

# Creating code that can be unit tested

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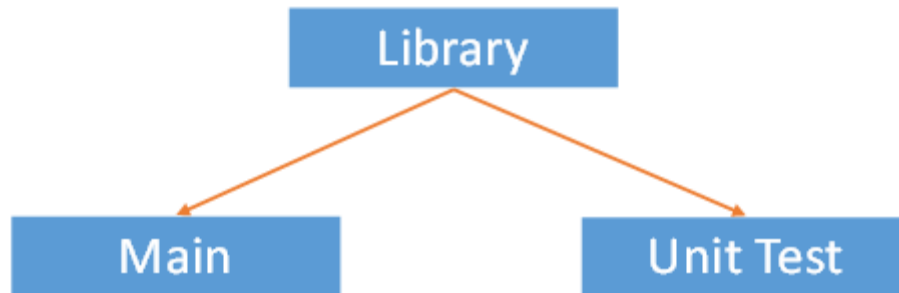
In many programs you need to develop code that will later be used by a main routine in an executable.

If you have learned about Test Driven Development you know the advantages that come along with Unit Testing your code; just to name a few: better maintainability, less risk in changes to the code and assurance that your code is working appropriately.

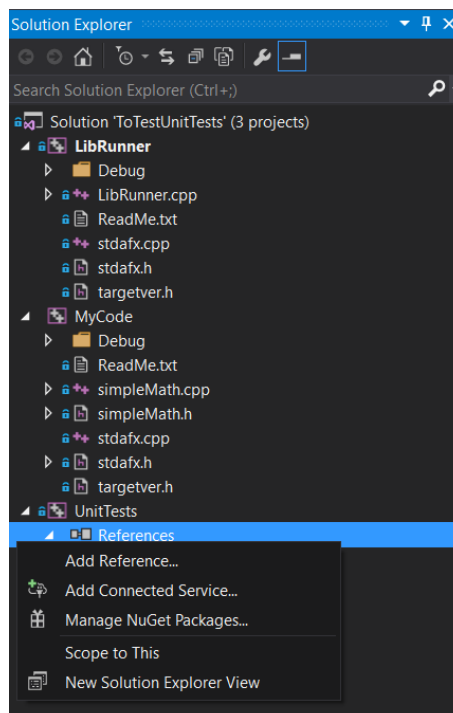
Here is a tutorial on how to create a visual studio solution that allows you to take advantage of Unit Testing:

1. Normally you will create a project where you will have all your code and another project for your Unit Test. The problem with this approach is that your unit test is not able to see the code in your main project, therefore we need a way to encapsulate the code and use it in the main routine and the Unit Test.

This can be accomplished by creating a library like this:

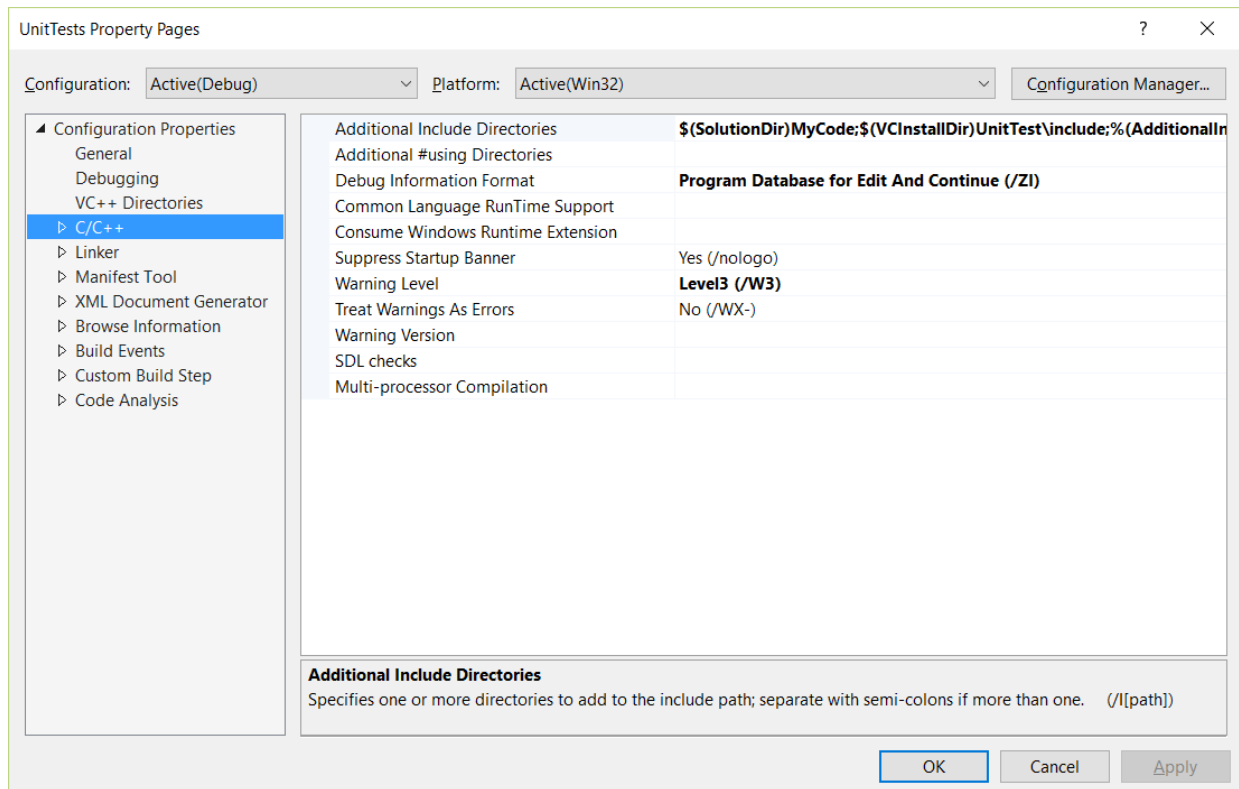


2. Create a Visual Studio Solution that includes 3 projects:
  - a. An empty "windows application" project for your EXE or DLL.
  - b. A static library project for the code classes that you want to unit test.
  - c. A unit test project.
3. Add a reference from the **UnitTest project** and the **Main project** to MyCode.lib. To do it, right click over the Reference folder and click Add Reference...



4. Now you need to include the location of the library into the "Additional Include Directories" of the dependent projects.

To do it, right click on the project folder and go to properties. Under C/C++ -> Additional Include directories "**\$(SolutionDir)<YourLibName>;**"



5. In your files (unit Test or Main Project) #include your .h files as you normally will do.

## Notes

- If you have classes with the same names as system classes wrap your code inside a namespace.

## Resources

- <http://blogs.msdn.com/b/jsocha/archive/2010/11/19/writing-unit-tests-in-visual-studio-for-native-c.aspx>
- [https://msdn.microsoft.com/en-us/library/ms243171\(v=vs.150\).aspx#](https://msdn.microsoft.com/en-us/library/ms243171(v=vs.150).aspx#)
- [Walkthrough: Creating and Using a Static Library \(C++\)](#)