**eInfochips Training & Research Academy**

**LINUX Lab-Level 0**

**Exercise 1**

**QUES 1. Enter these commands at the UNIX prompt, and try to interpret the output. Ask questions and don't be afraid to experiment (as a normal user you cannot do much harm):**

echo hello world

passwd

date

hostname

arch

uname a

dmesg | more

uptime

who am i

who

id

last

finger

top

echo $SHELL

man ls (you may need to press q to quit)

man who (you may need to press q to quit)

clear

cal 2000

cal 9 1752 (do you notice anything unusual?)

bc (type quit or press Ctrl+d to quit)

Try echo 4+5 and echo 5+4 | bc

time sleep 5

history

**Exercise 2**

**QUES 1. Try the following command sequence:**

cd

pwd

ls al

cd .

pwd

cd ..

pwd

ls al

cd ..

pwd

ls al

cd ..

pwd

cd /etc

ls al |more

cat passwd

cd

pwd

**QUES 2. (a) Change to the home directory of another user directly, using cd ~username.**

**(b) Change back into your home directory.**

**QUES 3. (a) Make subdirectories called work and play.**

**(b) Delete the subdirectory called work.**

**(c) Copy the file /etc/passwd into your home directory.**

**(d) Move it into the subdirectory play.**

**QUES 4. What is the difference between Hard link and Symbolic link.**

**QUES 5. Change into subdirectory play and create a symbolic link called terminal that points to** your **pts device. What happens if you try to make a hard link to the pts device?**

**QUES 6. What is the difference between listing the contents of directory play with ls l and ls L?**

**QUES 7. Create a file called hello.txt that contains the words "hello world". Can you use cp command, by using "terminal" as the source file to achieve the same effect?**

**QUES 8. Copy hello.txt to terminal. What happens?**

**QUES 10. How would you create and then delete a file called "$SHELL"? Try it.**

**QUES 13. What is the output of the command: echo {con,pre}{sent,fer}{s,ed}? Now, from your home directory, copy /etc/passwd and /etc/group into your home directory in one command given that you can only type /etc once.**

**QUES 14. Still in your home directory, copy the entire directory play to a directory called work, preserving the symbolic link.**

**QUES 15. Delete the work directory and its contents with one command. Accept no Complaints or queries.**

**QUES 16. Change into a directory that does not belong to you and try to delete all the files (avoid /proc or /dev, just in case!)**

**QUES 17. Experiment with different switches of the following commands:**

1. **ls**
2. **cp**
3. **mkdir**
4. **rmdir**
5. **ln**

**Exercise 3**

**1 Describe three different ways of setting the permissions on a file or directory to rrr. Create a file and see if this works.**

**2 Type umask 000 and then create a file called world.txt containing the words hello world. Look at the permissions on the file. What's happened? Now type umask 022 and create a file called world2.txt. When might this feature be useful?**

**3 Use find to display the names of all files in the /home subdirectory tree. Can you do this without displaying errors for files you can't read?**

**4 Use find to display the names of all files in the system that are bigger than 1MB.**

**5 Use ‘find and file’ to display all files in the /home subdirectory tree, as well as a guess at what sort of a file they are. Do this in two different ways.**

**6 Use grep to print the line in /etc/passwd that contains your login details.**

**7 Use find and grep and sort to display a sorted list of all files in the /home subdirectory tree that contain the word hello somewhere inside them.**

**8 Use locate to find all filenames that contain the word emacs. Can you combine this with grep to avoid displaying all filenames containing the word lib?**

**9 Archive the contents of your home directory (including any subdirectories) using tar and cpio. Compress the tar archive with compress, and the cpio archive with gzip. Now extract their**

**contents.**

**10 On Linux systems, the file /dev/urandom is a constantly generated random stream of characters. Can you use this file with ‘od’ to print out a random decimal number?**

**11 Type mount (with no parameters) and try to interpret the output.**

**Exercise 4**

**GREP:**

1. **Write a command to print the lines that has the the pattern "july" in all the files in a particular directory?**
2. **Write a command to print the lines that has the word "july" in all the files in a directory and also suppress the filename in the output.**
3. **Write a command to print the lines that has the word "july" while ignoring the case.**
4. **When you use a single file as input to the grep command to search for a pattern, it won't print the filename in the output. Now write a grep command to print the filename in the output without using the '-H' option.**
5. **Write a Unix command to display the lines in a file that do not contain the word "july"?**
6. **Write a command to print the file names in a directory that has the word "july"?**
7. **Write a command to print the file names in a directory that does not contain the word "july"?**
8. **Write a command to print the line numbers along with the line that has the word "july"?**
9. **Write a command to print the lines that starts with the word "start"?**
10. **Write a command to print the lines which end with the word "end"?**
11. **Write a command to select only those lines containing "july" as a whole word?**
12. **Let’s say that you have an entire folder full of music files in a bunch of different formats. You want to find all of the \*.mp3 files from the artist JayZ, but you don’t want any of the remixed tracks.**
13. **(a) Display Number of Lines Before or After Search String**

**(b) Prints Number of Lines Around Match**

**(c) Count Number of Matches**

**(d) Search a string Recursively in all Directories**

1. **Try Egrep, Zgrep, and Fgrep.**
2. **Try following commands with all switches:**
   1. **Sort**
   2. **Alias**
3. **Try less, more and pg.**