

1- which : تستخدم لطباعة المسار لأي كوماندا موجود في السستم

```
ahed@DESKTOP-OK5G6FV:~/ahed$ which ls
/usr/bin/ls
ahed@DESKTOP-OK5G6FV:~/ahed$
```

2- sort : يستخدم لترتيب محتوى الملف

- Ascii ch : sort file_name

```
ahed@DESKTOP-OK5G6FV:~/ahed$ sort test.txt
1
12
12
13
140
20
ahed@DESKTOP-OK5G6FV:~/ahed$
```

- number : sort -n file_name

```
ahed@DESKTOP-OK5G6FV:~/ahed$ sort -n test.txt
1
12
12
13
20
140
ahed@DESKTOP-OK5G6FV:~/ahed$
```

● النتيجة تكون على التيرمنال وليس على الفايل

q) how to write the output of the sort command on the origin file?

3- uniq: بتحذف الاشياء المتكررة

● يجب ان تكون الاشياء المتكرر متتالية

- النتيجة تكون على التيرمنال وليس على الفايل

- Sort -u : تستخدم لترتيب وحذف الاشياء المتكررة :

```
ahed@DESKTOP-OK5G6FV:~/ahed$ sort -n -u test.txt
1
10
12
14
120
ahed@DESKTOP-OK5G6FV:~/ahed$
```

يستخدم للبحث عن محتوى او نمط معين داخل الملف او ملفات 4- grep:

- النتيجة تكون على التيرمنال وليس على الفايل

- من الافضل كتابة النمط المبحوث عنه بين double qoutation "" و رح نعرف ليش بتجربة 4

```

ahed@DESKTOP-OK5G6FV:~/ahed$ grep 12 test.txt
12
120
12
ahed@DESKTOP-OK5G6FV:~/ahed$ grep 12 *
grep: my_folder: Is a directory
test.txt:12
test.txt:120
test.txt:12
test3.txt:12
test3.txt:12
test3.txt:120
testsort.txt:12
testsort.txt:12
testsort.txt:120
testsortuniq.txt:12
testsortuniq.txt:120
ahed@DESKTOP-OK5G6FV:~/ahed$ grep 12 *.txt
test.txt:12
test.txt:120
test.txt:12
test3.txt:12
test3.txt:12
test3.txt:120
testsort.txt:12
testsort.txt:12
testsort.txt:120
testsortuniq.txt:12
testsortuniq.txt:120
ahed@DESKTOP-OK5G6FV:~/ahed$

```

- `grep -n`: يستخرج المحتوى الذي تبحث عنه مع رقم السطر الموجود فيه
- `*.txt`: (text files) يعني كل الملفات النصية

```

ahed@DESKTOP-OK5G6FV:~/ahed$ grep -n "12" test.txt
2:12
3:120
5:12
ahed@DESKTOP-OK5G6FV:~/ahed$

```

- تستخرج كل محتوى الملف ما عدا المحتوى المبحوث عنه : `grep -v`

```
ahed@DESKTOP-OK5G6FV:~/ahed$ grep -v "12" test.txt
1
14
10
ahed@DESKTOP-OK5G6FV:~/ahed$
```

- كل نمط بتلاقيه بتطبعه على سطر منعزل : `grep -o`

```
ahed@DESKTOP-OK5G6FV:~/ahed$ grep "12" test.txt
12345678912
ahed@DESKTOP-OK5G6FV:~/ahed$ grep -o "12" test.txt
12
12
ahed@DESKTOP-OK5G6FV:~/ahed$
```

5- `ps`: تستخدم لعرض العمليات او البروسيسيز في النظام

- Processes (البروسيسيز) : **is a program that is being executed, even the commands are processes.**

● كل كوماند بتننفذه هو عبارة عن بروسيس

```

ahed@DESKTOP-OK5G6FV:~/ahed$ ps
  PID TTY          TIME CMD
   15 tty1      00:00:00 bash
  188 tty1      00:00:00 ps
ahed@DESKTOP-OK5G6FV:~/ahed$ ps -a
  PID TTY          TIME CMD
   15 tty1      00:00:00 bash
  189 tty1      00:00:00 ps
ahed@DESKTOP-OK5G6FV:~/ahed$ ps -aux
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.0   8972   428 ?        Ss1  11:10    0:00 /init
root        14  0.0  0.0   9328   252 tty1     Ss   11:10    0:00 /init
ahed        15  0.0  0.0  14348  4148 tty1     S    11:10    0:00 -bash
ahed       190  0.0  0.0  15880  2152 tty1     R    12:01    0:00 ps -aux
ahed@DESKTOP-OK5G6FV:~/ahed$ ps -ef
UID        PID  PPID  C STIME TTY          TIME CMD
root         1     0  0 11:10 ?            00:00:00 /init
root        14     1  0 11:10 tty1        00:00:00 /init
ahed        15    14  0 11:10 tty1        00:00:00 -bash
ahed       191    15  0 12:01 tty1        00:00:00 ps -ef
ahed@DESKTOP-OK5G6FV:~/ahed$

```

6- يرسل اشارة او سجنال لاي بروسيس موجود في النظام: kill-

```

ahed@DESKTOP-OK5G6FV: ~/ahed
ahed@DESKTOP-OK5G6FV:~$ ps -ef
UID        PID  PPID  C STIME TTY          TIME CMD
root         1     0  0 11:10 ?            00:00:00 /init
root        14     1  0 11:10 tty1        00:00:00 /init
ahed        15    14  0 11:10 tty1        00:00:00 -bash
root       199     1  0 12:07 tty2        00:00:00 /init
ahed       200   199  0 12:07 tty2        00:00:00 -bash
ahed       222    15  0 12:11 tty1        00:00:00 python3
ahed       226    15  8 12:11 tty1        00:00:01 python3 maim.py
ahed       228    200  0 12:12 tty2        00:00:00 ps -ef
ahed@DESKTOP-OK5G6FV:~$ kill -9 226
ahed@DESKTOP-OK5G6FV:~$

```

```

ahed@DESKTOP-OK5G6FV:~$ pkill -f -9 python3
ahed@DESKTOP-OK5G6FV:~$ ps -ef
  PID   PID  PPID  C  STIME TTY          TIME CMD
root      1     0  0  11:10 ?          00:00:00 /init
root     14      1  0  11:10 tty1        00:00:00 /init
ahed     15     14  0  11:10 tty1        00:00:00 -bash
root    199      1  0  12:07 tty2        00:00:00 /init
ahed    200    199  0  12:07 tty2        00:00:00 -bash
ahed    230    200  0  12:13 tty2        00:00:00 ps -ef
ahed@DESKTOP-OK5G6FV:~$

```

- بعض السجنا لهم اختصارات على الكيبورد مثلا `ctrl+c` تستخدم لايقاف بروسيس يعني بتبعت `SIGKILL` ، بتقدر تستخدمها بالتيرمنال اذا علقت مثلا بسبب كتابة كوماندا ليس بشكل كامل زي مثلا `grep 12`

7- `wc` : تستخدم لعد الاسطر والكلمات والحروف :

```

ahed@DESKTOP-OK5G6FV:~/ahed$ cat test3.txt
1
10
12
12
14
120
ahed@DESKTOP-OK5G6FV:~/ahed$ wc test3.txt
 6  6 18 test3.txt
ahed@DESKTOP-OK5G6FV:~/ahed$ wc -l test3.txt
6 test3.txt
ahed@DESKTOP-OK5G6FV:~/ahed$ wc -w test3.txt
6 test3.txt
ahed@DESKTOP-OK5G6FV:~/ahed$ wc -c test3.txt
18 test3.txt
ahed@DESKTOP-OK5G6FV:~/ahed$

```

8- `pip (|)` : تستخدم للدمج اكثر من كوماندا في سطر واحد :

Without pip

```
hed@DESKTOP-OK5G6FV:~/ahed$ ls -l > ls_out.txt
hed@DESKTOP-OK5G6FV:~/ahed$ grep "maim.py" ls_out.txt
-rw-r--r-- 1 ahed ahed  27 Jul 20 12:11 maim.py
hed@DESKTOP-OK5G6FV:~/ahed$
```

With pip

```
hed@DESKTOP-OK5G6FV:~/ahed$ ls -l | grep "maim.py"
-rw-r--r-- 1 ahed ahed  27 Jul 20 12:11 maim.py
hed@DESKTOP-OK5G6FV:~/ahed$
```

Q or small Task)

- Write a command line that counts the number of specific pattern occurrences in specific sequence or content .
- Write a command line that counts the number of files and directories in the current working directory.
- Write a command line that counts the number of not repeated lines in a specific file.

معينة بناء على الرقم او الاندكس (يبدأ ب 1 معينة او اعمدة تستخدم لتقطيع احرف : 9- cut
0) وليس

- احرف chars
- اعمدة fields

char


```
ahed@DESKTOP-OK5G6FV:~/ahed$ cat names.txt
ahed 5
ahad 6
amal 7
fadi 8
sari 10
ahed@DESKTOP-OK5G6FV:~/ahed$ cut -c1-4 names.txt
ahed
ahad
amal
fadi
sari
ahed@DESKTOP-OK5G6FV:~/ahed$ cut -c1 names.txt
a
a
a
f
s
ahed@DESKTOP-OK5G6FV:~/ahed$ cut -c1,3 names.txt
ae
aa
aa
fd
sr
ahed@DESKTOP-OK5G6FV:~/ahed$
```

Field

```

ahed@DESKTOP-OK5G6FV:~/ahed$ cut -c1-8 names.txt
ahed 5
ahad 6
amal 7
fadi 8
sari 10
mohammed
ahed@DESKTOP-OK5G6FV:~/ahed$ cut -d' ' -f1 names.txt
ahed
ahad
amal
fadi
sari
mohammed
ahed@DESKTOP-OK5G6FV:~/ahed$

```

- تعبر عن الفاصل بين الاعمدة -d
- اذا ما استخدمنا -d فهو يعتبر الفاصل بين الاعمده عبارة عن tab

- Q) write a command line that print the number of lines in specific file using wc command (don't use **wc -l**)

8- past: يستخدم لدمج محتوى الملفات في اوتبوت واحد او في فايل او ملف واحد

```

ahed@DESKTOP-OK5G6FV:~/ahed$ cat name.txt
ahmad
amal
amany
sari
ahed@DESKTOP-OK5G6FV:~/ahed$ cat idnum.txt
1
2
3
4
ahed@DESKTOP-OK5G6FV:~/ahed$ paste name.txt idnum.txt
ahmad 1
amal 2
amany 3
sari 4
ahed@DESKTOP-OK5G6FV:~/ahed$

```

- الفاصل بين محتوى الملفين هو عبارة عن tab
- لتغيير الفاصل بين محتوى الملفات نستخدم d- كما في الصورة الاتية

```

ahed@DESKTOP-OK5G6FV:~/ahed$ paste -d',' name.txt idnum.txt
ahmad,1
amal,2
amany,3
sari,4
ahed@DESKTOP-OK5G6FV:~/ahed$

```

- ممكن نستخدم لدمج محتوى نفس الملف

```
ahmed@DESKTOP-OK5G6FV:~/ahed$ cat name.txt
ahmad
amal
amany
sari
ahmed@DESKTOP-OK5G6FV:~/ahed$ paste -s name.txt
ahmad  amal  amany  sari
ahmed@DESKTOP-OK5G6FV:~/ahed$ paste -s -d',' name.txt
ahmad,amal,amany,sari
ahmed@DESKTOP-OK5G6FV:~/ahed$
```

9- find : يستخدم للبحث عن ملفات :

- للبحث من المكان او المجلد الحالي وما يحتويه نستخدم (.)

```

ahed@DESKTOP-OK5G6FV:~/ahed$ tree
.
├── idnum.txt
├── ls_out.txt
├── lsout
├── lsout.txt
├── maim.py
├── my_folder
│   └── name.txt
├── name.txt
├── names.txt
├── test.txt
├── test3.txt
├── testsort.txt
└── testsortuniq.txt

1 directory, 12 files
ahed@DESKTOP-OK5G6FV:~/ahed$ find -name "name.txt"
./my_folder/name.txt
./name.txt
ahed@DESKTOP-OK5G6FV:~/ahed$ find . -name "name.txt"
./my_folder/name.txt
./name.txt
ahed@DESKTOP-OK5G6FV:~/ahed$

```

● للبحث من الروت نستخدم (/)

```

ahed@DESKTOP-OK5G6FV:~/ahed$ find / -name "name.txt"
find: '/etc/polkit-1/localauthority': Permission denied
find: '/etc/ssl/private': Permission denied
find: '/etc/sssd': Permission denied
/home/ahed/ahed/my_folder/name.txt
/home/ahed/ahed/name.txt
find: '/mnt/c/$Recycle.Bin/S-1-5-18': Permission denied
find: '/mnt/c/$Recycle.Bin/S-1-5-21-141321038-2014729738-1193693878-1000': Permission denied
find: '/mnt/c/found.000': Permission denied
find: '/mnt/c/Program Files/Microsoft SQL Server/MSRS12.MSSQLSERVER/Reporting Services': Permission denied
find: '/mnt/c/Program Files/Microsoft SQL Server/MSSQL12.MSSQLSERVER/MSSQL/Backup': Permission denied
find: '/mnt/c/Program Files/Microsoft SQL Server/MSSQL12.MSSQLSERVER/MSSQL/Binn/Xtp': Permission denied
find: '/mnt/c/Program Files/Microsoft SQL Server/MSSQL12.MSSQLSERVER/MSSQL/DATA': Permission denied
find: '/mnt/c/Program Files/Microsoft SQL Server/MSSQL12.MSSQLSERVER/MSSQL/FTData': Permission denied
find: '/mnt/c/Program Files/Microsoft SQL Server/MSSQL12.MSSQLSERVER/MSSQL/JOBS': Permission denied
find: '/mnt/c/Program Files/Microsoft SQL Server/MSSQL12.MSSQLSERVER/MSSQL/Log': Permission denied
find: '/mnt/c/Program Files/Microsoft SQL Server/MSSQL12.MSSQLSERVER/MSSQL/repldata': Permission denied
find: '/mnt/c/Program Files/National Instruments/Shared/Web Server/certs/keys': Permission denied
find: '/mnt/c/Program Files/Windows Defender Advanced Threat Protection/Classification/Configuration': Permission denied
find: '/mnt/c/Program Files/WindowsApps': Permission denied
find: '/mnt/c/Program Files (x86)/Google/CrashReports': Permission denied
find: '/mnt/c/Program Files (x86)/Microsoft/EdgeUpdate/Install/{90BEEA12-4786-4102-B8E0-98807DF1C163}/EDGEMITMP_
b': Permission denied
find: '/mnt/c/ProgramData/HP/HP Touchpoint Analytics Client': Permission denied
find: '/mnt/c/ProgramData/Microsoft/Crypto/PCPKSP/WindowsAIK': Permission denied
find: '/mnt/c/ProgramData/Microsoft/Crypto/RSA/S-1-5-18': Permission denied
find: '/mnt/c/ProgramData/Microsoft/Crypto/SystemKeys': Permission denied
find: '/mnt/c/ProgramData/Microsoft/Diagnosis': Permission denied
find: '/mnt/c/ProgramData/Microsoft/Network/Download': Permission denied

```

يستخدم لتبديل حرف ب حرف اخر او حذف حرف معين : tr - 10

تبدیل الاحرف

```

ahed@DESKTOP-OK5G6FV:~/ahed$ cat trt.txt
The UNIX operating system was pioneered by Ken Thompson and Dennis Ritchie at
Bell Laboratories in the late 1960s. One of the primary goals in the design
of the UNIX system was to create an environment that promoted efficient program
development.
ahed@DESKTOP-OK5G6FV:~/ahed$ tr 'e' 'x' < trt.txt
Thx UNIX opxrating systxm was pionxxrxd by Kxn Thompson and Dxnnis Ritchix at
Bxll Laboratorix in thx latx 1960s. Onx of thx primary goals in thx dxsign
of thx UNIX systxm was to crxatx an xnvironmxnt that promotxd xfficixnt program
dxvxlopmxnt.
ahed@DESKTOP-OK5G6FV:~/ahed$

```

```

ahed@DESKTOP-OK5G6FV:~/ahed$ echo "ahed mafarjeh" | tr ' ' '+'
ahed+mafarjeh
ahed@DESKTOP-OK5G6FV:~/ahed$

```

\n = \12

```

ahed@DESKTOP-OK5G6FV:~/ahed$ echo "ahed mafarjeh" | tr ' ' '\n'
ahed
mafarjeh
ahed@DESKTOP-OK5G6FV:~/ahed$ echo "ahed mafarjeh" | tr ' ' '\12'
ahed
mafarjeh
ahed@DESKTOP-OK5G6FV:~/ahed$

```

لجذف الجرف

```

ahed@DESKTOP-OK5G6FV:~/ahed$ echo "ahed mafarjeh" | tr -d ' '
ahedmafarjeh
ahed@DESKTOP-OK5G6FV:~/ahed$

```

لتدليل مجموعة من الاحرف المتتالية بحرف اخر

```
ahed@DESKTOP-OK5G6FV:~/ahed$ echo "ahedbbbbbbmafarjeh" | tr -s 'b' ' '  
ahed mafarjeh  
ahed@DESKTOP-OK5G6FV:~/ahed$
```

- كل الكوماندز الي اخذناها في هذا الملف لا ينعكس تأثيرها على الفايل نفسه وانما تطبع الاوتبوت على التيرمنال

Task: write command line that print the owner name, month, day and the name of files and directories in the file that attached in exp#2 folder (task1.txt).