Overview

Protractor is an end-to-end test framework for Angular and AngularJS applications. Protractor runs tests against your application running in a real browser, interacting with it as a user would

Protractor is built on top of WebDriverJS, which uses native events and browser-specific drivers to interact with your application as a user would.

Protractor supports Angular-specific locator strategies, which allows you to test Angular-specific elements without any setup effort on your part.

You no longer need to add waits and sleeps to your test. Protractor can automatically execute the next step in your test the moment the webpage finishes pending tasks, so you don't have to worry about waiting for your test and webpage to sync.

Fresh Setup

 # Download an IDE (VS Code for me)
https://code.visualstudio.com/download

 # Install curl if you don't have it
sudo apt install curl

 # Add Node JS repository
curl -sL https://deb.nodesource.com/setup_14.x | sudo -E bash -

 # Install Node JS (Version 14 as stable)
sudo apt-get install -y nodejs

 # Install angular CLI
sudo npm install -g @angular/cli

(Setup your environment for Protractor is completed. It is time to run your test scripts)

 # Download a sample project from here
protractor-sample-project

 # Go to project folder and install npm packages
cd /project-folder
npm install

Run all the test script with following command [All Scripts]
```
ng e2e
```

Run any specific suite with following command [All Scripts Under a Suite]
```
ng e2e --suite=SUITE-NAME
```

Run all scripts under a spec file with the following command [All Scripts Inside a Spec File]
```
ng e2e --specs=./src/admin-login/admin-login.e2e-spec.ts
```

=============== Environment Preparation Completed Here===================

Notes:
Spec = *A set of test scripts inside a spec file. One test script (it block) is written for one test case of a feature. A feature contains multiple test cases.*
Suite = *A set of spec files*

Report: After completing all tests, it will automatically generate a report folder. Go to Project Folder >> Admin Test Report AND open *report.html.* Your test report will show here.

A Spec File Understanding

```
describe('Admin: Login', () => {
    it('Case 1: Verify successful login with valid User ID and valid
Password', () => {
        //Valid Login
        loginPage.login();

        //Verify that user logged in successfully
        expect(loginPage.getSuccessMessage()).toContain('logged in as ' +
adminUserId);

        //Logout successfully
        basePage.logoutFromBKBAPP();
    });
afterAll(() => {
        //Restart the browser
        browser.restart();
    });
```

```
})
```

The `describe` and `it` syntax is from the Jasmine framework. `browser` is a global created by Protractor, which is used for browser-level commands such as navigation with `browser.get`.

Protractor Configuration File Understanding

```
const { SpecReporter } = require('jasmine-spec-reporter');
var HtmlReporter = require('protractor-beautiful-reporter');


/**
 * @type { import("protractor").Config }
 */
exports.config = {
    allScriptsTimeout: 6000000,
    // specs: [
    //      './src/**/*.e2e-spec.ts'
    // ],

    // SELENIUM_PROMISE_MANAGER: false,
    capabilities: {
        browserName: 'chrome',
        chromeOptions: {
            prefs: {
'profile.default_content_setting_values.media_stream_camera': 1 },
            // args: ['--headless', '--window-size=1920x1080',
'--log-level=3'],
            // args: ['--window-size=1920x1080', '--log-level=3']
        }
    },

    suites: {
        admin_login: './src/admin-login/*.e2e-spec.ts',
        admin_logout: './src/admin-logout/*.e2e-spec.ts',
        user_info: './src/logged-in-user-info/*.e2e-spec.ts',
    },

    directConnect: true,
```

```
    baseUrl: 'https://bkbapp-iat.celloscope.net/admin',

    jasmineNodeOpts: {
        showColors: true,
        defaultTimeoutInterval: 600000,
        print: function () { }
    },

    onPrepare() {
        require('ts-node').register({
            project: require('path').join(__dirname, './tsconfig.json')
        });
        jasmine.getEnv().addReporter(new SpecReporter({ spec: {
displayStacktrace: true } }));
        jasmine.getEnv().addReporter(new HtmlReporter({
            baseDirectory: 'admin-test-report',
            preserveDirectory: false,
            takeScreenShotsOnlyForFailedSpecs: false
        }).getJasmine2Reporter());
    }
};
```

References:

https://www.protractortest.org/
https://www.protractortest.org/#/api
https://www.tutorialspoint.com/protractor/
https://angular.io/cli
https://www.youtube.com/playlist?list=PLhW3qG5bs-L_dgIr3hiOlnNIO8NGlXQnP