Lynne Coblammers
EECS 665
Lab 2 Report
2015.09.01

1. How and why does '-DCORRECT' remove errors and warnings?

-DCORRECT is defining a macro called CORRECT. In pre-proc1.c, there is a check for whether CORRECT is defined. If so, it includes the libraries stdio.h and math.h, and if not, those libraries are not included. When they are not included, the program doesn't have access to definitions in those libraries, such as printf, so warnings and errors appear. However, when CORRECT is defined, they are included, allowing the linker to succeed in finding those definitions.

2. What does '-lm' do to resolve the error?

Using gcc with a -l flag allows you to specify libraries that the project depends on that are not standard in gcc. In this case, we're specifying that it depends on the math library, libm.so, which is specified using the flag -lm. Once the linker knows to search this library, it can find the definition for pow, resolving the error.

3. What has the linker done in 'a.out' compared to 'linker3.o'?

In linker3.o, there is no reference to the external symbols my_mul, foo, or printf. This is because those functions are external. Instead, at this point, the object code calls to an offset from main, which essentially jump to the next line of execution in main without calling the actual functions. However, once the linker has run, creating a.out, those symbols have references in the object dump because the job of the linker is to bring in those external symbols. Now, when those three functions are called in main, there are references to actual external symbols, foo, my_mul@plt, and print@plt, and new address values filled in for where to go for that call, as well as the actual definitions for those calls at those address offsets.