CSCI 3232 Systems Software Assignment 5

Upload all your files to the correct dropbox folder in Folio before the deadline --- **11:30PM, Mar 2, Thursday, 2017.**

**Note: Make sure you have practiced all sample codes in slides and Folio’s example codes before you start this assignment.**

1. (20 points) Write a bash script **A5p1.sh** to (1) print out all command line arguments, one line for each argument; (2) print out all command line arguments in alphabetical order, one line for each argument. (When grading, no more than three command line arguments will be provided for your script.) For example, if your script is invoked as “**A5p1.sh c3 b2 a1**”, then it can print the following:

c3

b2

a1

After sorting in alphabetical order:

a1

b2

c3

1. (20 points) Write a bash script **A5p2.sh** to print out 28 equations, one line for each equation. Each of these equations should be of the form i\*j=k, where i is an integer from 1 through 4, j is an integer from 1 through 7 and k is the product of i and j. (For example, if i is 2 and j is 3, k should be 6.) You will print 28 different equations because the number of possible combinations of i and j is 4\*7=28. Your script should use loop to achieve the functionality. Do not define any functions in this script.
2. (20 points) Write a bash script **A5p3.sh** to redo problem 2. This time you need to define a function that takes two parameters a and b and prints out an equation of the form a\*b=c. The main part of your script should use loop and call the function you defined.
3. (40 points) Recall that in previous homework, you have written a C/C++ program that outputs a sequence of integers starting from the input supplied by the user on the command line and ending with 1 base on the rule f(x)=3x+1 if x is odd and f(x)=x/2 if x is even. Write a bash script **A5p4.sh** to call this C/C++ program with all integers from 25 through 40 on the command line. That is, you call your C/C++ program 16 times in your script **A5p4.sh** using a loop, each time supplying an integer between 25 and 40 on the command line for your C/C++ program. Make sure your 16 output lists of integers are clearly separated. Please also submit your C/C++ program source file together with a working makefile. You can hardcode your C/C++ program name in your **A5p4.sh** script. When grading, the TA will first type **make** and then invoke **A5p4.sh**.