**Testing Process:**

Testing can be tricky especially when we use complex server side technologies. Javascript’s flexibility makes it easy to get started, but very hard to master. How do we handle an API callback? How do we deal with require? and so on.

This document will describe the tools needed to test the application built with Node.js

* **Testing framework:**

For Node.js “**Mocha**” is the de facto unit test framework. It’s customisable and flexible

e.g.

before(function(){

// before() is to do the one time set up.

});

it(‘function-to-be-tested’, function(){

// Test and assertions go here

});

after(function() {

// after() is to do teardown

});

});

* **Assertion Library:**

TDD or BDD style libraries using native assertions that comes bundled with Node.Js

e.g.

expect(42).to.equal(42); // BDD Assertion Style

assert.equal(42, 42); // TDD Assertion Style

Also, “**Chai**” a feature rich library can be used that provides most of the popular assertion styles

* **Stubs:**

Stubs are needed to influence behaviour and test code under explicit conditions when testing complex functions. **Sinon.JS** can be used to influence behaviour (works with any unit testing framework). Sinon includes a collection of other tools for testing, such as fake timers and argument matches and Mocks and so on.

e.g.

var callback = sinon.stub();

callback.withArgs(100).returns(1);

callback.withArgs(1).throws("TypeError");

callback(); // No return value, no exception

callback(100); // Returns 1

callback(1); // Throws TypeError

* **Module Control**:

Because most calls to require happen privately, we have no way to stub, assert, or otherwise access external modules. To really control our tests, we’ll need the option to override require to return modules under our control.

**Mockery** gives us control of the module cache, and lets us replace entries with modules of our own.

e.g.

before(function() {

mockery.enable();

// Allow some ...

mockery.registerAllowable('async');

// ... Control others

mockery.registerMock('../some-other-module', stubbedModule);

});

after(function() {

mockery.deregisterAll(); //It’s important to deregister/disable mocks

mockery.disable();

});