Web Application Development

Using Boilerplate Template Generator (BTG) Tool

**Version 1.0**

**Oct 2015**

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Document Release Note

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**Document Details**

| Name | Version no. | Description |
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**Revision Details**

| Action taken (add/del/change) | Previous page no. | New page no. | Revision description |
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**Release Notice Reference (for release)**

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Definitions, Acronyms and Abbreviations

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| ***Abbreviation/Acronym*** | ***Description*** |
| BTG | Boilerplate Template Generator |

Table 1: Acronyms and Abbreviations

# Introduction

## Purpose

Boilerplate Template Generator (BTG) tool is developed for helping the web developer to create the initial project folders and files so that developers can use those initial template and start the development in the specific files. Those files and folders will be structured as per the standard guideline of HTML5 web application development.

BTG tool is a command line tool and it provides multiple commands like initializing project, creating controller etc. It will speedup the project development and also it will allow developer to follow standard guidelines.

## Intended Audience

Architects and Developers can use BTG tool for mobile application development.

# Scope

BTG tool is developed using NodeJs to create command line utility methods for project structure and file structure generation. This tool generates a web project by combining AngularJs, Bootstrap, Jasmine and Karma technologies together.

* 1. Bootstrap is used for responsive web development
  2. AngularJS is used to JavaScript modular development
  3. Jasmine is used to write unit test cases
  4. Karma is used to execute test cases in background.

# Technology Considerations

The technology considered for this framework is HTML4/5, JavaScript, CSS3, jQuery, AngularJs, Bootstrap, Jasmine and Karma.

## Target Platforms

Cross browser support (Browser which supports HTML5, AngularJs and Bootstrap)

## Development Frameworks

Below are the used development frameworks

1. AngularJS
2. Angular UI Router
3. jQuery
4. Bootstrap

## Unit Testing Frameworks

Below are the unit testing frameworks

1. Jasmine
2. Karma

# Installation

**Step 1**

To use this tool please makes sure that you have installed NodeJs (<https://nodejs.org/en/>) in your computer system. If not then please get them installed first.

Once NodeJs is installed on your system then two commands will be enabled globally on your command prompt or terminal. Those are “node” and “npm”.

In window system use “cmd/command prompt” and in mac or linux use “terminal” to use this tool.

**Step 2**

Next step is to install the dependencies for unit testing. So for that open the cmd/terminal and then execute below commands.

First we need to set the proxy settings of TCS in order to download the NPM packages. So for that hit the below url in the browsers. This is not required for the system which are connected to open internet network. Make sure to replace the username and password with your India domain username and password in the command.

npm config set proxy http://“username:password”@proxy.tcs.com:8080

then install karma and preprocessor of karma

npm install –g karma karma-ng-html2js-preprocessor karma-jasmine

NOTE : If you get some permission error(EACCESS) in Mac or Linux then try the commands with “sudo”. Example :

sudo npm install –g karma karma-ng-html2js- preprocessor karma-jasmine

then enter your administrator/root password to continue.

This command will install karma and html2js preprocessor for unit testing of AngularJS application.

**Step 3**

Now download the BTG tool from this link \_\_\_\_\_link\_\_\_\_\_ and put this folder inside a safe folder. And then using cmd/terminal go to that folder and execute below command

NOTE: Don’t worry if you get some errors while executing this statement. Because all required packages are already installed till now.

npm link

This command will link the BTG tool into the PATH variable. It will enable the “boilerplate” command globally.

Then use the below command to check whether the BTG is installed or not

boilerplate help

After executing this command you will see the below help instruction in the terminal/cmd. You can use these guidelines to use the commands available in the BTG tool to create the project.

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**>> Welcome to the Web Application Boilerplate Template Generator (BTG) Tool <<**

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| Boilerplate HELP |

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| Boilerplate Initialization - |

| Usage: boilerplate init |

| Description: This command will generate the project in the |

| current folder. It will create some startup files into the folder. |

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| Adding JavaScript - |

| Usage: boilerplate <jsFileType> [action] |

| |

| <jsFileType> - controller, directive, filter, helper, service |

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| controller - |

| Usage: boilerplate controller [action] |

| |

| Description: This command is used to access the controller |

| actions available in the tool |

| |

| Folder Path : /src/app/ |

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| directive - |

| Usage: boilerplate directive [action] |

| |

| Description: This command is used to access the directive |

| actions available in the tool |

| |

| Folder Path : /src/directives/ |

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| filter - |

| Usage: boilerplate filter [action] |

| |

| Description: This command is used to access the filter |

| actions available in the tool |

| |

| Folder Path : /src/filters/ |

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| helper - |

| Usage: boilerplate helper [action] |

| |

| Description: This command is used to access the helper |

| actions available in the tool. |

| |

| Folder Path : /src/helpers/ |

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| service - |

| Usage: boilerplate service [action] |

| |

| Description: This command is used to access the service |

| actions available in the tool. |

| |

| Folder Path : /src/services/ |

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| [action] - |

| add: This command is used to create the JavaScript file. |

| |

| list: This command will list all jsFileType related files |

| available in the project. |

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# How to Create Project

This section will cover the all the commands available in the BTG tool. You can get the same details by hitting “boilerplate help” command in the terminal/cmd.

This tool is command line tool so to use this one should use cmd/terminal only. To get started with the development, follow the below steps

**Step 1: Open command prompt or terminal**

**Step 2: Create empty folder in your workspace**

Go to the folder(existing) where we you want to create a project using cd command

cd path/of/workspace

**Step 3: Create a project directory**

Create the new folder by using mkdir command

mkdir angular-hello-world

and the go to that folder

cd angular-hello-world

**Step 4: Initialize project (Create project)**

To create a project use “boilerplate init” command as mentioned below and then hit enter-

boilerplate init

Tool will ask for the below information

? **project name :**

? **main module name (ng-app), white spaces are not allowed :**

? **project description :**

Enter the information one by one and hit the enter. This will create the project and will show below message once it is successfully done.

**INFO: Project successfully generated. For any help use `boilerplate help` command**

This will create a some set of folders and files in your angular-hello-world folder. Those files will be generated as per the input given while executing “boilerplate init” command.

NOTE: In those standard files some special commentings are used with ~!somename!~ format. Please do not remove those as this could create problem for the tool to operate some operations.

# How to Add JavaScript Modules and Unit Testing Specifications

In this section we will cover how we can use this tool to create Controllers, Directives, Helpers, Filters and Services and their unit test cases as per the AngularJs Standards.

To add a controller, directive, helpers, filters or service hit the below command inside your project folder.

Make sure to replace <jsTypeName> with “controller, directive, filter, helper or service” as per the requirement.

boilerplate <jsTypeName> add

So for exmaple to add controller hit below command

boilerplate controller add

After hitting these commands the tool will ask for some more information like name of the controller, directive .. , name of the folder to store the file etc and the description of the file. This will create a new file as per the folder structure of the BTG tool.

NOTE: There is no need to write or hit any specific command to create the unit test cases. The application will automatically create a unit test case of the newly created javascript files by utilizing above commands. Also the application will also configure the unit testing environment automatically

Now to see the list of <jsTypeName> files available in the application one can hit the below command

boilerplate <jsTypeName> list

.controller.js

.directive.js etc

add state inside app.js

modernizer

# How to Run Unit Test Cases

To run unit test cases the main requirement is to install the karma tool. This tool is already installed while we were doing the Installation of this tool. If we don’t have this tool installted and then follow the Installation step first.

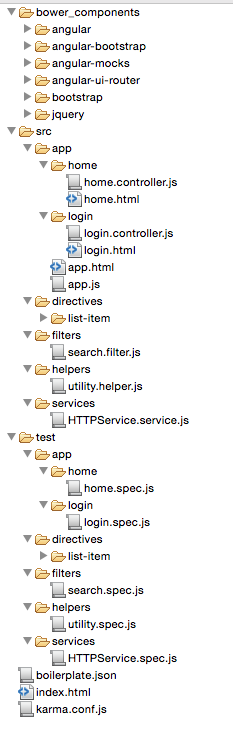
So the run the unit test case there is only one command and it will keep on checking everytime whenever we do any changes in the application files and show the unit testing reports in terminal/cmd.

So to start this hit this command in your project folder

karma start

# How to Run

# Folder Structure

This is standard folder structure generated by boilerplate command line tool.

**bower\_components**:

This folders stores all the library files used in the project. To install additional files we can use “bower” command line tool.

**src:**

This folder stores all project related JavaScript files.

**src/app**:

This folder stores all controllers and there related views files divided into folders.

Src/app/app/js -> stores routing informations

**src/directives:**

This folder stores all directives and there templates.

**src/filters:**

This folder stores all filters.

**src/helpers:**

This folder stores all helpers files. The helper is similar to service but it contains only utility methods. Not web service call etc.

**src/services:**

This folder stores all web service calling modules.

**test:**

This folder stores all unit test cases.