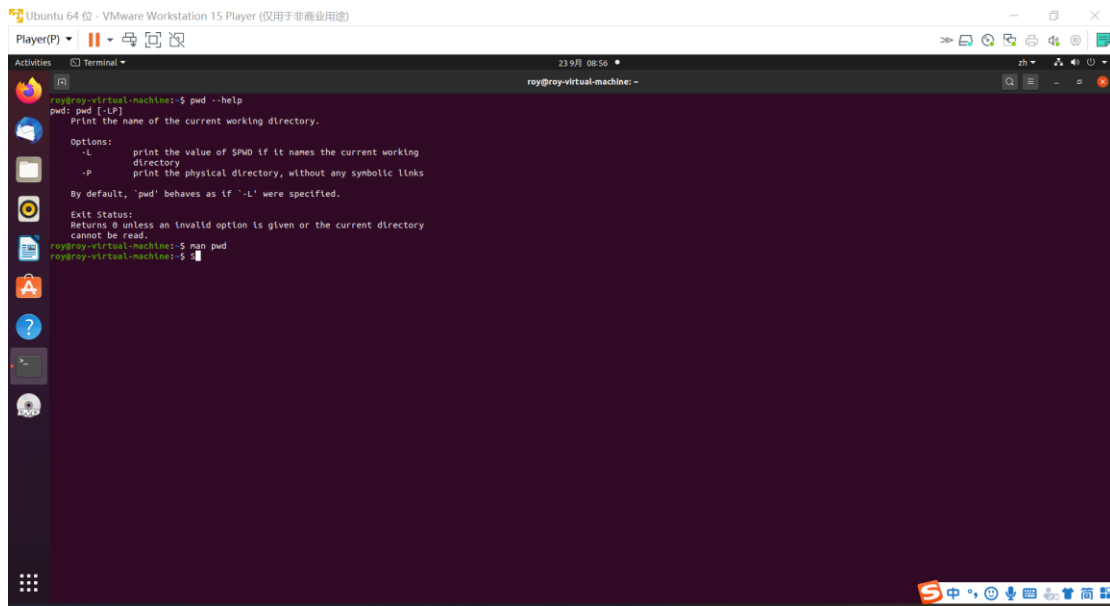


## Basic



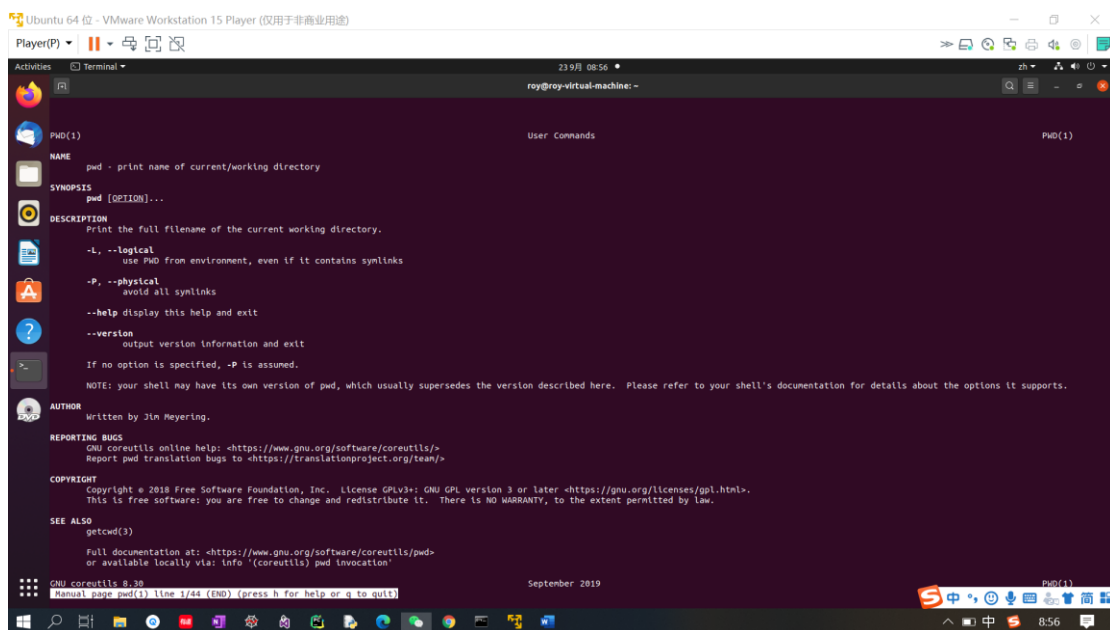
```
roy@roy-virtual-machine:~$ pwd --help
pwd: pwd [-LP]
Print the name of the current working directory.

Options:
  -L      print the value of $PWD if it names the current working
          directory
  -P      print the physical directory, without any symbolic links

By default, 'pwd' behaves as if '-L' were specified.

Exit Status:
Returns 0 unless an invalid option is given or the current directory
cannot be read.
roy@roy-virtual-machine:~$ man pwd
roy@roy-virtual-machine:~$
```

Command: `pwd – help`



```
NAME
  pwd - print name of current/working directory

SYNOPSIS
  pwd [OPTION]...

DESCRIPTION
  Print the full filename of the current working directory.

  -L, --logical
      use PWD from environment, even if it contains symlinks

  -P, --physical
      avoid all symlinks

  --help
      display this help and exit

  --version
      output version information and exit

  If no option is specified, -P is assumed.

  NOTE: your shell may have its own version of pwd, which usually supersedes the version described here. Please refer to your shell's documentation for details about the options it supports.

AUTHOR
  Written by Jim Meyerling.

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

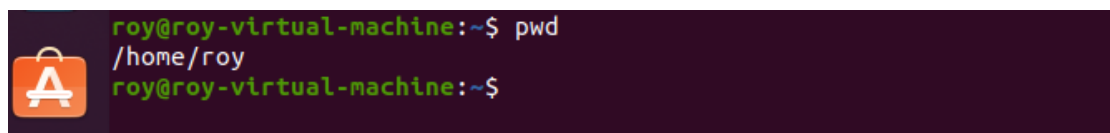
COPYRIGHT
  Copyright © 2018 Free Software Foundation, Inc. License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
  This is free software: you are free to change and redistribute it. There is NO WARRANTY, to the extent permitted by law.

SEE ALSO
  getcwd(3)

  Full documentation at: <https://www.gnu.org/software/coreutils/pwd>
  or available locally via: info '(coreutils) pwd invocation'

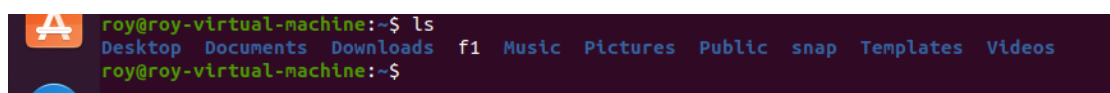
GNU coreutils 8.30
Manual page pwd(1) line 1/44 (END) (press h for help or q to quit)
September 2019
```

Command: `man pwd`



```
roy@roy-virtual-machine:~$ pwd
/home/roy
roy@roy-virtual-machine:~$
```

Command: `pwd`, to print the current working directory.



```
roy@roy-virtual-machine:~$ ls
Desktop  Documents  Downloads  f1  Music  Pictures  Public  snap  Templates  Videos
roy@roy-virtual-machine:~$
```

Command: ls, list all the directories in the current working directory.

```
roy@roy-virtual-machine:~$ ls -a
.  .bash_history  .bashrc  .config  Documents  f1  .local  Music  Pictures  Public  .ssh  .sudo_as_admin_successful  Templates
.. .bash_logout  .cache    Desktop  Downloads  .gnupg  .mozilla  .pan_environment  .profile  snap  .sudo_as_admin_successful  Templates  Videos
roy@roy-virtual-machine:~$
```

Command: ls -a, list all files

```
roy@roy-virtual-machine:~$ ls -l
total 40
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Desktop
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Documents
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Downloads
-rw-rw--w- 1 roy roy 86 6月 15 2020 f1
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Music
drwxr-xr-x 2 roy roy 4096 9月 23 08:53 Pictures
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Public
drwxr-xr-x 3 roy roy 4096 6月 15 2020 snap
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Templates
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Videos
roy@roy-virtual-machine:~$
```

Command: ls -l, long list of all the directories.

```
roy@roy-virtual-machine:~$ cd ..
roy@roy-virtual-machine:/home$ cd .
roy@roy-virtual-machine:/home$
```

Command: cd .. cd. Change directory to the parent directory and change directory to the current directory.

```
roy@roy-virtual-machine:/home$ cd .
roy@roy-virtual-machine:/home$ history
 1 sudo apt-get install open-vm-tools
 2 sudo apt-get install open-vm*
 3 reboot
 4 ls
 5 cd ..
 6 ls
 7 cd roy
 8 pwd
 9 ls
10 cd ..
11 pwd
12 cd ..
13 pwd
14 cd ..
15 pwd
16 cd roy
17 cd home
18 cd roy
19 pwd
20 ls
21 pwd
22 cd Desktop
23 ls
24 ls -l
25 cd ..
26 pwd
27 which bash
28 echo shell
29 cal
30 cal 6 2019
31 history
32 cal 6 2019
33 ls -l
34 hostname --help
35 man hostname
36 info hostname
37 pwd
38 ls
39 cd Desktop
40 cd ~
41 pwd
42 cd ..
43 cd..
44 cd ..
45 ls
46 ls -l
```

Command: history, list all the history commands.

```
roy@roy-virtual-machine:~$ echo 'hello world!'
hello world!
```

Command: echo, to print out something on the terminal.

```
roy@roy-virtual-machine:~$ export
declare -x COLORTERM="truecolor"
declare -x DBUS_SESSION_BUS_ADDRESS="unix:path=/run/user/1000/bus"
declare -x DESKTOP_SESSION="ubuntu"
declare -x DISPLAY=":0"
declare -x GDMSESSION="ubuntu"
declare -x GJS_DEBUG_OUTPUT="stderr"
declare -x GJS_DEBUG_TOPICS="JS ERROR;JS LOG"
declare -x GNOME_DESKTOP_SESSION_ID="this-is-deprecated"
declare -x GNOME_SHELL_SESSION_MODE="ubuntu"
declare -x GNOME_TERMINAL_SCREEN="/org/gnome/Terminal/screen/cdfec136_cd2f_49f3_98c5_21cd66ccfc9f"
declare -x GNOME_TERMINAL_SERVICE=":1.82"
declare -x GPG_AGENT_INFO="/run/user/1000/gnupg/S.gpg-agent:0:1"
declare -x GTK_MODULES="gail:atk-bridge"
declare -x HOME="/home/roy"
declare -x IM_CONFIG_PHASE="1"
declare -x INVOCATION_ID="4425ae6487d14b34994494b018989958"
declare -x JOURNAL_STREAM="9:51560"
declare -x LANG="en_GB.UTF-8"
declare -x LANGUAGE="en_GB:en"
declare -x LC_ADDRESS="zh_CN.UTF-8"
declare -x LC_IDENTIFICATION="zh_CN.UTF-8"
declare -x LC_MEASUREMENT="zh_CN.UTF-8"
declare -x LC_MONETARY="zh_CN.UTF-8"
declare -x LC_NAME="zh_CN.UTF-8"
declare -x LC_NUMERIC="zh_CN.UTF-8"
declare -x LC_PAPER="zh_CN.UTF-8"
declare -x LC_TELEPHONE="zh_CN.UTF-8"
declare -x LC_TIME="zh_CN.UTF-8"
declare -x LESSCLOSE="/usr/bin/lesspipe %s %s"
declare -x LESSOPEN="| /usr/bin/lesspipe %s"
declare -x LOGNAME="roy"
declare -x LS_COLORS="rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=00:su=37;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzna=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.lzo=01;31:*.xz=01;31:*.zst=01;31:*.tzt=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.wlm=01;31:*.swm=01;31:*.dwm=01;31:*.esd=01;31:*.jpg=01;31:*.png=01;31:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.webm=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.mpe=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:"
declare -x MANAGER="gnome-terminal"
```

Command: export, show all variables

```
roy@roy-virtual-machine:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
roy@roy-virtual-machine:~$ mkdir f1
roy@roy-virtual-machine:~$ ls
Desktop Documents Downloads f1 Music Pictures Public snap Templates Videos
roy@roy-virtual-machine:~$ mv f1 f2
roy@roy-virtual-machine:~$ ls
Desktop Documents Downloads f2 Music Pictures Public snap Templates Videos
roy@roy-virtual-machine:~$ rm -rf f2
roy@roy-virtual-machine:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
roy@roy-virtual-machine:~$
```

Command: mkdir, mv, rm -rf; First make a directory named “f1”, and then rename directory “f1” to “f2”. Finally, remove directory “f2” recursively and forcedly.

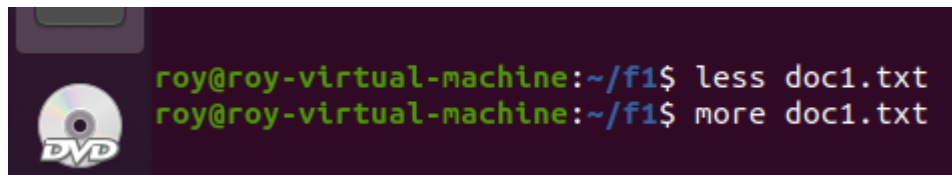
```
roy@roy-virtual-machine:~$ du
68      ./snap/snap-store/common/.cache/immodules
164     ./snap/snap-store/common/.cache/fontconfig
280     ./snap/snap-store/common/.cache/gnome-software/icons
1136    ./snap/snap-store/common/.cache/gnome-software/odrs
1236    ./snap/snap-store/common/.cache/gnome-software/cssresource
756     ./snap/snap-store/common/.cache/gnome-software/fwupd/remotes.d/lvfs
760     ./snap/snap-store/common/.cache/gnome-software/fwupd/remotes.d
764     ./snap/snap-store/common/.cache/gnome-software/fwupd
4408    ./snap/snap-store/common/.cache/gnome-software/appstream
7828    ./snap/snap-store/common/.cache/gnome-software
24      ./snap/snap-store/common/.cache/gio-modules
8092    ./snap/snap-store/common/.cache
8096    ./snap/snap-store/common
92      ./snap/snap-store/547/.local/share/icons/ubuntu-mono-light
44      ./snap/snap-store/547/.local/share/icons/Adwaita
324     ./snap/snap-store/547/.local/share/icons/Humanity
84      ./snap/snap-store/547/.local/share/icons/ubuntu-mono-dark
44      ./snap/snap-store/547/.local/share/icons/Humanity-Dark
8       ./snap/snap-store/547/.local/share/icons/hicolor
8       ./snap/snap-store/547/.local/share/icons/LoginIcons
608     ./snap/snap-store/547/.local/share/icons
188     ./snap/snap-store/547/.local/share/glib-2.0/schemas
192     ./snap/snap-store/547/.local/share/glib-2.0
804     ./snap/snap-store/547/.local/share
808     ./snap/snap-store/547/.local
8       ./snap/snap-store/547/.config/fontconfig
4       ./snap/snap-store/547/.config/gtk-2.0
4       ./snap/snap-store/547/.config/ibus
4       ./snap/snap-store/547/.config/gtk-3.0
4       ./snap/snap-store/547/.config/dconf
8       ./snap/snap-store/547/.config/autostart
52      ./snap/snap-store/547/.config
868     ./snap/snap-store/547
92      ./snap/snap-store/467/.local/share/icons/ubuntu-mono-light
44      ./snap/snap-store/467/.local/share/icons/Adwaita
324     ./snap/snap-store/467/.local/share/icons/Humanity
84      ./snap/snap-store/467/.local/share/icons/ubuntu-mono-dark
44      ./snap/snap-store/467/.local/share/icons/Humanity-Dark
8       ./snap/snap-store/467/.local/share/icons/hicolor
8       ./snap/snap-store/467/.local/share/icons/LoginIcons
608     ./snap/snap-store/467/.local/share/icons
188     ./snap/snap-store/467/.local/share/glib-2.0/schemas
192     ./snap/snap-store/467/.local/share/glib-2.0
804     ./snap/snap-store/467/.local/share
```

Command: du, give the disk usage descriptions

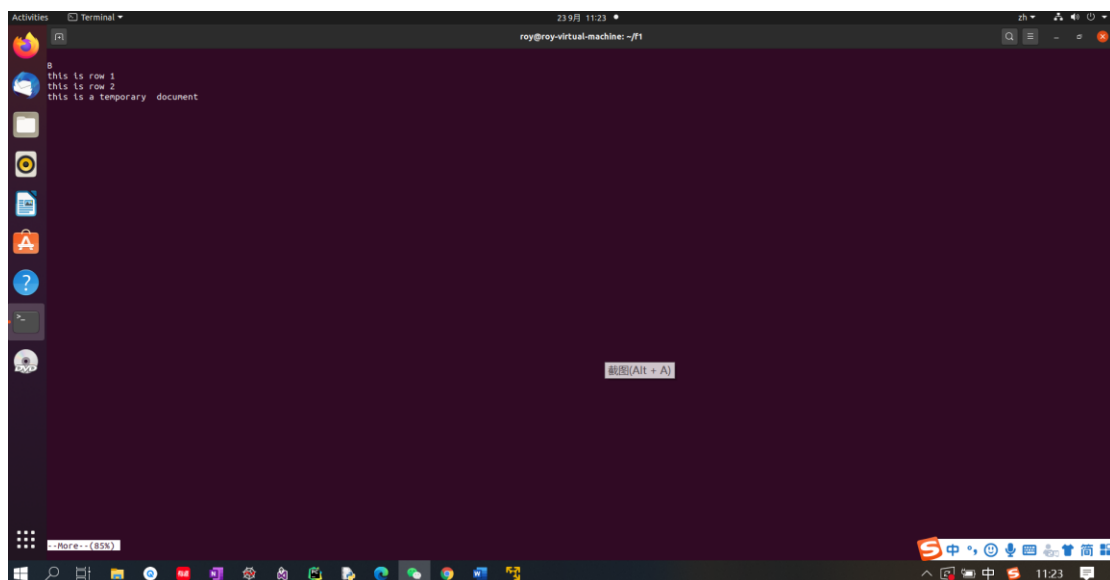
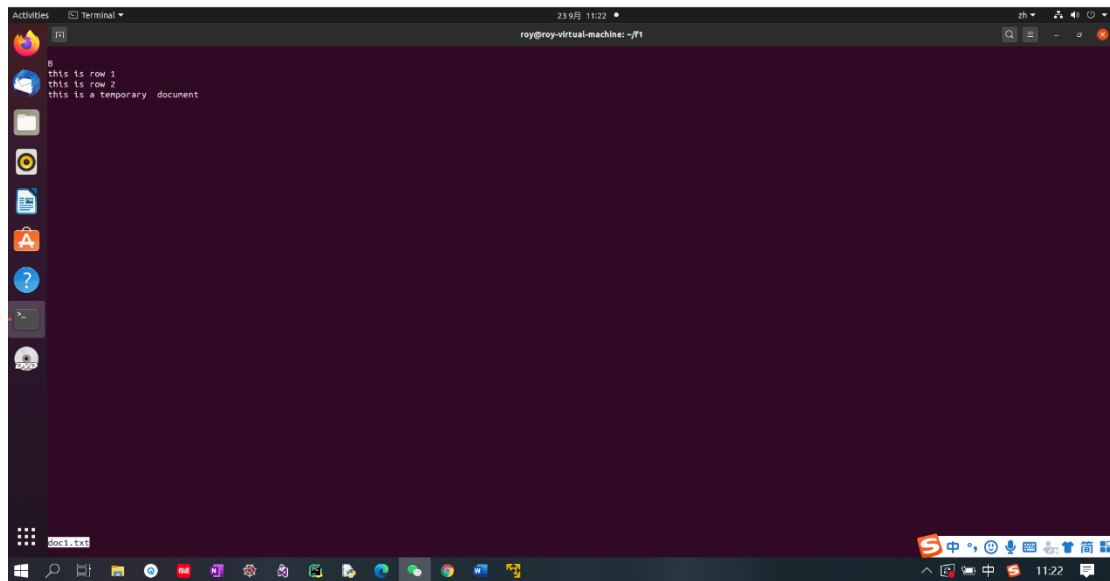
```
Activities Terminal 23 9月 11:21
roy@roy-virtual-machine: ~/f1
roy@roy-virtual-machine:~$ touch doc1.txt
roy@roy-virtual-machine:~$ ls
Desktop doc1.txt Documents Downloads Music Pictures Public snap Templates Videos
roy@roy-virtual-machine:~$ cd doc1.txt
bash: cd: doc1.txt: Not a directory
roy@roy-virtual-machine:~$ vi doc1.txt
roy@roy-virtual-machine:~$ mkdir f1
roy@roy-virtual-machine:~$ cp doc1.txt f1
roy@roy-virtual-machine:~$ cd f1
roy@roy-virtual-machine:~/f1$ ls
doc1.txt
roy@roy-virtual-machine:~/f1$ cat doc1.txt
B
this is row 1
this is row 2
this is a temporary document
```

Command: touch, vi, cp, cat; First, create a .txt file by command touch. Then, enter

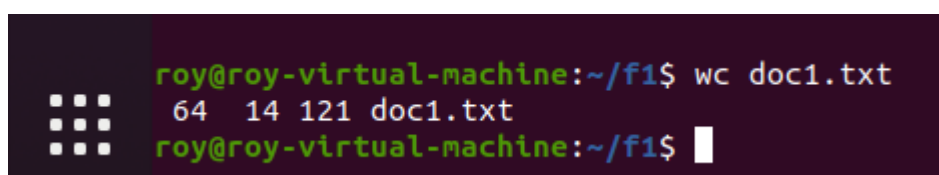
insert mode to modify the .txt file by command vi (filename). Next, copy the .txt file from the current directory to the directory “f1”. Finally, display the contents of the file by command cat (filename).

A terminal window with a dark purple background. On the left, there is a vertical sidebar with a DVD icon and a file explorer icon. The terminal text shows a user at a prompt in the directory ~/f1, running 'less doc1.txt' and then 'more doc1.txt'.

```
roy@roy-virtual-machine:~/f1$ less doc1.txt
roy@roy-virtual-machine:~/f1$ more doc1.txt
```



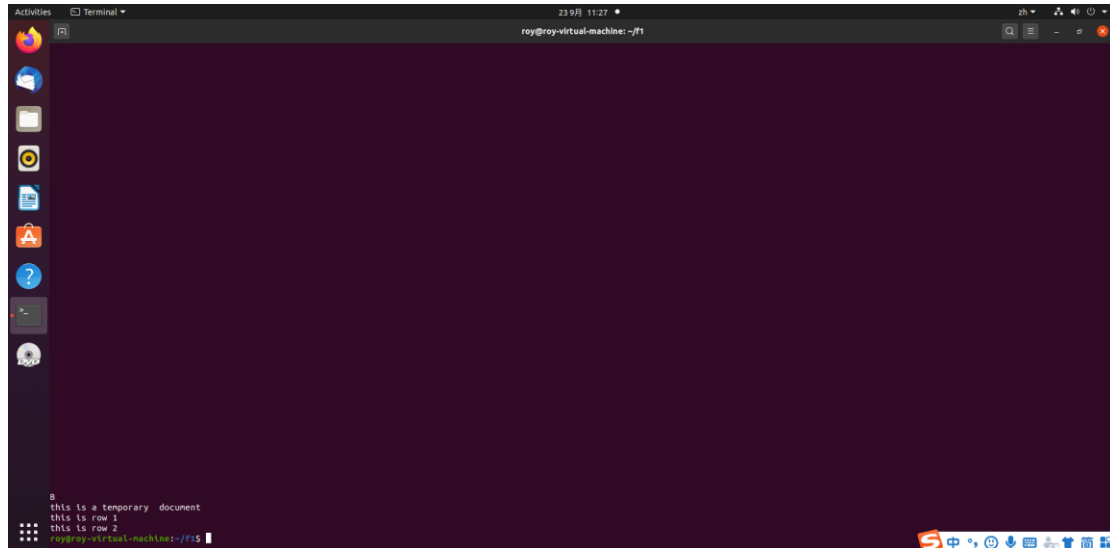
Command: less, more; interactive display contents of file.

A terminal window with a dark purple background. On the left, there is a vertical sidebar with a grid icon and a file explorer icon. The terminal text shows a user at a prompt in the directory ~/f1, running 'wc doc1.txt'. The output is '64 14 121 doc1.txt'.

```
roy@roy-virtual-machine:~/f1$ wc doc1.txt
64 14 121 doc1.txt
roy@roy-virtual-machine:~/f1$
```

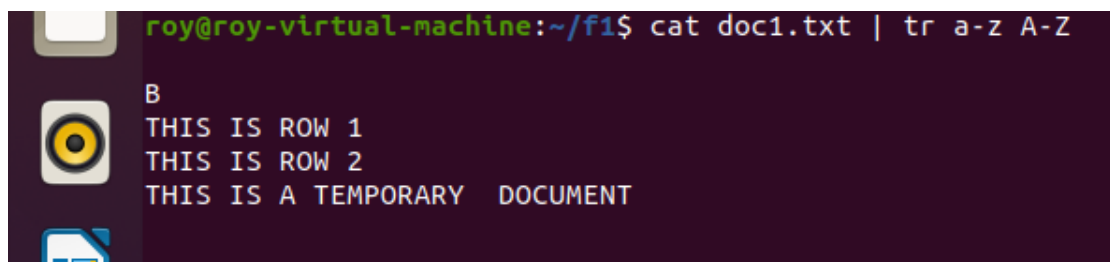
Command: wc, print newline, word, and byte counts for each file.

```
roy@roy-virtual-machine:~/f1$ sort doc1.txt
```

A terminal window titled 'Terminal' with a dark purple background. The prompt is 'roy@roy-virtual-machine: ~/f1\$'. The output of the 'wc' command is displayed: 'B' (byte count), 'this is a temporary document' (line count), 'this is row 1' (word count), 'this is row 2' (word count), and 'roy@roy-virtual-machine: ~/f1\$' (prompt). The window has a sidebar with application icons and a top bar with system information.

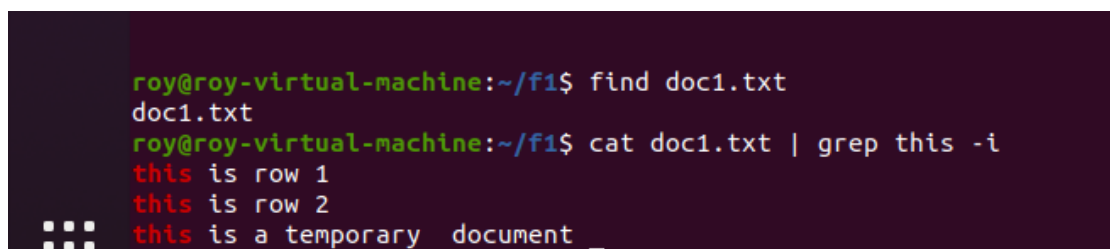
```
B
this is a temporary document
this is row 1
this is row 2
roy@roy-virtual-machine: ~/f1$
```

Command: sort, sort lines of text files.

A terminal window showing the command 'cat doc1.txt | tr a-z A-Z' being executed. The output is displayed in all caps: 'B', 'THIS IS ROW 1', 'THIS IS ROW 2', and 'THIS IS A TEMPORARY DOCUMENT'. The window has a sidebar with application icons and a top bar with system information.

```
roy@roy-virtual-machine:~/f1$ cat doc1.txt | tr a-z A-Z
B
THIS IS ROW 1
THIS IS ROW 2
THIS IS A TEMPORARY DOCUMENT
```

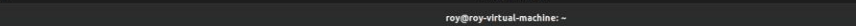
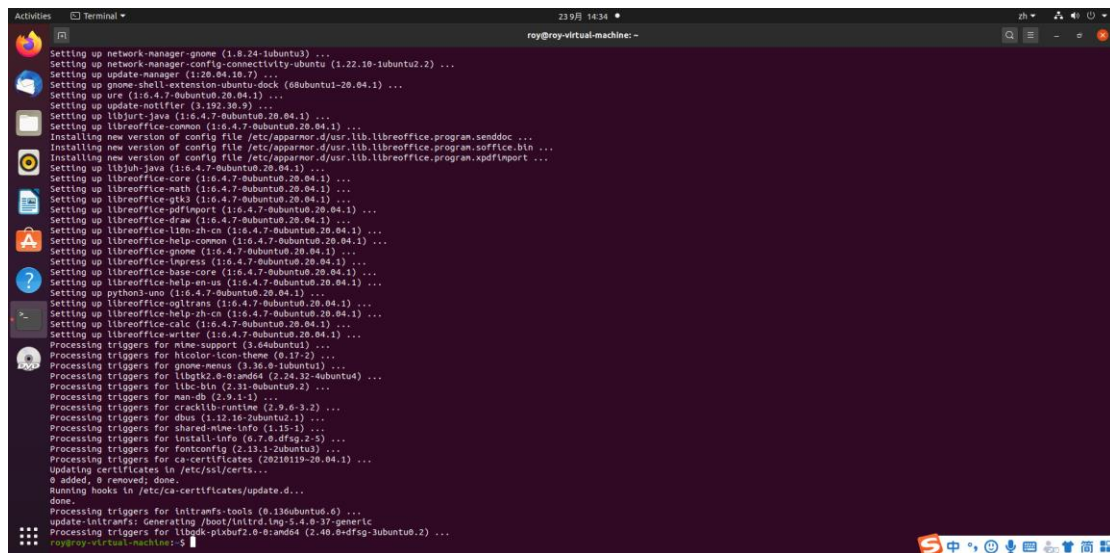
Command: tr |, translate character from the lower case to upper case. Pipe the contents of the .txt file to the tr command.

A terminal window showing two commands: 'find doc1.txt' and 'cat doc1.txt | grep this -i'. The output of 'find' is 'doc1.txt'. The output of 'grep' is 'this is row 1', 'this is row 2', and 'this is a temporary document'. The window has a sidebar with application icons and a top bar with system information.

```
roy@roy-virtual-machine:~/f1$ find doc1.txt
doc1.txt
roy@roy-virtual-machine:~/f1$ cat doc1.txt | grep this -i
this is row 1
this is row 2
this is a temporary document
```

Command: find, grep, search for files in a directory hierarchy. Print lines matching a RE pattern (includes this without consider the cases)





```

roy@roy-virtual-machine:~$ sudo apt-get upgrade
[sudo] password for roy:
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following package was automatically installed and is no longer required:
  libfprint2-1.0.0
Use 'sudo apt autoremove' to remove it.
The following packages have been kept back:
  fwupd fwupd-signed gnome-shell-extension-desktop-icons libglib-mesa0 libfwupd2 libfwupplugin1 libgln1 libglib-mesa-dr1 libglapi-mesa libglx-mesa0 libxatracker2 linux-generic-hwe-20.04
  linux-generic-hwe-20.04 linux-image-generic-hwe-20.04 mesa-vulkan-drivers ubuntu-advantage-tools ubuntu-desktop ubuntu-desktop-minimal ubuntu-drivers-common
0 to upgrade, 0 to newly install, 0 to remove and 19 not to upgrade.
roy@roy-virtual-machine:~$

```

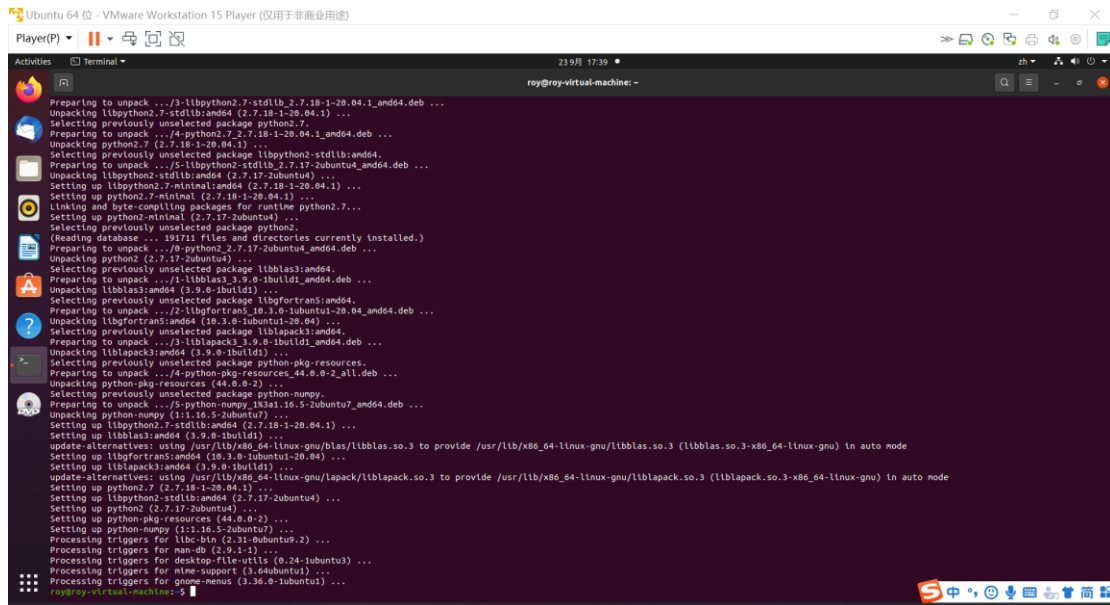
```

root@Virtual-Machine:~# sudo apt-get install pip
[sudo] password for roy:
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'python3-pip' instead of 'pip'
The following packages were automatically installed and are no longer required:
libprint-2-tdd
Use 'dpkg --get-selections' to remove it.
The following additional packages will be installed:
binutils binutils-common binutils-x86_64-linux-gnu build-essential dpkg-dev fakeroot g++ g++-9 gcc gcc-9 libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan libatomic1
libbz2-dev libbz2-libs0 libc-bin libc-lsb libc6 libc6-dev libcrypt-dev libcrypt1 libcrypt9 libcurl4 libdpkg libfakeroot libgcc-s1 libgdbm-dev libgdbm6 libgdbm13 libgnutls30 libhogweed4 libidn2-0
libisl15 libitm1 libubsan1 libunistring2 libusb-1.0-0 libusb-dev python3-pip-whl python3-distutils python3-setuptools python3-wheel python3.8-dev zlib1g-dev
Suggested packages:
binutils-doc bsdmainutils g++-multilib g++-multilib-gcc-dbg gcc-9-multilib gcc-9-doc gcc-9-locales glibc-doc libstdc++-9-doc make doc
python3-setuptools-doc
The following NEW packages will be installed:
binutils binutils-common binutils-x86_64-linux-gnu build-essential dpkg-dev fakeroot g++ g++-9 gcc gcc-9 libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan libatomic1
libbz2-dev libbz2-libs0 libc-bin libc-lsb libc6 libc6-dev libcrypt-dev libcrypt1 libcrypt9 libcurl4 libdpkg libfakeroot libgcc-s1 libgdbm-dev libgdbm6 libgdbm13 libgnutls30 libhogweed4 libidn2-0
libisl15 libitm1 libubsan1 libunistring2 libusb-1.0-0 libusb-dev python3-pip-whl python3-distutils python3-setuptools python3-wheel python3.8-dev zlib1g-dev
0 to upgrade, 4 to newly install, 0 to remove and 0 not to upgrade.
Need to get 41.7 MB of archives.
After this operation, 185 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 binutils-common amd64 2.34-eubuntui1 [207 kB]
Get:2 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libbinutils amd64 2.34-eubuntui1 [475 kB]
Get:3 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libcrypt9 amd64 2.34-eubuntui1 [17.1 kB]
Get:4 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libcrypt-dev amd64 2.34-eubuntui1 [146 kB]
Get:5 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 binutils-x86_64-linux-gnu amd64 2.34-eubuntui1 [1,613 kB]
Get:6 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 binutils amd64 2.34-eubuntui1 [3,388 B]
Get:7 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libc-dev-bin amd64 2.31-eubuntu2 [71.8 kB]
Get:8 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 linux-libc-dev amd64 5.4.0-ho.86.97 [1,104 kB]
Get:9 http://cn.archive.ubuntu.com/ubuntu focal/main amd64 libcrypt-dev amd64 1:4.4.10-1ubuntu5 [104 kB]
Get:10 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libc6-dev amd64 2.31-eubuntu2 [2,320 kB]
Get:11 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libitm1 amd64 10.3.0-ibuntui-20.04 [26.2 kB]
Get:12 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libatomic1 amd64 10.3.0-ibuntui-20.04 [9,256 B]
Get:13 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libsanj amd64 9.3.0-1buntui-20.04 [394 kB]
Get:14 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libsanj amd64 10.3.0-1buntui-20.04 [835 kB]
Get:15 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libsanj amd64 10.3.0-1buntui-20.04 [2,009 kB]
Get:16 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libsanj amd64 10.3.0-1buntui-20.04 [2,009 kB]
Get:17 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libsanj amd64 10.3.0-1buntui-20.04 [784 kB]
Get:18 http://security.ubuntu.com/ubuntu focal-updates/main amd64 libsanj amd64 10.3.0-1buntui-20.04 [2,009 kB]
Get:19 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libsanj amd64 10.3.0-1buntui-20.04 [784 kB]
Get:20 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libquadmath amd64 10.3.0-ibuntui-20.04 [146 kB]
Get:21 http://cn.archive.ubuntu.com/ubuntu focal-updates/main amd64 libgcc-9-dev amd64 9.3.0-1buntui-20.04 [2,168 kB]

```

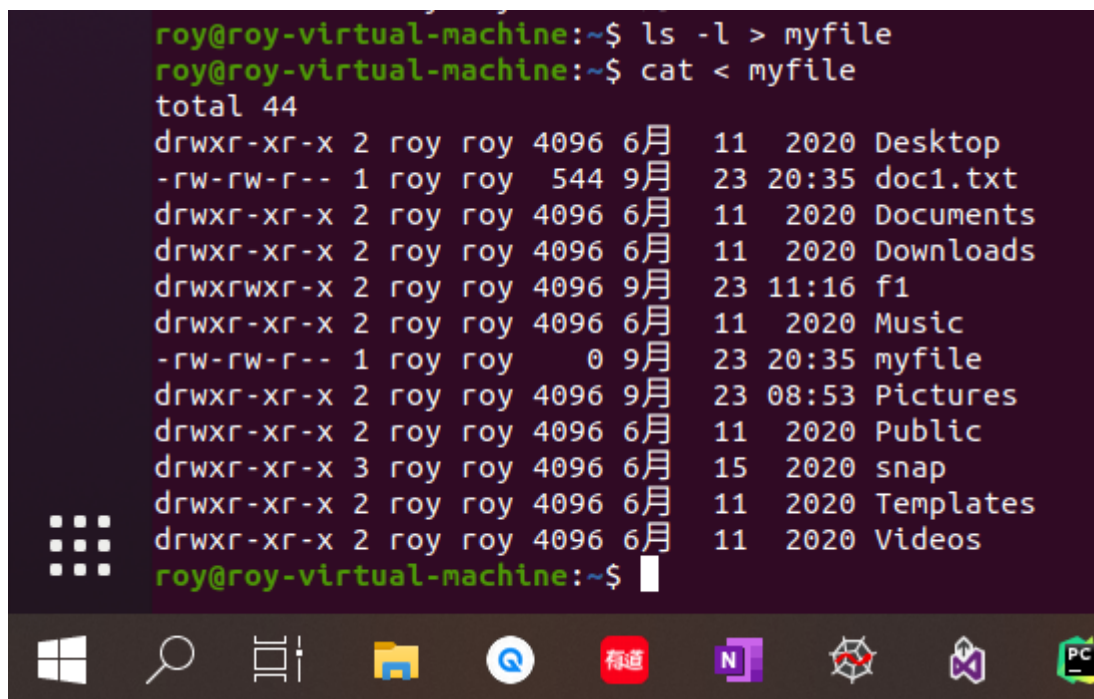






```
Preparing to unpack .../3-libpython2.7-stdlib_2.7.18-1-20.04.1_and64.deb ...
Unpacking libpython2.7-stdlib:amd64 (2.7.18-1-20.04.1) ...
Selecting previously unselected package python2.7.
Preparing to unpack .../4-python2.7_2.7.18-1-20.04.1_and64.deb ...
Unpacking python2.7 (2.7.18-1-20.04.1) ...
Selecting previously unselected package libpython2-stdlib:amd64.
Preparing to unpack .../5-libpython2-stdlib_2.7.17-2ubuntu4_and64.deb ...
Unpacking libpython2-stdlib:amd64 (2.7.17-2ubuntu4) ...
Setting up libpython2.7-minimal:amd64 (2.7.18-1-20.04.1) ...
Setting up python2.7-minimal (2.7.18-1-20.04.1) ...
Linking and byte-compiling packages for runtime python2.7...
Setting up python2-minimal (2.7.17-2ubuntu4) ...
Selecting previously unselected package python2.
(Reading database ... 191711 files and directories currently installed.)
Preparing to unpack .../0-python2_2.7.17-2ubuntu4_and64.deb ...
Unpacking python2 (2.7.17-2ubuntu4) ...
Selecting previously unselected package libblas3:amd64.
Preparing to unpack .../1-libblas3_3.9.0-1build1_and64.deb ...
Unpacking libblas3:amd64 (3.9.0-1build1) ...
Selecting previously unselected package libgfortran5:amd64.
Preparing to unpack .../2-libgfortran5_10.3.0-1ubuntu1-20.04_and64.deb ...
Unpacking libgfortran5:amd64 (10.3.0-1ubuntu1-20.04) ...
Selecting previously unselected package liblapack3:amd64.
Preparing to unpack .../3-liblapack3_3.9.0-1build1_and64.deb ...
Unpacking liblapack3:amd64 (3.9.0-1build1) ...
Selecting previously unselected package python-pkg-resources.
Preparing to unpack .../4-python-pkg-resources_44.0.0-2_all.deb ...
Unpacking python-pkg-resources (44.0.0-2) ...
Selecting previously unselected package python-numpy.
Preparing to unpack .../5-python-numpy_1:1.16.5-2ubuntu7_and64.deb ...
Unpacking python-numpy (1:1.16.5-2ubuntu7) ...
Setting up libpython2.7-stdlib:amd64 (2.7.18-1-20.04.1) ...
Setting up libblas3:amd64 (3.9.0-1build1) ...
update-alternatives: using /usr/lib/x86_64-linux-gnu/libblas.so.3 to provide /usr/lib/x86_64-linux-gnu/libblas.so.3 (libblas.so.3-x86_64-linux-gnu) in auto mode
Setting up libgfortran5:amd64 (10.3.0-1ubuntu1-20.04) ...
Setting up liblapack3:amd64 (3.9.0-1build1) ...
update-alternatives: using /usr/lib/x86_64-linux-gnu/liblapack.so.3 to provide /usr/lib/x86_64-linux-gnu/liblapack.so.3 (liblapack.so.3-x86_64-linux-gnu) in auto mode
Setting up python2.7 (2.7.18-1-20.04.1) ...
Setting up libpython2-stdlib:amd64 (2.7.17-2ubuntu4) ...
Setting up python2 (2.7.17-2ubuntu4) ...
Setting up python-pkg-resources (44.0.0-2) ...
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for desktop-file-utils (0.24-1ubuntu3) ...
Processing triggers for mime-support (3.6ubuntu1) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu1) ...
roy@roy-virtual-machine:~$
```

Command: `sudo apt-get install python-numpy`, install numpy package for Python in a controller mode



```
roy@roy-virtual-machine:~$ ls -l > myfile
roy@roy-virtual-machine:~$ cat < myfile
total 44
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Desktop
-rw-rw-r-- 1 roy roy 544 9月 23 20:35 doc1.txt
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Documents
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Downloads
drwxrwxr-x 2 roy roy 4096 9月 23 11:16 f1
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Music
-rw-rw-r-- 1 roy roy 0 9月 23 20:35 myfile
drwxr-xr-x 2 roy roy 4096 9月 23 08:53 Pictures
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Public
drwxr-xr-x 3 roy roy 4096 6月 15 2020 snap
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Templates
drwxr-xr-x 2 roy roy 4096 6月 11 2020 Videos
roy@roy-virtual-machine:~$
```

Command: `ls -l > myfile`, `cat < myfile`; Use named pipes to redirect the output of `ls -l` to a file named “myfile”, and redirect the input from the keyboard to the file contents.

```
roy@roy-virtual-machine:~$ echo "a" && echo "b" && echo "c"
a
b
c
roy@roy-virtual-machine:~$ echo "a" ; echo "b" ; echo "c"
a
b
c
roy@roy-virtual-machine:~$
```

Command: &&, ;    Execute multiple command in one line.