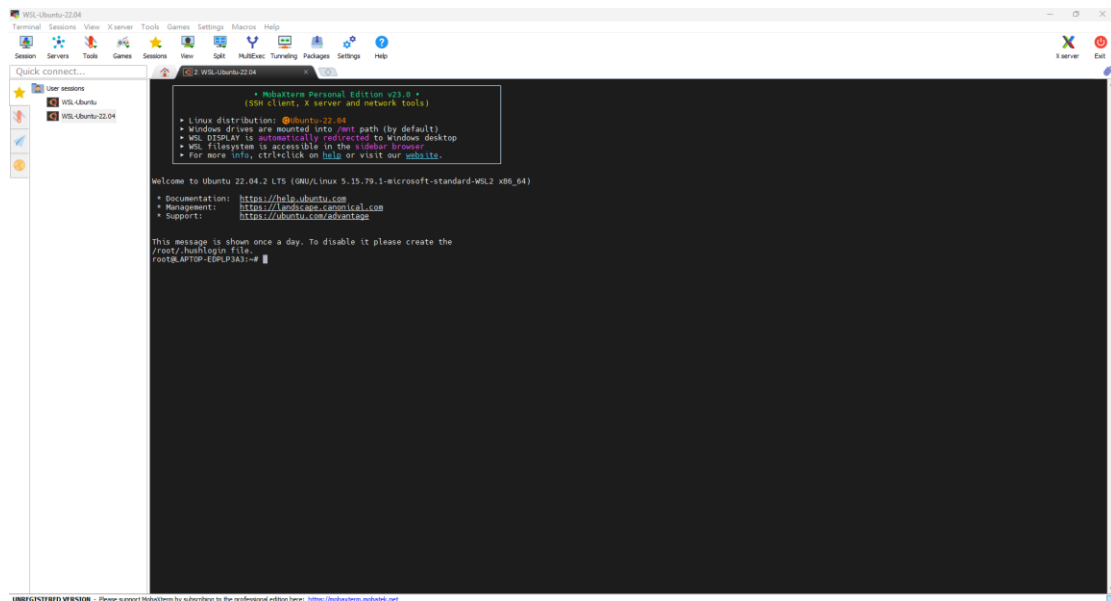


## 前情提要

由於老師上課告訴我們 MobaXterm 開啟 wsl 的 linux 會比較方便，因此我以此為開發環境



## 學習程式

1. ls : 列出檔案(-a 列出所有檔案)
2. cd (path name) : 前往某個位置路徑，若要回上一個位置，則位置名稱為一
3. pwd : 列出位置路徑
4. mkdir : 創建位置路徑

```
root@LAPTOP-EDPLP3A3:~# ls -a
.  ..  .Xauthority  .bash_history  .bashrc  .config  .motd_shown  .profile
root@LAPTOP-EDPLP3A3:~# mkdir myfile
root@LAPTOP-EDPLP3A3:~# ls -a
.  ..  .Xauthority  .bash_history  .bashrc  .config  .motd_shown  .profile  myfile
root@LAPTOP-EDPLP3A3:~# cd myfile
root@LAPTOP-EDPLP3A3:~/myfile# cd..
cd..: command not found
root@LAPTOP-EDPLP3A3:~/myfile# cd--
cd--: command not found
root@LAPTOP-EDPLP3A3:~/myfile# cd --
root@LAPTOP-EDPLP3A3:~#
```

```
root@LAPTOP-EDPLP3A3:~/myfile# pwd
/root/myfile
```

5. rmdir : 刪除位置
6. cat : 開啟檔案或合併檔案

(註：file1.txt 內容為 123，file.txt 內容為 456)

```

root@LAPTOP-EDPLP3A3:~# rmdir myfile
root@LAPTOP-EDPLP3A3:~# mkdir myfile
root@LAPTOP-EDPLP3A3:~# cd myfile
root@LAPTOP-EDPLP3A3:~/myfile# > file1.txt
root@LAPTOP-EDPLP3A3:~/myfile# >> file2.txt
root@LAPTOP-EDPLP3A3:~/myfile# cat file1.txt file2.txt > file0.txt
root@LAPTOP-EDPLP3A3:~/myfile# cat file1.txt
123root@LAPTOP-EDPLP3A3:~/myfile# cat file2.txt
456root@LAPTOP-EDPLP3A3:~/myfile# cat file0.txt
123456root@LAPTOP-EDPLP3A3:~/myfile# █

```

7. cp：複製檔案

8. mv：修改檔案名稱

9. rm：刪除檔案

```

123456root@LAPTOP-EDPLP3A3:~/myfile# cp file1.txt copy.txt
root@LAPTOP-EDPLP3A3:~/myfile# cat copy.txt
123root@LAPTOP-EDPLP3A3:~/myfile# mv file1.txt file3.txt
root@LAPTOP-EDPLP3A3:~/myfile# mv file3.txt file1.txt
root@LAPTOP-EDPLP3A3:~/myfile# rm copy.txt

```

10. grep：找檔案裡的關鍵字

```

root@LAPTOP-EDPLP3A3:~/myfile# grep 123 file1.txt
123
root@LAPTOP-EDPLP3A3:~/myfile# grep 125 file.txt
grep: file.txt: No such file or directory
root@LAPTOP-EDPLP3A3:~/myfile# grep 1 file.txt
grep: file.txt: No such file or directory
root@LAPTOP-EDPLP3A3:~/myfile# man wc

```

11. more：將檔案一頁頁列出

12. file：檢查檔案類型

13. diff：比較兩個檔案

14. clear：清空屏幕

```

root@LAPTOP-EDPLP3A3:~/myfile# more file0.txt
123456
root@LAPTOP-EDPLP3A3:~/myfile# file file1.txt
file1.txt: ASCII text, with no line terminators
root@LAPTOP-EDPLP3A3:~/myfile# diff file1.txt file2.txt -y -w 30
123      | 456root@LAPTOP-EDPLP3A3:~/myfile#
root@LAPTOP-EDPLP3A3:~/myfile# clear█

```

15. man：在線上手冊用指令名稱尋找指令意義

16. whatis：用指令名稱尋找指令意義

17. apropos (keyword)：用關鍵字尋找指令

```

root@LAPTOP-EDPLP3A3:~/myfile# man wc
root@LAPTOP-EDPLP3A3:~/myfile# whatis wc
wc (1) - print newline, word, and byte counts for each file
root@LAPTOP-EDPLP3A3:~/myfile# apropos copy
cp (1) - copy files and directories
cpgr (8) - copy with locking the given file to the password or group file
cpio (1) - copy files to and from archives
cppw (8) - copy with locking the given file to the password or group file
dd (1) - convert and copy a file
debconf-copydb (1) - copy a debconf database
git-checkout-index (1) - Copy files from the index to the working tree
install (1) - copy files and set attributes
ntfscp (8) - copy file to an NTFS volume.
objcopy (1) - copy and translate object files
rcp (1) - OpenSSH secure file copy
rsync (1) - a fast, versatile, remote (and local) file-copying tool
scp (1) - OpenSSH secure file copy
ssh-copy-id (1) - use locally available keys to authorise logins on a remote machine
x86_64-linux-gnu-objcopy (1) - copy and translate object files

```

```

NAME
    wc - print newline, word, and byte counts for each file

SYNOPSIS
    wc [OPTION]... [FILE]...
    wc [OPTION]... --files-from=FILE

DESCRIPTION
    Print newline, word, and byte counts for each FILE, and a total line if more than one FILE is specified. A word is a non-zero-length sequence of characters delimited by white space.
    With no FILE, or when FILE is -, read standard input.
    The options below may be used to select which counts are printed, always in the following order: newline, word, character, byte, maximum line length.
    -c, --bytes
        print the byte counts
    -m, --chars
        print the character counts
    -L, --lines
        print the newline counts
    --files-from=FILE
        read input from the files specified by null-terminated names in file FILE; if FILE is -, then read names from standard input
    -L, --max-line-length=LENGTH
        print the maximum display width
    -w, --word
        print the word counts
    --help
        print this help and exit
    --version
        output version information and exit

AUTHOR
    Written by Paul Rubin and David Mackenzie.

REPORTING BUGS
    GNU coreutils online help: <http://www.gnu.org/software/coreutils/>
    Report any translation bugs to <http://translationproject.org/team>

COPYING
    Copyright © 2020 Free Software Foundation, Inc. License GPLv3+: GNU GPL version 3 or later <http://www.gnu.org/licenses/gpl.html>.
    This is free software: you are free to change and redistribute it. There is no warranty, to the extent permitted by law.

SEE ALSO
    Full documentation <http://www.gnu.org/software/coreutils/>
    or available locally via: <info:coreutils> or <man:coreutils>

GNU coreutils 8.32

```

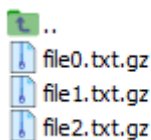
18. gzip：主要用來壓縮與解壓縮檔案

19. tar：以另一個名字壓縮或解壓縮來備份檔案

```

root@LAPTOP-EDPLP3A3:~/myfile# gzip *
root@LAPTOP-EDPLP3A3:~/myfile# gzip -dv *
file0.txt.gz:  -33.3% -- replaced with file0.txt
file1.txt.gz:  -66.7% -- replaced with file1.txt
file2.txt.gz:  -66.7% -- replaced with file2.txt
root@LAPTOP-EDPLP3A3:~/myfile# tar -czvf test.txt.gz file1.txt
file1.txt
root@LAPTOP-EDPLP3A3:~/myfile# tar -tzvf test.txt.gz
-rw-r--r-- root/root      3 2023-03-06 00:24 file1.txt
root@LAPTOP-EDPLP3A3:~/myfile# tar -xzvf test.txt.gz
file1.txt
root@LAPTOP-EDPLP3A3:~/myfile#

```



20. sudo：以系統管理員的身分執行的指令(-l 顯示權限)

21. apt：軟件管理的指令，包括安裝、更新、刪除

22. ps：顯示進程狀態(-A 顯示進程訊息)

23. kill：刪除執行中的程序或工作(-l 顯示信號)

```

root@LAPTOP-EDPLP3A3:~# sudo -l
Matching Defaults entries for root on LAPTOP-EDPLP3A3:
    env_reset, mail_badpass, secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin\:/snap/bin, use_pty

User root may run the following commands on LAPTOP-EDPLP3A3:
    (ALL : ALL) ALL
root@LAPTOP-EDPLP3A3:~# sudo apt upgrade
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
Calculating upgrade ... Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@LAPTOP-EDPLP3A3:~# ps -A
  PID TTY          TIME CMD
    1 ?        00:00:00 init(Ubuntu-22.
    4 ?        00:00:00 init
    8 ?        00:00:00 Relay(9)
   10 ?        00:00:00 wslconnect
   11 pts/1    00:00:00 bash
  165 pts/1    00:00:00 ps
root@LAPTOP-EDPLP3A3:~# kill -l
 1) SIGHUP       2) SIGINT       3) SIGQUIT      4) SIGILL       5) SIGTRAP
 6) SIGABRT     7) SIGBUS      8) SIGFPE      9) SIGKILL     10) SIGUSR1
11) SIGSEGV    12) SIGUSR2    13) SIGPIPE    14) SIGALRM     15) SIGTERM
16) SIGSTKFLT 17) SIGCHLD   18) SIGCONT    19) SIGSTOP    20) SIGTSTP
21) SIGTTIN    22) SIGTTOU   23) SIGURG     24) SIGXCPU    25) SIGXFSZ
26) SIGVTALRM 27) SIGPROF   28) SIGWINCH   29) SIGIO       30) SIGPWR
31) SIGSYS     34) SIGRTMIN  35) SIGRTMIN+1 36) SIGRTMIN+2 37) SIGRTMIN+3
38) SIGRTMIN+4 39) SIGRTMIN+5 40) SIGRTMIN+6 41) SIGRTMIN+7 42) SIGRTMIN+8
43) SIGRTMIN+9 44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13 52) SIGRTMAX-12
53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9  56) SIGRTMAX-8  57) SIGRTMAX-7
58) SIGRTMAX-6 59) SIGRTMAX-5 60) SIGRTMAX-4 61) SIGRTMAX-3 62) SIGRTMAX-2
63) SIGRTMAX-1 64) SIGRTMAX

```

24. nano：在終端機編輯文字檔案

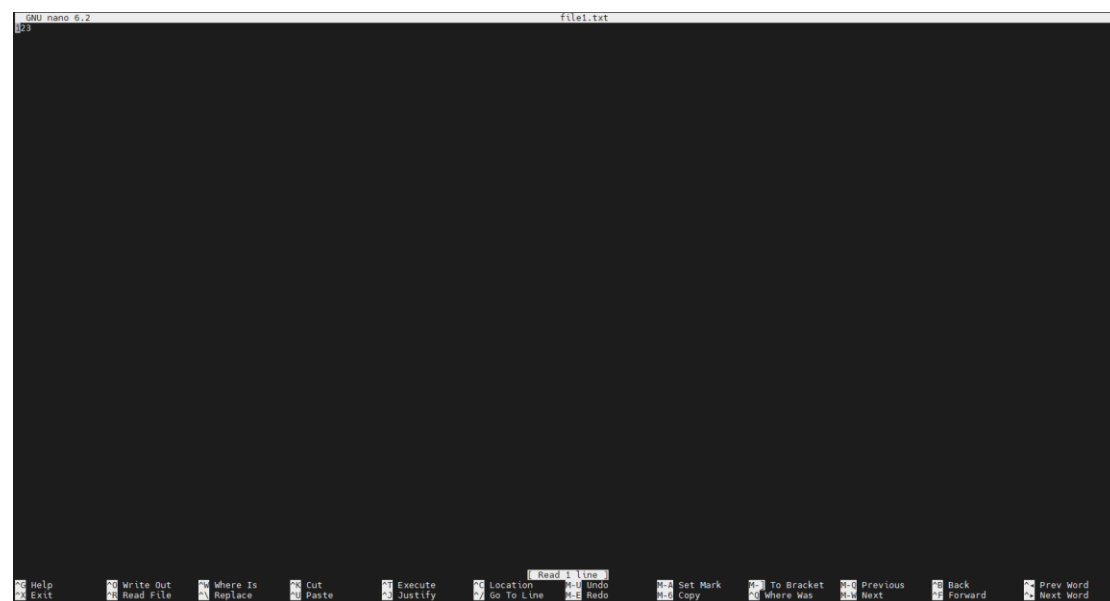
25. date：顯示或設定時間

26. bc：linux 的計算器(需用 apt install bc 這個指令下載)

```

root@LAPTOP-EDPLP3A3:~/myfile# nano file1.txt
root@LAPTOP-EDPLP3A3:~/myfile# date
Sun Mar 12 12:39:55 CST 2023

```



```

root@LAPTOP-EDPLP3A3:~/myfile# apt install bc
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
The following NEW packages will be installed:
  bc
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 87.6 kB of archives.
After this operation, 220 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 bc amd64 1.07.1-3build1 [87.6 kB]
Fetched 87.6 kB in 1s (73.6 kB/s)
Selecting previously unselected package bc.
(Reading database ... 24120 files and directories currently installed.)
Preparing to unpack .../bc_1.07.1-3build1_amd64.deb ...
Unpacking bc (1.07.1-3build1) ...
Setting up bc (1.07.1-3build1) ...
Processing triggers for install-info (6.8-4build1) ...
Processing triggers for man-db (2.10.2-1) ...
root@LAPTOP-EDPLP3A3:~/myfile# echo "1+1"
1+1
root@LAPTOP-EDPLP3A3:~/myfile# echo "1+1"| bc
2
root@LAPTOP-EDPLP3A3:~/myfile# █

```

27. ncal(由於 cal 不知為何無法執行，因此以 ncal 替代)：顯示日期(需先安裝 bsdmainutils)

```

root@LAPTOP-EDPLP3A3:~# apt-get install bsdmainutils
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
The following additional packages will be installed:
  ncal
Suggested packages:
  calendar whois vacation mailutils
The following NEW packages will be installed:
  bsdmainutils ncal
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 23.4 kB of archives.
After this operation, 97.3 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Ign:1 http://archive.ubuntu.com/ubuntu jammy/universe amd64 ncal amd64 12.1.7+nm3ubuntu2
Ign:2 http://archive.ubuntu.com/ubuntu jammy/universe amd64 bsdmainutils all 12.1.7+nm3ubuntu2
Ign:1 http://archive.ubuntu.com/ubuntu jammy/universe amd64 ncal amd64 12.1.7+nm3ubuntu2
Ign:2 http://archive.ubuntu.com/ubuntu jammy/universe amd64 bsdmainutils all 12.1.7+nm3ubuntu2
Get:1 http://archive.ubuntu.com/ubuntu jammy/universe amd64 ncal amd64 12.1.7+nm3ubuntu2 [20.2 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/universe amd64 bsdmainutils all 12.1.7+nm3ubuntu2 [3170 B]
Fetched 23.4 kB in 2min 41s (144 B/s)
Selecting previously unselected package ncal.
(Reading database ... 24137 files and directories currently installed.)
Preparing to unpack .../ncal_12.1.7+nm3ubuntu2_amd64.deb ...
Unpacking ncal (12.1.7+nm3ubuntu2) ...
Selecting previously unselected package bsdmainutils.
Preparing to unpack .../bsdmainutils_12.1.7+nm3ubuntu2_all.deb ...
Unpacking bsdmainutils (12.1.7+nm3ubuntu2) ...
Setting up ncal (12.1.7+nm3ubuntu2) ...
Setting up bsdmainutils (12.1.7+nm3ubuntu2) ...
Processing triggers for man-db (2.10.2-1) ...
root@LAPTOP-EDPLP3A3:~# cal
-bash: /mnt/c/Users/User/AppData/Roaming/MobaXterm/slash/bin/cal: cannot execute binary file: Exec format error
root@LAPTOP-EDPLP3A3:~# ncal
      March 2023
Su       5 12 19 26
Mo       6 13 20 27
Tu       7 14 21 28
We       1  8 15 22 29
Th       2  9 16 23 30
Fr       3 10 17 24 31
Sa       4 11 18 25

```

28. locate：尋找檔案(需先安裝 mlocate)

29. whereis：尋找檔案

30. find：尋找檔案

```
root@LAPTOP-EDPLP3A3:~# locate myfile
/mnt/c/Program Files/MATLAB/examples/matlab/data/myfile1.txt
/mnt/c/Program Files/MATLAB/examples/matlab/data/myfile3.txt
/mnt/c/Program Files/MATLAB/examples/matlab/main/myfile1.m
/mnt/c/Program Files/MATLAB/examples/matlab/main/myfile2.m
/mnt/c/Program Files/MATLAB/examples/matlab/main/myfile3.m
/root/myfile
/root/myfile/file0.txt
/root/myfile/file1.txt
/root/myfile/file2.txt
/root/myfile/test.txt.gz
root@LAPTOP-EDPLP3A3:~# whereis myfile
myfile:
root@LAPTOP-EDPLP3A3:~# whereis file
file: /usr/bin/file /usr/lib/file /usr/share/file /usr/share/man/man1/file.1.gz
root@LAPTOP-EDPLP3A3:~# whereis file1.txt
file1.txt:
root@LAPTOP-EDPLP3A3:~# cd myfile
root@LAPTOP-EDPLP3A3:~/myfile# find . -type f
./file2.txt
./test.txt.gz
./file0.txt
./file1.txt
root@LAPTOP-EDPLP3A3:~/myfile# █
```

小心得：在查詢資料的過程中，我學會了不少 linux 語法，相信我未來能越來越進步

參考資料

[UNIX Tutorial One \(surrey.ac.uk\)](http://www.surrey.ac.uk/~cs/teaching/1styear/unix/tutorial1/)

[Linux Command 命令列指令與基本操作入門教學 \(techbridge.cc\)](http://techbridge.cc/linux-command/)

[Linux 命令大全 | 菜鸟教程 \(runoob.com\)](http://runoob.com/linux-command/)

[Linux 日曆 cal 與 ncal 指令教學，產生月曆、年曆的工具 - G. T. Wang \(gtwang.org\)](http://gtwang.org/linux-cal-ncal/)