List of Commands

date

Description

print or set the system date and time.

Syntax

```
date
```

Example

- Description of example: print the system date and time
  - `date`

uname

Description

print system information

Syntax

```
uname + options
```

Example

- Description of example: print system information
  - `uname`

du

Description

estimate file space usage.

Syntax

```
du+ options + files
```

Example

- Description of example: estimate file space and human-redable in Downloads.
  - `du -ha ~/Downloads`
- Description of example: estimate file space and human-redable in Music
  - `du -ha ~/Music`
- Description of example: estimate file space and human-redable in Pictures
  - `du -ha ~/Pictures`

---

free

Description

Display amount of free and used memory in the system

Syntax

`cmd + free`

Example

- Description of example: Display amount of free and used memory in the system
  - `free`

---

echo

Description

display a line of text

Syntax

`echo + "String"`

Example

- Description of example: Display "Hello World"
  - `echo "Hello World"`

---

apt

Description

command-line interface

Syntax

```
sudo+ apt + install + Package Name
```

Example

- Description of example: Install serveral Program in a single command
  - `sudo apt install firefox flameshot caffeine -y`
- Description of example: remove several program in a single command
  - `sudo apt remove firefox flameshot caffeine -y`
- Description of example:install and remove software in a single command
  - `sudo apt install firefox+ flameshot- caffeine- vlc+ -y`

---

pwd

Description

used for displaying your current working directory

Syntax

```
pwd
```

Example

- Description of example: displaying your current working directory.
  - `pwd`

---

cd

Description

Use to change current working directory

Syntax

```
cd + Destination
```

Example

- Description of example: move from Home directory to Downloads folder.
  - `cd ~/Downloads`
- Description of example: move from Home directory to Music.
  - `cd ~/Music`
- Description of example: move from Home directory to Pictures.
  - `cd ~/Pictures`

---

ls

Description

used to display all files inside a give directory

Syntax

`ls + file/directory`

Example

- Description of example: this will show all the files in the folder Downloads.
  - `ls ~/Downloads`
- Description of example: this will show all the files in the folder Music.
  - `ls ~/Music`
- Description of example: this will show all the files in the folder Picture.
  - `ls ~/Pictures`

tree

Description

list contents of directories in a tree-like format.

Syntax

`tree + options`

Example

- Description of example: list all the contents of directories Downloads.
  - `tree ~/Downloads`
- Description of example: list all the contents of directories Muisc.
  - `tree ~/Music`
- Description of example: list all the contents of directories Pictures.
  - `tree ~/Pictures`

man

Description

an interface to the system reference manuals

Syntax

```
man + options
```

Example

- Description of example: ls command manuals
    - ```man ls```
- Description of example: cp command manuals
    - ```man cp```
- Description of example:tree command manuals
    - ```man tree```

---

mkdir

Description

make directories

Syntax

```
mkdir + the name of the Directory
```

Example

- Description of example: Create a directory in the present working directory.
    - ```mkdir wallpapers```
- Description of example: Create multiple directories.
    - ```mkdir wallpapers/cars wallpapers/cities wallpapers/forest```
- Description of example: Create a directory with parent directory at the same time.
    - ```mkdir -p wallpapers_others/movies```

---

touch

Description

is used for creating files.

Syntax

```
touch + options
```

Example

- Description of example: To create a file called list
    - ```touch list```
- Description of example: To create several files:
    - ```touch cars.txt script.py names.csv```

- Description of example: To create a file using absolute path:
    - `touch ~/Downloads/games.txt`

---

rm

Description

removes files

Syntax

`remove + options`

Example

- Description of example: Remove a file
    - `rm list`
- Description of example: Remove a file and prompt confirmation before removal
    - `rm -i list`
- Description of example: Remove anempty directory.
    - `rmdir Downloads/games`

---

cp

Description

copies files/directories from a source to a destination

Syntax

`cp + file to copy + destination`

Example

- Description of example: To copy a file
    - `cp Downloads/wallpapers.zip Pictures/`
- Description of example: TO copy a directory with absolute path
    - `cp -r ~/Downloads/wallpapers ~/Pictures/`
- Description of example: to copy multiple files in a single command
    - `sudo cp-r script.sh program.py home.html assets/ /var/www/html/`

---

mv

Description

moves and renames directories.

Syntax

```
mv + source + destination
```

Example

- Description of example: to move a file from a directory to another using relative path
  - `mv Downloads/homework.pdf Documents/`
- Description of example: to move multiple directories/files to a different directory
  - `mv games/wallpapers/rockmusic/ /media/student/flashdrive/`
- Description of example: to rename a file
  - `mv homework.docx cis106homework.docx`

stat

Description

Enter description here

Syntax

```
stat [OPTION]... FILE...
```

Example

- Description of example: to view the file details of a file residing in the current home directory, execute:
  - `stat file1.txt`
- Description of example: You can view a detailed report on multiple files by specifying the files on the command line one after the other as shown:
  - `stat file1.txt file2.pdf`
- Description of example: For more command options , use the –help option with stat command as shown.
  - `stat --help`

Wildcards (*,?,[])

Description

Represent letters and characters used to specify a file name for searches.

Syntax

```
cmd + options
```

Example

- Description of example: will match all files that end in .txt
  - `ls *.txt`
- Description of example: To match all files that have a vowel after letter f:
  - `ls f[aeiou]*`
- Description of example: to match all files whose name has at least one number.
  - `ls *[!0-9].*`

Brace expansion

Description

is not a wildcard but another feature of bash that allows you to generate arbitrary strings to use with commands.

Syntax

`cmd + options`

Example

- Description of example: To create directory structure in a single command:
  - `mkdir -p music{jazz,rock}/{mp3files,vidoes,oggfiles}/new{1..3}`
- Description of example: To create a N number of files use:
  - `touch website{1..5}.html`
- Description of example: Remove multiple files in a single directory
  - `rm -r {dir1,dir2,dir3,file.txt,file.py}`

cat

Description

is used for displaying the content of a file.

Syntax

`cat + option + file to display`

Example

- Description of example: Display the content of a file using absolute path
  - `cat ~/Documents/todo.md`
- Description of example: Display the content of a file with line numbers
  - `cat -n ~/Documents/Todo.md`
- Description of example: Display the content of a file with line numbers excluding empty line

       ○ `cat -b ~/Documents/todo.md`

---

head

Description

Display the top N number of lines of a given file.

Syntax

`head + option + files`

Example

- Description of example: Display the first 10 line of a file.
    - `head -10 ~/Documents/Book/dracula.txt`
- Description of example: Display the first 5 lines of a file
    - `head -5 ~/Documents/Book/dracula.txt`
- Description of example:Display the first 100 line of a file.
    - `head -100 ~/Documents/Book/dracula.txt`

---

tail

Description

Display the last N Number of line of a given file.

Syntax

`tail + option + file`

Example

- Description of example: Display the last 10 line of a file.
    - `tail -10 ~/Documents/Book/dracula.txt`
- Description of example: Display the last 5 line of a file.
    - `tail -5 ~/Documents/Book/dracula.txt`
- Description of example: Display the last 100 line of a file.
    - `tail -100 ~/Documents/Book/dracula.txt`

---

cut

Description

is used to extract a specific section of each line of a file and display it to the screen.

Syntax

```
cut + options + files
```

Example

- Description of example: Display a list of all the users in your system
    - `cut -d ':' -f1 /etc/passwd`
- Description of example:Display a list of all the users in your system with their login shell
    - `cut -d ':' -f1,7 /etc/passwd`
- Description of example: Cut a range of bytes per line
    - `cut -b 1-5 usernames.txt`

---

tr

Description

is used for translating or deleting characters from standard output.

Syntax

```
Standard output | tr + option + set + set
```

Example

- Description of example: Translate one character to another
    - `cat file.txt | tr '.' ','`
- Description of example: Translate white space into tabs.
    - `cat program.py | tr "[:space:]" '\t'`
- Description of example:Translate tab into space.
    - `cat file.py | tr "[:space:]" ' '`

---

paste

Description

is used for joining files horizontally in columns

Syntax

```
paste + option + files
```

Example

- Description of example: Merge two files
  - `paste users.lst ip_address.lst`
- Description of example: Merge two files using a different delimiter
  - `paste -d ":" user1.lst ip_addresses.lst`

---

wc

Description

is used for printing the number of lines,characters and bytes in a file.

Syntax

`wc + option + files`

Example

- Description of example: Display the number of characters in a file
  - `wc -m users.txt`
- Description of example: Display the number of line in a file
  - `wc users.txt`
- Description of example: Display the number words in a file
  - `wc -w users.txt`

---

grep

Description

is used to search text in given file. it works line by line basis.

Syntax

`grep + options + search criteria + files`

Example

- Description of example: Search any line that contains the word "dracula" in the given file:
  - `grep 'dracula ~/Documents/dracula.txt`
- Description of example: Search any line that contains the word "dracula" regardless of the case in the given file:
  - `grep -i 'dracula ~/Documents/dracula.txt`
- Description of example: Search and display only the matched string
  - `grep -o 'dracula ~/Documents/dracula.txt`

---

output redirection

Description

redirect the input and output of commands to and from files as well as connecting multiple commands together into powerful command pipelines.

Syntax

```
command_1 | command_2 | command_3 | .....| command_N
```

Example

- Description of example:Use grep to look for a string in a particular man page
  - `man ls | grep "human-readable"`
- Description of example: Display only the 2nd line in a file
  - `head -2 file.lst | tail -1`

Saving the output of a command

Description

Syntax

```
command output + > + file
```

Example

- Description of example: Save the output of a command to a file
  - `ls -lA ~ > all-files-in-home.txt`
- Description of example: Save the error generated by a command to a file
  - `ls -lA downloads/ 2> error-of-ls`
- Description of example: Do not Display errors. send errors to the black hole
  - `ls -lA downloads/ 2> /dev/null`

vim or nano (basic stuff: open a file, close a file, edit a file)

Description

On Unix-like operating systems, vim, which stands for "Vi Improved", is a text editor. It can be used for editing any kind of text and is especially suited for editing computer programs.

Syntax

```
cmd + vim
```

Example

- Description of example: Start vim with a file name
  - ```
    vim food.txt
    ```
- Description of example: save the file
  - ```
    press esc key,type:w
    ```
- Description of example:Exit vim
  - ```
    press esc, type:q
    ```

tar

Description

Creates archives by combining files and directories into a single file.

Syntax

```
tar + options + archive name + file to add to archive
```

Example

- Description of example: Create archive
  - ```
    tar -cf example.tar file1 file2 file3
    ```
- Description of example:extract archive
  - ```
    tar -xf example.tar
    ```
- Description of example:Extract archive in a different directory
  - ```
    tar -xf example.tar --directory ~/Downloads
    ```

gz, bzip2, or xz

Description

gz, bzip2, xz - compress or expand files

Syntax

```
Compression utility-option<path of compressed file> file with the same name
without extension
```

Example

- Description of example:Display a file that has been compressed with bzip2
  - ```
    bzcat file.bz2
    ```
- Description of example:Compress a single file

- gzip file.txt
- Description of example: Compress multiple files
  - gzip file1.txt file2.txt file3.txt

---

chmod

Description

change file permission on files

Syntax

chmod permissions file/directory

Example

- Description of example: Give execute permission to use.
  - chmod u+x script.sh
- Description of example: Remove (other) execute permissions
  - chmod o-x script.sh
- Description of example: assing multiple permission to user,other and group.
  - chmod u=rwx,g=rw,o=r script.sh