Unit tests guideline

Last updated by | Stephen Palmer | 20 May 2021 at 12:31 BST

Overview

Ng documentation: https://v11.angular.io/guide/testing ↗
Ng sample app & tests: https://stackblitz.com/angular/ldmqnjgrkne?file=src%2Fapp%2Fapp.component.html ↗
Karma test runner: https://karma-runner.github.io/latest/index.html ↗
Jasmine test framework: http://jasmine.github.io/ ↗

Setup

Requires some dev dependencies so may need to install

```
npm install --only=dev
```

package.json *(versions may vary)*

```
"jasmine-core": "^3.7.1",
"jasmine-spec-reporter": "^7.0.0",
"karma": "^6.3.2",
"karma-chrome-launcher": "^3.1.0",
"karma-coverage": "^2.0.3",
"karma-jasmine": "^4.0.1",
"karma-jasmine-html-reporter": "^1.5.4"
```

Running Tests

Standard test run

(currently runs both Chrome launcher & headless - so can view both output)
```
ng test
```

Coverage test run

```
npm run test-coverage
```

results land in root level ./coverage folder... - to view open `./coverage/index.html`

Run individual Test or Suites

only focused Suites or Tests will run - just prefix with `f` *(other test greyed out)*
`fdescribe()` *or* `fit()`

example: just run single test

```
fit('form invalid when empty', () => {
    expect(component.form.valid).toBeFalsy('form should be invalid when empty');
});
```

Skip individual Test or Suites

will skip any Suites or Tests prefixed with x

 xdescribe() *or* xit()

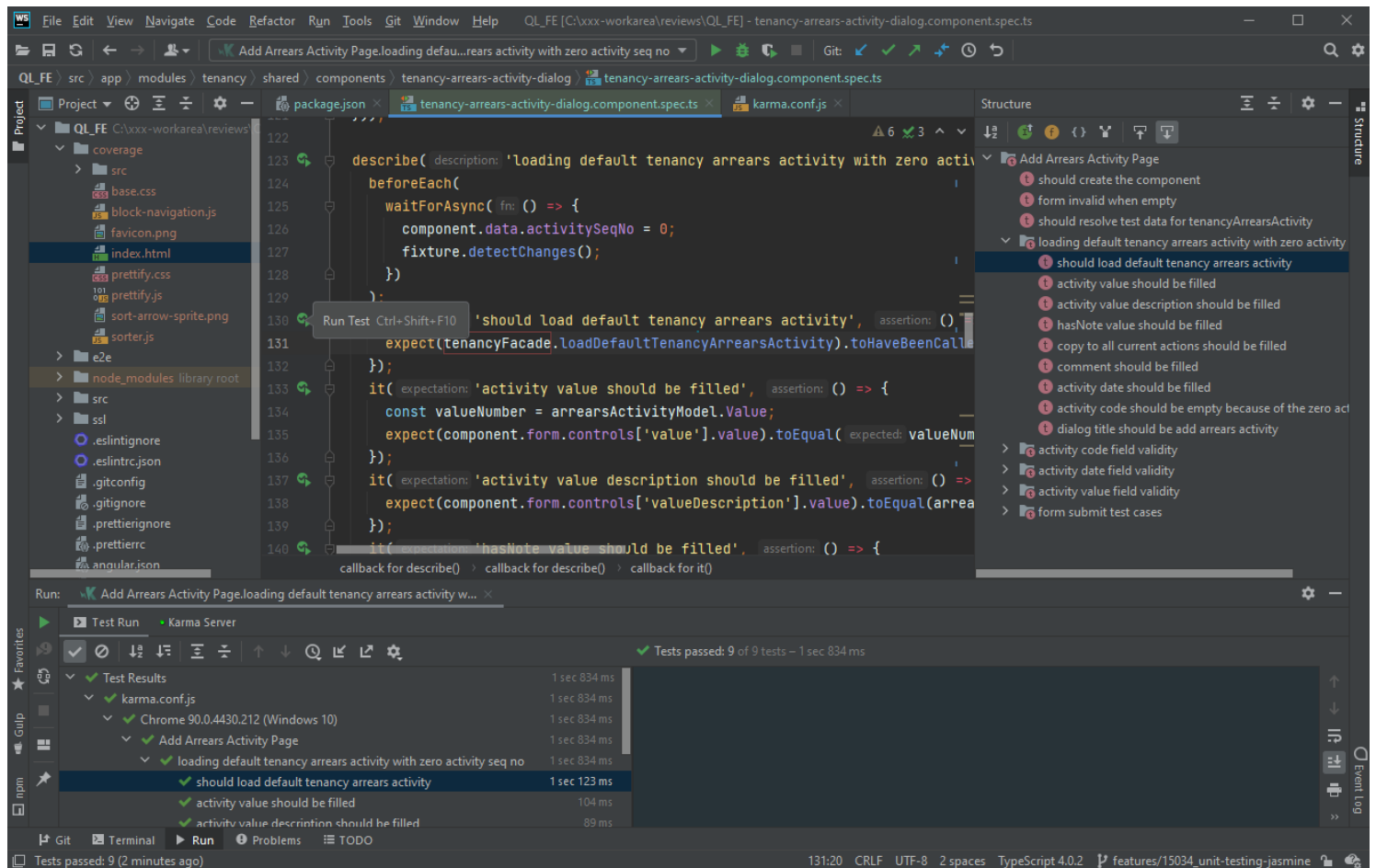*example: exclude a suite*

```
xdescribe('form submit test cases', () => {
    beforeEach(
       waitForAsync(() => {
          component.data.activitySeqNo = 9433;
          component.data.tenancyNo = 1468;
          fixture.detectChanges();
          ...
```
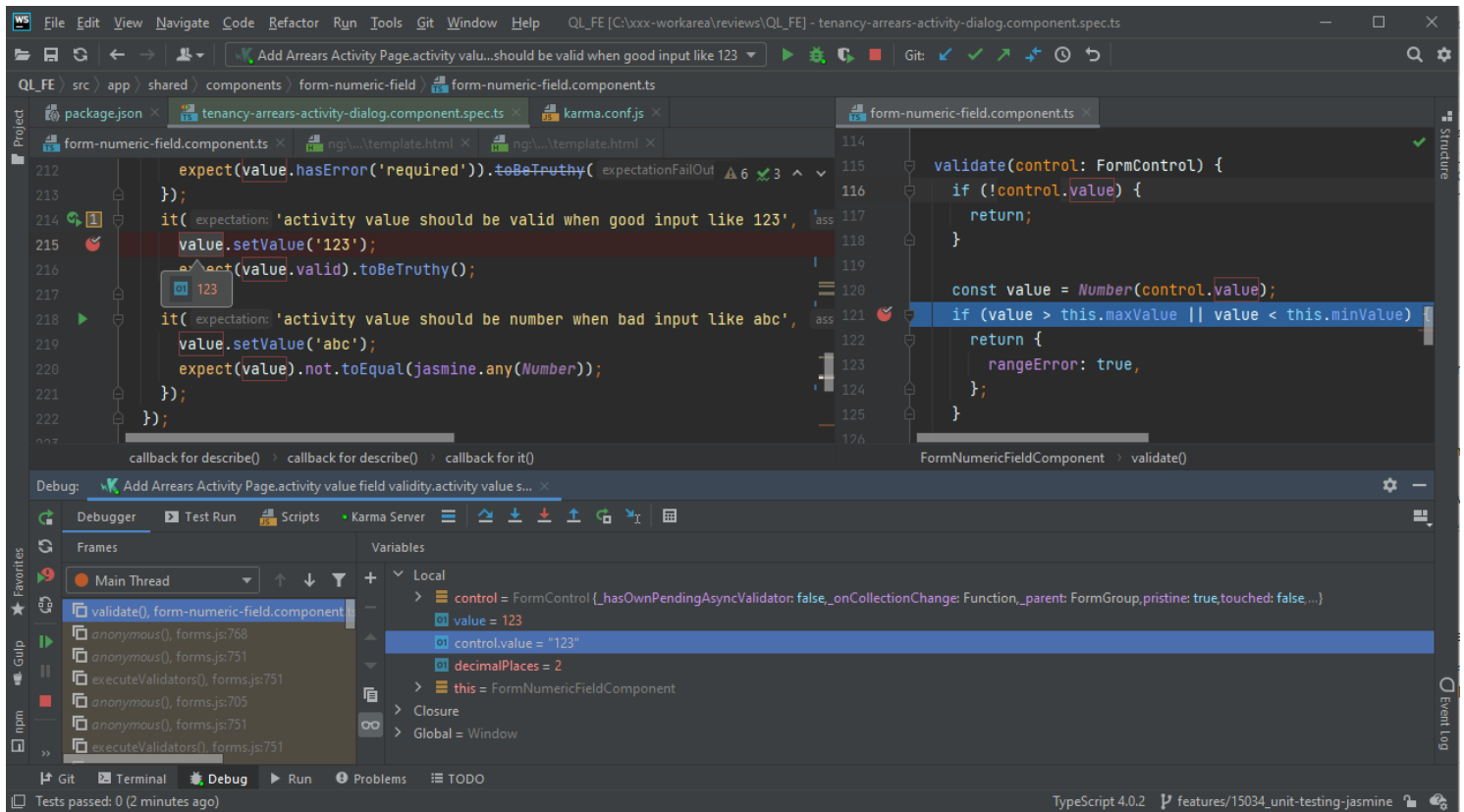
IDE Support

Webstorm

https://www.jetbrains.com/help/webstorm/running-unit-tests-on-karma.html#ws_karma_navigation ↗

lots of features: - can run individual tests, suits - debug as per app code - plus run | results | structure | coverage panes

debugging tests

CI

tbc...

will probably create a custom launcher & additional package.json script .. - something like...
package.json

```
 "test-headless": "node --max_old_space_size=4096 node_modules/@angular/cli/bin/ng test --source-map=false --browsers=ChromeHeadlessCI",
```

karma.conf.js

```
browsers: ['Chrome'],
    flags: ['--disable-web-security', '--disable-gpu', '--no-sandbox'],
    customLaunchers: {
      ChromeHeadlessCI: {
        base: 'ChromeHeadless',
        flags: ['--no-sandbox']
      }
    },
```

Case Examples

tbc...