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* Unit Testing Class

classic layout

Unit Testing Class[**¶**](#gjdgxs)

Unit testing is an approach to software development in which tests are written for each function in your application. If you are not familiar with the concept you might do a little googling on the subject.

CodeIgniter’s Unit Test class is quite simple, consisting of an evaluation function and two result functions. It’s not intended to be a full-blown test suite but rather a simple mechanism to evaluate your code to determine if it is producing the correct data type and result.

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[**Using the Unit Testing Library**](#3rdcrjn)[**¶**](#30j0zll)

[**Initializing the Class**](#26in1rg)[**¶**](#1fob9te)

Like most other classes in CodeIgniter, the Unit Test class is initialized in your controller using the $this->load->library function:

$this->load->library('unit\_test');

Once loaded, the Unit Test object will be available using $this->unit

[**Running Tests**](#lnxbz9)[**¶**](#3znysh7)

Running a test involves supplying a test and an expected result in the following way:

$this->unit->run(‘test’, ‘expected result’, ‘test name’, ‘notes’);

Where test is the result of the code you wish to test, expected result is the data type you expect, test name is an optional name you can give your test, and notes are optional notes. Example:

$test = 1 + 1;  
  
$expected\_result = 2;  
  
$test\_name = 'Adds one plus one';  
  
$this->unit->run($test, $expected\_result, $test\_name);

The expected result you supply can either be a literal match, or a data type match. Here’s an example of a literal:

$this->unit->run('Foo', 'Foo');

Here is an example of a data type match:

$this->unit->run('Foo', 'is\_string');

Notice the use of “is\_string” in the second parameter? This tells the function to evaluate whether your test is producing a string as the result. Here is a list of allowed comparison types:

* is\_object
* is\_string
* is\_bool
* is\_true
* is\_false
* is\_int
* is\_numeric
* is\_float
* is\_double
* is\_array
* is\_null
* is\_resource

[**Generating Reports**](#35nkun2)[**¶**](#2et92p0)

You can either display results after each test, or your can run several tests and generate a report at the end. To show a report directly simply echo or return the run function:

echo $this->unit->run($test, $expected\_result);

To run a full report of all tests, use this:

echo $this->unit->report();

The report will be formatted in an HTML table for viewing. If you prefer the raw data you can retrieve an array using:

echo $this->unit->result();

[**Strict Mode**](#1ksv4uv)[**¶**](#tyjcwt)

By default the unit test class evaluates literal matches loosely. Consider this example:

$this->unit->run(1, TRUE);

The test is evaluating an integer, but the expected result is a boolean. PHP, however, due to it’s loose data-typing will evaluate the above code as TRUE using a normal equality test:

if (1 == TRUE) echo 'This evaluates as true';

If you prefer, you can put the unit test class in to strict mode, which will compare the data type as well as the value:

if (1 === TRUE) echo 'This evaluates as FALSE';

To enable strict mode use this:

$this->unit->use\_strict(TRUE);

[**Enabling/Disabling Unit Testing**](#44sinio)[**¶**](#3dy6vkm)

If you would like to leave some testing in place in your scripts, but not have it run unless you need it, you can disable unit testing using:

$this->unit->active(FALSE);

[**Unit Test Display**](#2jxsxqh)[**¶**](#1t3h5sf)

When your unit test results display, the following items show by default:

* Test Name (test\_name)
* Test Datatype (test\_datatype)
* Expected Datatype (res\_datatype)
* Result (result)
* File Name (file)
* Line Number (line)
* Any notes you entered for the test (notes)

You can customize which of these items get displayed by using $this->unit->set\_test\_items(). For example, if you only wanted the test name and the result displayed:

[**Customizing displayed tests**](#z337ya)[**¶**](#4d34og8)

$this->unit->set\_test\_items(array('test\_name', 'result'));

[**Creating a Template**](#3j2qqm3)[**¶**](#2s8eyo1)

If you would like your test results formatted differently then the default you can set your own template. Here is an example of a simple template. Note the required pseudo-variables:

$str = '  
<table border="0" cellpadding="4" cellspacing="1">  
{rows}  
 <tr>  
 <td>{item}</td>  
 <td>{result}</td>  
 </tr>  
{/rows}  
</table>';  
  
$this->unit->set\_template($str);

Note

Your template must be declared **before** running the unit test process.

[**Class Reference**](#1y810tw)[**¶**](#17dp8vu)

*class* CI\_Unit\_test[¶](#4i7ojhp) set\_test\_items(*$items*)[¶](#2xcytpi)

| Parameters: | * **$items** (*array*) – List of visible test items |
| --- | --- |
| Returns: | void |

Sets a list of items that should be visible in tests. Valid options are:

* test\_name
* test\_datatype
* res\_datatype
* result
* file
* line
* notes

run(*$test*[, *$expected = TRUE*[, *$test\_name = 'undefined'*[, *$notes = ''*]]])[¶](#1ci93xb)

| Parameters: | * **$test** (*mixed*) – Test data * **$expected** (*mixed*) – Expected result * **$test\_name** (*string*) – Test name * **$notes** (*string*) – Any notes to be attached to the test |
| --- | --- |
| Returns: | Test report |
| Return type: | string |

Runs unit tests.

report([*$result = array()*])[¶](#3whwml4)

| Parameters: | * **$result** (*array*) – Array containing tests results |
| --- | --- |
| Returns: | Test report |
| Return type: | string |

Generates a report about already complete tests.

use\_strict([*$state = TRUE*])[¶](#2bn6wsx)

| Parameters: | * **$state** (*bool*) – Strict state flag |
| --- | --- |
| Return type: | void |

Enables/disables strict type comparison in tests.

active([*$state = TRUE*])[¶](#qsh70q)

| Parameters: | * **$state** (*bool*) – Whether to enable testing |
| --- | --- |
| Return type: | void |

Enables/disables unit testing.

result([*$results = array()*])[¶](#3as4poj)

| Parameters: | * **$results** (*array*) – Tests results list |
| --- | --- |
| Returns: | Array of raw result data |
| Return type: | array |

Returns raw tests results data.

set\_template(*$template*)[¶](#1pxezwc)

| Parameters: | * **$template** (*string*) – Test result template |
| --- | --- |
| Return type: | void |

Sets the template for displaying tests results.

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