Developer Tips: C# Test for Exception

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As I'm creating unit tests for my latest project I found myself yet again dreading the testing of exceptions. The way we test for exceptions just stands out as a sore thumb whenever I look at them. When I first learned how to unit test exceptions I used the classic ExpectedException attribute. This works fine and is clean as long as you don't care about what message is returned from the exception.

I prefer to verify that the correct exception was thrown with the correct message. This meant that now I had to use try/catch blocks and add Assert.Fail after the method call for when the exception was not thrown. I've gone through multiple variations and I keep forgetting that the Assert.Fail I added throws an exception itself and is caught by the generic catch for exceptions making the messaging a mess unless I check for the AssertFailedException and rethrow.

I was tired of making this mistake and the repetition of try/catch code that kept changing. I decided to create a TestHelper class to handle this for me. I created the methods TestForException to take the method calls as a parameter along with the expected exception and let it handle the try/catch block. To do this I had to create two versions of the method, one for methods with no return type (Action) and another for methods with a return type (Func). I personally prefer the lamda expression inline or assigned to a variable for readability. The local function variation is growing on me though.

Below is the TestHelper class, followed by a simple class with two process methods to demo the Action and Func variations and of course unit tests provided. These code samples and more can be found on my GitHub site. <https://github.com/penblade>



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# Conclusion

With these test for exception helper methods I no longer cringe when I need to add unit tests for exceptions. My unit tests for exceptions are now shorter, cleaner, easier to read, and easier to maintain.

How do you create your unit tests for testing for exceptions? Which way do you prefer? Do you have a better way? Let us know in the comments below! Thanks!