**Protractor Tutorial**

**What is Protractor?**

Protractor is an end-to-end test framework for AngularJS applications. Protractor is a Node.js program that supports the Jasmine and Mocha test frameworks. Selenium is a browser automation framework. Selenium includes the Selenium Server, the WebDriver APIs, and the WebDriver browser drivers.

**What is Angular js?**

AngularJS is a JavaScript-based open-source front-end web framework mainly maintained by Google and by a community of individuals and corporations to address many of the challenges encountered in developing single-page applications.

**What is node.js?**

Node.js is an open-source, cross-platform JavaScript run-time environment that executes JavaScript code outside of a browser.

Node.js is primarily used for non-blocking, event-driven servers, due to its single-threaded nature. It's used for traditional web sites and back-end API services, but was designed with real-time, push-based architectures in mind.

**Installation:**

1. Installation node.js from GOOGLE and save the installation path. npm –v to check node.js version.
2. npm install –g protractor / sudo npm install –g protractor to install protractor in mac.
3. Install the webdriver first and then update. If already install then no need to install.
4. webdriver-manager update (windows)/sudo webdriver-manager update(Mac).
5. To start the selenium server type: webdriver-manager start.
6. Open your eclipse->Help->Market place->Plugin->Install Tern plugin->save. This is mainly for js.

**How to create project in eclipse?**

1. Create a new project in eclipse.
2. Right click on the project->configure->convert into Tern project. Select Angular js, browser extension, node.js, protractor and then hit save.
3. Create a package/folder and then create a file in .js and then write your code using jasmine frame work by using describe (jasmine function which ask what exactly do and need to write a function), it (jasmine function & it will ask what exactly your test step will do and keep a function) and expect(jasmine function for assertion) keyword.
4. Then create another .js file where setup the configuration file.
5. Type browser then . and then type ctrl+space for protractor library. Browser is a variable.
6. Open the terminal->go to the project level->write Protractor configurefilename.js-> Enter.

**How to generate protractor report?**

Open terminal and then

npm install protractor-beautiful-reporter --save-dev

See github and the following url:

<https://www.npmjs.com/package/protractor-beautiful-reporter>

To avoid 105 error see github and see the config.js file.

**How to work with non Angular js in protractor?**

We can use one approach out of two:

1. Add this code before browser variable in your script.

browser.ignoreSynchronization=true;

or

1. Add this browser.driver with every element.

Ex: browser.driver.element.

**How to work with crossbrowser and headless browser?**

Add this code below spec in configure file.

Single browser:

capabilities: {

'browserName': 'firefox'

},

Multiple or parallel browser:

multiCapabilities: [{

'browserName': 'firefox'

}, {

'browserName': 'chrome'

}],