



**COMSATS UNIVERSITY ISLAMABAD**  
**ATTOCK CAMPUS**

**Lab Report 4 :**

**Operating System**

**Submitted to : Sir Fayyaz Ali**

<b>Group Members</b>	Muaaz Shoaib FA20-BCS-074 Shahzeb Shaheen FA20-BCS-040
--------------------------	---

### Rubrics Assessment Sheet for Operating System

Lab #:	<b>Lab no 4</b>
Lab Title:	<b>File Permission and Owner Ship</b>
Submitted by:	
<b>Names</b> <b>Muaaz Shoaib</b> <b>Shahzeb Shaheen</b>	<b>Registration</b> <b>FA20-BCS-074</b> <b>FA20-BCS-040</b>

Rubrics name & number		Marks	
		In-Lab	Post lab
Engineering Knowledge	<i>R2:Use of Engineering Knowledge and follow Experiment Procedures: Ability to follow experimental procedure,control variables,and record Procedural steps on lab report.</i>		
Problem Analysis	<i>R6: Experimental Data Analysis : Ability to interept findings,compare them to values in the literature,identify weaknesses and limitations</i>		
Design	<i>RS: Best Coding Staudards: Abilitylofollowthecoding standards and programming practices</i>		
Modem Tools Usage	<i>R9: Understa11d Tools: Ability to describe and explain the principles behind applicability of engineering tools.</i>		
Individual and Teamwork	<i>R9:Management of Team Work: Ability to appreciate, understand and work multidisciplinary team members</i>		

Rubrics #	R2	R6	RS	R9	R13
Jn -Lab					
Post- Lab					

Description :

File Ownership :

A file owner is a person who is directly responsible of the file

File Permission :

A file permission is a sequence of 9 bits broken into 3 octets of 3 bits each.

A file also have a group designation to specify which permission should apply.

Q1 : For the ls command, what option prints information out in long form, like `-l`, but does not print any file ownership information? In the worksheet, provide a copy of the output using ls with this option run from the top level of the lab directory .

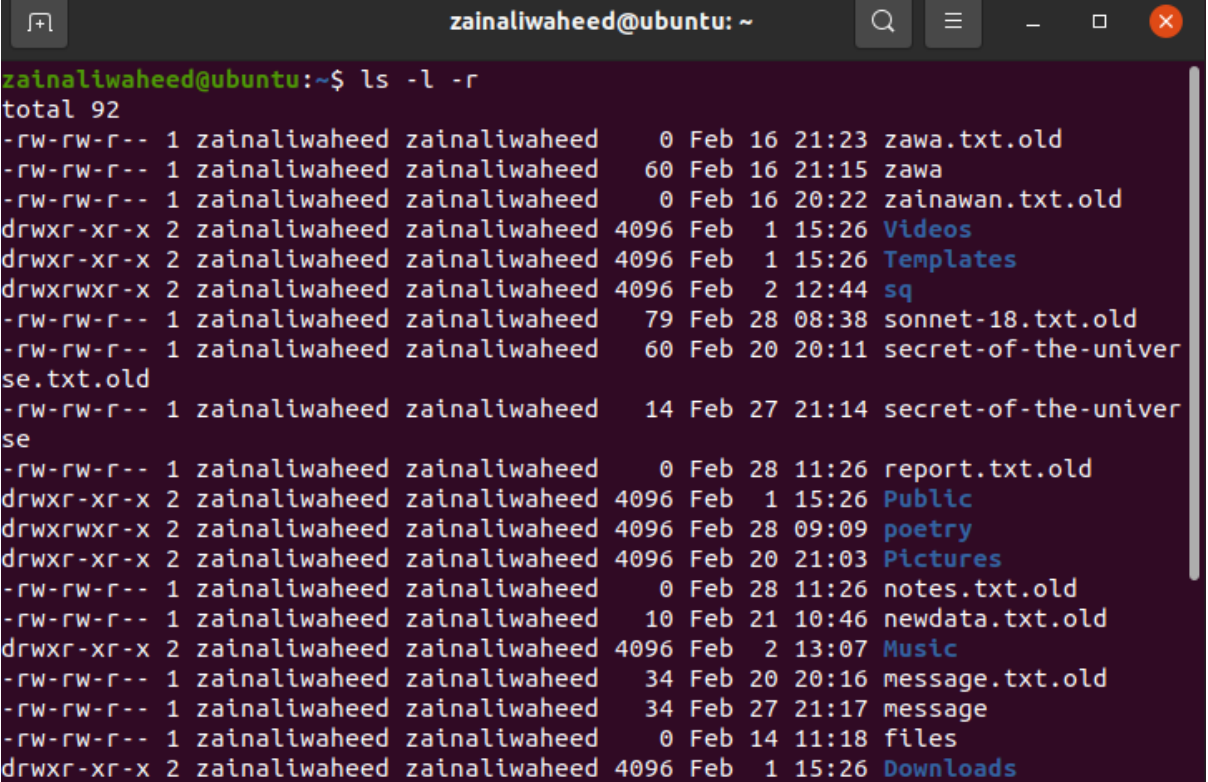
```
zainaliwaheed@ubuntu: ~  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Downloads  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 14 11:18 files  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  34 Feb 27 21:17 message  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  34 Feb 20 20:16 message.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  2 13:07 Music  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  10 Feb 21 10:46 newdata.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 28 11:26 notes.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 20 21:03 Pictures  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 28 09:09 poetry  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Public  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 28 11:26 report.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  14 Feb 27 21:14 secret-of-the-univer  
e  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  60 Feb 20 20:11 secret-of-the-univer  
e.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  79 Feb 28 08:38 sonnet-18.txt.old  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  2 12:44 sq  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Templates  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Videos  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Dec 31 1999 y2k  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 16 20:22 zainawan.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  60 Feb 16 21:15 zawa  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 16 21:23 zawa.txt.old
```

Q 2

Change into the part1 directory and type ls. You will see a list of files a b c d e f g.

- a. Note that ls lists the files in alphabetic order. What ls option will list the files in reverse alphabetic

order? Provide a copy of your output of your ls with the addition of -l in your worksheet.



```
zainaliwaheed@ubuntu: ~  
zainaliwaheed@ubuntu:~$ ls -l -r  
total 92  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  0 Feb 16 21:23 zawa.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed 60 Feb 16 21:15 zawa  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  0 Feb 16 20:22 zainawan.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Videos  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Templates  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  2 12:44 sq  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  79 Feb 28 08:38 sonnet-18.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  60 Feb 20 20:11 secret-of-the-univer  
se.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  14 Feb 27 21:14 secret-of-the-univer  
se  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  0 Feb 28 11:26 report.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Public  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 28 09:09 poetry  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 20 21:03 Pictures  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  0 Feb 28 11:26 notes.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  10 Feb 21 10:46 newdata.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  2 13:07 Music  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  34 Feb 20 20:16 message.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  34 Feb 27 21:17 message  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  0 Feb 14 11:18 files  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Downloads
```

b. What ls options will sort the files by size from smallest to largest? Provide a copy of your output of your ls with the addition of -l in your worksheet.

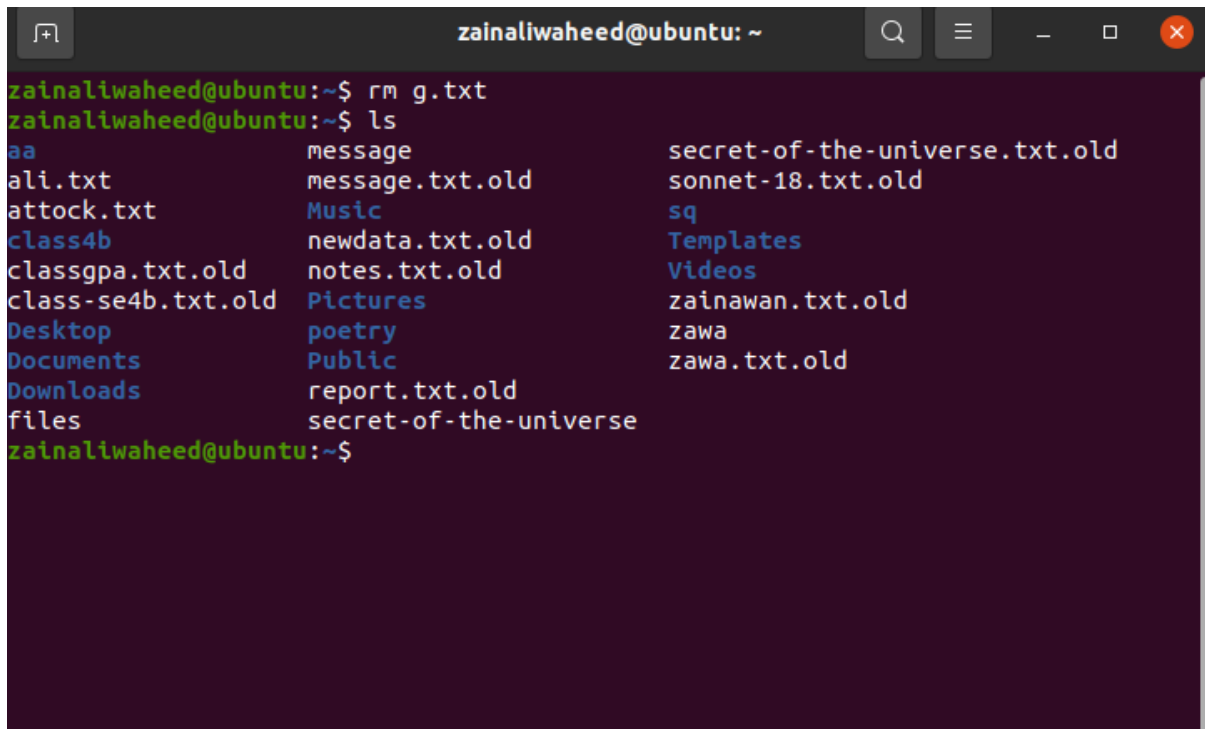
```
zainaliwaheed@ubuntu: ~  
zainaliwaheed@ubuntu:~$ ls -l -s  
total 92  
4 drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 22 13:55 aa  
4 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 10 Mar 14 10:59 ali.txt  
4 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 13 Mar 14 11:00 attock.txt  
4 drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 21 12:02 class4b  
4 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 32 Feb 21 11:09 classgpa.txt.old  
4 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 86 Feb 21 10:39 class-se4b.txt.old  
4 drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Desktop  
4 drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Documents  
4 drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Downloads  
0 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 0 Feb 14 11:18 files  
4 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 34 Feb 27 21:17 message  
4 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 34 Feb 20 20:16 message.txt.old  
4 drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 2 13:07 Music  
4 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 10 Feb 21 10:46 newdata.txt.old  
0 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 0 Feb 28 11:26 notes.txt.old  
4 drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 20 21:03 Pictures  
4 drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 28 09:09 poetry  
4 drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Public  
0 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 0 Feb 28 11:26 report.txt.old  
4 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 14 Feb 27 21:14 secret-of-the-unive  
rse  
4 -rw-rw-r-- 1 zainaliwaheed zainaliwaheed 60 Feb 20 20:11 secret-of-the-unive
```

- c. What ls option will sort the files in reverse size order from largest to smallest. Provide a copy of your output of your ls with the addition of -l in your worksheet

```
zainaliwaheed@ubuntu: ~  
zainaliwaheed@ubuntu:~$ ls -l -S  
total 92  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 22 13:55 aa  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 21 12:02 class4b  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Desktop  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Documents  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Downloads  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 2 13:07 Music  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 20 21:03 Pictures  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 28 09:09 poetry  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Public  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 2 12:44 sq  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Templates  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 1 15:26 Videos  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed 86 Feb 21 10:39 class-se4b.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed 79 Feb 28 08:38 sonnet-18.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed 60 Feb 20 20:11 secret-of-the-univers  
e.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed 60 Feb 16 21:15 zawa  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed 34 Feb 27 21:17 message  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed 34 Feb 20 20:16 message.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed 32 Feb 21 11:09 classgpa.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed 14 Feb 27 21:14 secret-of-the-univers
```

Q3.

Remove the g file using the rm command. Notice that the shell asked you to confirm removing the item. Look at the manual for rm, what option must have been invoked when you issued that command? What option can you use to avoid having to confirm the removal of an item?



```
zainaliwaheed@ubuntu: ~  
zainaliwaheed@ubuntu:~$ rm g.txt  
zainaliwaheed@ubuntu:~$ ls  
aa                message          secret-of-the-universe.txt.old  
ali.txt           message.txt.old  sonnet-18.txt.old  
attack.txt        Music            sq  
class4b           newdata.txt.old  Templates  
classgpa.txt.old  notes.txt.old    Videos  
class-se4b.txt.old Pictures          zainawan.txt.old  
Desktop           poetry           zawa  
Documents         Public           zawa.txt.old  
Downloads         report.txt.old  
files            secret-of-the-universe  
zainaliwaheed@ubuntu:~$
```

Q4.

.(Challenge) Read the manual page for the touch command. One of the uses for touch is to update the last modified timestamp of a file (you can view that last modified using ls -l). Use the touch command to create a file y2k whose last modification time was Dec. 31 1999 at 23:59.59. Include the command you used on your worksheet and a copy of your ls -l output of the y2k file



```
zainaliwaheed@ubuntu: ~  
TOUCH(1)                                User Commands                                TOUCH(1)  
  
NAME  
    touch - change file timestamps  
  
SYNOPSIS  
    touch [OPTION]... FILE...  
  
DESCRIPTION  
    Update the access and modification times of each FILE to the current  
    time.  
  
    A FILE argument that does not exist is created empty, unless -c or -h  
    is supplied.  
  
    A FILE argument string of - is handled specially and causes touch to  
    change the times of the file associated with standard output.  
  
    Mandatory arguments to long options are mandatory for short options  
    too.  
  
    -a      change only the access time
```

```
zainaliwaheed@ubuntu: ~  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Downloads  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 14 11:18 files  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  34 Feb 27 21:17 message  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  34 Feb 20 20:16 message.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  2 13:07 Music  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  10 Feb 21 10:46 newdata.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 28 11:26 notes.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 20 21:03 Pictures  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 28 09:09 poetry  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Public  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 28 11:26 report.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  14 Feb 27 21:14 secret-of-the-univers  
e  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  60 Feb 20 20:11 secret-of-the-univers  
e.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  79 Feb 28 08:38 sonnet-18.txt.old  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  2 12:44 sq  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Templates  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Videos  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Mar 21 09:15 y2k  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 16 20:22 zainawan.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  60 Feb 16 21:15 zawa  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed   0 Feb 16 21:23 zawa.txt.old  
zainaliwaheed@ubuntu:~$
```



```
zainaliwaheed@ubuntu: ~  
zainaliwaheed@ubuntu:~$ touch -t 199912312359.59 y2k  
zainaliwaheed@ubuntu:~$ ls  
aa                message          secret-of-the-universe.txt.old  
ali.txt           message.txt.old  sonnet-18.txt.old  
attack.txt        Music            sq  
class4b           newdata.txt.old Templates  
classgpa.txt.old  notes.txt.old   Videos  
class-se4b.txt.old Pictures        y2k  
Desktop           poetry          zainawan.txt.old  
Documents         Public          zawa  
Downloads         report.txt.old  zawa.txt.old  
files            secret-of-the-universe  
zainaliwaheed@ubuntu:~$ ls -l  
total 92  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 22 13:55 aa  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  10 Mar 14 10:59 ali.txt  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  13 Mar 14 11:00 attack.txt  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 21 12:02 class4b  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  32 Feb 21 11:09 classgpa.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  86 Feb 21 10:39 class-se4b.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Desktop  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Documents  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Downloads  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  86 Feb 21 10:39 class-se4b.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Desktop  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Documents  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Downloads  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  0 Feb 14 11:18 files  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  34 Feb 27 21:17 message  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  34 Feb 20 20:16 message.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  2 13:07 Music  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  10 Feb 21 10:46 newdata.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  0 Feb 28 11:26 notes.txt.old  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 20 21:03 Pictures  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb 28 09:09 poetry  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Public  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  0 Feb 28 11:26 report.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  14 Feb 27 21:14 secret-of-the-univers  
e  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  60 Feb 20 20:11 secret-of-the-univers  
e.txt.old  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  79 Feb 28 08:38 sonnet-18.txt.old  
drwxrwxr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  2 12:44 sq  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Templates  
drwxr-xr-x 2 zainaliwaheed zainaliwaheed 4096 Feb  1 15:26 Videos  
-rw-rw-r-- 1 zainaliwaheed zainaliwaheed  0 Dec 31 1999 y2k
```