Exercises

1. Search all sequences containing "Loxondota" in `/home/student/lorem.txt`
   Flag : BC{GREP_ME_LOREM_FL4G}

2. Copy the file /etc/passwd to your home directory. Display the line starting with `student` name.
   Your commands : cp /etc/passwd ~/passwd_copy
   grep '^student:' ~/passwd_copy

3. Display the lines in the passwd file starting with login names of 3 or 4 characters.
   Your commands : grep -E '^[a-zA-Z0-9]{3,4}:' /etc/passwd

4. In the file `/home/student/sample.txt` how many different values are there in the first column? in the second?
   Your response : 8
   Your command : awk '{print $1}' /home/student/sample.txt | sort | uniq | wc -l

5. In the file `/home/student/sample.txt` sort the values in the second column by frequency of occurrence. (uniq -c can be useful)
   Your response : 8
   Your command : awk '{print $2}' /home/student/sample.txt | sort | uniq -c | sort -nr

6. In the file `/home/student/iris.data` Change the column separator (comma) to tab (make sure that the changes are applied to the file)
   Your response :

5.6	2.7	4.2	1.3	Iris-versicolor
5.7	3.0	4.2	1.2	Iris-versicolor
5.7	2.9	4.2	1.3	Iris-versicolor
6.2	2.9	4.3	1.3	Iris-versicolor
5.1	2.5	3.0	1.1	Iris-versicolor
5.7	2.8	4.1	1.3	Iris-versicolor
6.3	3.3	6.0	2.5	Iris-virginica
5.8	2.7	5.1	1.9	Iris-virginica
7.1	3.0	5.9	2.1	Iris-virginica

   Your command : sed -i 's/,/\t/g' /home/student/iris.data

7. In the file `/home/student/iris.data`, extract from this file the column 3 (petal length in cm) (use cut)
   Your response :

   6.7 3.1 4.7 1.5 Iris-versicolor
   6.3 2.3 4.4 1.3 Iris-versicolor
   5.6 3.0 4.1 1.3 Iris-versicolor
   5.5 2.5 4.0 1.3 Iris-versicolor
   5.5 2.6 4.4 1.2 Iris-versicolor
   6.1 3.0 4.6 1.4 Iris-versicolor
   5.8 2.6 4.0 1.2 Iris-versicolor
   5.0 2.3 3.3 1.0 Iris-versicolor
   5.6 2.7 4.2 1.3 Iris-versicolor
   5.7 3.0 4.2 1.2 Iris-versicolor
   5.7 2.9 4.2 1.3 Iris-versicolor
   6.2 2.9 4.3 1.3 Iris-versicolor
   5.1 2.5 3.0 1.1 Iris-versicolor

   Your command : cut -d ',' -f 3 /home/student/iris.data

8. In the file `/home/student/iris.data`, count the number of flower species (cut and uniq)
   Your response :

   50 Iris-setosa
   100 Iris-versicolor
   50 Iris-virginica
   1

   Your command : cut -d ',' -f 5 /home/student/iris.data | uniq -c

9. In the file `/home/student/iris.data`, sort by increasing petal length (see sort options)
   Your response :

   6.9 3.1 4.9 1.5 Iris-versicolor
   6.9 3.1 4.9 1.5 Iris-versicolor
   6.9 3.1 5.1 2.3 Iris-virginica
   6.9 3.1 5.4 2.1 Iris-virginica
   6.9 3.2 5.7 2.3 Iris-virginica
   7.0 3.2 4.7 1.4 Iris-versicolor
   7.0 3.2 4.7 1.4 Iris-versicolor
   7.1 3.0 5.9 2.1 Iris-virginica
   7.2 3.0 5.8 1.6 Iris-virginica
   7.2 3.2 6.0 1.8 Iris-virginica

10. Your command : sort -t ',' -k 3n /home/student/iris.data

11. In the file `/home/student/iris.data`, show only lines with petal length greater than the average size
    Your response :
    Your command : awk -F ',' 'NR==FNR { sum += $3; count++ } NR!=FNR && $3 > (sum / count) { print }' /home/student/iris.data /home/student/iris.data

12. Using `/etc/passwd`, extract the user and home directory fields for all users on your student machine for which the shell is set to `/bin/false`.
    Your response :
    User: systemd-timesync, Home Directory: /run/systemd
    User: systemd-network, Home Directory: /run/systemd/netif
    User: systemd-resolve, Home Directory: /run/systemd/resolve
    User: systemd-bus-proxy, Home Directory: /run/systemd
    User: syslog, Home Directory: /home/syslog
    User: _apt, Home Directory: /nonexistent
    User: lxd, Home Directory: /var/lib/lxd/
    User: mysql, Home Directory: /nonexistent
    User: messagebus, Home Directory: /var/run/dbus
    User: uuidd, Home Directory: /run/uuidd
    User: dnsmasq, Home Directory: /var/lib/misc
    User: postfix, Home Directory: /var/spool/postfix
    User: dovecot, Home Directory: /usr/lib/dovecot
    User: dovenull, Home Directory: /nonexistent
    User: colord, Home Directory: /var/lib/colord

    Your command: grep '/bin/false' /etc/passwd | awk -F: '{print "User: " $1 ", Home Directory: " $6}'