**ECE 3822: Software Tools FOr eNGINEERS**

# HOMEWORK No. 7: Classes

The goal of this assignment is to introduce you to the class construction in C++.

Create a text file that contains the names of 10 people you know in a simple text format:

File names.txt:

Smith, John

Smith, Mary

Doe, Jane

…

Create a C++ class, called NL for “Name List” that supports the following methods: (1) constructor and destructors; (2) debug (displays the current state of the class including its internal data); (3) read and write methods (e.g., read is able to read the above file and store the data in a character string array); (4) sort the data into alphabetical order (any sort approach, even brute force, is fine); (5) print the list to stdout in a ‘pretty’ format.

The driver program should support the following interface:

print\_list [–debug] [–sort] [-help] names.txt

Where “-debug” produces information about the status of the program as it is running (e.g., prints the name of every method called), “-sort” sorts the names into alphanetical order, and “-help” prints information about the program (e.g., what options are supported).

For example, the following command line:

print\_list –sort names.txt

should produce output something like this:

001: Doe, Jane

002: Smith, John

003: Smith, Mary

The –debug flag would show me the sequence of functions called, such as NL::Constructor, NL::read, NL::print, NL::~NL, etc. Debug flags are very useful when you want to be able to debug code without recompiling the program (such as when we are chasing memory bugs).

We will later revisit classes in Python and learn how to create object-oriented programs using Python’s support for classes.