

Unit Tests

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What is unit testing?

- A software testing method by which individual units of source code are tested.
- A test is a piece of code that tests some other code.
 - Each test should be independent.
 - Each test should test some specific functionality.
- **Benefits:**
 - Detect regressions.
 - Test-driven development.
- We will use a simple, header-only library for unit testing, *acutest*.

How does it work?

- *TEST_CHECK*: tests a boolean condition and fails if the condition evaluates to false.
- *TEST_LIST*: the list specifies name of each test (it has to be unique) and pointer to a function implementing the test.

```
#include "acutest.h"
#include "list.h"

// a unit test that checks the list_size function
void test_list_size(void)
{
    List* list = list_prepend(NULL, 0);
    TEST_CHECK(list_size(list) == 1);

    list = list_prepend(list, 1);
    TEST_CHECK(list_size(list) == 2);
}

// all the tests that will run
TEST_LIST = {
    { "test_list_size", test_list_size },
    { NULL, NULL } /* zeroed record marking the end of the list */
};
```