**Lab 2**

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**Goals: To know and apply file and search commands in a UNIX environment. To understand structures in C.**

**Suggested Reading:**

Introduction to UNIX: Lecture Three, http://www.doc.ic.ac.uk/~wjk/UnixIntro/Lecture3.html

Shell Metacharacters: <http://www.sal.ksu.edu/faculty/tim/unix_sg/shell/metachar.html>

Howto: C Programming with Directories on Linux by HIMANSHU ARORA on JUNE 15, 2012 <http://www.thegeekstuff.com/2012/06/c-directory/>

Expert C Programming: Deep C Secterts by Peter Van der Linden. Available in the library and digital library.

**Activity:**

1. Use find to display the names of all files in the system that are bigger than 1MB. What command did you use?

**find $HOME -size +1M**

2. Compile the program hworld.c. Use file to check what type of file is

**hworld.c: C source, ASCII text**

**hworld executable: ELF 64-bit LSB shared object**

**countries ASCII text**

3. Use diff to compare the files names and names2. Explain the output.

**From column 1 to 3 in the first file is the same as the columns 8 to 10 in the second file. And from the 15th and 16th column it’s text that doesn’t appear in the second column.**

4. Use sort to show the file countries sorted alphabetically by Country. How did you input the command?

**sort -k2 counties**

5. Use both head and tail to display countries ranked 3 to 6. How did you input the commands?

**(tail +4 | head -4) < countries**

6.Use grep to isolate the line in /etc/passwd that contains your login details. If you are using the lab computer the user is user01. What command did you use?

**grep -F "mgonco95" /etc/passwd**

7. If a file has permissions r--r--r--, what does it mean? How would you set the permissions r--r--r-- to the file countries?

**Read-only**

**chmod 444 countries**

8. How would you modify an executable permissions to avoid other users to execute it?

**chmod 444 a.out**

9. How would you modify the permissions on your home directory to make it completely private?.

**chmod 750 home/user**

10. 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?

**Umask 000**

**-rwxrwxrwx, meaning it has all the permissions to execute, it should have given no permissions to the file, but it didn’t worked.**

**Umask 022**

**It should have given write and execution permissions to the file, but it didn’t worked also**

11. Create a struc that represents a student (name, matriculation number, program, semester). Then create a function that receives a pointer to that struct and prints it. In your main method create 3 Students and then print their information using the method you created.

12. Comment the code p.c. Which UNIX command does it resembles?

**To the compile command to specify the nme in which you want the compiler to compile your code**

\*some exercises taken from http://www.doc.ic.ac.uk/~wjk/UnixIntro/Exercise3.html. If you finish early try the others!

Add to every source file the following comment at top, replacing the info between < >:

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

<Name of the Student>:<Student Number>

<Name of the Student>:<Student Number>

For the other questions that are not source code, upload a report(preferably in pdf format) answering the questions in the activity. Upload your report to Lab2 Activity in Google Classroom.