

# Angular Testing

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# Testing Angular Applications

- Angular was built from the ground-up to facilitate testing
  - Modular implementation with controllers, filters, factories, services and providers etc
  - Dependency injection

# Test-Driven Development

- Write an automated test case defining the desired functionality
- Write application code to pass the test
- Refactor the code to meet coding standards

[https://en.wikipedia.org/wiki/Test-driven\\_development](https://en.wikipedia.org/wiki/Test-driven_development)

# Unit Testing

- Testing individual units of code
  - Restricted to verifying if the component's logic is implemented correctly
- Isolating the unit under test from other dependencies is important
  - Dependency injection enables us to inject mock dependencies
  - Clear separation in Angular between the DOM and logic through the use of \$scope.

# Jasmine

- Behavior driven development framework for JavaScript
  - Adopted to test Angular applications
  - Use “describe” function to group our tests
  - Use “it” function to define individual tests

# Jasmine Example

```
describe('Controller: MenuController', function () {  
  
    it('should create "dishes" with 2 dishes fetched from xhr', function(){  
        expect(scope.showMenu).toBeTruthy();  
        expect(scope.dishes).toBeDefined();  
        expect(scope.dishes.length).toBe(2);  
    });  
  
});
```

# Karma

- JavaScript based command line tool (NodeJS application)
  - Spawns a web server to load your application's source code
  - Executes your tests in the browser

# angular-mocks

- Angular ngMock module provides mocking support for your tests
  - Inject and mock Angular services within unit tests
  - Make asynchronous modules execute synchronously to make it easier to execute tests
  - \$httpBackend lets us mock XHR requests in tests



# Angular Mocks Example

```
// load the controller's module
beforeEach(module('confusionApp'));

var MenuController, scope, $httpBackend;

// Initialize the controller and a mock scope
beforeEach(inject(function ($controller, _$httpBackend_, $rootScope, menuFactory) {

    // place here mocked dependencies
    $httpBackend = _$httpBackend_;
    $httpBackend.expectGET("http://localhost:3000/dishes").respond([ . . . ]);

    scope = $rootScope.$new();

    MenuController = $controller('MenuController', {
        $scope: scope, menuFactory: menuFactory  });

    $httpBackend.flush();

})));
```

## Exercise (Instructions): Unit Testing Angular Applications

- Configure a Karma configuration file
- Set up unit tests using Jasmine and carry out the unit test automatically