

COL100 Assignment 7: Multiple Files

IInd Semester 2014-15

1. You are required to split the solution (program) to assignment 6 into multiple files.

Benefits:

1. Improves code organization
2. faster compilation of the program
3. Easier code reuse across different projects
4. Easier to split responsibilities when programming in teams (in future)

Tips:

1. Separate declarations from implementation
2. Move declarations into header (.h) files, and implementation into source files (.cpp)
3. You may create sub-directories like 'include' and 'src' and move header files into 'include' directory and source files into 'src' directory. Each of these directories can have other sub-directories within them.
 - i. Example directory structure
assign7 (this is the top level directory)
assign7/src/ (directory with source files)
assign7/include/ (directory with header files)
assign7/makefile (see instructions below)
4. Split the program based on high-level logical operation.
 - i. Example 1: encryption, decryption, and matrix operations can into separate files. The main function that ties all of this together can into another file.
 - ii. Example 2: encryption and decryption can be in one file, matrix and other utility operations can be another file, with main being in a separate file.
5. Use the 'make' utility to specify the compilation order of your files.
 - i. Compile each source file separately to get object (.o) files
 - ii. link the individual object files (.o) to get the final executable
 - iii. Read section 2.1, 2.2, 2.3 and 2.7 of the below link to implement a simple makefile

<https://www.gnu.org/software/make/manual/make.html#Introduction>

Submission instructions:

1. Delete all the temporary files that are generated during compilation (like object files, and the final executable). This is the equivalent of doing 'make clean'
2. compress the top-level directory and generate a single .zip file
3. Upload the zip file to the final submission system

https://10.237.20.241:1345/OnlineEvaluation/default/user/login?_next=/OnlineEvaluation/default/submit

Grading:

1. There are no separate test cases for this assignment. The test cases that are given out for Assignment 6 should continue to work for Assignment 7.
2. Marks will be given to the quality of organization of your code. The submissions where the splitting into multiple files has improved organization of the program will get higher marks. Clearly, there is no single way of splitting the program into multiple files.
3. Weightages are as follows
 - i. [necessary condition] Program should work correctly for some test cases of Assignment 6 (should have some additions into the given stub)
 - ii. [50%] Program split into multiple files but compilation error
 - iii. [80%] Program split into multiple files, and compiles successfully, but does not have a makefile
 - iv. [100%] program split into multiple files, compiles successfully, has a makefile