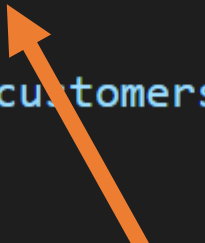# ADIOS framework

How to write "testable" code and tests

"Testable" code

- Allows writing automated tests
- Exposes certain situations to the testing engine as **assertions**
- The more assertions exposed, the better.
- Ideally should cover all lines of code.

"Testable" code - Example

```php
class GetAllCustomers extends \ADIOS\Core\Widget\Action {
  public function preRender() {

    $model = new \ADIOS\Widgets\CustomersAndBids\Models\Customer($this->adios);
    $customers = $model->getAll();
    $this->adios->test->assert("customersCount", count($customers));

    return [ "customers" => $customers ];
  }
}
```

The actions "tells" the testing engine how much customers are in the database.

Writing tests

- New **\ADIOS\Core\Test class** for supporting the development of tests.
  - Each test extends this class.
- Tests are stored in **ROOT_DIR/tests**
- A **ROOT_DIR/test/Runner.php** script takes the test name as an argument and runs the test
  - Test is run using "php Runner.php <TestName>"
- Each test must override the **init()** method
- Each test must check assertions using **checkAssertions()** method

Writing tests - Example

```php
class Test01 extends \ADIOS\Core\Test {
  public function init() : void {
    $model = new \ADIOS\Widgets\CustomersAndBids\Models\Customer($this->adios);

    $this->adios->db->query("SET FOREIGN_KEY_CHECKS=0");
    $this->adios->db->query("truncate table {$model->getFullTableSQLName()}");

    $random = rand(10, 50);
    for ($i = 1; $i <= $random; $i++) $model->insertRandomRow();

    $this->adios->renderAction("CustomersAndBids/GetAllCustomers", []);
    $this->checkAssertion("customersCount", $random);

  }
}
```

Empty the list of customers and add a random number of customers.
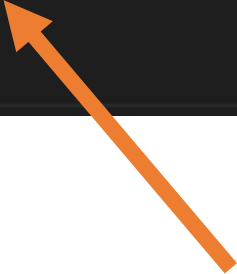
Expect the same number of customers in the database.

Result:

```
PS Q:\workspace\www\_interne\prototype_crm\tests> php .\Runner.php "Financie\HlavnaKniha\CustomersAndBids\Test01"
Test ADIOS\Tests\Financie\HlavnaKniha\CustomersAndBids\Test01 succeeded.
```

Writing tests – Example – Failed test

```php
class Test01 extends \ADIOS\Core\Test {
  public function init() : void {
    $model = new \ADIOS\Widgets\CustomersAndBids\Models\Customer($this->adios);

    $this->adios->db->query("SET FOREIGN_KEY_CHECKS=0");
    $this->adios->db->query("truncate table {$model->getFullTableSQLName()}");

    $random = rand(10, 50);
    for ($i = 1; $i <= $random; $i++) $model->insertRandomRow();

    $this->adios->renderAction("CustomersAndBids/GetAllCustomers", []);
    $this->checkAssertion("customersCount", $random - 1);

  }
}
```

Small modification – the test will fail

Result - Failed:

```
PS Q:\workspace\www\_interne\prototype_crm\tests> php .\Runner.php "Financie\HlavnaKniha\CustomersAndBids\Test01"
Test ADIOS\Tests\Financie\HlavnaKniha\CustomersAndBids\Test01 failed at assertion 'customersCount'.
Assertion value: 19
Expected value: 18
```
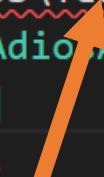
Writing tests – Runner.php

Basic project's
ROOT_DIR/test/Runner.php
implementation
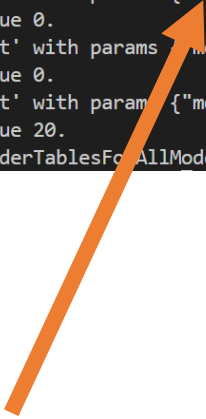
```php
<?php

require("../src/Init.php");

(new \ADIOS\Tests\Runner(
    new \MyAdios\App($config),
    $argv[1]
))->run();
```

Default ADIOS test runner.
Can also run default ADIOS tests.

```
PS Q:\workspace\www\_interne\prototype_crm\tests> php .\Runner.php "UI/Table/TestRenderTablesForAllModels"
Checking assertion 'loadedRowsCount' with params {"model":"Core\/Models\/Config"}.
Check succeeded with assertion value 7.
Checking assertion 'loadedRowsCount' with params {"model":"Core\/Models\/Translate"}.
Check succeeded with assertion value 0.
Checking assertion 'loadedRowsCount' with params {"model":"Core\/Models\/User"}.
Check succeeded with assertion value 1.
Checking assertion 'loadedRowsCount' with params {"model":"Core\/Models\/UserRole"}.
Check succeeded with assertion value 1.
Checking assertion 'loadedRowsCount' with params {"model":"Core\/Models\/Token"}.
Check succeeded with assertion value 0.
Checking assertion 'loadedRowsCount' with params {"model":"Widgets\/CustomersAndBids\/Models\/Bid"}.
Check succeeded with assertion value 0.
Checking assertion 'loadedRowsCount' with param {"model":"Widgets\/CustomersAndBids\/Models\/Customer"}.
Check succeeded with assertion value 20.
Test 'ADIOS\Tests\UI\Table\TestRenderTablesForAllModels' succeeded with 7 assertions checked.
```

Output of the default ADIOS test that
renders UI/Table for all models.