

Software Verification and Validation, ESOF 411, Fall 2019
Unit Testing Introductory Exercise, Jan. 7
Due Jan. 9 (Wednesday)

Frank Ackerman developed a 3D Tic-Tac-Toe game in C# and created this and the following unit testing exercise using NUnit. Frank has offered to help you with this and the following exercise. Thank you Dr. Ack!

This assignment is to become familiar with the unit testing software for C#, NUnit.

Your assignment is:

1. Clone the 3D Tic-Tac-Toe C# console application and play the game.
(http://gitlab.cs.mtech.edu/ESOF411/S19/TTT3d_Play.git). Frank created notebooks of this code for each of you. These will be given out in class.
2. This exercise involves writing unit tests for the above program. A class library version of the above program has been created, along with a testing framework and 4 unit tests. Clone this project into another directory.
(http://gitlab.cs.mtech.edu/ESOF411/S19/TTT3d_Test.git).
3. Look over the class TTT3dTests. It contains:
 - TestFixture – declaration of a TTT3dGame instance.
 - SetUp – instantiation of that instance. This will be run before each test.
 - Tests:
 - chk_UnitTestSetup() – check that the test fixture is set up correctly.
 - chk_AddLinesInColumns()
 - chk_AddLinesInPlanes()
 - chk_TTT3dGameConstructor()
4. In your local directory create NUnit tests, in a format consistent with the tests given, for the methods:
 - addKittyCornerLine()
 - addLeftOrRightDiagonals()
 - ifGamePositionEmpty()

You do not need to turn this in, or submit it to the repository.