**COMP 2766: Introduction to Linux**

**Solutions to Practice Skills Exam**

***NOTE****: If you copy the command lines in this document and paste them onto a shell’s command line, they might not work properly. Certain characters, such as quotation marks and hyphens, will pose problems. Instead, type them.*

1. FRUIT=Apple
2. # date > ~/${FRUIT}\_pie\_is\_good.txt
3. head -1 /etc/rc.d/rc\* > ~/myout 2> ~/myerr
4. The cp command has three recursive switches, any one of which you may and must use when copying a directory.

# cp –r /var/spool/ ~root/myspool

# cp –R /var/spool/ ~root/myspool

# cp ––recursive /var/spool/ ~root/myspool

1. To determine which regular files in your present working directory can be edited by the other user/access class (a.k.a. the world):

# ls –l | grep ‘^-.......w’

1. You need to account for the fact that anything or nothing can appear before and/or after each of the two digits. So, a \* is needed before and after each of the two [0-9]’s.

# ls -d /etc/\*[0-9]\*[0-9]\*

1. # ln /etc/passwd mypasswd
2. # tail –n +4 /etc/inittab
3. In order to access a directory, its x permission is required. To list a directory’s contents, its r permission is required. With a default umask, any user who creates a directory will already have its r and x permissions set for others. The only step that really must be performed is allowing others to travel through the home directory to access the public directory.

# mkdir ~/public

# chmod 755 ~/public

# chmod o+x ~

1. To list a directory’s contents, its r permission is required, at minimum. (NOTE: To perform a long listing of a directory, both its r and x permissions are required.) To create files in a directory and to delete files from a directory, its w and x permissions are required. To restrict the preceding activities to only user root and group music, the directory’s permissions should be set to rwxrwx--- (770, in octal).

To prevent users other than root and the directory’s user owner from deleting other users’ files in a directory, the sticky bit must be set. For files that are created in a directory to be automatically owned by a group, the SGID bit must be set and the directory must be owned by that group. Finally, members of that group must be allowed to travel through the home directory to access the project directory.

# mkdir ~/project

# chmod 770 ~/project

# chmod o+t ~/project

# chgrp music ~/project

# chmod g+s ~/project

# chmod o+x ~

1. Before attempting any file globbing, always enter this command line to have the shell respect case:

# export LC\_COLLATE=C

# ls /etc/[aeiou]\*

1. Both of these two command lines will work:

# egrep -c ‘^[aeiou]...[aeiou]$’ /usr/share/dict/words > ~/vowels

# egrep ‘^[aeiou]...[aeiou]$’ /usr/share/dict/words | wc –l > ~/vowels

1. All three of these command lines will work:

# egrep ‘^[aeiouAEIOU][aeiouAEIOU].\*’ /usr/share/dict/words

# egrep –i ‘^[aeiou][aeiou].\*’ /usr/share/dict/words

# egrep –i ‘^[aeiou]{2,}’ /usr/share/dict/words

1. # cat /dev/zero > /dev/null &
2. Both of the following command lines will work. To determine a backgrounded process’ job number, use the jobs or ps command with the appropriate switch(es).

# kill *PIDofThecatProcess*

# kill *%jobNumberofThecatProcess*

1. # groupadd marketing

# useradd –G marketing cathy

1. The sort commands switches can be combined, but only in a certain fashion. For example, -nt or –nk. Instead of using quotation marks around the pipe delimiter character, a backslash could be used in front of the pipe to escape it (that is, tell the shell to ignore the special meaning of the pipe). Both techniques are used below:

# sort –t‘|’ –k6 –n emp.lst | tail -1 | cut –f2 –d\|

1. Both of these command lines work:

# egrep ‘true?man’ emp.lst

# egrep ‘truman|trueman’ emp.lst

1. All of these command lines work:

echo Today is `date`

echo Today is $(date)

echo “Today is `date`”

echo “Today is $(date)”

1. Either of these two command lines work:

# egrep ‘^linux’ /etc/group | cut –f4 –d:

# getent group linux

1. /etc/sudoers defines commands that users/groups may execute on certain hosts. Never modify that file by loading it into an editor. Instead, follow these instructions:
   1. enter the visudo command
   2. press either lowercase i or uppercase I to enter insert mode
   3. page down to the commands section near the bottom of the file
   4. insert the following line:

student ALL=(ALL) /usr/bin/cat /var/log/messages

NOTE: Use the existing command lines in the file as a template, in case you forget.

* 1. press Esc to exit insert mode
  2. type :x or :wq to write your changes to disk and quit; if you have made mistakes, visudo will flag them; if you do not know what your mistakes are, close the tab or terminal window to exit.