

# CPS353: Internet Programming

## Homework Assignment 3: Unit testing

### Due Wednesday, October 7th by the start of class

This assignment introduces you to the basics of unit testing by adding tests to a basic star trek game. The tests can use Moq and should use Nunit.

#### Steps to get started

Note: Visual Studio Express does not work with Nunit. Use the Community Version.


1. Download the unit test zip file found at:
  - a. <http://www.cs.gordon.edu/courses/cps353/handouts/labs-csharp-nunit-master.zip>
  - b. **OR** use the zip link on the homework page since we started that in class
2. Open the project in the TestedTrek folder using Visual Studio.
  - a. Click ok to allow the project to be upgraded
3. Add the Nunit nugget package
  - a. Go to Tools/Nuget Package Manager/Manage Nuget Packages for Solution
  - b. Search for Nunit (select online if you see that option on the left)
  - c. Select the first result and add it to the NUnitTests project. You do not need to add it to the other ones
  - d. Click Install
4. Add the Nunit Test adapter
  - a. Go to Tools/Extensions and Updates
  - b. Select Online from the left
  - c. Search for Nunit
  - d. Install "NUnit Test Adapter"
  - e. Restart Visual Studio by clicking the Restart now button
5. Add Moq (if you want to do the extra credit)
  - a. Go to Tools/Nuget Package Manager/Manage Nuget Packages for Solution
  - b. Search for Moq
  - c. Add it to your solution

#### Further details

We are going to add a new Experimental Death Ray weapon to the solution. The image below has the details for what the weapon should do. Add tests and refactor the code if needed, but do not refactor the any code in the "Untouchables" namespace.

**exercise: add the Experimental Death Ray!**

- Always eats up most of your energy; can only fire once.
- Randomly:
  - Destroys the Klingon (50%?)
  - Fizzles, doing nothing
  - Strengthens the Klingon
  - Creates a black hole which eats your ship
  - Creates a wormhole which throws the Klingon safely beyond range
  - Turns you and your crewmates into babbling mutants



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**Grading**

For full credit, all features described above should be implemented. Each feature should have at least one test and all tests should be passing. Extra credit for using Moq rather than the Mock classes in the test project. We will probably be using Moq in the unit tests for our milestones.

Submit your assignment by emailing a zip file containing the TestedTrek project with your tests to the instructor before class starts.