SETTING UP OPENCPPCOVERAGE

This document has been translated and adapted from:
http://www.cs.ubbcluj.ro/~istvanc/oop/lab/Codecoverage.pdf.

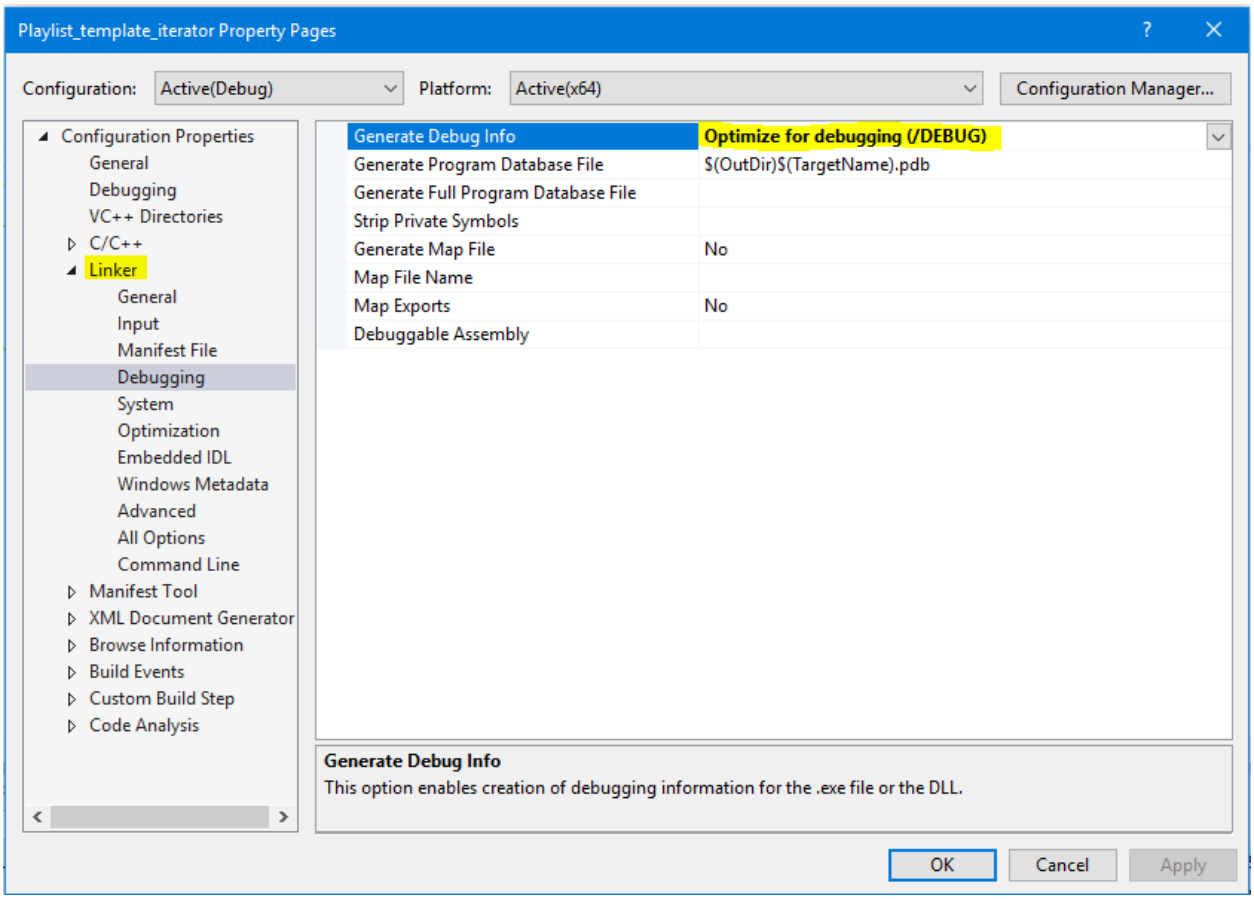
OpenCppCoverage is a tool for verifying unit testing coverage, but it can also be used to count the executed lines in a program for debugging purposes.

1. Download and install OpenCppCoverage from: https://opencppcoverage.codeplex.com/. When installing, do not modify the default options (tool path will be added to the PATH environment variable).

2. Modify your **main()** function to only contain the test function calls (comment everything else).

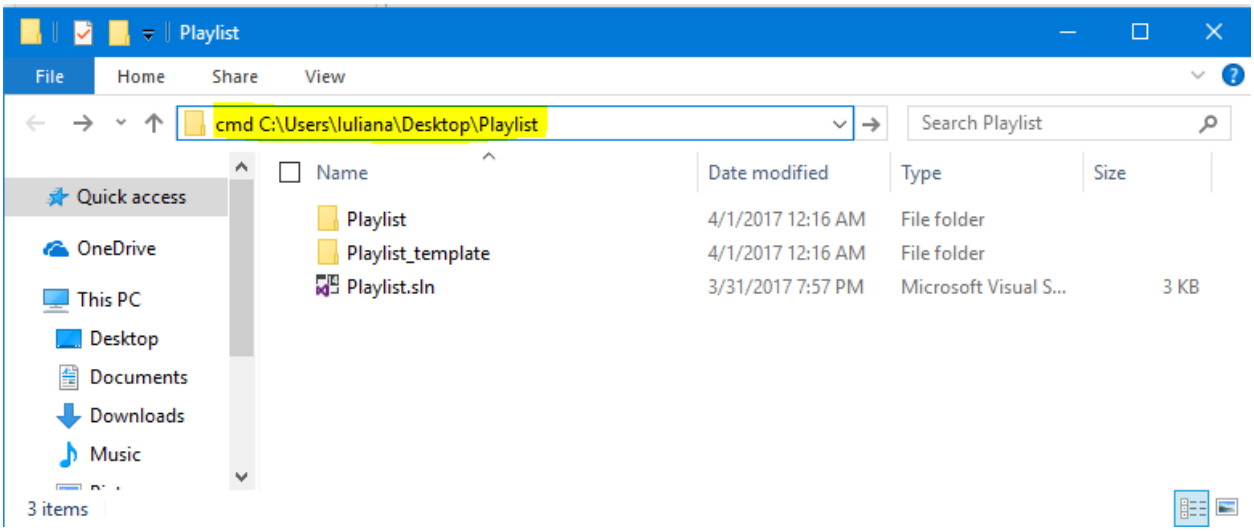
```
int main()
{
	Tests::testAll();

	/*Repository repo{};
	Controller ctrl{ repo };
	UI ui{ ctrl };
	ui.run();*/

	return 0;
}
```

3. In Visual Studio, go to Project Properties (right-click on the Project -> Properties) -> Linker -> Debugging -> in “Generate Debug Info”, select **Optimize for debugging (/DEBUG)**.



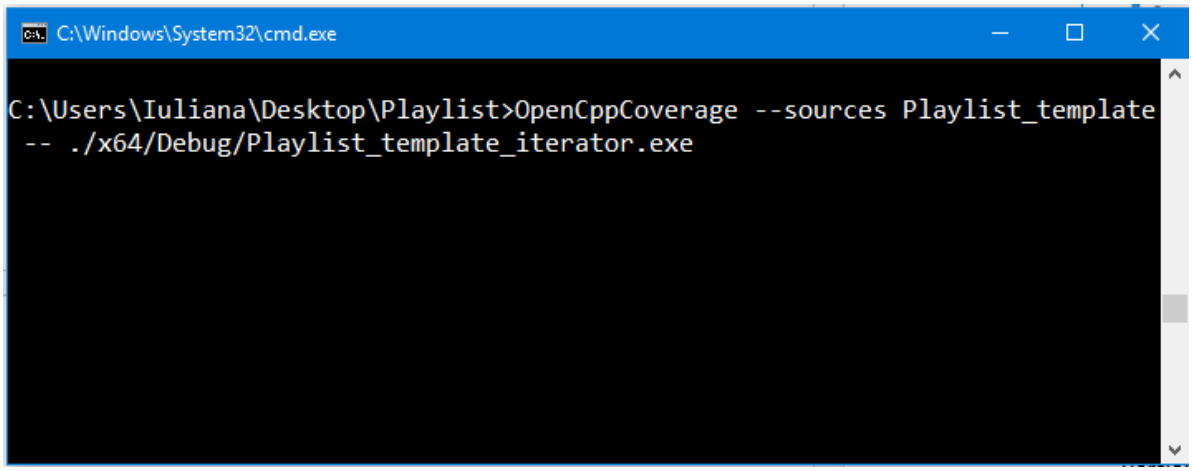
HOW TO GENERATE CODE COVERAGE DOCUMENT

1. Open a command prompt having the project directory as current directory. In Windows, you can type **cmd** in the *File Explorer Address Bar,* before the path*:*



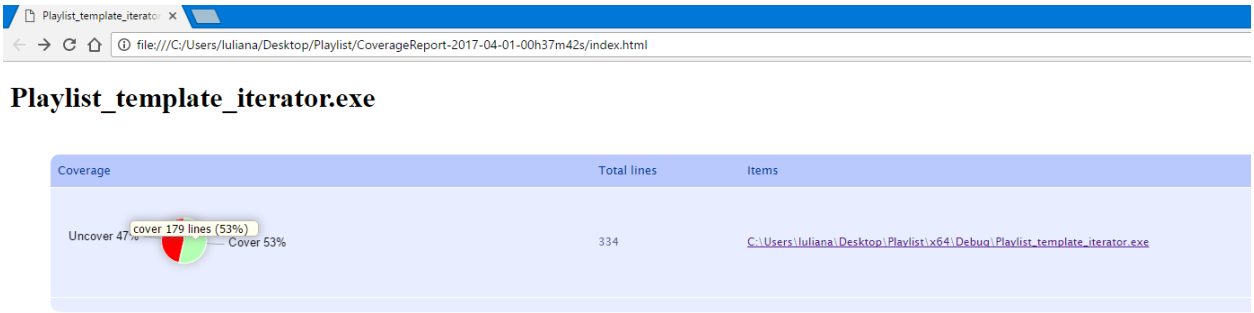
2. When the command prompt opens, run the following command:

   OpenCppCoverage --sources <*folder_containing_source_files*> -- <*path_towards_executable*>



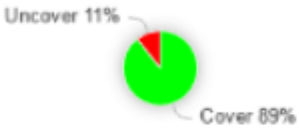
3. The executable will be run and then the OpenCppCoverage tool generates, in the current directory, an html report regarding the percentages of executed lines. This report will be called: CoverageReport-<*year*>-<*month*>-<*day*>-<*hour*>h<*minute*>m<*second*>s (e.g.: CoverageReport-2017-04-01-00h37m42s). A new such report will be generated each time the tool is run.

4. If you open the "index.html" file, you will see the coverage for the entire project:



5. When clicking on the link, you can see the coverage for each of the individual files in your project:

Playlist_template_iterator.exe

Coverage	Total lines	Items
	126	c:\users\iuliana\desktop\playlist\playlist_template\ui.cpp
	28	c:\users\iuliana\desktop\playlist\playlist_template\playlist.cpp
	57	c:\users\iuliana\desktop\playlist\playlist_template\dynamicvector.h
	20	c:\users\iuliana\desktop\playlist\playlist_template\controller.cpp
	3	c:\users\iuliana\desktop\playlist\playlist_template\controller.h
	5	c:\users\iuliana\desktop\playlist\playlist_template\main.cpp
	11	c:\users\iuliana\desktop\playlist\playlist_template\repository.cpp
	2	c:\users\iuliana\desktop\playlist\playlist_template\repository.h

6. Make sure you have at least 99% coverage for all your modules, except the UI. We need at least 99% coverage in our (rather simple) applications, as less than 99% would mean that a certain line of code has never been run (e.g. a one-line function, a special case in a function). In real applications, code coverage less than 99% is accepted.