Unix/Linux Tutorial for Beginners
Session VI – Find files, file permissions & compresssion

Mandatory exercises

1. Which command lists all the files from your home directory having '.fa' as file ending?

   (a) search . '.fa'

   (b) find ~ -name '*.fa'

   (c) find ~ -name '.fa'

   (d) find /home '.fa'

2. Consider the following command:

```
$ find . -name '*.txt' | wc -l | sort -n
```

   What does this command do? What is its output?

   (a) The **find** command finds all files ending with '*.txt' in the user's home directory. The **wc -l** returns the total amount of lines in each files found by the previous command. The command **sort -n** sorts numerically the output of the **wc** command. The output of this script is a list of numerically sorted files.

   (b) The **find** command finds all files ending with '*.txt' in the current working directory. The **wc -l** returns the total amount of found files. The command **sort -n** sorts numerically the output of the **wc** command. The output of this script is the total number of files which were found.

   (c) The **find** command finds all files ending with '*.txt' in the current working directory. The **wc -l** returns the total amount of found files. The command **sort -n** sorts numerically the output of the **wc** command. The output of this script is a numerically sorted list of files.

3. Which argument can be used together with the command find to limit the search within the current working directory?

   (a) -current

(b) -maxdepth 1

(c) -local

4. Assuming you are interested in finding all files which contain the word 'rose' (case insensitive) in their name and end with '.txt' in the folder ~/data. Which commands do not return the desired answer?

   (a) find ~/data -type f -name '*txt' -and -name '*rose*'

   (b) find ~/data -type f -name '*txt' -and -iname '*rose*'

   (c) find ~ -iname '*rose*'

5. There are two types of compression known. How are they called?

   (a) the less & more compression

   (b) the chunk & press compression

   (c) the lossless & lossy compression

6. What does the flag -d mean in combination with gzip or bzip2?

   (a) compress only directories

   (b) decompression

   (c) delete the files after compression

7. Change directory permissions of ~/myLinuxProject so that only you and your group can read, write, and execute to it. Which commands deliver the correct answer?

   (a) change -R o-rwx ~/myLinuxProject

   (b) chmod -R u+rwx,g+rwx,o-rwx ~/myLinuxProject

   (c) chown -R a-rwx ~/myLinuxProject

   (d) chmod -R 770 ~/myLinuxProject

8. The long directory listing reveals the following entry:

```
$ ls -l
-rw-rw-r--  1 duck duck  872850  6. Mar 2016  linux_teaching.tar.bz2
```

   What can be told about this entry?

   (a) It is actually a directory.

   (b) All have read, write, and execute permissions.

   (c) Everyone (other) has only read permissions.

   (d) The owner and the group have the same permissions: read and write.

9. Which permissions are granted for the owner, group, and others if you set the permissions of a file as follows:

```
$ chmod 644 README.info
```

(a) owner: read+write, group: read, other: read

(b) owner: read+write+execute, group: execute, other: read+write

(c) owner: read+execute, group: write, other: execute

Optional exercises

1. The file my_executable.o has set the permissions to read and write for the owner, while permissions for the group and others are set to read only.

```
$ ls -l my_executable.o
-rw-r- -r- -   1   duck   duck   my_executable.o
```

Which commands change the permissions so, that the user has read, write and execute permissions, the group has read and execute permissions, and others have no permissions?

(a) chmod ug+wxo-r my_executable.o

(b) chmod u+wx,g+x,o-r my_executable.o

(c) chmod 750 my_executable.o

2. Create a new empty file named permissions.txt. Use ls -l permissions.txt to check the permissions of this file. Which permissions has the file? Use chmod with either symbolic or numeric permissions to change the permissions of this file as described in the table below. Use ls -l to check your success. It's enough to insert only the command without the filename in the e-learning system, e.g. 'chmod a+x'. The changes should be done incrementally, i.e. from the state of the file after the last change.

required permissions	command needed
rwxrwxrwx	
rwxrwxr-x	
rwxr-xr-x	
r-x------	
r--r-----	
rw-r--r--	
r--r--r--	
rw-rw-rw-	
rwx------	

3. Create a directory named public_html. Verify the set permissions. Group and others should be able only to read and execute on the public_html directory. Change the permissions if necessary. Which commands have you used?

(a) mkdir public_html **and** chmod o+rx public_html **and** ls -ld public_html

(b) mkdir public_html **and** ls -ld public_html **and** chmod g-w public_html **and** ls -ld public_html

(c) dirmake public_html **and** chmod g+rx public_html **and** ls -ld public_html

4. Use touch to create an empty file named index.html in the public_html directory. Allow group and others to be able to write all files in the public_html directory. Which commands have you used?

   (a) mkfile public_html/index.html **and** chmod g+w public_html/* **and** ls -l public_html/*

   (b) create public_html/index.html **and** chmod u+X public_html/* **and** ls -l public_html/*

   (c) touch public_html/index.html **and** chmod a+w public_html/* **and** ls -l public_html/*

   (d) touch public_html/index.html **and** chmod ugo+w public_html/* **and** ls -l public_html/*

Exercises are in part derived by material from ©Software Carpentry (`http://software-carpentry.org`, license: CC BY 4.0) that was adapted from me for this course. Another part is from a BILS course given by Martin Dahlö and used here by his kind agreement. Remaining exercises by M. Martis.