HANDS-ON 1

Task	Hint
1. Open the VM and play Linux (Ubuntu) Check the Applications menu Run the command line	 (Show applications -> Terminal)

2. Identify if you are a normal user or a superuser
 	
Try to switch to root (superuser) and report what happens
	`whoami`
	
	`su`

3. Identify your shell	`echo $SHELL`

4. Check the kernel version
 	
Check the system distribution
 	
Check the glibc version
	`uname -r`
	
	`uname -a`
	
	`ls -l /lib/i386-linux-gnu/libc.so*`

HANDS-ON 2

Task	Hint
Start Terminal	
1. Display the list of your files and directories	`ls`

2. Check more options about the ls command and	`ls --help`
	`man ls`
	`info ls`

display all files	`ls -a`
3. Clear the screen	`clear`

4. Compare the information given by different kinds of help about pwd command	`whatis pwd`
	`help pwd`
	`man pwd`
	`info pwd`

5. Go to the Downloads directory	`cd Downloads`
List the files in it	`ls`
Go to Desktop directory	`cd ../Desktop`
List the files	`ls`
Go back to Downloads directory	`cd ../Downloads` (or `cd –`)
Go back to your home directory	`cd ~` `cd`
6. Review a few used commands with arrow and compare with output from history	`history`
7. Print the date on the screen	`date`
Save date into date.txt file	`date > date.txt`
Add another line with date into that file	`date >> date.txt`
8. Exit the shell	`exit`
9. Start terminal again	
print the current directory	`pwd`

go to the Desktop directory
 	
print the current directory
 	
go back to your home directory
 	
print the current directory
 	
go to the /tmp directory
 	
print the current directory
 	
go back to your home directory using the absolute path
 	
list all the directories starting from root directory
try to guess what kind of files can be stored there
	`cd Desktop`
	
	`pwd`
	
	`cd ..` (or `cd -` or `cd ~`)
	
	`pwd`
	
	`cd /tmp`
	
	`pwd`
	
	`cd /home/student`
	
	`ls /`
	
	(see Linux tree in slides)

10. Display more information about date.txt file	`ls -l d*` `stat date.txt`

HANDS-ON 3

Task	Hint
Start the Terminal	
1. Make a directory called CourseLinux in your home directory	`mkdir CourseLinux`
• Copy the directory /usr/share/icons to the created 'CourseLinux' directory	`cp -r -v -i /usr/share/icons/ ./CourseLinux`
• Make a directory called test in CourseLinux directory	`mkdir CourseLinux/test`
• Make a directory called test1 in CourseLinux directory	`mkdir CourseLinux/test1`
• Rename test1 into test2	`mv CourseLinux/test1 CourseLinux/test2`
• Copy the files from directory /usr/share/icons to the created 'CourseLinux/test' directory	`cp -r -v -i /usr/share/icons/* CourseLinux/test`
• Change the filename of photos.svg to fl.svg in CourseLinux/test directory	`mv CourseLinux/test/unity-icon-theme/apps/128/photos.svg CourseLinux/test/fl.svg`
• Copy the file fl.svg in CourseLinux/test into fl2.svg in your home directory	`cp -v -i CourseLinux/test/fl.svg fl2.svg`
• Display the new file, close the display	`display fl2.svg`
• Create a symbolic link called mylink2file to CourseLinux/test/fl.svg file in your home directory	`ln -s CourseLinux/test/fl.svg mylink2file`
• Display mylink2file, close the display	`display mylink2file` (do not forget to close the display)
• Remove CourseLinux/test/fl.svg	`rm –i CourseLinux/test/fl.svg`
• Try to display again mylink2file and report the problem	`display mylink2file` (do not forget to close the display)
2. Clear the screen	`clear`
• Go to CourseLinux directory	`cd CourseLinux`

• Download the file https://raw.githubusercontent.com/hpcleuven/Linux-intro/master/tabel.dat and https://raw.githubusercontent.com/hpcleuven/Linux-intro/master/matstats.log
•
• Show the content of the file tabel.dat and matstats.log
• Show the last part and the first part of matstat.log (show 30 lines)
• Check if the patterns ardaa and ardbb appear in the file matstats.log
• List the files of the directory in less
• Check if the file tabel.dat is in the list
	`wget https://raw.githubusercontent.com/hpcleuven/Linux-intro/master/tabel.dat`
	
	`wget https://raw.githubusercontent.com/hpcleuven/Linux-intro/master/matstats.log`
	
	`cat tabel.dat` (or `less tabel.dat` or `more tabel.dat`)
	
	`less matstats.log`
	(or `more matstats.log`)
	
	`tail -30 matstats.log`
	`head matstats.log`
	
	`grep ardaa matstats.log`
	`grep ardbb matstats.log`
	
	`ls -al | less`
	
	`ls -al | grep tabel.dat`

3. Create a file called test4edit
 	
Edit the file with Gedit, nano, vi editors
	`touch test4edit`
	
	`gedit test4edit`
	`nano test4edit`
	`vi test4edit`

HANDS-ON 4

Task	Hint
Start the Terminal	
1. Show the path of gcc command	`which gcc`
• Check the path of libraries for gcc command	`whereis gcc|grep lib`
• Display the current user	`whoami`
• Display the sentence “I like Linux” with “I” removed and letters converted into capital letters	`echo "I like Linux" | tr -d 'I'|tr a-z A-Z`
• Run the command line calculator and check the result of 1/2 • Do the same but display 2 digits	`bc` within bc type `1/2` (enter will show the result) change the display format with `scale=2` (confirm with enter) type again `1/2` (enter will display the correct value) to exit bc type `quit`
• Save date to file date.txt	`date > date.txt`
• Add another line displaying the date into date.txt file	`date >> date.txt`
• Copy the date.txt into date1.txt file	`cp date.txt date1.txt`
• Add the text “I like Linux” to date1.txt file	`echo "I like Linux" >> date1.txt`
• Add the text “And I do not” to date.txt file	`echo "And I do not" >> date.txt`
• Display the information about changes between date.txt and date1.txt files	`diff date.txt date1.txt`
• Check the disk usage of CourseLinux directory	`du -kah CourseLinux`
• Count words and lines in date.txt file	`wc date.txt`

2. Clear the screen	`clear`
• Go to CourseLinux directory	`cd ~/CourseLinux`
• Check if you have icons directory there	`ls ico*`
• Archive the centos-logos directory	`tar -cvf ico.tar icons/`
• Archive and gzip the centos-logos directory	`tar -czvf ico.tar.gz icons/` `mkdir newtest`

• Create a new directory newtest under CourseLinux and unpack the archive into it	`cd newtest`
	`cp ../ico.tar.gz  .`
	`tar -xzvf ico.tar.gz` (or `tar -xvf ico.tar`)

3. Go to 'CourseLinux' directory	`cd ~/CourseLinux`

• Create a directory 'testfiles', create in it a file 'file1' containing a few numbers	`mkdir testfiles`
	`cd testfiles`
	`touch file1`
	`gedit file1`

• Copy file1 into file2, remove the user write permission to file2, edit file2, print the files and permissions in testfiles directory	`cp file1 file2`
	`chmod u-w file2`
	`ls -la`

• Try to edit file2 and add some numbers. Does it work?	`gedit file2`

Change the permissions of the directory 'testfiles': remove write access for the user, print the files and permissions in the current directory	`cd ..`
	`chmod u-w testfiles`
	`ls -la`

• Try to copy file1 in that directory to a file file3. What happens?	`cp testfiles/file1 testfiles/file3`
• Remove read all the access to testfiles for the others, print the files and permissions in the current directory	`chmod o-rwx testfiles` `ls -la`
• Try to list the files in testfiles directory.	`ls testfiles`
• Remove read access for the user for testfiles directory, print the files and permissions in the current directory	`chmod u-r testfiles` `ls -la`

• Try to list the files in testfiles directory. What happens?
 	
• Go to the testfiles directory and go back one level up
 	
• Remove read access for the user for testfiles directory, print the files and permissions in the current directory
 	
• Try to go to the testfiles directory. What happens?
	`ls testfiles`
	
	`cd testfiles`
	`cd ..`
	
	`chmod u-x testfiles`
	`ls -la`
	
	`cd testfiles`

4. Clear the screen
 	
• Check the processes running
 	
• Start the gedit editor (from the command line)
 	
• Open a second terminal
 	
• Search there for the process id of the gedit editor
 	
• Kill the editor
 	
• Start the gedit editor in background
	`clear`
	
	`ps -aux`
	
	`gedit`
	
	in a new terminal:
	`ps -u student | grep gedit`
	
	`kill <pid> (killall gedit)`
	
	`gedit &`