able to modify each and every feature or replace them to suit the needs and requirements of the development workflow. AngularJS has been dominating JavaScript framework and the popularity, that it has gained, reveals that the dominance will prevail in the future.

This document addresses queries on AngularJS and hope the information is useful for you. Please feel free to post your queries, feedback, comments and suggestions at contactus@rapidvaluesolutions.com

Reference

- **AngularJS** - http://www.w3schools.com/angular/angular_intro.asp
- **Yeoman toolset** - <https://github.com/yeoman/yo>
- **Yeoman Generator** - <http://yeoman.io/codelab/install-generators.html>
- **Controllers** – http://www.w3schools.com/angular/angular_controllers.asp
- **Modules** – <https://docs.angularjs.org/api/ng/function/angular.module>
- **Scripts** - <https://docs.angularjs.org/api/ng/directive/script>
- **HTML** - <http://www.w3schools.com/html/>
- **CSS** - <http://www.w3schools.com/css/>
- **NoodleJS** - <http://damodaran.github.io/Books/Nodejs/noodlejs.html>
- **Bower**- <https://github.com/angular/bower-angular>
- **Grunt** - <https://www.npmjs.com/package/grunt-angular-builder>
- **Node Js**- <http://www.tutorialspoint.com/nodejs/>
- **GIT** – <https://en.wikipedia.org/wiki/GitHub>
- **Npm** - <https://github.com/npm/npm>

About RapidValue

RapidValue is a leading provider of end-to-end mobility, omni-channel and cloud solutions to enterprises worldwide. Armed with a large team of experts in consulting, UX design and application engineering, along with experience delivering global projects, we offer a range of services across various industry verticals. RapidValue delivers its services to the world's top brands and Fortune 1000 companies, and has offices in the United States and India.



www.rapidvaluesolutions.com



www.rapidvaluesolutions.com/blog



+1 877.643.1850



contactus@rapidvaluesolutions.com

Disclaimer:

This document contains information that is confidential and proprietary to RapidValue Solutions Inc. No part of it may be used, circulated, quoted, or reproduced for distribution outside RapidValue. If you are not the intended recipient of this report, you are hereby notified that the use, circulation, quoting, or reproducing of this report is strictly prohibited and may be unlawful.