

JAVASCRIPT UNIT TESTING

A short introduction to Javascript Unit Tests

A NEWCRAFT tech meetup



SOME FRAMEWORKS



JavaScript Unit Testing framework



BDD testing framework



BDD testing framework

AND MORE...



Vows

cucumberTM

A bright yellow parallelogram, tilted upwards from left to right, serving as a background for the text.

QUNIT

DATE FORMATTER

```
var dateFormatter = {  
  format: function (from, now) {  
    var formattedTextDate;  
  
    // ...  
  
    if (day_diff >= 31) {  
      formattedTextDate = "A long time ago";  
    } else if (day_diff === 0 && diff < 60) {  
      formattedTextDate = "just now";  
    }  
  
    // ...  
  
    return formattedTextDate;  
  }  
};
```

FULL CODE

TESTS

```
QUnit.test("Format dates", function(assert) {  
    assert.equal(  
        dateFormatter.format('2017/01/27 23:59:20', '2017/01/28 00:00:00'),  
        'just now'  
    );  
});
```

FULL CODE

INSTALL

Two packages available in NPM

qunit

grunt-contrib-qunit

```
$ npm install qunit --save-dev  
$ npm install grunt-contrib-qunit --save-dev
```

CONFIGURATION

Gruntfile.js

```
module.exports = function(grunt) {  
  grunt.initConfig({  
    // ...  
  
    qunit: {  
      files: ['test/**/*.html']  
    }  
  });  
  
  grunt.loadNpmTasks('grunt-contrib-qunit');  
  
  // ...  
  
  grunt.registerTask('test', ['qunit']);  
};
```

BROWSER

Run tests

☐ Hide passed tests ☐ Check for Globals ☐ No try-catch

Filter: Module:

QUnit 2.1.1; Mozilla/5.0 (Macintosh; Intel Mac OS X 10_11_6) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/56.0.2924.87 Safari/537.36

Tests completed in 26 milliseconds.
11 assertions of 12 passed, 1 failed.

1. prettydate.format (1, 11, 12) Rerun 12 ms

1. okay @ 1 ms

2. okay @ 2 ms

3. okay @ 2 ms

4. okay @ 3 ms

5. failed @ 3 ms

Expected: "58 minutes ago"

Result: undefined

Diff: "58 minutes ago"undefined

Source: at Object.<anonymous> (file:///Users/antoinefroger/Perso/slides-javascript-unit-testing/test/test-dates.html:15:20)

6. okay @ 10 ms

7. okay @ 10 ms

8. okay @ 11 ms

9. okay @ 11 ms

10. okay @ 11 ms

11. okay @ 11 ms

12. okay @ 11 ms

Source: at file:///Users/antoinefroger/Perso/slides-javascript-unit-testing/test/test-dates.html:10:15

RUN THE TESTS IN A BROWSER

TRAVIS CI

```
395 > javascript-unit-testing@1.0.0 test /home/travis/build/antfroger/slides-javascript-unit-testing
396 > grunt test
397
398 Running "qunit:files" (qunit) task
399 Testing test/test-dates.html .OK
400 >> 1 tests completed with 0 failed, 0 skipped, and 0 todo.
401 >> 12 assertions (in 44ms), passed: 12, failed: 0
402
403 Done.
404
405
406 The command "npm test" exited with 0.
407
408 Done. Your build exited with 0.
```

RUN THE TESTS WITH TRAVIS CI

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JASMINE

UNIT CONVERTER

```
function Convert(number, fromUnit) {  
    // ...  
  
    return {  
        to : function (toUnit) {  
            if (betweenUnit) {  
                // return ...  
            }  
  
            throw new Error("unrecognized from-unit");  
        }  
    };  
}
```

FULL CODE

INSTALL

Two packages available in NPM

jasmine

grunt-contrib-jasmine

```
$ npm install jasmine --save-dev  
$ npm install grunt-contrib-jasmine --save-dev
```


CONFIGURATION

Gruntfile.js


```
module.exports = function(grunt) {  
  grunt.initConfig({  
    // ...  
  
    jasmine: {  
      pivotal: {  
        src: 'src/**/*.js',  
        options: {  
          specs: 'spec/*Spec.js',  
          helpers: 'spec/*Helper.js'  
        }  
      }  
    }  
  });  
  
  grunt.loadNpmTasks('grunt-contrib-jasmine');  
  
  // ...  
  
  grunt.registerTask('test', ['jasmine']);  
};
```

TESTS

```
describe( "Convert library", function () {  
  describe( "distance converter", function () {  
    it("converts inches to centimeters", function () {  
      expect(Convert(12, "inches").to("cm")).toEqual(30.48);  
    });  
  });  
  
  describe( "volume converter", function () {  
    it("converts liters to gallons", function () {  
      expect(Convert(3, "liters").to("gallons")).toEqual(0.79);  
    });  
  });  
});
```

FULL CODE

BROWSER

 Jasmine 2.4.1

Options


6 specs, 0 failures

finished in 0.002s

```
Convert library
  throws an error when passed an unknown from-unit
  throws an error when passed an unknown to-unit

distance converter
  converts inches to centimeters
  converts centimeters to yards

volume converter
  converts liters to gallons
  converts gallons to cups
```

 Jasmine 2.4.1

Options

6 specs, 1 failure

finished in 0.005s

Spec List | Failures

Convert library distance converter converts inches to centimeters

Expected 30.48 to equal 30.4898.

Error: Expected 30.48 to equal 30.4898.
at stack (file:///Users/antoinefroger/Perso/slides-javascript-unit-testing/node_modules/jasmine-core/lib/jasmine-core/jasmine.js:1577:17)
at buildExpectationResult (file:///Users/antoinefroger/Perso/slides-javascript-unit-testing/node_modules/jasmine-core/lib/jasmine-core/jasmine.js:1547:14)
at Spec.expectationResultFactory (file:///Users/antoinefroger/Perso/slides-javascript-unit-testing/node_modules/jasmine-core/lib/jasmine-core/jasmine.js:638:18)
at Spec.addExpectationResult (file:///Users/antoinefroger/Perso/slides-javascript-unit-testing/node_modules/jasmine-core/lib/jasmine-core/jasmine.js:330:34)
at Expectation.addExpectationResult (file:///Users/antoinefroger/Perso/slides-javascript-unit-testing/node_modules/jasmine-core/lib/jasmine-core/jasmine.js:588:21)
at Expectation.toEqual (file:///Users/antoinefroger/Perso/slides-javascript-unit-testing/node_modules/jasmine-core/lib/jasmine-core/jasmine.js:1501:12)
at Object.<anonymous> (file:///Users/antoinefroger/Perso/slides-javascript-unit-testing/spec/convertSpec.js:19:52)

RUN THE TESTS IN A BROWSER

TRAVIS CI

```
409 Running "jasmine:pivotal" (jasmine) task
410 Testing Jasmine specs via PhantomJS
411
412 Convert library
413   - throws an error when passed an unknown from-unit...✓ throws an error when passed an unknown from-unit
414   - throws an error when passed an unknown to-unit...✓ throws an error when passed an unknown to-unit
415   distance converter
416     - converts inches to centimeters...✓ converts inches to centimeters
417     - converts centimeters to yards...✓ converts centimeters to yards
418   volume converter
419     - converts liters to gallons...✓ converts liters to gallons
420     - converts gallons to cups...✓ converts gallons to cups
421
422 6 specs in 0.013s.
423 >> 0 failures
424 (node:2009) DeprecationWarning: Calling an asynchronous function without callback is deprecated.
425
426 Done.
427
428
429 The command "npm test" exited with 0.
430
431 Done. Your build exited with 0.
```

RUN THE TESTS WITH TRAVIS CI

THANKS

QUESTIONS?

 github.com/antfroger

 [@__tooni__](https://twitter.com/__tooni__)