A Warrior's Guide to

ANGULARJS

Carlos Solis

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Also By Carlos Solis

Manual del Guerrero: AngularJS

To the ones who were, the ones who come, and specially to the crazy one who thought far away stars .

....”Après moi, le déluge”

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SECTION 1: FIRST STEPS

Introduction to AngularJS

Web applications are possibly one of the most common ways of interacting with internet users, they are no longer the static sites of the 90s, but sites that offer services, process data and make transactions or complex calculus.

When we talk about web applications we make reference to the most popular websites, as Gmail, Facebook or Amazon. All of them are complex web applications that receive and process big loads of data and manage it in order to render their services to a specific audience.

In most of the cases, web applications use external servers in order to provide a more fluent experience to all of their users; which is why so many applications have been created using AJAX, which helps to reduce the loading time and therefore, offer a more consolidated experience.

Thanks to the coming of the mobile phones and the sustained growth of the browsers, equipments and platforms, all the work that is done in order to create a website has become even more complex and its development time is crucial.

For the purpose of meeting the deadlines of the developing schedules, which are tighter nowadays, developers use frameworks to save time and be able to meet the deadlines and quality requirements of their projects. AngularJS is one of these frameworks and offers a fast development alternative, scalable and easy to learn.

Due to its capacities and speed, AngularJS is one of the most popular frameworks and the big companies and entrepeneurs consider it one of their favorite, as it allows them to process their products fast.

What is AngularJS?

In short, AngularJS is a open-source and free framework developed by Google. It is based on the popular language: JavaScript and its main goal is to create dynamic and efficient web applications.

Unlike other popular frameworks, AngularJS is a structural framework, it does not depend nor it is composed by graphic elements, images or CSS, it does only focus on the logic part of your application.

The MVW Pattern

The MVC (model, view, controller) is one of the most popular programming patterns for developing applications and it allows you to admin an app, spreading the data, the interface and the interactivity between the different independent layers.

The majority of the modern JavaScript frameworks introduce this patter to some extent, but they require that you spread all your files in different layers, and sometimes they do this just to ask you to group them again later on in your own application; at the end you will be just wasting your time! AngularJS introduces the MVC pattern, and it just asks you to spread your application in different layers, but once you do it the framework will be in charge of the rest. AngularJS handles all the units for you and it does also work as the catalyst that groups all the elements of your application together.

However, if we are very technically strict, AngularJS uses a variation of this patter called MVW (model, view, whatever). It was named by one of the developers with the purpose of representing the developing freedom that this framework offers.

The MVW concept is to help reducing the manual work for creating a massive application to the maximum without having to compromise the quality.

Data binding

This is maybe one of the most popular features that AngularJS has to offer: data binding. It consists of a real-time link of the data of two elements; in case the value of one of them would change, the effect would immediately be reflected in the other linked element.

This technique is extremely useful to do calculations or to graphically represent the changes that the user makes. Traditionally, the majority of the frameworks can implement this behavior by using events and additional functions that take time and refinement. In AngularJS, data binding is integrated and does not even nrequire a code line; you just require a few properties and you will have a two-way data link.

These types of links are real-time created and the users will be able to immediately observe the result of any change or process the application may make.

Dependency injection

From the moment in which you start to create your application, it does not matter how simple this one can be, it is designed to grow in a module system manner. The AngularJS library is only maintained with the basic elements it requires to work; but if in the future you need to add new functionalities, you can then use extra libraries.

In order to keep this modularity, AngularJS uses dependencies, this means that every time you import or create a library, you just need to inject a dependence of this one in any part of the code so it can be available in your application without any further problem.

Your application can grow indefinitely using new units progressively, AngularJS will grow together with you. When you use units you can keep your code bubbled and easy to maintain;

believe me, the future developers that will work in your application will be thankful to you for not having left a mixed code throughout one single file that can end up being illegible or impossible to refine.

Directives

The directives are the signature with which you will recognize an application that was created with AngularJS. In few words, the directives allow you to give additional powers to the regular HTML code.

The directives are programming elements that we inject in a web document, and they are totally compatible with the HTML syntaxes, easy to remember and allow you to create conducts or complex code within a file. They are thought to help you save time when you add advanced conducts by only adding some properties in the HTML.

The directives allow you to reuse functions and predefined tasks in the AngularJS code; and this lets you to turn to them time and time again in your document just by adding a tag or special property.

Moreover, although AngularJS includes a wide set of different directives, you have total power over the set that will let you expand it according to your customized directives.

Why you should use AngularJS?

Using a framework for a new project can be an expensive bet, not only should you be sure that everything will work perfectly at the start, but you also need to be able to rely on the application in future time and be able to make it grow according to your needs.

Angular JS is an excellent framework and of the most favorite for the big companies, because it meets all the necessary features the users need to admin a small website or massive applications with millions of users. Some of the characteristics that make AngularJS in an excellent option to create your project are:

1. **It is extremely popular:** it will be very easy for you to find all the material, forums and even to hire the developers that can handle the topic.
2. **It does not use graphic components**: you have the total freedom to customize your application to the minimum detail.
3. **It is light and efficient:** the complex framework is of 105kb and it is optimized to use the system resources to its minimum.
4. **You end up writing less code:** all the framework has been designed to help you save time without compromising quality and its functionalities.
5. **It coexists with other frameworks:** you can use AngularJS with other frameworks ad tools like jQuery, Bootstrap or PhoneGap, and you will not have to worry about upcoming incompatibility.

Development Tools

AngularJS is a tool that adapts to your rules; to create applications with this framework, you won't need a specific development tool nor to buy software licenses. Moreover, you can work using any operating system or text editor. In other words, you set the rules of your work!

In order to start creating and testing your applications in AngularJS you will just need 2 elements, which are possibly already installed in your system:

- A code editor
- A web browser

The browser can be any of your choice, or even better, many of them! I personally suggest you to use Google Chrome or Mozilla Firefox, as both are very popular and count on with excellent developer tools that will help you to work better.

Safari, Opera and Internet Explorer are also excellent options, you can easily work with them, and once you are done with the development process, the best you can do is to test your application in these browsers to be sure that everything works perfectly.

About the text editor, there exist hundreds of free and paid options you can rely on, any editor that can modify your text files can be useful. If you are risky enough, you can even create a full AngularJS application just using NotePad! If you have not got a favorite editor yet, I will now show you some of the most popular editors, and some configuration tricks for AngularJS.

Sublime Text 2

Sublime Text is an all terrain text editor. It can be used to develop applications in many languages, among which are HTML, JavaScript and CSS, which are the ones you will need to create AngularJS applications.

When writing this manual, Sublime Text's current version is 2 and no matter there exists a 3 Beta Version, we will focus on the second one as it is the most spread one.

Currently it is one of the most popular tools among developers and it is very feasible that you are already using it to create your websites. Sublime Text is available for MacOS, Windows and Linux platforms.

In spite of its popularity, Sublime Text is not a free tool, it costs 70 USD and if you professionally work in web development, I strongly suggest you to buy it, it will be worth every cent. If you wish to try this app before buying it, you can find a trial version that has not got an expiry date, so you will be able to use it all along the exercises in this manual.

You can download Sublime Text from its official site:

http://www.sublimetext.com/2

Setting Up Sublime Text for AngularJS

The best Sublime Text 2 has to offer are the various setting and support options for external plugins; these one make the development of applications easier. Fortunately we count on with many options to improve the development of applications experience. This program offers a Package Control through which we can install several additional plugins that can speed up the development process in AngularJS.

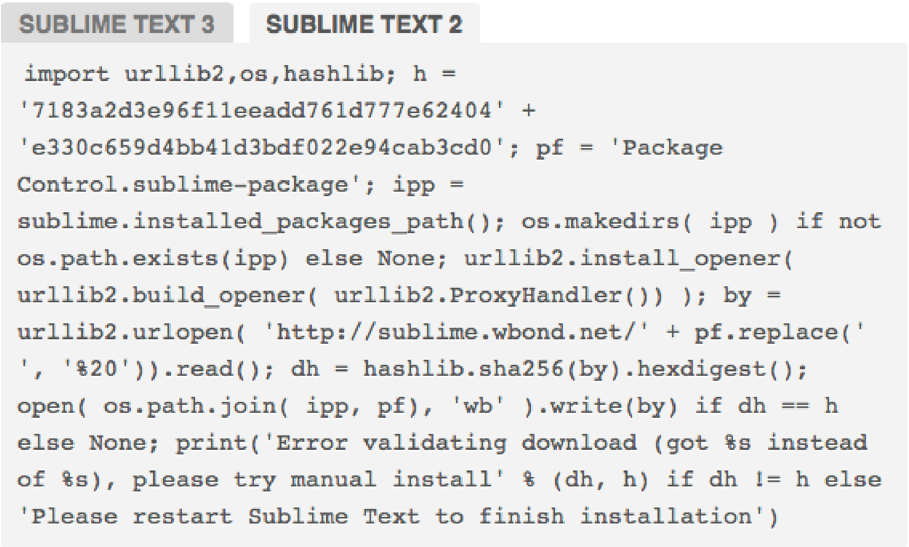
Install Package Control

Before you start to install additional packages, you first need to be sure that you have the Package Control installed. This special plugin gives you access to thousands of sets and additional functions of Sublime Text.

To install Package Control you need to use an installation command that you can find in its official website:

https://sublime.wbond.net/installation

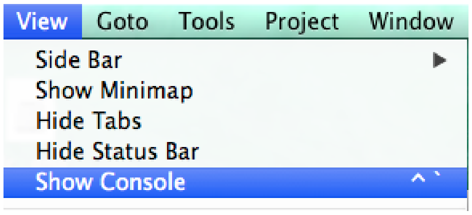
There you will find an installation command that varies according the Sublime Text version that you may use. Choose your version and copy the corresponding text.



```
import urllib2,os,hashlib; h =
'7183a2d3e96f11eeadd761d777e62404' +
'e330c659d4bb41d3bdf022e94cab3cd0'; pf = 'Package
Control.sublime-package'; ipp =
sublime.installed_packages_path(); os.makedirs( ipp ) if not
os.path.exists(ipp) else None; urllib2.install_opener(
urllib2.build_opener( urllib2.ProxyHandler()) ); by =
urllib2.urlopen( 'http://sublime.wbond.net/' + pf.replace('
', '%20')).read(); dh = hashlib.sha256(by).hexdigest();
open( os.path.join( ipp, pf), 'wb' ).write(by) if dh == h
else None; print('Error validating download (got %s instead
of %s), please try manual install' % (dh, h) if dh != h else
'Please restart Sublime Text to finish installation')
```

Now that you have the installation command you have to open the Sublime Text console. To do this you need to select the following option within the main menu:

View > Show Console



There you will paste the text you copied before and after a couple of seconds the system will be ready. Remember to restart the program once this process is done! This way you will be sure that everything will be ready and correctly set up.

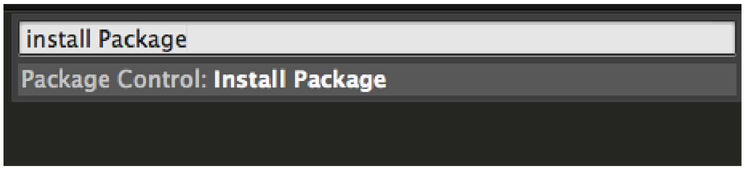
Install Support for AngularJS

Once you have installed the Package Control you just need to turn to it in Sublime Text through the commands´ palette, which can be activated when combining these keys:

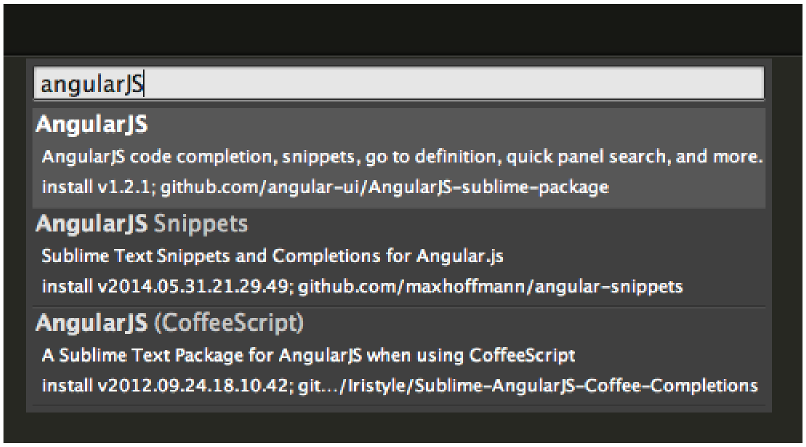
`ctrl + shift + p` (Windows)

`cmd + shift + p` (Mac OS)

This combination will display the commands´ palette, where you have to write "Install Package" and select the corresponding option.



After a few seconds you will see the available packages to install in your system. Now write the text "AngularJS" in the command´s palette, the filter will show all the available packages with a similar title, in this case, you need to choose the first one.



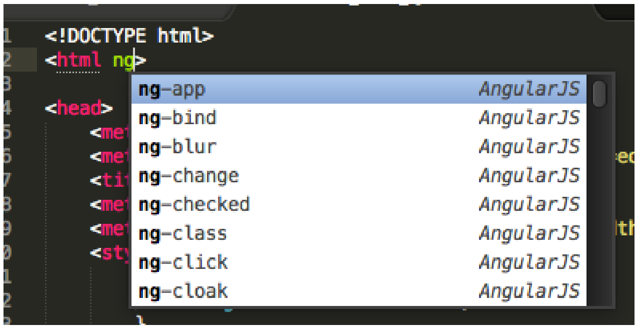
angularJS

AngularJS
AngularJS code completion, snippets, go to definition, quick panel search, and more.
install v1.2.1; github.com/angular-ui/AngularJS-sublime-package

AngularJS Snippets
Sublime Text Snippets and Completions for Angular.js
install v2014.05.31.21.29.49; github.com/maxhoffmann/angular-snippets

AngularJS (CoffeeScript)
A Sublime Text Package for AngularJS when using CoffeeScript
install v2012.09.24.18.10.42; git.../lristyle/Sublime-AngularJS-Coffee-Completions

Now that you have already added the support for AngularJS in Sublime Text, with this plugin you will have auto filled directives, AngularJS objects and templates for the common use commands.



```
<!DOCTYPE html>
<html ng>

<head>
    <me
    <me
    <ti
    <me
    <me
    <st
```

ng-app	AngularJS
ng-bind	AngularJS
ng-blur	AngularJS
ng-change	AngularJS
ng-checked	AngularJS
ng-class	AngularJS
ng-click	AngularJS
ng-cloak	AngularJS

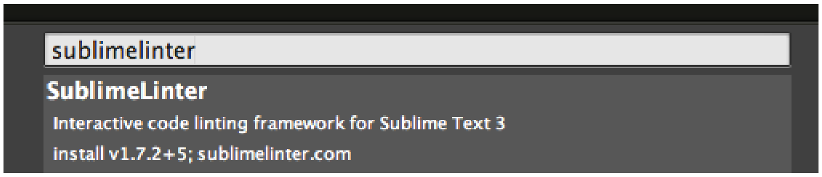
You can find updated information about this plugin in its official website in GitHub:

https://github.com/angular-ui/AngularJS-sublime-package#plug-in-details

Installing Code Linter - JavaScript

AngularJS is a framework based in JavaScript and although it saves you a lot of work, you will have to intensively work in this language in order to create sophisticated applications. Sublime Text has a dedicated plugin that will help you to detect errors in your code before you even realize they exist.

To install it you need to open the palette again and select the “Install Package” option; this time you need to type “SublimeLinter” and choose the corresponding option to this plugin to install it in your system.

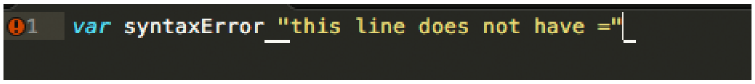

sublimelinter

SublimeLinter

Interactive code linting framework for Sublime Text 3

install v1.7.2+5; sublimelinter.com

Once it has been installed, SublimeLinter will search for syntax errors in your JavaScript code and will show you alerts in whatever line that may have a problem. This way you will know where and why your application is failing, you will save countless hours of work and you will avoid searching for semicolons that could have been wrongly typed. I promise you!


```
var syntaxError "this line does not have ="
```

Adobe Brackets

Adobe Brackets is a new free and open-source program specifically created to work with web technologies. With this program you can edit JavaScript, HTML5, CSS3, JSON files and any other popular format for the development of websites.

Among the different advantages this program has to offer, this software provides a full multiplatform with support for MacOS, Windows and Linux systems. Its size is approximately of 120MB, which means it is quite compact in comparison to the majority of the current editors. In addition, it counts on with a modest use of system resources, which makes it very practical and can be used in any system without having a big impact in the processor or memory.

Maybe one of the best things Brackets has to offer is the live-preview function, which not only allows you to view and edit the application's code in real-time by using any browser, but also it creates a micro server through NodeJS for every site. This will save you time and resources as it avoids the need to install programs like Xampp, Wammp, IIS or any system server.

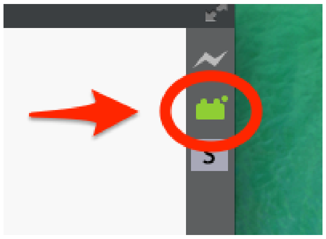
In my opinion this is my favorite software to create websites, I strongly recommend you to install it and try it out. You won't be wasting your time and it is very likely that it will impress you positively as it happened to me.

Set up Brackets for AngularJS

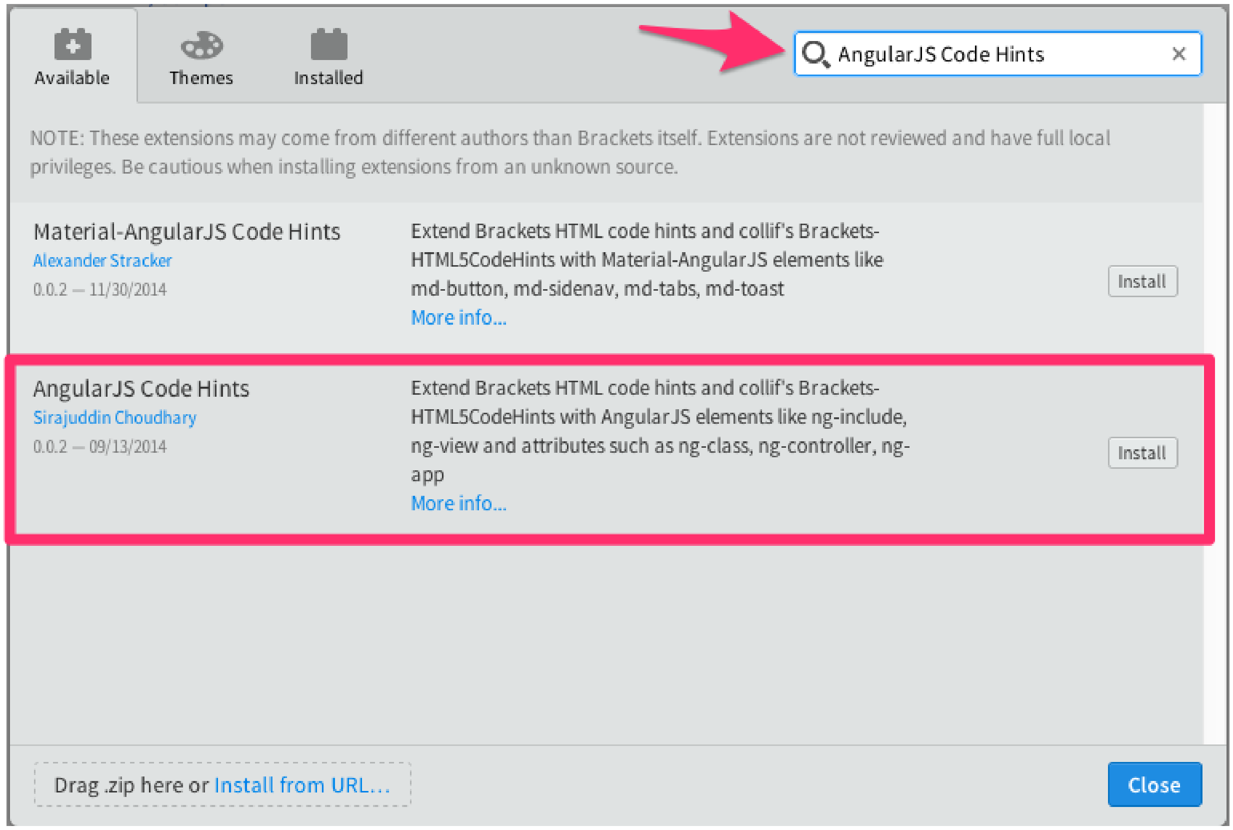
Brackets has a great amount of plugins to extend the use and functionalities of the original program. To install the AngularJS plugin you need to search for this option:

File > Extension Manager

You can also search for the button located in the right menu within the program.



In both cases, Brackets will show you the extensions admin. Select the tag "Available" and look for the search box in the right upper corner of the window. There you have to write "AngularJS Code Hints" so that the system can search for an extension to integrate AngularJS to Brackets.



NOTE: These extensions may come from different authors than Brackets itself. Extensions are not reviewed and have full local privileges. Be cautious when installing extensions from an unknown source.

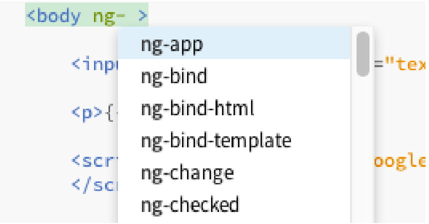
Material-AngularJS Code Hints
Alexander Stracker
0.0.2 — 11/30/2014

Extend Brackets HTML code hints and collif's Brackets-HTML5CodeHints with Material-AngularJS elements like md-button, md-sidenav, md-tabs, md-toast
More info...

AngularJS Code Hints
Sirajuddin Choudhary
0.0.2 — 09/13/2014

Extend Brackets HTML code hints and collif's Brackets-HTML5CodeHints with AngularJS elements like ng-include, ng-view and attributes such as ng-class, ng-controller, ng-app
More info...

Select the extension just how it is shown in the image and press the button "Install", after a few seconds you will have the autocomplete support for directives and AngularJS elements.



```
<body ng- >
```

In order to be sure that everything has been correctly installed and set up, do not forget to restart the brackets before you use this new plugin.

Adobe Dreamweaver

Adobe Dreamweaver is a perfect tool for developers who want to explore AngularJS. Its preview and graphic management tools convert it into the ideal program for those who feel more comfortable in a more visual environment.

AngularJS is fully compatible with any of the versions of Dreamweaver. Although it does not have direct support for the AngularJS elements, Dreamweaver has code hinting for HTML5, JavaScript, jQuery and CSS3, which can help you to speed up the development time. For beginner developers, this tool is especially useful to remember the names of tags and components.

Dreamweaver is supported by Windows and Mac operating systems. It is a paid software, property of Adobe and it belongs to the Creative Cloud package. Its average cost is of USD29 per month and there is a free trial available for one month.

You can find more information about Dreamweaver Creative Cloud in its official site.

http://www.adobe.com/products/dreamweaver.html

Creating a Project with AngularJS

An AngularJS application reduced to the essentials, is in brief, a HTML file linked to a JavaScript file in which you can find a group of commands and instructions.

However, to implement an AngularJS application, you need to follow some steps, which no matter how easy they are, they are essential for your application to run smoothly.

We will dedicate this chapter to list and review each of the steps and elements that compose an AngularJS application: how to install, set up and start AngularJS. We will employ all the concepts and techniques to create our first application.

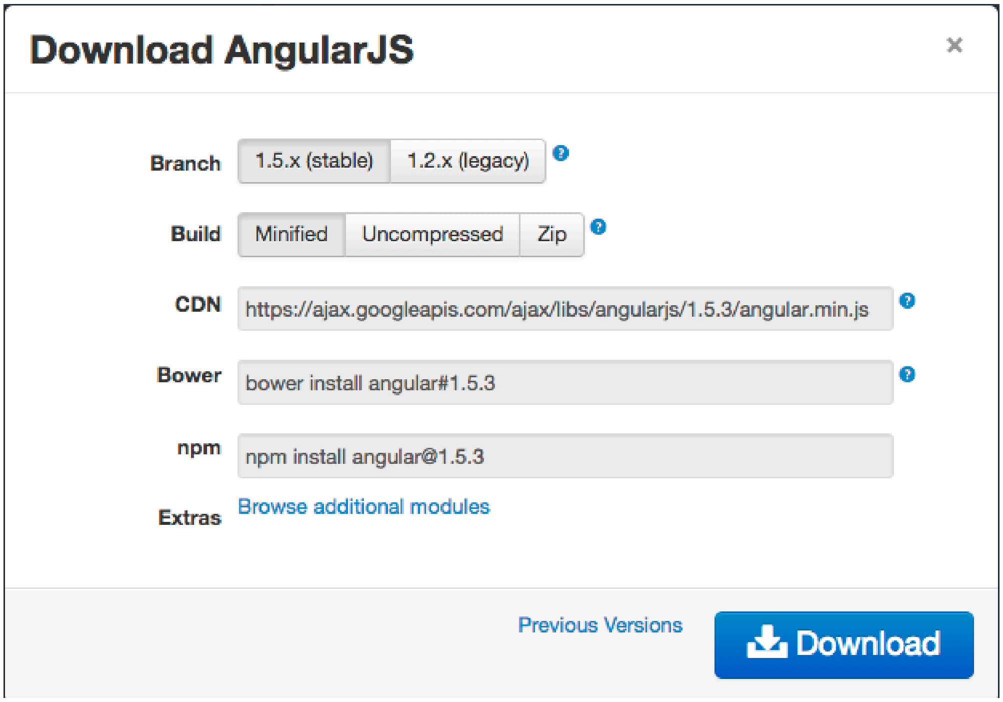
Download AngularJS

Without the slightest doubt, the first step to start using this library is to have access to its source code; AngularJS offers us various ways to use its routines and procedures.

AngularJS has to be installed from Google's official website, you can find it in other places, sets or links, though. It is advisable to the extent possible that you use the official site's version, this way you will be 100% sure that you have a safe and stable version. The official website is:

https://angularjs.org

As soon as you enter the official website, you will find a button that invites you to download the AngularJS code. When you click on it, you will see a window with different options to customize your download.



Download AngularJS

Branch: 1.5.x (stable) | 1.2.x (legacy)

Build: Minified | Uncompressed | Zip

CDN: https://ajax.googleapis.com/ajax/libs/angularjs/1.5.3/angular.min.js

Bower: bower install angular#1.5.3

npm: npm install angular@1.5.3

Extras: Browse additional modules

All of these options are thought for you to be able to adapt AngularJS to different scenarios. We will go through each of these sections to help you choose the perfect version that fits your needs.

Version

You will find 2 options, the first one will allow you to download the former version of AngularJS. Choose this option if you already have a site that uses AngularJS, if you have already created customized components or if you have come across compatibility problems with the current version.

The second option lets you download the latest version of AngularJS (1.4.x). If you are reading this manual it is possible that it is the first time that you work with AngularJS. I strongly recommend you to choose this option, as it lets you take the best and the most advanced features of this framework.

Build

This option lets us choose the understanding level and the size of the file. The option “Zip” downloads a compressed file with the source code of AngularJS. Use this version if you will work with an Intranet application, if your application will be run in a local server or if you will have a limited access to Internet.

The “Uncompressed” option contains the source code of AngularJS without any compression, with comments and details about the operation of the program. This option is perfect if you wish to create additional functions. Finally, the “Minified” option creates a completely reduced and optimized version of the code in order to have the smallest size as possible. I recommend you to use this version every time you can, and you will ensure the best results and the fastest download.

CDN

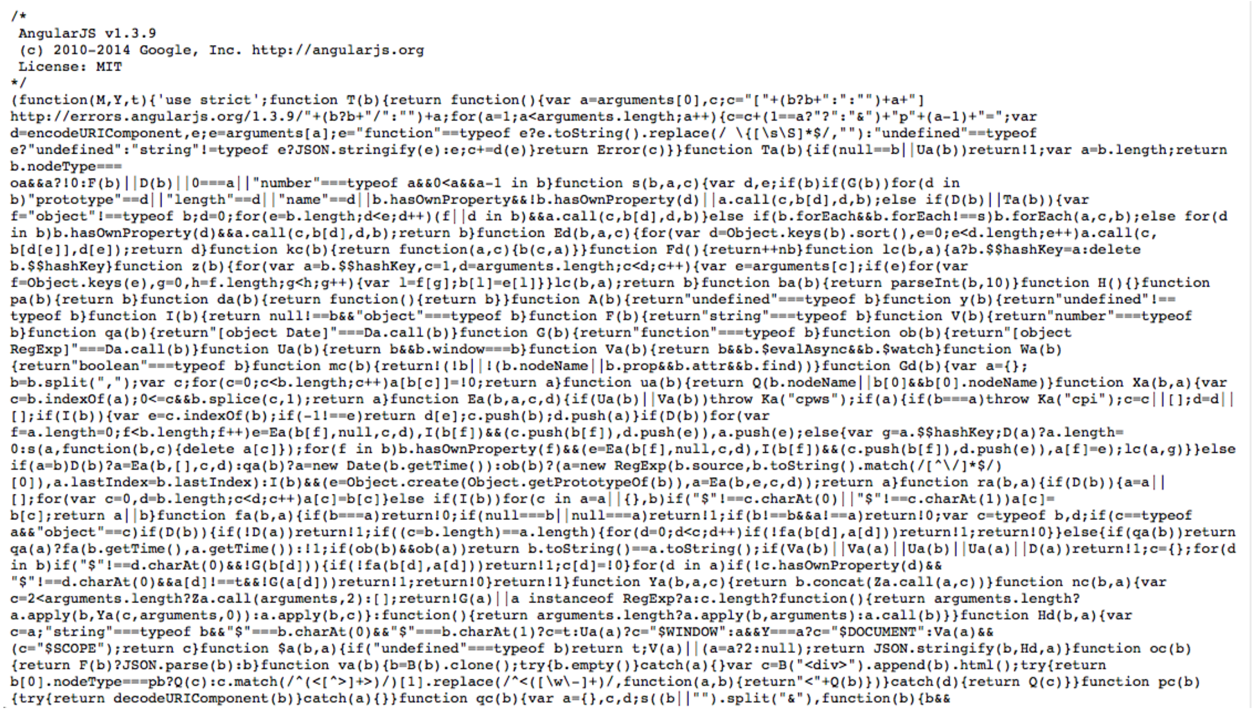
A CDN is a Content Delivery Network, when you use it you will count on with advantages as saving bandwidth and you will forget about the need of keeping your code in a server.

When you use a CDN your file relates to a dynamic link that adjusts to the closest server to the users’ location that downloads your application. The result of this is a JavaScript file with less latency and eventually, it will be downloaded faster and therefore, your site will be faster and more efficient.

Additional Libraries

The additional libraries will allow you include new methods. They are separated from the central nucleus and from the code, in order to reduce the total size of the installation. When you use a modular scheme, your website will never load unnecessary code, only the required elements will be installed in your application.

Once the options of your file are chosen, the download process will take place. If you chose the suggested options, when you press download, the application will redirect you to a document that will possibly look similar to this one:



```
/*
 AngularJS v1.3.9
 (c) 2010-2014 Google, Inc. http://angularjs.org
 License: MIT
*/
(function(M,Y,t){'use strict';function T(b){return function(){var a=arguments[0],c;c="["+(b?b+":":"")+a+"]
http://errors.angularjs.org/1.3.9/"+(b?b+"/":"")+a;for(a=1;a<arguments.length;a++){c=c+(1==a?"?":"&")+"p"+(a-1)+"=";var
d=encodeURIComponent,e;e=arguments[a];e="function"==typeof e?e.toString().replace(/ \{[\s\S]*$/,""):"undefined"==typeof
e?"undefined":"string"!=typeof e?JSON.stringify(e):e;c+=d(e)}return Error(c)}}function Ta(b){if(null==b||Ua(b))return!1;var a=b.length;return
b.nodeType===
oa&&a?!0:F(b)||D(b)||0===a||"number"===typeof a&&0<a&&a-1 in b}function s(b,a,c){var d,e;if(b)if(G(b))for(d in
b)"prototype"==d||"length"==d||"name"==d||b.hasOwnProperty&&!b.hasOwnProperty(d)||a.call(c,b[d],d,b);else if(D(b)||Ta(b)){var
f="object"!==typeof b;d=0;for(e=b.length;d<e;d++)(f||d in b)&&a.call(c,b[d],d,b)}else if(b.forEach&&b.forEach!==s)b.forEach(a,c,b);else for(d
in b)b.hasOwnProperty(d)&&a.call(c,b[d],d,b);return b}function Ed(b,a,c){for(var d=Object.keys(b).sort(),e=0;e<d.length;e++)a.call(c,
b[d[e]],d[e]);return d}function kc(b){return function(a,c){b(c,a)}}function Fd(){return++nb}function lc(b,a){a?b.$$hashKey=a:delete
b.$$hashKey}function z(b){for(var a=b.$$hashKey,c=1,d=arguments.length;c<d;c++){var e=arguments[c];if(e)for(var
f=Object.keys(e),g=0,h=f.length;g<h;g++){var l=f[g];b[l]=e[l]}}lc(b,a);return b}function ba(b){return parseInt(b,10)}function H(){}function
pa(b){return b}function da(b){return function(){return b}}function A(b){return"undefined"===typeof b}function y(b){return"undefined"!==
typeof b}function I(b){return null!==b&&"object"===typeof b}function F(b){return"string"===typeof b}function V(b){return"number"===typeof
b}function qa(b){return"[object Date]"===Da.call(b)}function G(b){return"function"===typeof b}function ob(b){return"[object
RegExp]"===Da.call(b)}function Ua(b){return b&&b.window===b}function Va(b){return b&&b.$evalAsync&&b.$watch}function Wa(b)
{return"boolean"===typeof b}function mc(b){return!(!b||!(b.nodeName||b.prop&&b.attr&&b.find))}function Gd(b){var a={};
b=b.split(",");var c;for(c=0;c<b.length;c++)a[b[c]]=!0;return a}function ua(b){return Q(b.nodeName||b[0]&&b[0].nodeName)}function Xa(b,a){var
c=b.indexOf(a);0<=c&&b.splice(c,1);return a}function Ea(b,a,c,d){if(Ua(b)||Va(b))throw Ka("cpws");if(a){if(b===a)throw Ka("cpi");c=c||[];d=d||
[];if(I(b)){var e=c.indexOf(b);if(-1!==e)return d[e];c.push(b);d.push(a)}if(D(b))for(var
f=a.length=0;f<b.length;f++)e=Ea(b[f],null,c,d),I(b[f])&&(c.push(b[f]),d.push(e)),a.push(e);else{var g=a.$$hashKey;D(a)?a.length=
0:s(a,function(b,c){delete a[c]});for(f in b)b.hasOwnProperty(f)&&(e=Ea(b[f],null,c,d),I(b[f])&&(c.push(b[f]),d.push(e)),a[f]=e);lc(a,g)}}else
if(a=b)D(b)?a=Ea(b,[],c,d):qa(b)?a=new Date(b.getTime()):ob(b)?(a=new RegExp(b.source,b.toString().match(/[^\/]*$/)
[0]),a.lastIndex=b.lastIndex):I(b)&&(e=Object.create(Object.getPrototypeOf(b)),a=Ea(b,e,c,d));return a}function ra(b,a){if(D(b)){a=a||
[];for(var c=0,d=b.length;c<d;c++)a[c]=b[c]}else if(I(b))for(c in a=a||{},b)if("$"!==c.charAt(0)||"$"!==c.charAt(1))a[c]=
b[c];return a||b}function fa(b,a){if(b===a)return!0;if(null===b||null===a)return!1;if(b!==b&&a!==a)return!0;var c=typeof b,d;if(c==typeof
a&&"object"==c)if(D(b)){if(!D(a))return!1;if((c=b.length)==a.length){for(d=0;d<c;d++)if(!fa(b[d],a[d]))return!1;return!0}}else{if(qa(b))return
qa(a)?fa(b.getTime(),a.getTime()):!1;if(ob(b)&&ob(a))return b.toString()==a.toString();if(Va(b)||Va(a)||Ua(b)||Ua(a)||D(a))return!1;c={};for(d
in b)if("$"!==d.charAt(0)&&!G(b[d])){if(!fa(b[d],a[d]))return!1;c[d]=!0}for(d in a)if(!c.hasOwnProperty(d)&&
"$"!==d.charAt(0)&&a[d]!==t&&!G(a[d]))return!1;return!0}return!1}function Ya(b,a,c){return b.concat(Za.call(a,c))}function nc(b,a){var
c=2<arguments.length?Za.call(arguments,2):[];return!G(a)||a instanceof RegExp?a:c.length?function(){return arguments.length?
a.apply(b,Ya(c,arguments,0)):a.apply(b,c)}:function(){return arguments.length?a.apply(b,arguments):a.call(b)}}function Hd(b,a){var
c=a;"string"===typeof b&&"$"===b.charAt(0)&&"$"===b.charAt(1)?c=t:Ua(a)?c="$WINDOW":a&&Y===a?c="$DOCUMENT":Va(a)&&
(c="$SCOPE");return c}function $a(b,a){if("undefined"===typeof b)return t;V(a)||(a=a?2:null);return JSON.stringify(b,Hd,a)}function oc(b)
{return F(b)?JSON.parse(b):b}function va(b){b=B(b).clone();try{b.empty()}catch(a){}var c=B("<div>").append(b).html();try{return
b[0].nodeType===pb?Q(c):c.match(/^(<[^>]+>)/)[1].replace(/^<([\w\-]+)/,function(a,b){return"<"+Q(b)})}catch(d){return Q(c)}}function pc(b)
{try{return decodeURIComponent(b)}catch(a){}}function qc(b){var a={},c,d;s((b||"").split("&"),function(b){b&&
```

What you can see now is the source code of AngularJS, you just need to copy the URL that is placed in the upper area, something similar to this:

```
https://ajax.googleapis.com/ajax/libs/angularjs/1.5.3/angular.min.js
```

Keep this URL handy, you will need it in a minute when you install AngularJS in a HTML file.

Install AngularJS in a HTML document

AngularJS depends directly on your HTML code, which is why I recommend you for the installation to create first a well structured HTML document, with a valid code and one that follows the standards to be sure that everything runs smoothly from the very beginning. You can start your application using this base code:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8">
<title>AngularJS - Hello World!</title>
<meta name="description" content="">
<meta name="viewport" content="width=device-width">
</head>
<body>

</body>
</html>
```

Now that you have the perfect base code for your application, it is time to install it in a document. The installation process could not be easier. Do you remember the AngularJS URL that I asked you to keep handy a moment ago? It is time to use it together with the tag <script>. You just need to set this code line just before the tag </body>.

```
<script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.5.3/ang\
ular.min.js"></script>
```

At this stage, you have a document ready to use AngularJS. However, although this file has access to the library, it does not have any instruction on how to or where to use it. In order to do this it is necessary to define and start an application.

Set up an AngularJS application

One of the key elements are the directives, elements that we can insert in the HTML code and they will allow us to set up complex procedures. We will then talk about them in detail. Now we will focus on our first and one of the most important directives, as when we include it in our file, we will indicate AngularJS that it can start running the processes included therein.

We focus on the “ng-app” directive and how to use it when we include it in our document in a HTML parameter way.

Let’s see this example: let’s say that I want that the HTML file in which we are working on behaves as an AngularJS application; I just need to include this directive within any HTML tag and define the name of my application. In this case, if my app is called “myAngularApp”, the proper way to start it would be:

```
<body ng-app='helloworld'>

</body>
```

The value “ng-app” is assigned a name with which I will identify my application, go ahead and choose the name that you’d like!

Bear in mind that it is technically possible to include just the directive without naming the app, and you will have lots of examples on the Internet that call the “ng-app” directive this way:

```
<body ng-app >

</body>
```

Although, in theory an application has the power to work with this code, it is always better to define it with a name from the very beginning. As your application becomes more complex, sooner or later you will need to assign a name to it; so it is better if you start your work with a good quality code.

In this book we will use this practice in every example. I recommend you to apply them in your own documents!

Scope of ng-app

The “ng-app” directive doesn’t just define an AngularJS application, it does also delimit the area of a specific action.

You can include the “ng-app” directive wherever you way, but remember that the actions within your AngularJS application will have effect just inside the tag you assign it. Any element outside the chosen tag will be completely ignored by the application.

You are completely free when it comes to using the “ng-app” directive wherever you’d like and this position will many times depend on the specific needs your application may have. However, I strongly recommend you to include this directive in the <html> or <body> tags (just in one of them at a time; this way you will have just one app that groups all the site’s routines, you will ensure that all the content is part of the application and you will have control over all the visible elements of the HTML document.

Initialize the application

Now that you have named your application using the “ng-app” directive, it is time to run it. In order to do this you need to create a variable where we will set the corresponding module to your new app. For example, if we have an application that has been set up like:

```
ng-app='helloworld'
```

We need to run it with the code:

```
var myAngularApp = angular.module('helloworld',[]);
```

In this case it has been assigned the “myAngularApp” variable, but you can use any name. The value that this variable stores sets a new AngularJS module where your application is stored.

Loading additional modules

You will see that i added an array after the name of the module; the reason why I did this was to set additional dependencies that will add new functionalities to your app. AngularJS allows us to include additional modules when we set up our app and this way we can keep a modular code. When you download the framework you will see that only the basic and more frequent functionalities are included to keep the load quick and efficient, but if you require additional services, you can download new modules and include them in this array so that they are available in your app. For example, if we would like to add support to manage the URLs through a routing additional module, we would embed it this way:

```
var myAngularApp = angular.module('helloworld',['ngRoute'])
```

In this example we won’t use additional modules.

Example: Hello World

You now know how to instal, set up and declare AngularJS in a HTML file.

We will put all the topics dealt within this chapter into practice and create, your first AngularJS app!

In this example we will apply the contents of this chapter to create a basic HTML app.

Open your favorite code editor and create a new HTML5 file, give it a name in the <title> tag and add a <h1> heading within the <body> tag. Your document should look very similar to this one:

```
<!DOCTYPE html>
<html ng-app='helloworld'>

<head>
    <meta charset="utf-8">
    <title>AngularJS - Hello World!</title>
    <meta name="viewport" content="width=device-width">
</head>
<body>

    <h1> Hello World! </h1>

</body>

</html>
```

Save the document as "helloworld.html". Now it is time to add AngularJS, first you need to include the link to the framework:

```
<script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.5.3/ang\
ular.min.js"></script>
```

After having inserting the "ng-app" directive with the name of your app, we will include it in the <html> tag

```
<html ng-app='helloworld'>
```

Finally we will declare the module of the app to run it

```
var miAppAngular = angular.module('helloworld',[]);
```

We now have an AngularJS app ready to work! You are learning so fast!

Let's see the topic we will deal with in the next chapter, and we will use an expression so that you can try how amazing AngularJS is. Replace the current <h1> with this code:

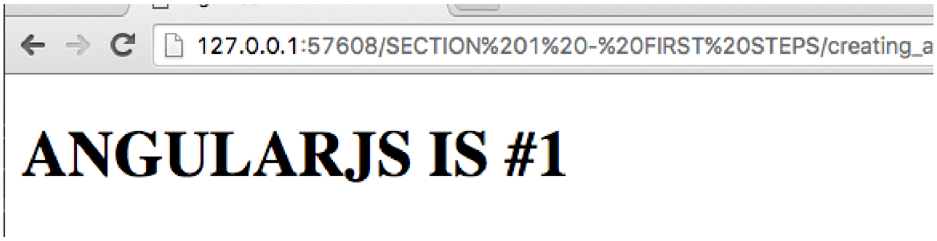
```
<h1> {{ "AngularJS is #" + 1 |uppercase }}</h1>
```

The expression that we have included shows a concatenation and modifies the text so that it is just displayed in uppercase.

The complete code of your first app should be this one:

```
<!DOCTYPE html>
<html>

<head>
    <meta charset="utf-8">
    <title>AngularJS - Hello World!</title>
    <meta name="viewport" content="width=device-width">
</head>
<body ng-app='helloworld'>

    <h1> {{ "AngularJS is #" + 1 |uppercase }}</h1>

    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.5.3\
/angular.min.js"></script>
    <script>

        var myAngularApp = angular.module('helloworld',[]);

    </script>
</body>

</html>
```

Save your document and open it in the browser, your result will look similar to this one:


127.0.0.1:57608/SECTION%201%20-%20FIRST%20STEPS/creating_a

ANGULARJS IS #1

As you can see, with a little effort and some settings you have already run your first AngularJS application.

Awesome, right?

This is just the start, in the next chapters you will learn to create complete applications at a record speed!