# [**Test Double**](https://martinfowler.com/bliki/TestDouble.html)

**17 January 2006**

[**Martin Fowler**](https://martinfowler.com/)

[TESTING](https://martinfowler.com/tags/testing.html)

Gerard Meszaros is [working on a book](https://martinfowler.com/books/meszaros.html) to capture patterns for using the various [Xunit](https://martinfowler.com/bliki/Xunit.html) frameworks. One of the awkward things he's run into is the various names for stubs, mocks, fakes, dummies, and other things that people use to stub out parts of a system for testing. To deal with this he's come up with his own vocabulary which I think is worth spreading further.

The generic term he uses is a [Test Double](http://xunitpatterns.com/Test%20Double.html) (think stunt double). Test Double is a generic term for any case where you replace a production object for testing purposes. There are various kinds of double that Gerard lists:

* **Dummy** objects are passed around but never actually used. Usually they are just used to fill parameter lists.
* **Fake** objects actually have working implementations, but usually take some shortcut which makes them not suitable for production (an [InMemoryTestDatabase](https://martinfowler.com/bliki/InMemoryTestDatabase.html) is a good example).
* **Stubs** provide canned answers to calls made during the test, usually not responding at all to anything outside what's programmed in for the test.
* **Spies** are stubs that also record some information based on how they were called. One form of this might be an email service that records how many messages it was sent.
* **Mocks** are pre-programmed with expectations which form a specification of the calls they are expected to receive. They can throw an exception if they receive a call they don't expect and are checked during verification to ensure they got all the calls they were expecting.

## Further Reading

I expand on the use of Mocks, Doubles and the like in [Mocks Aren't Stubs](https://martinfowler.com/articles/mocksArentStubs.html)

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