

An abstract composition on a dark gray background. It features several diagonal lines: a white line in the upper left, a light gray line in the lower left, and a bright pink line in the lower right. The word 'Substrate' is written in a bold, orange, sans-serif font, positioned between the white and light gray lines. The word 'River' is written in the same font and color, positioned between the light gray and pink lines.

**Substrate**

**River**

The background is dark gray with several diagonal lines. Two white lines are in the upper left, and two pink lines are in the lower right, all sloping upwards from left to right.

# Test-002

## Writing Tests

<https://substrate.dev/substrate-collectables-workshop/#/5/writing-tests>



a simple test

不要忘记测试必须在TestExternalities的上下文中执行!

```
#[test]
fn it_works() {
    with_externalities(&mut build_ext(), || {
        assert!(true);
    })
}
```



## 测试命令

```
cargo test -p substratekitties-runtime substratekitties
```

您可以将这行代码理解为运行substratekitties单元测试，它位于substratekitties-runtime子包中。

```
cargo test -p substratekitties-runtime
```

测试整个runtime包



## Console log

```
running 1 tests
```

```
test template::tests::it_works ... ok
```

```
test result: ok. 1 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out
```



## Test "Create Kitty" Works

```
#[test]
fn create_kitty_should_work() {
  with_externalities(&mut build_ext(), || {
    // create a kitty with account #10.
    assert_ok!(Kitties::create_kitty(Origin::signed(10)));

    // check that there is now 1 kitty in storage
    assert_eq!(Kitties::all_kitties_count(), 1);

    // check that account #10 owns 1 kitty
    assert_eq!(Kitties::owned_kitty_count(10), 1);

    // check that some random account #5 does not own a kitty
    assert_eq!(Kitties::owned_kitty_count(5), 0);

    // check that this kitty is specifically owned by account #10
    let hash = Kitties::kitty_by_index(0);
    assert_eq!(Kitties::owner_of(hash), Some(10));

    let other_hash = Kitties::kitty_of_owner_by_index((10, 0));
    assert_eq!(hash, other_hash);
  })
}
```



## Your Turn!

1- Owner can successfully transfer a kitty.

所有者成功转移Kitty的测试

2- A non-owner will fail to transfer a kitty. Specifically, make sure your test expectedly fails with an error message of: "'from' account does not own this kitty"

非所有者转移kitty失败的测试



**Substrate**

**River**

**Thanks**