**ECE 3822: Engineering Computation II**

**Homework No. 3: Shell Scripts**

**Goal:** The goal of this homework is to introduce you to how to write a simple shellscript.

**Description:** The tasks are:

1. Create a list of all the \*.txt files in our example database, saving this to a text file. This should be a list 23002 long. Let’s assume this file, called filenames.txt, looks something like this:

/data/courses/ece\_3822/current/eeg\_reports/04\_tcp\_le\_a/031/00003100/s001\_2006\_07\_25/00003100\_s001.txt

/data/courses/ece\_3822/current/eeg\_reports/04\_tcp\_le\_a/030/00003010/s003\_2006\_07\_22/00003010\_s003.txt

/data/courses/ece\_3822/current/eeg\_reports/04\_tcp\_le\_a/030/00003089/s002\_2006\_07\_24/00003089\_s002.txt

/data/courses/ece\_3822/current/eeg\_reports/04\_tcp\_le\_a/030/00003097/s002\_2006\_07\_26/00003097\_s002.txt

/data/courses/ece\_3822/current/eeg\_reports/04\_tcp\_le\_a/057/00005791/s001\_2009\_01\_14/00005791\_s001.txt

1. Write a bash shellscript, called convert.sh, that takes a filename as its first argument, supports an option named “-help”, and converts this text file into a script that copies each file from one filename to another. This is specifically what you need to do:

(a) “convert.sh –help” or “convert.sh –help filenames.txt newdir” displays a help message describing how to use your program. This message should follow this format:

name: isip\_e

synopsis: isip\_e [options] files

descr: edits files by automatically invoking the proper editor

example: isip\_e -tool emacs file\_0.text file\_1.C file\_2.sh ...

options:

 -tool: sets the type of editor to be invoked (emacs, mule, etc.)

 -help: display this help message

arguments: standard tool arguments are passed to the tool

man page: none

(b) “convert.sh filenames.txt newdir” outputs the followings text (each cp command is one line):

cp /data/courses/ece\_3822/current/eeg\_reports/04\_tcp\_le\_a/031/00003100/s001\_2006\_07\_25/00003100\_s001.txt newdir/f00000000.txt

cp /data/courses/ece\_3822/current/eeg\_reports/04\_tcp\_le\_a/030/00003010/s003\_2006\_07\_22/00003010\_s003.txt newdir/f00000001.txt

...

Note that convert.sh does not actually copy the files, it just converts the filenames file to a sequence of commands that could be run as a script.

**Note that “-help” can appear anywhere on the command line after the command name and should result in the display of a help message (e.g., “convert.sh f.txt -help” should work).**

1. Next, repeat this by simply loading “filenames.txt” into a text editor of your choice, and using its advanced editing capabilities to directly create a new file with the same cp commands. I’d recommend you use the macro capability in emacs, but most editors support a similar function. Either way, you need to know how to build and execute macros in your editor.

The point of this assignment is that you are learning how to use Linux text processing tools to generate scripts that do useful things, such as clean up filenames. You can program many different applications in shell, but there are better programming environments for this, such as Python. Shell is useful when doing simple operating system type commands such as creating and copying files.