CMSI 284-01, -02

COMPUTER SYSTEMS ORGANIZATION/ SYSTEMS PROGRAMMING

Spring 2016

Assignment 0503a

First, some initial assembly language-only (well, *mostly* assembly language) programs.

Outcomes

This assignment will affect your proficiency measures for outcomes *2c*, *2d*, *3c* (for the last two programs), and *4a–4f*.

For Submission

Write the following assembly language programs. Some of you may experience *déjà vú*, and if you do, that is completely normal **:)**

- A program that "makes change" for a total number of cents provided as a lone argument: the program displays the number of quarters, dimes, nickels, and pennies needed (*make-change.asm*).
- A program that states whether or not a given year is a leap year, according to the current algorithm: the program accepts the year as a lone argument, then states whether or not that year is a leap year (*leap-year.asm*).
- Examine the list of 64-bit Linux system calls (you will find a decent number on the web) and pick two (2) system calls that you find interesting. Implement an assembly language program that invokes that system call and displays appropriate feedback (via the *write* system call, natch). Congratulations, you will have written a couple of Linux operating system commands!

In all cases, do make sure to handle bad or missing arguments. Argument-handling doesn't have to be elaborate, but the programs should at least never terminate abnormally.

Commit your work to version control under the folder *asm-intro*, using the given filenames.