Question no.1

What is the difference between du and df? Please show the difference with an example.

⇨The “du” and “df” both are the most used Unix/Linux commands that provide information about disk usage, but they differ in what they report and how they display the result.

⇨“du” reports the disk space used by the individual files and directories in a specified directory tree. It is often used to identify the large files or directories that are using up disk space.

For example, to list the disk usage of all files and directories in the current directory,

Command: du -h

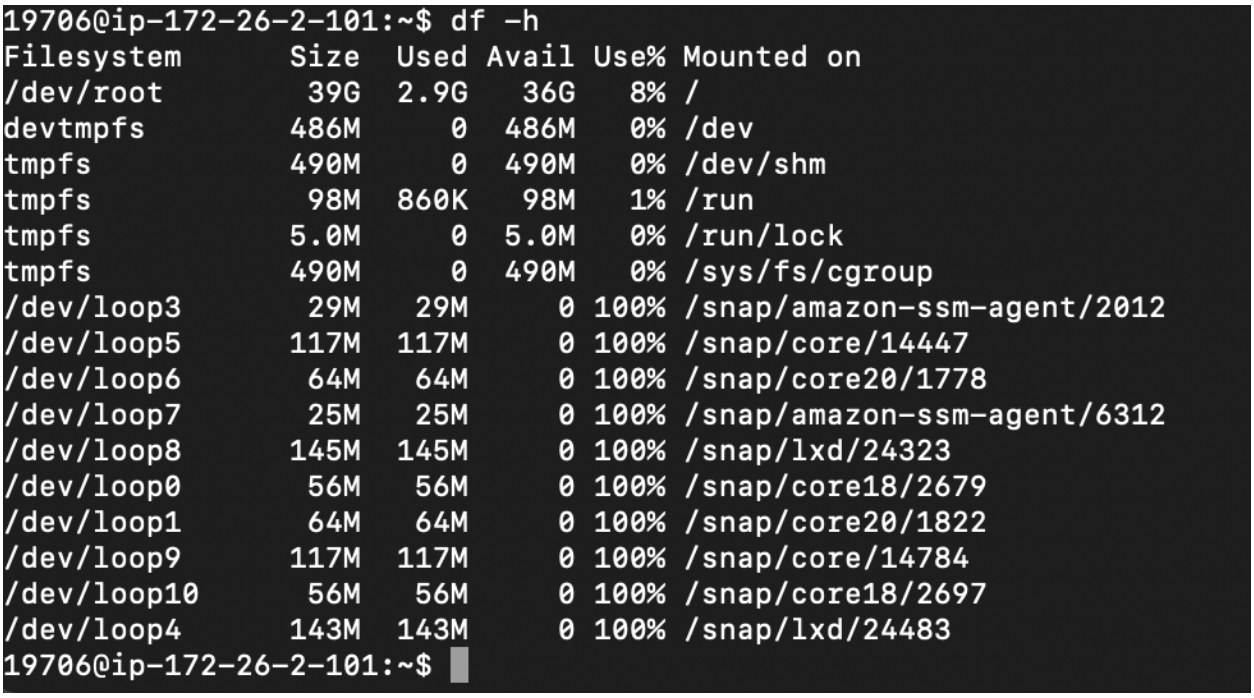
The -h option displays the sizes in a “human-readable format making it easier to understand.

⇨“df” reports the amount of free and used disk space on a file system. It is often used to check how much space is available on a disk or partition.

For example, to list the disk space usage of all mounted file systems.

Command: df -h

The -h option displays the sizes in a "human-readable" format.



Question no.2

In a file with 2 columns, how do you extract the first column and save it in a file called col2? How do you extract the second column and save it in a file called col2?

⇨To extract the first column and save it in a file column, we need to use the command:

cut -f1 myfile.txt > col2.

```
[19706@ip-172-26-2-101:~$ vi myfile.txt
[19706@ip-172-26-2-101:~$ cat myfile.txt
apple   red
banana  yellow
orange  blue
[19706@ip-172-26-2-101:~$ cut -f1 myfile.txt > col2
[19706@ip-172-26-2-101:~$ cat col2
apple
banana
orange
19706@ip-172-26-2-101:~$
```

⇨To extract the first column and save it in a file column, we need to use the command:
cut -f2 myfile.txt > col2.

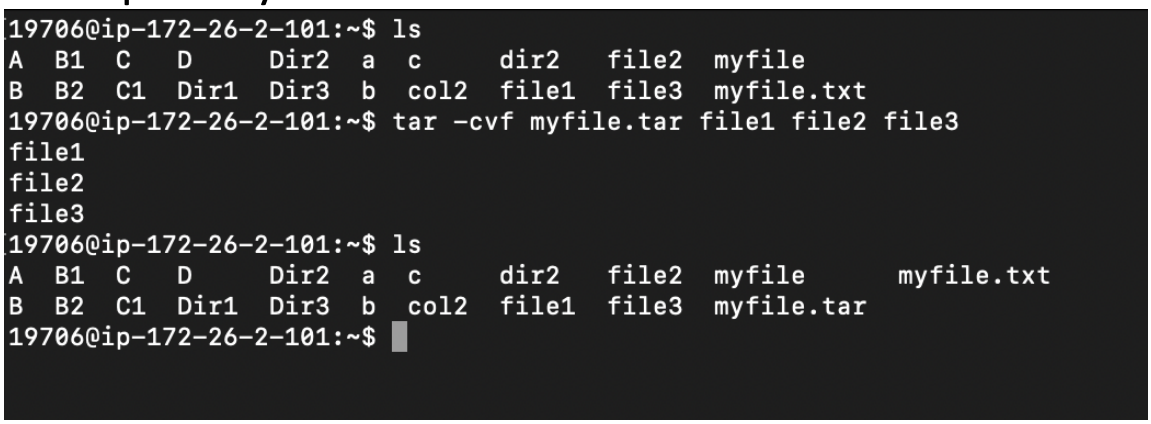
```
[19706@ip-172-26-2-101:~$ vi myfile.txt
[19706@ip-172-26-2-101:~$ cat myfile.txt
apple   red
banana  yellow
orange  blue
[19706@ip-172-26-2-101:~$ cut -f1 myfile.txt > col2
[19706@ip-172-26-2-101:~$ cat col2
apple
banana
orange
[19706@ip-172-26-2-101:~$ cut -f2 myfile.txt > col2
[19706@ip-172-26-2-101:~$ cat col2
red
yellow
blue
19706@ip-172-26-2-101:~$
```

Question no.3

What are the common extensions for a tar file? What about zip files?

⇨the common extensions for a tar file, with examples:

a) tar: A tar file without compression.
   Example: myfile.tar.



b) .tar.gz or .tgz: A tar file compressed with gzip.
   Example: myfile.tar.gz.

c) .tar.bz2: A tar file compressed with bzip2.
Example: myfile.tar.bz2.

```
19706@ip-172-26-2-101:~$ ls
A  B1  C   D     Dir2  a  c     dir2   file2  myfile      myfile.tar.gz
B  B2  C1  Dir1  Dir3  b  col2  file1  file3  myfile.tar  myfile.txt
19706@ip-172-26-2-101:~$ tar -cjvf myfile.tar.bz2 file1 file2 file3
file1
file2
file3
19706@ip-172-26-2-101:~$ ls
A   B2  D     Dir3  c     file1  myfile          myfile.tar.gz
B   C   Dir1  a     col2  file2  myfile.tar      myfile.txt
B1  C1  Dir2  b     dir2  file3  myfile.tar.bz2
19706@ip-172-26-2-101:~$
```

d) .tar.xz: A tar file compressed with xz.
Example: myfile.tar.xz.

```
19706@ip-172-26-2-101:~$ ls
A   B2  D     Dir3  c     file1  myfile          myfile.tar.gz
B   C   Dir1  a     col2  file2  myfile.tar      myfile.txt
B1  C1  Dir2  b     dir2  file3  myfile.tar.bz2
19706@ip-172-26-2-101:~$ tar -cJvf myfile.tar.xz file1 file2 file3
file1
file2
file3
19706@ip-172-26-2-101:~$ ls
A   B2  D     Dir3  c     file1  myfile          myfile.tar.gz
B   C   Dir1  a     col2  file2  myfile.tar      myfile.tar.xz
B1  C1  Dir2  b     dir2  file3  myfile.tar.bz2  myfile.txt
19706@ip-172-26-2-101:~$
```

e) .tar.Z: A tar file compressed with the compress command.
Example: myfile.tar.Z.

```
19706@ip-172-26-2-101:~$ ls
A   B2  D     Dir3  c     file1  myfile          myfile.tar.gz
B   C   Dir1  a     col2  file2  myfile.tar      myfile.tar.xz
B1  C1  Dir2  b     dir2  file3  myfile.tar.bz2  myfile.txt
19706@ip-172-26-2-101:~$ tar -cZvf myfile.tar.Z file1 file2 file3
file1
file2
file3
/bin/sh: 1: compress: not found
tar: Child returned status 127
tar: Error is not recoverable: exiting now
19706@ip-172-26-2-101:~$ ls
A   B2  D     Dir3  c     file1  myfile        myfile.tar.bz2  myfile.txt
B   C   Dir1  a     col2  file2  myfile.tar    myfile.tar.gz
B1  C1  Dir2  b     dir2  file3  myfile.tar.Z  myfile.tar.xz
19706@ip-172-26-2-101:~$
```

I have already used the above command gzip or bzip2 compression method with the appropriate file extension (.gz or .bz2), so I don't need to use the. Z extension and the compress command.

f) .tar.lz: A tar file compressed with lzma.
Example: myfile.tar.lz.

```
19706@ip-172-26-2-101:~$ ls
A   B2  D     Dir3  c     file1  myfile        myfile.tar.bz2  myfile.txt
B   C   Dir1  a     col2  file2  myfile.tar    myfile.tar.gz
B1  C1  Dir2  b     dir2  file3  myfile.tar.Z  myfile.tar.xz
19706@ip-172-26-2-101:~$ tar -c --lzma -f myfile.tar.lz file1 file2 file3
19706@ip-172-26-2-101:~$ ls
A   B2  D     Dir3  c     file1  myfile        myfile.tar.bz2  myfile.tar.xz
B   C   Dir1  a     col2  file2  myfile.tar    myfile.tar.gz   myfile.txt
B1  C1  Dir2  b     dir2  file3  myfile.tar.Z  myfile.tar.lz
19706@ip-172-26-2-101:~$
```

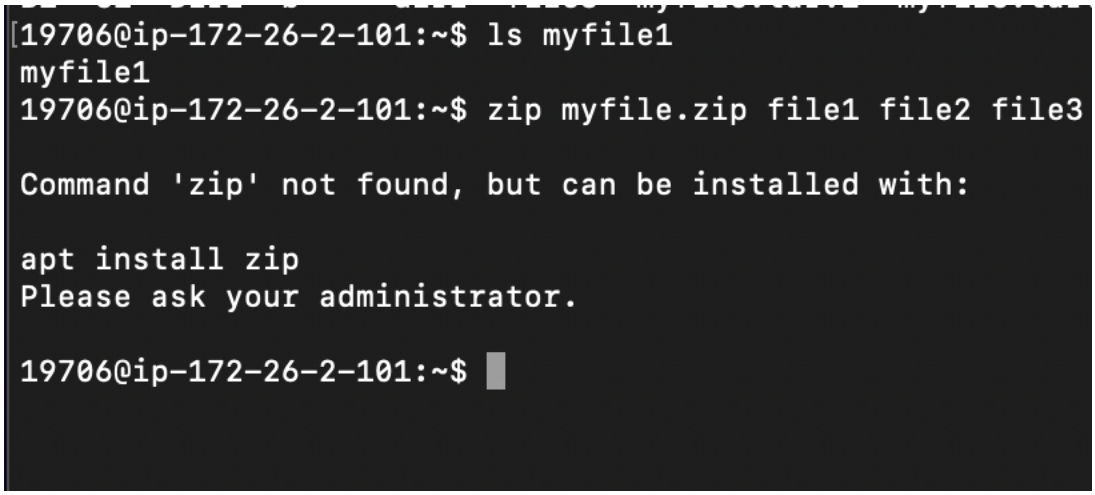
g) .tar.lz4: A tar file compressed with lz4.
Example: myfile.tar.lz4.

```
19706@ip-172-26-2-101:~$ ls
A   B2  D     Dir3  c     file1  myfile        myfile.tar.bz2  myfile.tar.xz
B   C   Dir1  a     col2  file2  myfile.tar    myfile.tar.gz   myfile.txt
B1  C1  Dir2  b     dir2  file3  myfile.tar.Z  myfile.tar.lz
19706@ip-172-26-2-101:~$ tar -c --lz4 -f myfile.tar.lz4 file1 file2 file3
tar: unrecognized option '--lz4'
Try 'tar --help' or 'tar --usage' for more information.
19706@ip-172-26-2-101:~$
```

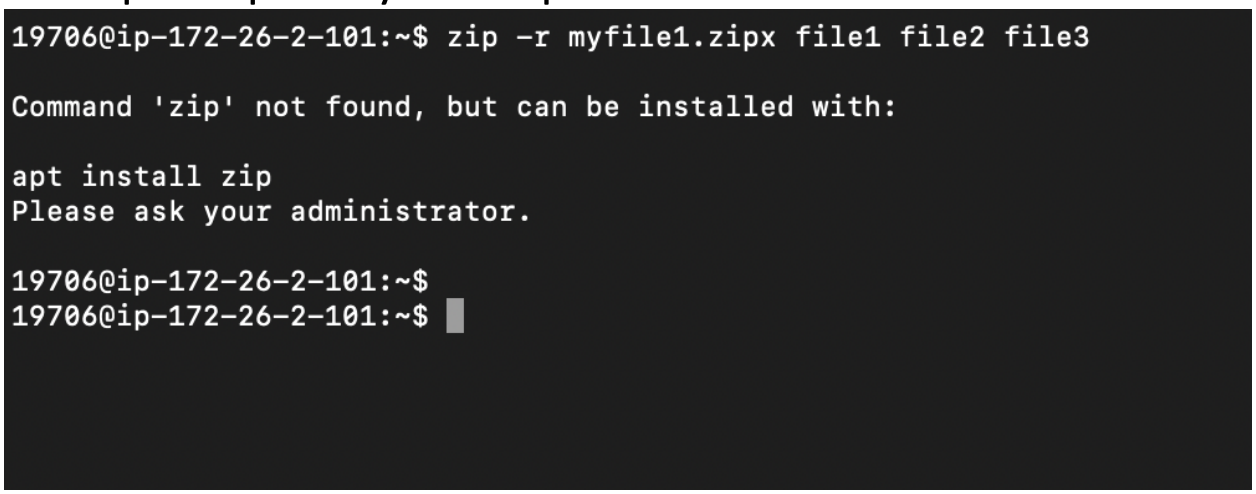
This version of tar is not supported by my terminal.

⇨The common extensions for zip files:

a) .zip: A zip file without compression.
   Example: zip myfile1.zip file1 file2 file3



b) .zipx: A zip file compressed with advanced compression methods.
   Example: zip -r myfile1.zipx file1 file2 file3



c) .jar: A zip file format used for Java archives.
   Example: jar cvf myfile1.jar file1 file2 file3

```
19706@ip-172-26-2-101:~$ jar cvf myfile1.jar file1 file2 file3

Command 'jar' not found, but can be installed with:

apt install openjdk-11-jdk-headless  # version 11.0.17+8-1ubuntu2~20.04, or
apt install default-jdk              # version 2:1.11-72
apt install fastjar                  # version 2:0.98-6build1
apt install openjdk-13-jdk-headless  # version 13.0.7+5-0ubuntu1~20.04
apt install openjdk-16-jdk-headless  # version 16.0.1+9-1~20.04
apt install openjdk-17-jdk-headless  # version 17.0.5+8-2ubuntu1~20.04
apt install openjdk-8-jdk-headless   # version 8u352-ga-1~20.04

Ask your administrator to install one of them.

19706@ip-172-26-2-101:~$
```

d) .war: A zip file format used for web application archives.

Example: jar cvf myfile1.war file1 file2 file3

```
19706@ip-172-26-2-101:~$ jar cvf myfile1.war file1 file2 file3

Command 'jar' not found, but can be installed with:

apt install openjdk-11-jdk-headless  # version 11.0.17+8-1ubuntu2~20.04, or
apt install default-jdk              # version 2:1.11-72
apt install fastjar                  # version 2:0.98-6build1
apt install openjdk-13-jdk-headless  # version 13.0.7+5-0ubuntu1~20.04
apt install openjdk-16-jdk-headless  # version 16.0.1+9-1~20.04
apt install openjdk-17-jdk-headless  # version 17.0.5+8-2ubuntu1~20.04
apt install openjdk-8-jdk-headless   # version 8u352-ga-1~20.04

Ask your administrator to install one of them.

19706@ip-172-26-2-101:~$
```

e) .ear: A zip file format used for enterprise application archives.

Example: jar cvf myfile1.ear file1 file2 file3

```
19706@ip-172-26-2-101:~$ jar cvf myfile1.ear file1 file2 file3

Command 'jar' not found, but can be installed with:

apt install openjdk-11-jdk-headless  # version 11.0.17+8-1ubuntu2~20.04, or
apt install default-jdk              # version 2:1.11-72
apt install fastjar                  # version 2:0.98-6build1
apt install openjdk-13-jdk-headless  # version 13.0.7+5-0ubuntu1~20.04
apt install openjdk-16-jdk-headless  # version 16.0.1+9-1~20.04
apt install openjdk-17-jdk-headless  # version 17.0.5+8-2ubuntu1~20.04
apt install openjdk-8-jdk-headless   # version 8u352-ga-1~20.04

Ask your administrator to install one of them.

19706@ip-172-26-2-101:~$
19706@ip-172-26-2-101:~$
```

f) .apk: A zip file format used for Android application packages.

Example: zip myfile.apk file1 file2 file3

```
19706@ip-172-26-2-101:~$ zip myfile.apk file1 file2 file3

Command 'zip' not found, but can be installed with:

apt install zip
Please ask your administrator.

19706@ip-172-26-2-101:~$
```

None of the commands is working on my terminal because my terminal does not support zip file.