CS 288 2018S Section 006
Homework 03

Due: At the beginning of class on Wednesday February 28th.

Using an IDE or Text Editor of your choice, create and save a UNIX Shell file for each problem given. Before submitting your solutions via Moodle, zip the shell scripts and name the archive, if your name is Harry Houdini, for example, HW3_HarryHoudini.zip. You may use gzip if that's more convenient.

1. Write a shell script, `renumber.sh`, that will rename all the files in a directory. The first argument is a base name, second argument is a file extension. If the script is run as:

   ```
   $ renumber.sh 25thAnniversary jpeg
   ```

   then the resulting files should have names like:

   ```
   25thAnniversary001.jpeg, 25thAnniversary002.jpeg, 25thAnniversary003.jpeg, etc.
   ```

   Before renaming a file, make sure that a file with the new name does not already exist. If one does, handle the exception appropriately.

2. Write a script, `bubble.sh`, which sorts a list of command-line arguments in descending order. For example, for this invocation:

   ```
   $ bubble.sh 7 2 3 9 -1
   ```

   Your program should print: `9 7 3 2 -1`
   - You must use the Bubble Sort algorithm
   - You may assume that the user will not enter more than 9 numbers.
   - Use only basic shell commands and array structure. In other words, don't use commands such as `sort` that can sort the numbers with little effort.

3. Write a Bash script, `count.sh`, which builds an array of counters for the files starting with a digit under a directory given as a command-line argument. For example, if there are 7 files starting with "0", and 3 files starting with "8", your script will print:

   ```
   0 7
   1 0
   2 0
   3 0
   4 0
   5 0
   6 0
   7 0
   8 3
   9 0
   ```