Surname, Name: Section: Student No:

1. copy everything in LabQ into Dir1 with rsync . term LabQ will not be copied but everything inside it (recursively).

```
rsync -av .  ../Answers/Dir1/
```

2. copy everything in the current directory into Dir3 using tar without using any explicit tar file, if possible. You can use and explicit tar file, but you will loose credit.

```
tar cf - .  | tar xf - -C ../Dir3
tar cf - .  | (cd ../Answers/Dir3; tar xf - )
tar cf ../Answers/2.tar .  ; (cd ../Answers/Dir3; tar xf ../2.tar)
```

3. copy everything in LabQ into Dir5 with cpio with using an auxiliary cpio file. Keep the auxilary file in Answers directory.

```
find .  -depth | cpio -o > ../Answers/3.cpio;
(cd ../Answers/Dir5; cpio -i < ../3.cpio)
```

4. find all files/directories which are installed with apache2; and find all progams related with with program apache2

```
whereis apache2 > ../Answers/4.txt
man -k apache2 >> ../Answers/4.txt
```

5. Find list of all *.txt files which are older than aa.txt

```
find .  \! -newer  -type f -name "*.txt" > ../Answers/5.txt
```

6. combine all *.txt files within LabQ hierarchy

```
find .  -type f -name "*.txt" | xargs cat > ../Answers/6.txt
find .  -type f -name "*.txt" -exec cat '{}'  \;   > ../Answers/6.txt
```

7. find all files with suffix .gz, bz2 or .xz within LabQ hierarchy and copy them into Dir4 while retaining directory structure

```
find .  -type f \( -name "*.gz" -o -name "*.bz2" -o -name "*.xz" \)
| cpio -pd ../Answers/Dir4
```

8. In a single command create directories A B C D E each containing F, H, J and each of which containing 1 2 3 4 5, each of which containing X Y and Z in directory Answers (we need to see directory and corresponding command). Also in a single command create empty files 1.txt in 1's, 2.txt in 2's and 5.txt in 5's.

```
mkdir -p  ../Answers/{A,B,C,D,E}/{F,H,J}/{1,2,3,4,5}/{X,Y,Z}
touch  ../Answers/{A,B,C,D,E}/{F,H,J}/{1/1.txt,2/2.txt,5/5.txt}
```

9. Consider all files with name *.txt in the current directory: including sub directories
- determine all lines among all files which contains string ayse or elif, case insensitive
```
find .  -type f -name "*.txt" | xargs cat | egrep -i "elif|ayse" > ../Answers/9.txt

find .  -type f -name "*.txt" -exec egrep -ih "elif|ayse" '{}'  \;  > ../Answers/9.txt
```

10. Consider all files in the current directory: including sub directories
- determine all lines among all files which contains string ayse or elif, case insensitive

```
egrep -ihr "elif|ayse" .  > ../Answers/10.txt
```

11. Consider all *.txt files in LabQ (on the surface) determine **lines** of these files which contains **elif** and **ayse** case insensitive on a line, (under 11.txt)

```
grep -hi elif *.txt | grep -i ayse > ../Answers/11.txt
```

Consider all *.txt files in LabQ (on the surface) determine **files** which has lines containing **elif** and **ayse** case insensitive on a line, (under 11.TXT)

```
egrep -il "ayse.*elif|elif.*ayse" *.txt > ../Answers/11.TXT
```

12. find all *.txt files within LabQ hierarchy and put these files in TXT1.tar

```
find .  -type f -name "*.txt" | xargs tar cf ../Answers/TXT1.tar
```

13. Extract contents of ed.tar.bz2 into Dir6 without using gzip, bzip2, xzand their derrivatives like zcat;, bzcat etc, i.e just tar with suitable options only You issue commands within LabQ.

    ```
    tar xjvf ed.tar.bz2 -C ../Answers/Dir6/
    ```

14. Find lines in Dene1.txt.xz containing string elif and ayse case insensitive without using xz and xzcat directly

    ```
    xzgrep -i elif Dene1.txt.xz | grep -i ayse > ../Answers/14.txt
    ```

15. Copy ABC and Data directories into Dir10 and compress all ordinary files in Dir10 with bzip2 `rsync -av ABC Data ../Answers/Dir10; find /Answers/Dir10 -type f -exec bzip2 '{}'  \;`

16. Add execute permissions for file **exec.SH** to all, remove read and write from others, add to suid property to group and owner; all in a single statement, and use symbolic method (Do these after copying into Answers)

    ```
    cp exec.SH ../Answers/SH; chmod a+x,o-rw,ug+s
    ```

17. Consider Dene.txt, remove first 20 lines and last 25 lines obtaining DENE.TXT. Do not use information about size of Dene.txt, just assume it has more than 60 lines in it. We need to see original line numbers. Just use filters. you may use tac .

    ```
    cat -n Dene.txt | tail -n +21 | head -n -25 > ../Answers/DENE.TXT
    ```

18. Given a.txt, we want to determine the lines containing strings Net and Fox and put them in files 18-1.txt, 18-2.txt and 18-3.txt . How would you do it using:(each $\boxed{3}$)

    grep: `grep Net a.txt | grep Fox > ../Answers/18-1.txt`

    sed: `sed -n '/Net/p' a.txt |sed -n '/Fox/p' > ../Answers/18-2.txt`

    awk: `awk '/Net/' a.txt | awk '/Fox/' > ../Answers/18-3.txt`

19. Given a.txt, we want to determine lines containing only one of Net and Fox and put them in a files 19-1.txt, 19-2.txt, and 19-3.txt. How would you do it using: (each $\boxed{3}$)

    grep: `grep Net a.txt | grep -v Fox > ../Answers/19-1.txt`
    `grep Fox a.txt | grep -v Net >> ../Answers/19-1.txt`

    sed: `sed -n '/Net/p' a.txt | sed '/Fox/d' > 19-2.txt`
    `sed -n '/Fox/p' a.txt | sed '/Net/d' >> 19-2.txt`

    awk: `awk '/Net/' a.txt | awk '!/Fox/' > 19-3.txt`
    `awk '/Fox/ a.txt | awk '!/Net/' >> 19-3.txt`

20. Given a.txt, we want to determine the lines containing **word** Net and put them in files 20-1.txt, 20-2.txt and 20-3.txt How would you do it using:(each $\boxed{5}$)

    grep: `grep -w Net a.txt > ../Answers/20-1.txt`

    sed: `sed -n '/\<Net\>/p' a.txt > ../Answers/20-2.txt`

    awk: `awk '/\<Net\>/'  a.txt > ../Answers/20-3.txt`

21. **Sed**. Given A.txt we want to: (**each $\boxed{2}$ points**)
    - replace all strings Net with Internet
    Give command and write new file as Answers/B1.txt

    ```
    sed 's/Net/Internet/g' A.txt > ../Answers/B1.txt
    ```
    - On lines containing Internet, replace fox with Firefox
    Give command and write file as Answers/B2.txt

    ```
    sed '/Internet/s/fox/Firefox/g' A.txt > ../Answers/B2.txt
    ```

    - On lines 5-10 insert "BASLA " at the beginning, and add to the end of last line word " END"
    Give commands and write file as Answers/B3.txt

    ```
    sed '5,10s/^/BASLA / ' A.txt | sed '$s/$/ END/'  > ../Answers/B3.txt
    ```