

Surname, Name:

Section:

Student No:

**Closed Book, closed note exam. You are required to write down commands with necessary arguments and options; and make sure that they work. Your script and output should match. Give the best result that you can give! Each question worths 5 points unless otherwise stated. Over 100 points is bonus.** Unless otherwise stated for question *k*, your answers as command must be in *k.sh* and output should in *k.txt* both should be in *Answers* directory.

SIGNATURE .....

Time of Submission:

**Prelude:** Before solving questions you should:

- issue command *history -c*
  - let NAME be your FirstLast name as ascii (MAkgul, ASOzgur, LMessi, LionelMessi) (do not use Turkish Characters, ı ğ ş ç ü ö )
  - create NAME and NAME/Answers directories `mkdir -p ~/NAME/Answers`
  - script NAME/Answers/NAME.Log
  - touch NAME/Answers/Your-Full-Name
  - download the questions file and unzip it in NAME Directory, ( maintaining directory structure), unzip file-path  
`cd ~/NAME` or simply `cd ; cd NAME`  
 use one of the commands  
`wget http://liste.ctis.bilkent.edu.tr/courses/166/LabQ4.zip`  
`wget http://lab4t/download/LabQ4.zip`  
`unzip -K LabQ4`
  - `mkdir -p ~/NAME/Answers/Dir{1,2,3,4,5,6,7,8,9,10,11,12,13}`
  - **Your working directory will be LabQ, files that you operate on will be in LabQ. Your answers will be written under NAME; shell scripts and solution files under NAME/Answers; you need to redirect selected output to NAME/Answers directory. Also commands that you use should be saved/copied under Answers. You can collect commands under *cevaplar.sh* provided you include question numbers For some questions, you may work directly in Name/Answers. Try to answers questions with one line commands if possible. In some questions, you may use more than one line of commands. Remember all new files will end up at Answers. Output of question *k* should be in *k.txt* in Answers, unless otherwise specified. You should save history file, when you finish. You can copy History file as *History.sh* and edit by adding question numbers . Please keep original history file as is.**
  - **When you finish** (that is when exam ends), you will zip NAME directory with commands  
`cd ; history > NAME/Answers/History;` (modify *History.sh*); `cd ; zip -ry NAME NAME`
  - upload NAME.zip
1. copy everything in LabQ into Dir1 with *rsync* . term LabQ will not be copied but everything inside it (recursively).
  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.
  3. copy everything in LabQ into Dir5 with *cpio* with using an auxiliary *cpio* file. Keep the auxiliary file in Answers directory.
  4. find all files/directories which are installed with *apache2*; and find all progams related with with program *apache2*
  5. Find list of all \*.txt files which are older than aa.txt
  6. combine all \*.txt files within LabQ hierarchy
  7. find all files with suffix .gz, bz2 or .xz within LabQ hierarchy and copy them into Dir4 while retaining directory structure
  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.

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
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
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)  
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)
12. find all \*.txt files within LabQ hierarchy and put these files in TXT1.tar
13. Extract contents of ed.tar.bz2 into Dir6 without using gzip, bzip2, xz and their derivatives like zcat, bzip2, etc, i.e just tar with suitable options only You issue commands within LabQ.
14. Find lines in Dene1.txt.xz containing string elif and ayse case insensitive without using xz and xzcat directly
15. Copy ABC and Data directories into Dir10 and compress all ordinary files in Dir10 with 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)
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 .
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 3)

**grep:****sed:****awk:**

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 3)

**grep:****sed:****awk:**

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 5)

**grep:****sed:****awk:**

21. **Sed.** Given A.txt we want to: (each 2 points )

- replace all strings Net with Internet

Give command and write new file as Answers/B1.txt

- On lines containing Internet, replace Fox with Firefox

Give command and write file as 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