

JAVASCRIPT FOR ENTERPRISE

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**CODING
ALONE**

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WHAT DOES ENTERPRISE CODE MEAN?

- Understandable
- Flexible
- Testable
- Deployable

WHAT THE POINT WITH JAVASCRIPT?

1. Architecture
2. Tests
3. Debugging
4. Packaging

(Frontend & Backend)

ARCHITECTURE

MODULE MANAGEMENT

BEFORE

One single big javascript file to rule them all!

MODULE MANAGEMENT

BEFORE

```
<script src="/scripts/1.js"></script>  
<script src="/scripts/2.js"></script>  
<script src="/scripts/3.js"></script>  
...  
<script src="/scripts/99919293.js"></script>
```


MODULE MANAGEMENT

NOWADAYS

- AMD (Require.js, head.js, yepnope.js, ...)
- CommonJs (Node.js, ...)
- ...

MODULE MANAGEMENT

REQUIRE.JS EXAMPLE

index.html

```
<script data-main="/js/main" src="/js/require.js"></script>
```

/js/main.js

```
require(['alerter'], function(alerter) {  
  alerter('Hello world');  
});
```

/js/alerter.js

```
define(function () {  
  return function (message) { alert(message); }  
});
```

MODULE MANAGEMENT

NODE.JS EXAMPLE

app.js

```
var alerter = require('./alerter');  
alerter('Hello world');
```

alerter.js

```
module.exports = function (message) {  
  console.log(message);  
};
```

FRAMEWORKS

BEFORE

- "jQuery?"
- GWT
- ...

FRAMEWORKS

NOWADAYS

FRONTEND

- Backbone.js
- Ember.js
- Angular.js
- ...

BACKEND

- Express.js
- Meteor.js
- Sail.js
- ...

PATTERNS

- MVP
- MVC
- MVVM
- MVMVMVMMVMPPVMVMVP
- ...

TESTING

- Mocha
- Jasmine
- ...

TESTING

MOCHA EXAMPLE

```
var assert = require('assert');

describe('Array', function () {
  describe('#indexOf()', function () {
    it('should return -1 when the value is not present', function () {
      assert.equal(-1, [1, 2, 3].indexOf(5));
      assert.equal(-1, [1, 2, 3].indexOf(0));
    })
  })
});
```


TESTING

JASMINE EXAMPLE

```
var assert = require('assert');

describe('Array', function () {
  describe('#indexOf()', function () {
    it('should return -1 when the value is not present', function () {
      assert.equal(-1, [1, 2, 3].indexOf(5));
      assert.equal(-1, [1, 2, 3].indexOf(0));
    })
  })
});
```

TESTING / ASSERTION

- Should.js
- Chai.js
- ...

ASSERTION USING SHOULD.JS

```
var should = require('should');

var user = {
  name: 'sandro'
};

user.should.have.property('name', 'sandro');
```

TESTING / ASSERTION

ASSERTION USING CHAI.JS

Should style

```
chai.should();  
user.should.be.a('string');
```

Expect style

```
chai.expect();  
expect(sandro).to.be.a('string');
```

Assert style

```
var assert = chai.assert();  
assert.typeOf(sandro, 'string');
```

TESTING / MOCKS, SPIES, STUBS

- Sinon.js
- ...

TESTING / MOCKS, SPIES, STUBS

SPIES USING SINON.JS

```
it('calls the original function', function () {  
  var callback = sinon.spy();  
  
  PubSub.subscribe('message', callback);  
  PubSub.publishSync('message');  
  
  assertTrue(callback.called);  
});
```

TESTING / MOCKS, SPIES, STUBS

STUBS USING SINON.JS

```
it('test should stub method differently based on arguments', function () {  
  var callback = sinon.stub();  
  callback.withArgs(42).returns(1);  
  callback.withArgs(1).throws('TypeError');  
  
  callback();    // No return value, no exception  
  callback(42); // Returns 1  
  callback(1);  // Throws TypeError  
});
```

TESTING / MOCKS, SPIES, STUBS

MOCK XHR USING SINON.JS

```
function getTodos(id, callback) {  
  jQuery.ajax({  
    url: '/todo/' + id + '/items',  
    success: function (data) {  
      callback(null, data);  
    }  
  });  
}
```


TESTING / MOCKS, SPIES, STUBS

MOCK XHR USING SINON.JS

```
var xhr, requests;

before(function () {
  xhr = sinon.useFakeXMLHttpRequest();
  requests = [];
  xhr.onCreate = function (req) { requests.push(req); };
});

after(function () { xhr.restore(); });

it('makes a GET request for todo items', function () {
  getTodos(42, sinon.spy());
  assert.equals(requests.length, 1);
  assert.match(requests[0].url, '/todo/42/items');
});
```

TESTING / MOCKS, SPIES, STUBS

UI TESTING

- Selenium
- Phantom.js
- Slimer.js

DEBUGGING

WHAT ABOUT SERVER-SIDE?

NODE INSPECTOR

[HTTPS://GITHUB.COM/NODE-INSPECTOR/NODE-INSPECTOR](https://github.com/node-inspector/node-inspector)

DEPLOYMENT

- Lint
- Minification
- Grunt: JavaScript Task Runner

DEPLOYMENT

LINT

- JSHint
- JSLint
- ...

DEPLOYMENT

MINIFICATION

- YUI
- Closure
- ...

DEPLOYMENT

PACKAGING

- Bower
- NPM
- ...



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