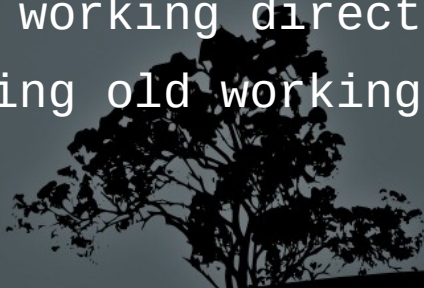
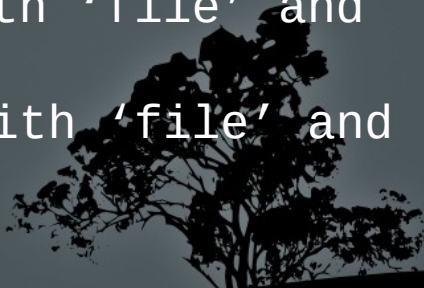


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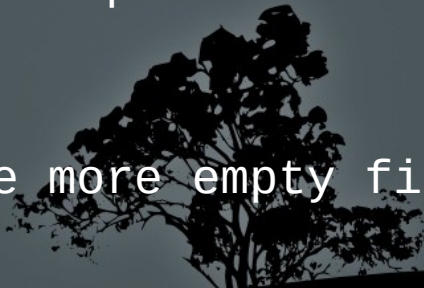
* Login into your Lab environment

- `$ cd Lab3`
 - `$ pwd # print working directory`
 - `$ ls # show contents of working directory`
 - `$ ls -l # same with long listing format`
 - `$ ls -la # show hidden files as well`
 - `$ mkdir dir1/dir2 dir3/dir4 # what's wrong here?`
 - `$ mkdir -p dir1/dir2 dir3/dir4 # create directory hierarchy`
 - `$ ls -la # list content anew`
 - `$ cd dir1/dir2 # change into dir2`
 - `$ pwd # print working directory`
 - `$ echo $PWD # environment variable showing working directory`
 - `$ echo $OLDPWD # environment variable showing old working directory`
- 

Lesson 3 – Lab

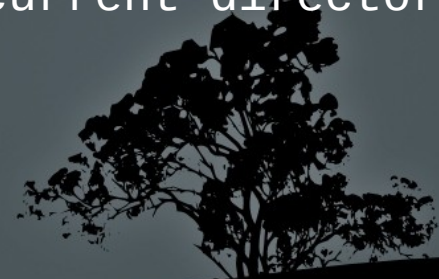
- `$ touch fileone filetwo filethree fileA # create some empty files`
 - `$ ls -la # show contents`
 - `$ date # show date`
 - `$ ls file* # list all files starting with 'file'`
 - `$ ls filet* # list all files starting with 'filet'`
 - `$ ls filet?? # list all files starting with 'filet' and followed by exactly 2 characters`
 - `$ ls file{one,two} # show fileone and filetwo`
 - `$ touch file1 file2 file3 file11 file22 # create some more empty files`
 - `$ ls file[a-z]* # display files starting with 'file' and followed by an alpha character`
 - `$ ls file[0-9] # display files starting with 'file' and followed by a single digit`
 - `$ ls file[0-9]* # display files starting with 'file' and followed by a digit`
- 

Lesson 3 – Lab

- `$ cd ../../ # go two directories back`
 - `$ pwd # verify where we are working`
 - `$ ls -R # recursive listing`
 - `$ ls -lR # recursive long listing`
 - `$ cd - # go back to the previous working directory ($OLDPWD)`
 - `$ pwd # verify where we are working`
 - `$ stat file[o,t]* > dates-before.txt # save the stats for the selected files`
 - `$ touch file[o,t]* # change the dates of the selected files`
 - `$ stat file[o,t]* > dates-after.txt # save the new stats for the selected files`
 - `$ cat dates-before.txt dates-after.txt # compare the previous and new stats`
 - `$ paste dates-before.txt dates-after.txt # compare the previous and new stats side by side`
 - `$ cd dir3 ; pwd # change to dir3; verify`
 - `$ touch dir4/fileA dir4/fileB # create some more empty files`
- 

Lesson 3 – Lab

- `$ rmdir dir4 # try to remove dir4. Did it work?`
- `$ rm dir4/* # remove the contents of dir4`
- `$ rmdir dir4 # remove dir4. Did it work?`
- `$ mkdir dir4 # create a new dir4`
- `$ touch dir4/fileA dir4/fileB # create some new empty files`
- `$ rm -rf dir4 #(rm -Rf dir4) delete dir4 recursively`
- `$ cp -av ../dir1 . # copy dir1 and contents from parent to current recursively`
- `$ ls -lR # long listing recursively`
- `$ stat dir1/* # show stats of dir1 contents`
- `$ mv dir1 dir4 # rename dir1 to dir4`
- `$ stat dir4/* # show stats of dir4 contents`
- `$ mv dir4/* . # move contents of dir4 to current directory`
- `$ ls -lR # long listing recursively`



Lesson 3 – Lab

- `$ stat *` # show stats for all contents of working directory
- `$ mv -i ../dir1/dir2/* .` # reply "y"
- `$ stat *` # show stats for all contents of working directory again
- `$ ls -la ../dir1/dir2` # show contents of dir2
- `$ ls -FR` # list classes recursively
- `$ ls -F /bin` # list classes of /bin
- `$ ls -F /dev | less` # list classes of /dev
- `$ ls -FR /var/run | less` list classes of /var/run
- `$ touch -t 197001010000 fileA` # go back in time
- `$ ls -l fileA ; stat fileA` # time travel is possible!
- `$ file *` # show type of all files in working directory
- `$ cd ..` # go to parent directory
- `$ file *` # show type of all files in the new working directory



Lesson 3 – Lab

- `$ dd if=/etc/fstab of=fstab.mod conv=ucase # convert to upper case`
- `$ paste -d\| /etc/fstab fstab.mod # compare the two files`
- `$ find . # find everything in the working directory`
- `$ find dir3 -ctime +15 # find files older than 15 days`
- `$ find dir3 -ctime +15 -delete # delete files older than 15d`
- `$ find /usr/share -type f -exec file {} \; # execute `file` on all normal files`
- `$ ls -lh # display a long listing in human readable form`
- `$ gzip example.odt # compress file example.odt`
- `$ ls -lh *.odt* # compare the size of the two files`
- `$ ls . | cpio -ov > backup.cpio # archive current directory`
- `$ find /etc | cpio -ov > etc.cpio # archive /etc`
- `$ mkdir new-etc ; cd new-etc # create a new directory`
- `$ cpio -iv < ../etc.cpio # extract /etc to the new directory`



Lesson 3 – Lab

- `$ ls -lhR ; pwd # list everything recursively`
- `$ rm -fr * # remove everything in the working directory!`
- `$ tar cvf backup.tar /etc /boot /var # archive three directories (/etc /boot /var)`
- `$ gzip backup.tar # compress archive`
- `$ tar cvzf backup2.tar.gz /etc /boot /var # archive and compress using gzip`
- `$ tar cvjf backup3.tar.bz2 /etc /boot /var # archive and compress using bzip2`
- `$ tar cvJf backup4.tar.xz /etc /boot /var # archive and compress using xz`
- `$ ls -lh # compare the size of the three archives`
- `$ tar tvzf backup.tar.gz # display the contents of the archive`
- `$ tar xvzf backup.tar.gz # extract the archive in the working directory`

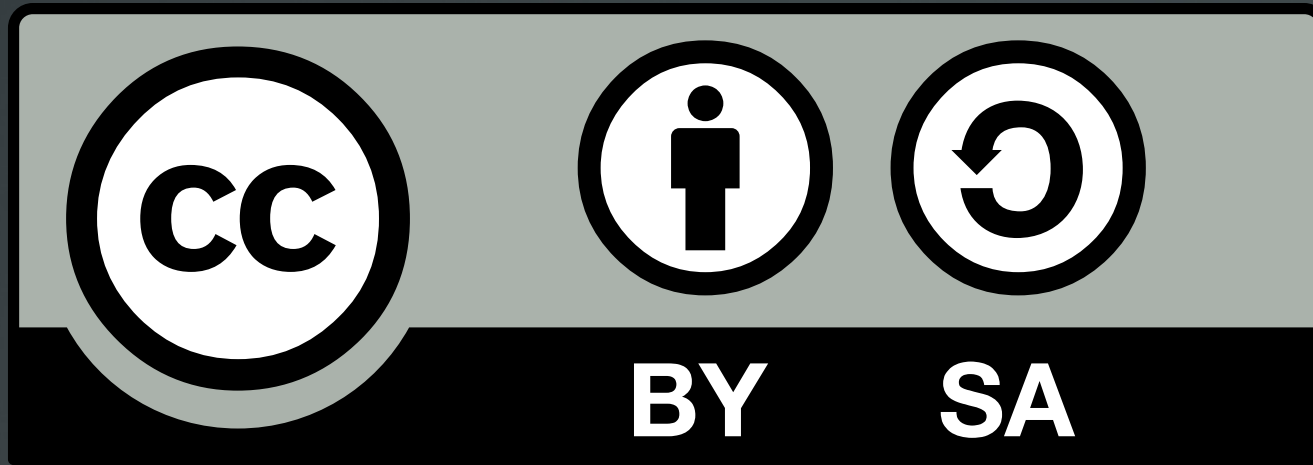


Lesson 3 – Lab

- `$ mkdir backup2 backup3 backup4 # create three backup directories`
- `$ time tar xvzf backup2.tar.gz -C backup2 # calculate the time needed to gzip to extract`
- `$ time tar xvjf backup3.tar.bz2 -C backup3 # calculate the time needed to bzip2 to extract`
- `$ time tar xvJf backup4.tar.xz -C backup4 # calculate the time needed to xz to extract`
- `$ ls -lR backup`



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