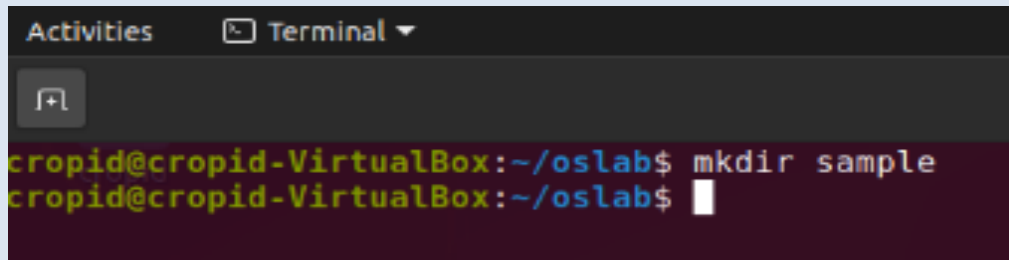


Experiment – 12

Aim : Implement the following basic commands used in LINUX UNIX OS (Also perform all the commands with their switches as assignment). ls, man, pwd, who, whoami, date, cal, mkdir, rm, rmdir, cat, head, tail, more, less, cp, mv, echo.

❖ Make Directory :

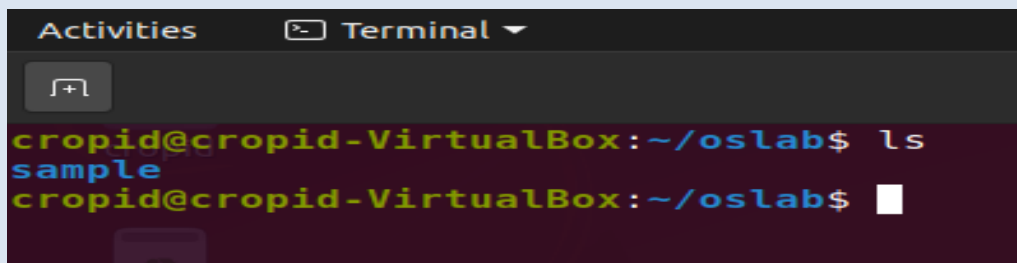
- **Command -** mkdir [Directory name]
- **Description -** It creates a new directory(folder) with provided name.



```
Activities  Terminal ▾
cropid@cropid-VirtualBox:~/oslab$ mkdir sample
cropid@cropid-VirtualBox:~/oslab$
```

❖ List files/directory :

- **Command -** ls
- **Description -** It list all contents within a directory.



```
Activities  Terminal ▾
cropid@cropid-VirtualBox:~/oslab$ ls
sample
cropid@cropid-VirtualBox:~/oslab$
```

❖ Remove Directory :

- **Command -** rmdir [Directory name]
- **Description -** It removes the directory with provided name.

```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ rmdir sample/
cropid@cropid-VirtualBox:~/oslab$
```

❖ Get current date & time :

- Command - `date`
- Description - It prints current date and time on screen.

```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ date
Tuesday 17 August 2021 07:17:26 PM IST
cropid@cropid-VirtualBox:~/oslab$
```

❖ Get calendar :

- Command - `cal <month> <year>`
- Description - It prints calendar of current month or given month/year on screen.

```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ cal
      August 2021
Su Mo Tu We Th Fr Sa
 1  2  3  4  5  6  7
 8  9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

cropid@cropid-VirtualBox:~/oslab$ cal jan 2022
      January 2022
Su Mo Tu We Th Fr Sa
                1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31
cropid@cropid-VirtualBox:~/oslab$
```

```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ cal 2022
2022
January February March
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

April May June
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

July August September
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

October November December
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

cropid@cropid-VirtualBox:~/oslab$
```

❖ Clear terminal window :

- Command - clear
- Description - It clears all content present on terminal window.

```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ cal 2022
2022
January February March
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

April May June
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

July August September
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

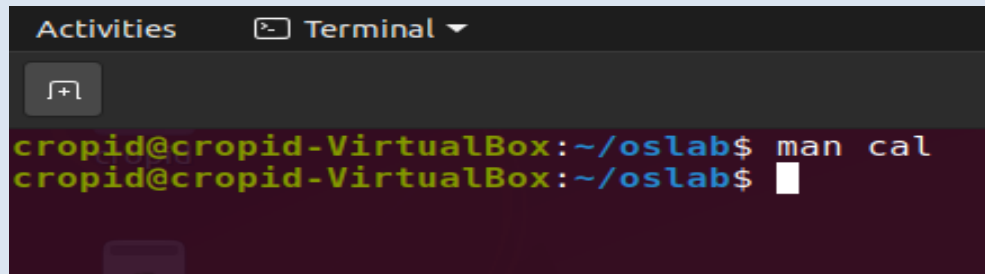
October November December
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

cropid@cropid-VirtualBox:~/oslab$ clear
```

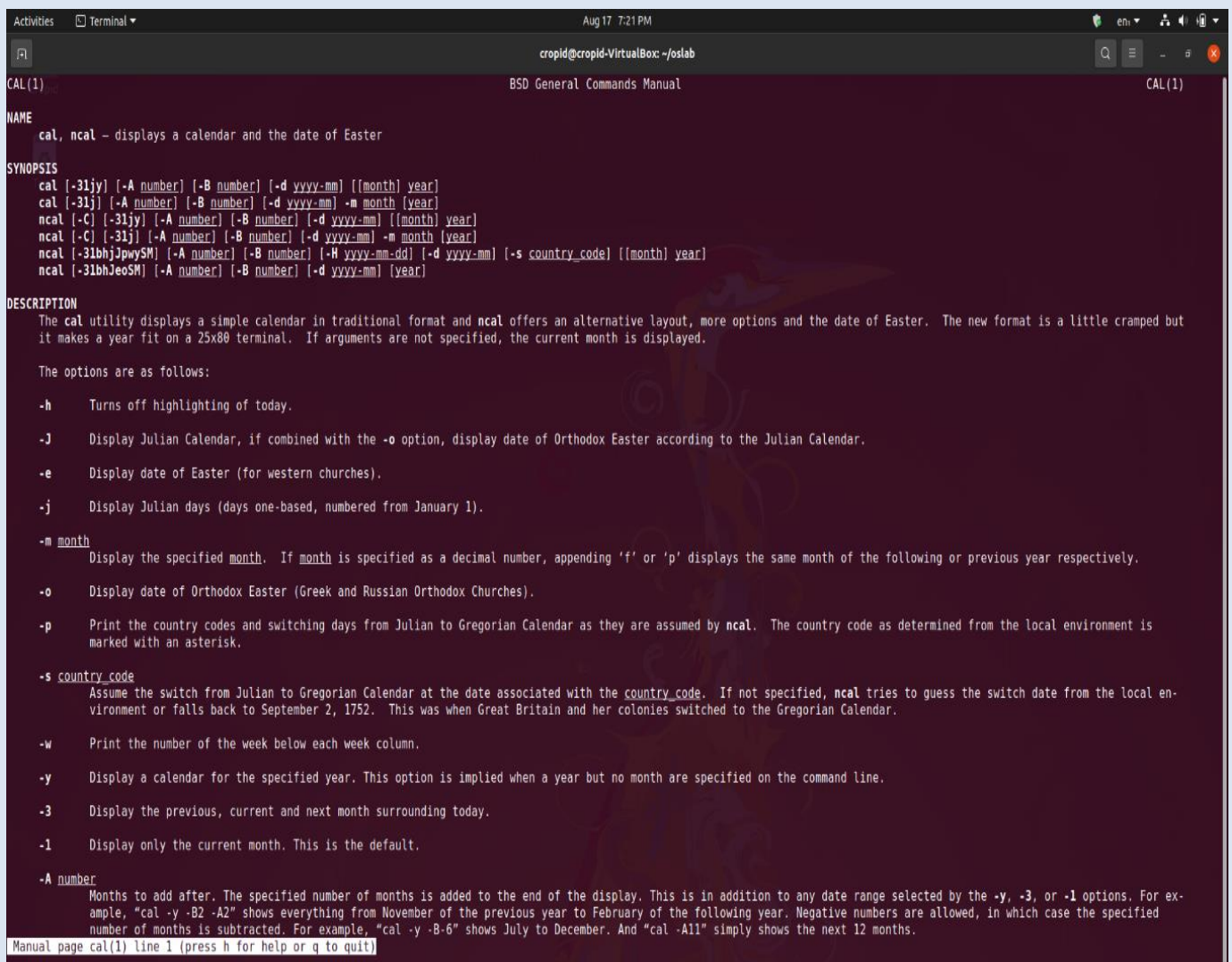
```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$
```

❖ Open manual of any command :

- **Command –** `man [command]`
- **Description –** It shows the manual of any command which contains all info about that command.



```
cropid@cropid-VirtualBox:~/oslab$ man cal
cropid@cropid-VirtualBox:~/oslab$
```



```
Aug 17 7:21 PM
cropid@cropid-VirtualBox: ~/oslab
CAL(1) BSD General Commands Manual CAL(1)

NAME
  cal, ncal - displays a calendar and the date of Easter

SYNOPSIS
  cal [-31jy] [-A number] [-B number] [-d yyyy-mm] [(month) year]
  cal [-31j] [-A number] [-B number] [-d yyyy-mm] -m month [year]
  ncal [-C] [-31jy] [-A number] [-B number] [-d yyyy-mm] [(month) year]
  ncal [-C] [-31j] [-A number] [-B number] [-d yyyy-mm] -m month [year]
  ncal [-31bhjJpwySM] [-A number] [-B number] [-H yyyy-mm-dd] [-d yyyy-mm] [-s country_code] [(month) year]
  ncal [-31bhJeoSM] [-A number] [-B number] [-d yyyy-mm] [year]

DESCRIPTION
  The cal utility displays a simple calendar in traditional format and ncal offers an alternative layout, more options and the date of Easter. The new format is a little cramped but it makes a year fit on a 25x80 terminal. If arguments are not specified, the current month is displayed.

  The options are as follows:

  -h      Turns off highlighting of today.

  -J      Display Julian Calendar, if combined with the -o option, display date of Orthodox Easter according to the Julian Calendar.

  -e      Display date of Easter (for western churches).

  -j      Display Julian days (days one-based, numbered from January 1).

  -m month
          Display the specified month. If month is specified as a decimal number, appending 'f' or 'p' displays the same month of the following or previous year respectively.

  -o      Display date of Orthodox Easter (Greek and Russian Orthodox Churches).

  -p      Print the country codes and switching days from Julian to Gregorian Calendar as they are assumed by ncal. The country code as determined from the local environment is marked with an asterisk.

  -s country_code
          Assume the switch from Julian to Gregorian Calendar at the date associated with the country_code. If not specified, ncal tries to guess the switch date from the local environment or falls back to September 2, 1752. This was when Great Britain and her colonies switched to the Gregorian Calendar.

  -w      Print the number of the week below each week column.

  -y      Display a calendar for the specified year. This option is implied when a year but no month are specified on the command line.

  -3      Display the previous, current and next month surrounding today.

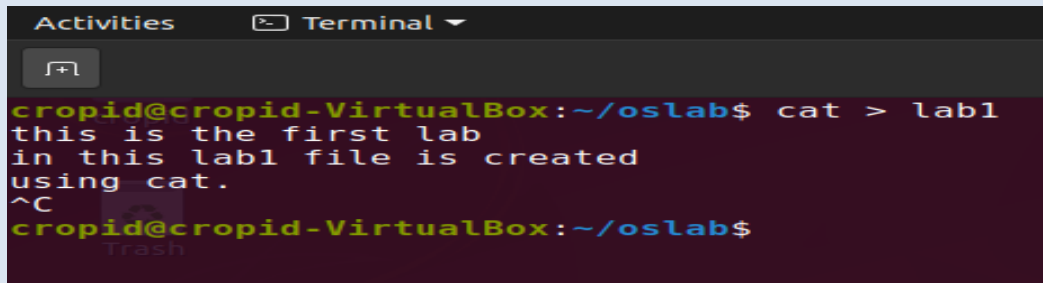
  -1      Display only the current month. This is the default.

  -A number
          Months to add after. The specified number of months is added to the end of the display. This is in addition to any date range selected by the -y, -3, or -1 options. For example, "cal -y -B2 -A2" shows everything from November of the previous year to February of the following year. Negative numbers are allowed, in which case the specified number of months is subtracted. For example, "cal -y -B-6" shows July to December. And "cal -A11" simply shows the next 12 months.

Manual page cal(1) line 1 (press h for help or q to quit)
```

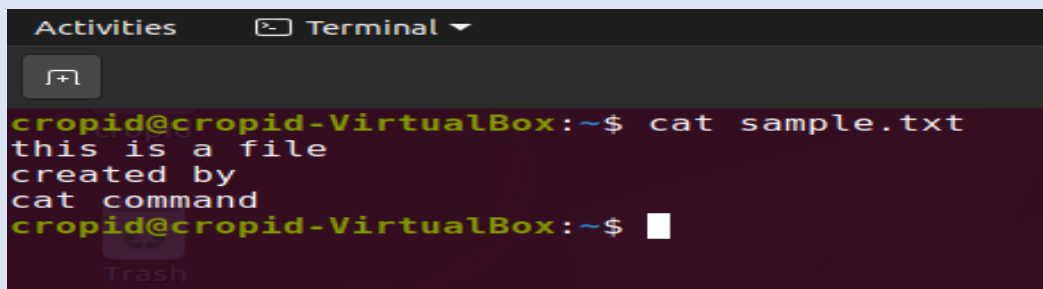
❖ Create and write in a file :

- **Command** - `cat > [file name]`
- **Description** - It creates a file with a name given and write data in file from std. input till user press ctrl + d.

A terminal window titled 'Terminal' showing a user at the prompt 'cropid@cropid-VirtualBox:~/oslab\$' typing 'cat > lab1'. The terminal then displays the text 'this is the first lab in this lab1 file is created using cat.' followed by a Ctrl+C signal (^C) and the prompt 'cropid@cropid-VirtualBox:~/oslab\$'.

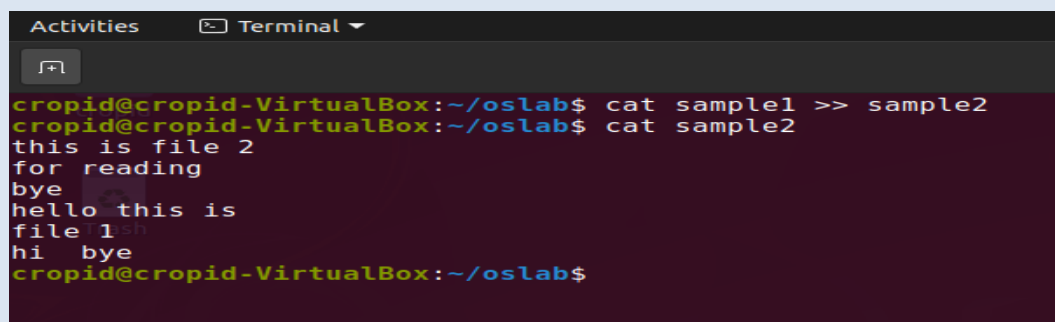
❖ Read a file :

- **Command** - `cat [file name]`
- **Description** - It prints the file content on terminal.

A terminal window titled 'Terminal' showing a user at the prompt 'cropid@cropid-VirtualBox:~\$' typing 'cat sample.txt'. The terminal then displays the text 'this is a file created by cat command' followed by the prompt 'cropid@cropid-VirtualBox:~\$'.

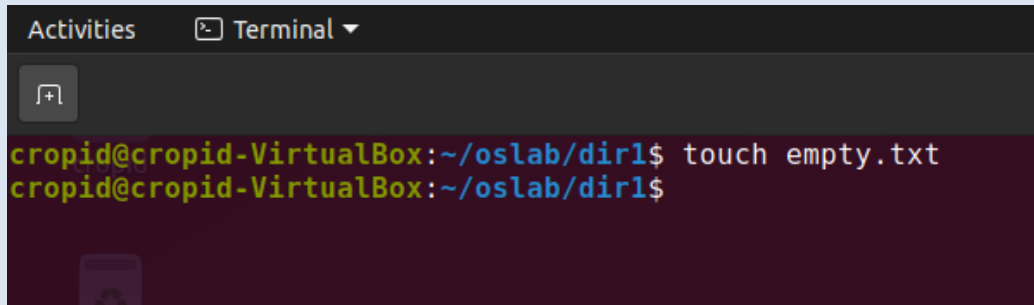
❖ Concatenate a file :

- **Command** - `cat [file1] >> [file2]`
- **Description** - Cat also refers to concatenate. It concatenate file1 data to file2. (>> refers to append , > refers to overwrite).

A terminal window titled 'Terminal' showing a user at the prompt 'cropid@cropid-VirtualBox:~/oslab\$' typing 'cat sample1 >> sample2'. The prompt then changes to 'cropid@cropid-VirtualBox:~/oslab\$' and the user types 'cat sample2'. The terminal then displays the text 'this is file 2 for reading bye hello this is file 1 hi bye' followed by the prompt 'cropid@cropid-VirtualBox:~/oslab\$'.

❖ Create a file :

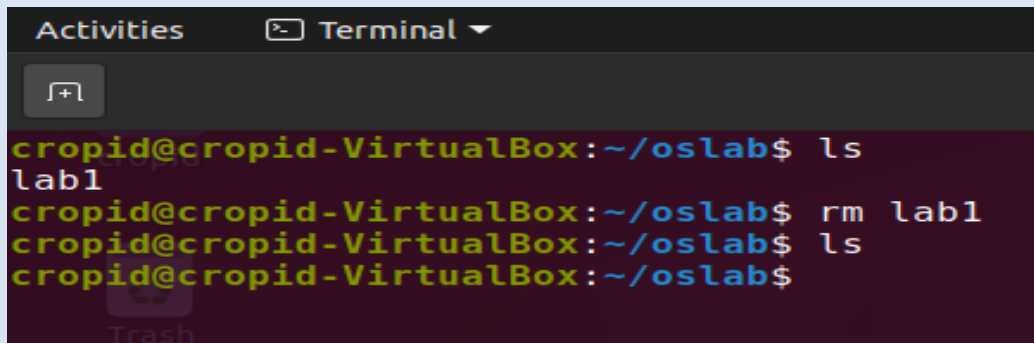
- Command - touch [file name] or > [file name]
- Description - Both commands create an empty file.



```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab/dir1$ touch empty.txt
cropid@cropid-VirtualBox:~/oslab/dir1$
```

❖ Remove a existing file in a directory:

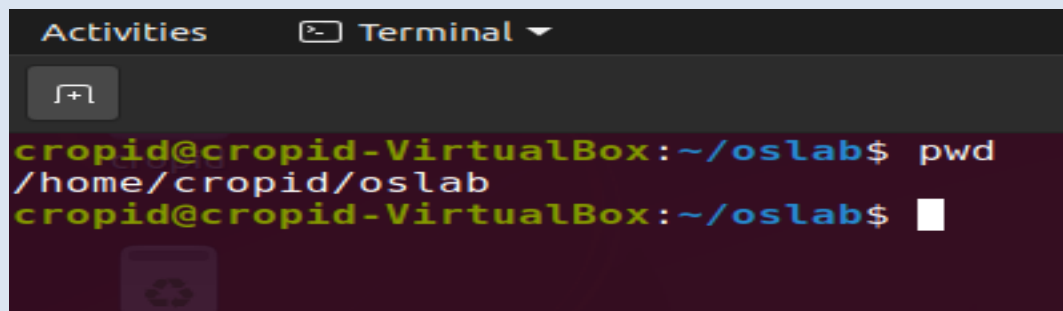
- Command - rm [file name]
- Description - It removes the file whose name or path is given. (-r for recursive deletion used to delete a directory).



```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ ls
lab1
cropid@cropid-VirtualBox:~/oslab$ rm lab1
cropid@cropid-VirtualBox:~/oslab$ ls
cropid@cropid-VirtualBox:~/oslab$
```

❖ Get path of working directory :

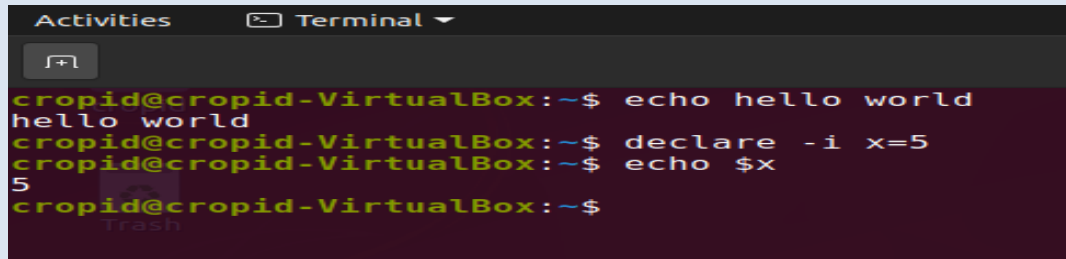
- Command - pwd
- Description - It gives the path of current working directory.



```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ pwd
/home/cropid/oslab
cropid@cropid-VirtualBox:~/oslab$
```

❖ Print data :

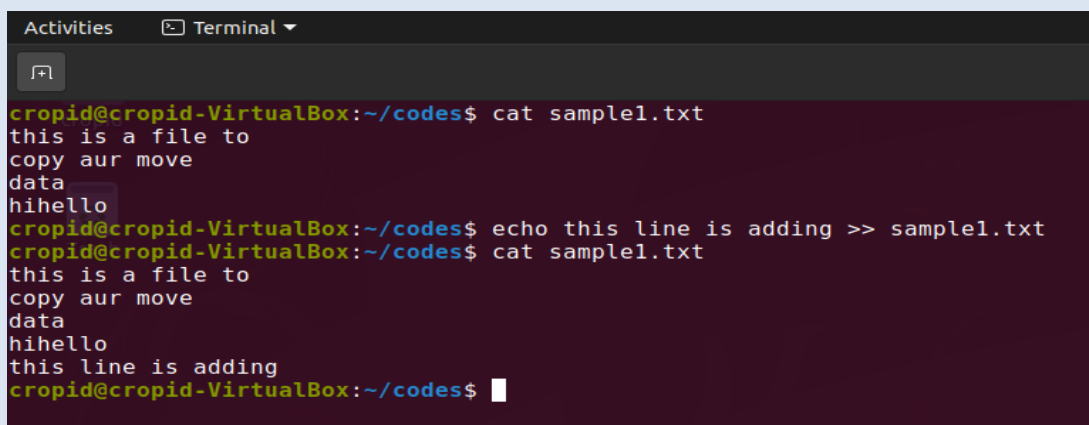
- **Command** - `echo <data>`
- **Description** - It simply print the value of given string or variable on screen.



```
Activities Terminal
cropid@cropid-VirtualBox:~$ echo hello world
hello world
cropid@cropid-VirtualBox:~$ declare -i x=5
cropid@cropid-VirtualBox:~$ echo $x
5
cropid@cropid-VirtualBox:~$
```

❖ Add data :

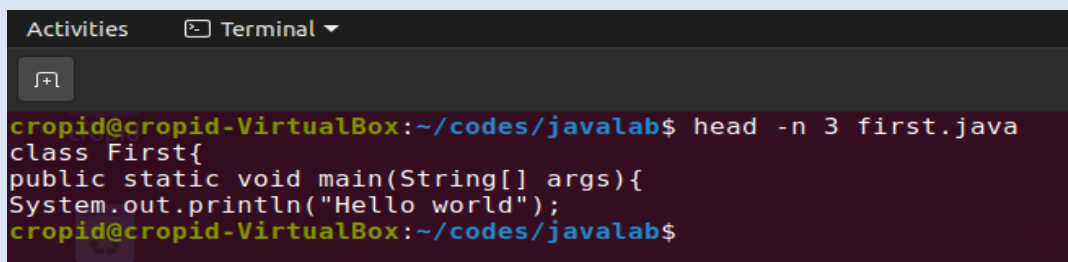
- **Command** - `echo <data> >> [filename]`
- **Description** - It append the given data to the filename given.



```
Activities Terminal
cropid@cropid-VirtualBox:~/codes$ cat sample1.txt
this is a file to
copy aur move
data
hihello
cropid@cropid-VirtualBox:~/codes$ echo this line is adding >> sample1.txt
cropid@cropid-VirtualBox:~/codes$ cat sample1.txt
this is a file to
copy aur move
data
hihello
this line is adding
cropid@cropid-VirtualBox:~/codes$
```

❖ Get data from starting :

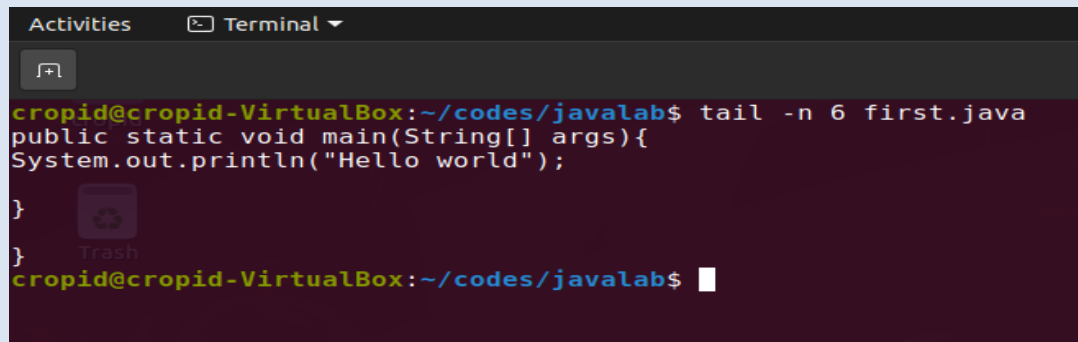
- **Command** - `head -n <no. of lines> [filename]`
- **Description** - It prints the data of file from starting upto the given no. of lines (By default 10).



```
Activities Terminal
cropid@cropid-VirtualBox:~/codes/javalab$ head -n 3 first.java
class First{
public static void main(String[] args){
System.out.println("Hello world");
cropid@cropid-VirtualBox:~/codes/javalab$
```


❖ Get data from ending:

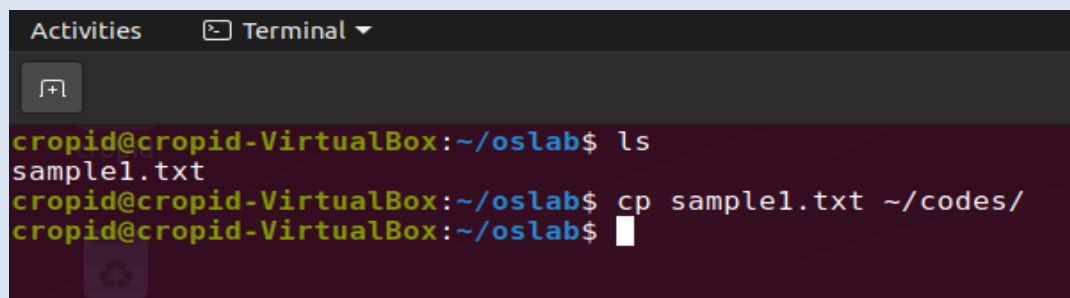
- **Command** - `tail -n <no. of lines> [filename]`
- **Description** - It prints the data of file from last upto the given no. of lines (By default 10).



```
Activities Terminal
cropid@cropid-VirtualBox:~/codes/javablab$ tail -n 6 first.java
public static void main(String[] args){
System.out.println("Hello world");
}
}
cropid@cropid-VirtualBox:~/codes/javablab$
```

❖ Copy:

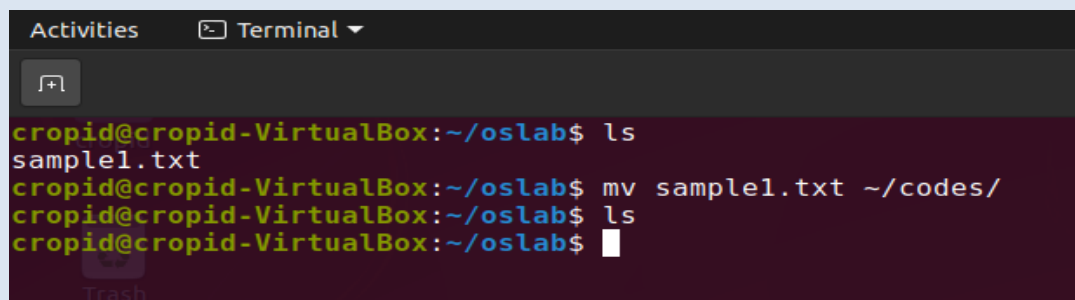
- **Command** - `cp [source path] [destination path]`
- **Description** - It copy the file from source path to desired path.



```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ ls
sample1.txt
cropid@cropid-VirtualBox:~/oslab$ cp sample1.txt ~/codes/
cropid@cropid-VirtualBox:~/oslab$
```

❖ Move:

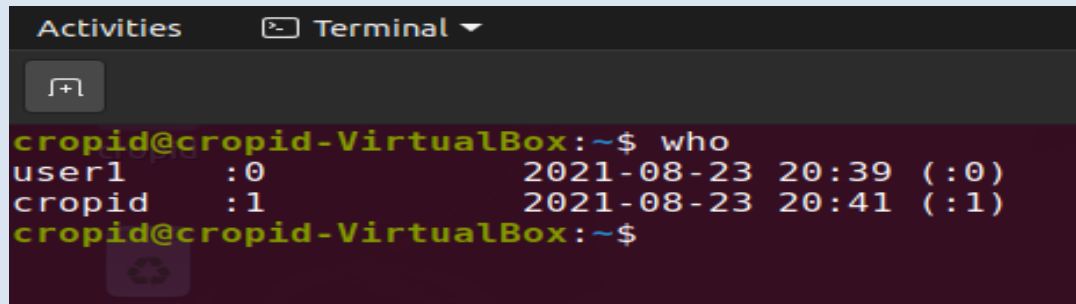
- **Command** - `mv [source path] [destination path]`
- **Description** - It move the file from source path to desired path. Also it can be use to rename files.



```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ ls
sample1.txt
cropid@cropid-VirtualBox:~/oslab$ mv sample1.txt ~/codes/
cropid@cropid-VirtualBox:~/oslab$ ls
cropid@cropid-VirtualBox:~/oslab$
```


❖ List of users :

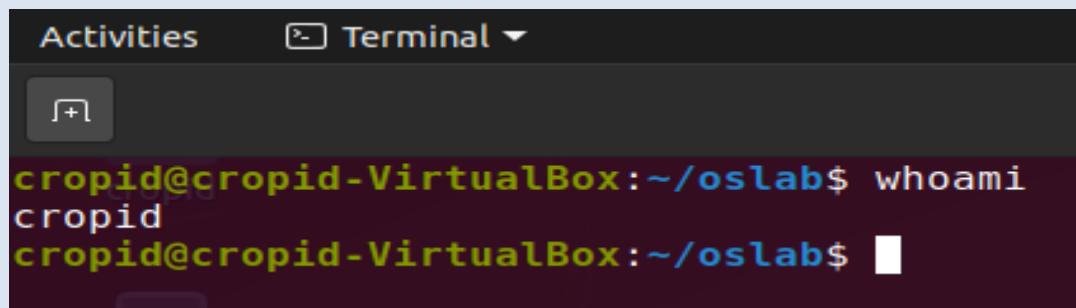
- Command - `who`
- Description - It display all the users logged in the current session of machine.



```
Activities Terminal
cropid@cropid-VirtualBox:~$ who
user1      :0                2021-08-23  20:39  (:0)
cropid     :1                2021-08-23  20:41  (:1)
cropid@cropid-VirtualBox:~$
```

❖ Username :

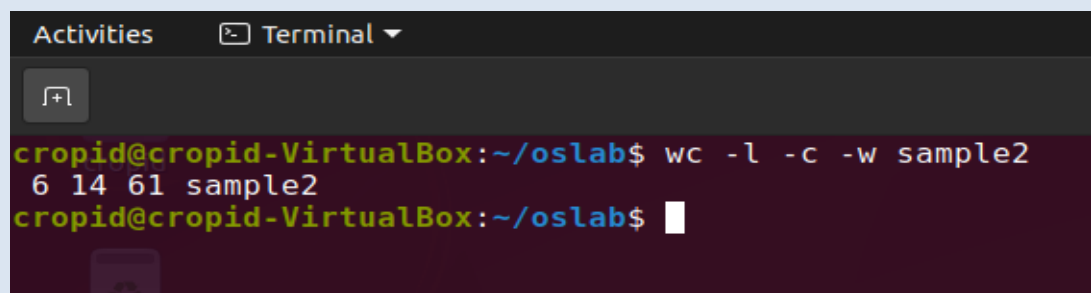
- Command - `whoami`
- Description - It display the name of current user account.



```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ whoami
cropid
cropid@cropid-VirtualBox:~/oslab$
```

❖ Count data :

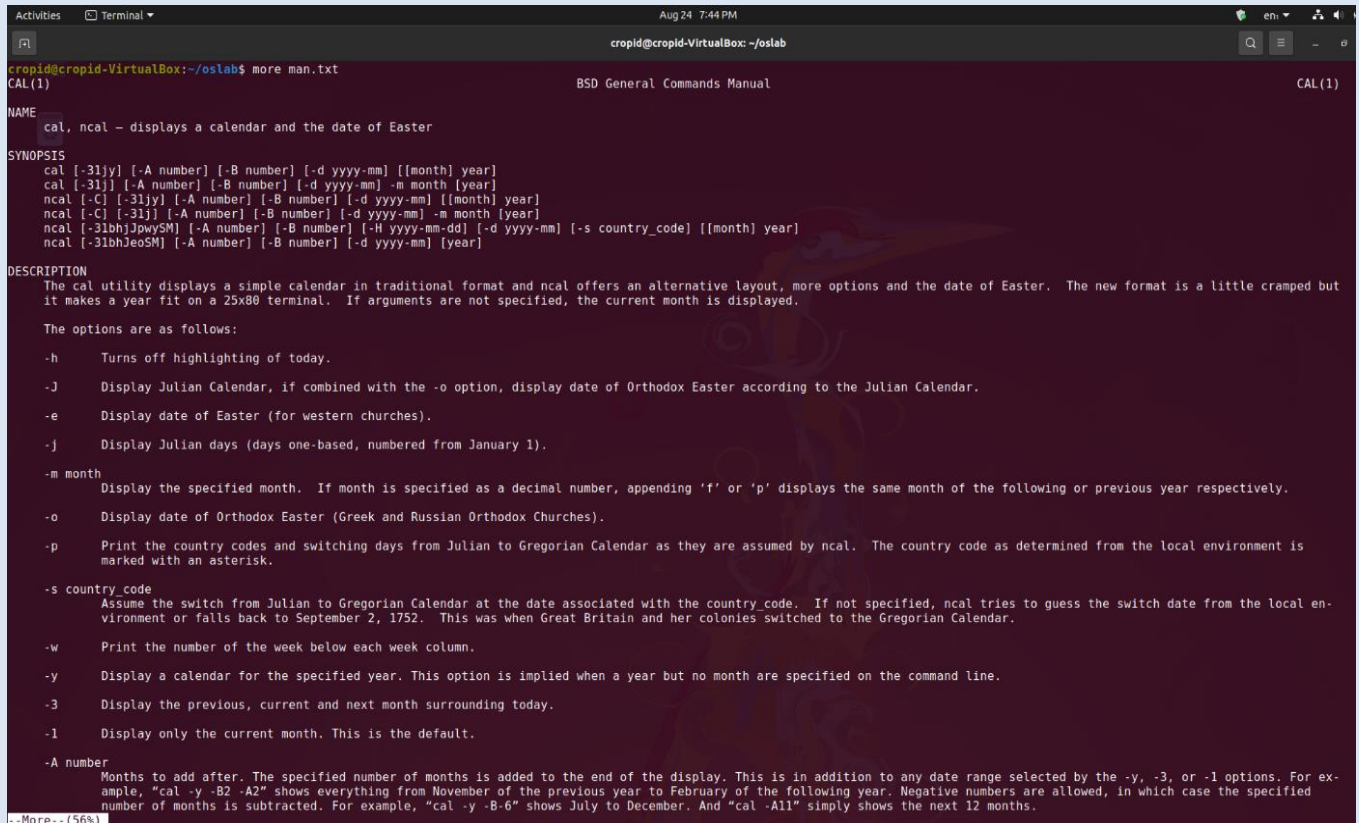
- Command - `wc -l -w -c [filename]`
- Description - It prints the count of lines, words, and characters in a file or data. (`-l` for line, `-w` for words, `-c` for characters).



```
Activities Terminal
cropid@cropid-VirtualBox:~/oslab$ wc -l -c -w sample2
6 14 61 sample2
cropid@cropid-VirtualBox:~/oslab$
```

❖ Use of more :

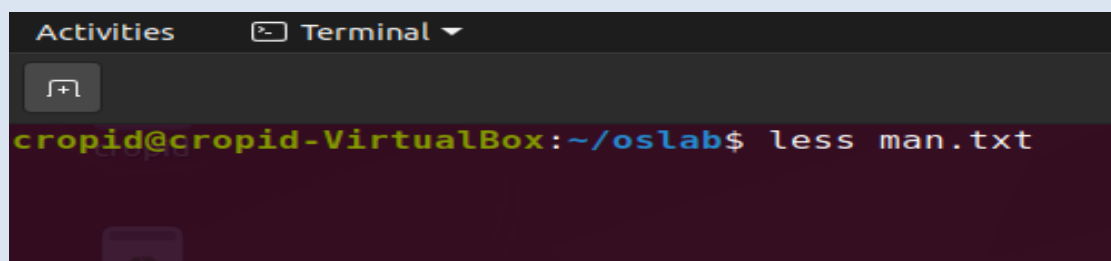
- **Command -** more [filename]
- **Description -** It prints the data till screen gets full and further can be viewed by space key.



```
Aug 24 7:44 PM
cropld@cropld-VirtualBox: ~/oslab
cropld@cropld-VirtualBox:~/oslab$ more man.txt
CAL(1)
BSD General Commands Manual
NAME
cal, ncal - displays a calendar and the date of Easter
SYNOPSIS
cal [-31jy] [-A number] [-B number] [-d yyyy-mm] [[month] year]
cal [-31j] [-A number] [-B number] [-d yyyy-mm] -m month [year]
ncal [-C] [-31jy] [-A number] [-B number] [-d yyyy-mm] [[month] year]
ncal [-C] [-31j] [-A number] [-B number] [-d yyyy-mm] -m month [year]
ncal [-31bhjJpwySM] [-A number] [-B number] [-H yyyy-mm-dd] [-d yyyy-mm] [-s country_code] [[month] year]
ncal [-31bhJeoSM] [-A number] [-B number] [-d yyyy-mm] [year]
DESCRIPTION
The cal utility displays a simple calendar in traditional format and ncal offers an alternative layout, more options and the date of Easter. The new format is a little cramped but it makes a year fit on a 25x80 terminal. If arguments are not specified, the current month is displayed.
The options are as follows:
-h Turns off highlighting of today.
-J Display Julian Calendar, if combined with the -o option, display date of Orthodox Easter according to the Julian Calendar.
-e Display date of Easter (for western churches).
-j Display Julian days (days one-based, numbered from January 1).
-m month
Display the specified month. If month is specified as a decimal number, appending 'f' or 'p' displays the same month of the following or previous year respectively.
-o Display date of Orthodox Easter (Greek and Russian Orthodox Churches).
-p Print the country codes and switching days from Julian to Gregorian Calendar as they are assumed by ncal. The country code as determined from the local environment is marked with an asterisk.
-s country_code
Assume the switch from Julian to Gregorian Calendar at the date associated with the country_code. If not specified, ncal tries to guess the switch date from the local environment or falls back to September 2, 1752. This was when Great Britain and her colonies switched to the Gregorian Calendar.
-w Print the number of the week below each week column.
-y Display a calendar for the specified year. This option is implied when a year but no month are specified on the command line.
-3 Display the previous, current and next month surrounding today.
-l Display only the current month. This is the default.
-A number
Months to add after. The specified number of months is added to the end of the display. This is in addition to any date range selected by the -y, -3, or -l options. For example, "cal -y -B2 -A2" shows everything from November of the previous year to February of the following year. Negative numbers are allowed, in which case the specified number of months is subtracted. For example, "cal -y -B-6" shows July to December. And "cal -A11" simply shows the next 12 months.
...More-- (56%)
```

❖ Use of less:

- **Command -** less [filename]
- **Description -** It prints the data till screen gets full and further can be viewed by forward(f key) and backward(b key).



```
Activities Terminal
cropld@cropld-VirtualBox: ~/oslab$ less man.txt
```

```
Aug 24 7:46 PM
cropld@cropld-VirtualBox: ~/oslab
CAL(1) BSD General Commands Manual CAL(1)

NAME
    cal, ncal - displays a calendar and the date of Easter

SYNOPSIS
    cal [-31jy] [-A number] [-B number] [-d yyyy-mm] [[month] year]
    cal [-31j] [-A number] [-B number] [-d yyyy-mm] -m month [year]
    ncal [-C] [-31jy] [-A number] [-B number] [-d yyyy-mm] [[month] year]
    ncal [-C] [-31j] [-A number] [-B number] [-d yyyy-mm] -m month [year]
    ncal [-31bhjpwysM] [-A number] [-B number] [-H yyyy-mm-dd] [-d yyyy-mm] [-s country_code] [[month] year]
    ncal [-31bhJeoSM] [-A number] [-B number] [-d yyyy-mm] [year]

DESCRIPTION
    The cal utility displays a simple calendar in traditional format and ncal offers an alternative layout, more options and the date of Easter. The new format is a little cramped but it makes a year fit on a 25x80 terminal. If arguments are not specified, the current month is displayed.

    The options are as follows:

    -h      Turns off highlighting of today.
    -J      Display Julian Calendar, if combined with the -o option, display date of Orthodox Easter according to the Julian Calendar.
    -e      Display date of Easter (for western churches).
    -j      Display Julian days (days one-based, numbered from January 1).
    -m month
            Display the specified month. If month is specified as a decimal number, appending 'f' or 'p' displays the same month of the following or previous year respectively.
    -o      Display date of Orthodox Easter (Greek and Russian Orthodox Churches).
    -p      Print the country codes and switching days from Julian to Gregorian Calendar as they are assumed by ncal. The country code as determined from the local environment is marked with an asterisk.
    -s country_code
            Assume the switch from Julian to Gregorian Calendar at the date associated with the country_code. If not specified, ncal tries to guess the switch date from the local environment or falls back to September 2, 1752. This was when Great Britain and her colonies switched to the Gregorian Calendar.
    -w      Print the number of the week below each week column.
    -y      Display a calendar for the specified year. This option is implied when a year but no month are specified on the command line.
    -3      Display the previous, current and next month surrounding today.
    -1      Display only the current month. This is the default.
    -A number
            Months to add after. The specified number of months is added to the end of the display. This is in addition to any date range selected by the -y, -3, or -1 options. For example, "cal -y -B2 -A2" shows everything from November of the previous year to February of the following year. Negative numbers are allowed, in which case the specified number of months is subtracted. For example, "cal -y -B-6" shows July to December. And "cal -A11" simply shows the next 12 months.

man.txt
```

❖ Output to a file :

- **Command** - `command > [filename]`
- **Description** - It redirect the output of command in the file. (> is used for redirection).

```
Aug 24 7:38 PM
cropld@cropld-VirtualBox: ~/oslab
cropld@cropld-VirtualBox:~/oslab$ man cal > man.txt
cropld@cropld-VirtualBox:~/oslab$ cat man.txt
CAL(1) BSD General Commands Manual CAL(1)

NAME
    cal, ncal - displays a calendar and the date of Easter

SYNOPSIS
    cal [-31jy] [-A number] [-B number] [-d yyyy-mm] [[month] year]
    cal [-31j] [-A number] [-B number] [-d yyyy-mm] -m month [year]
    ncal [-C] [-31jy] [-A number] [-B number] [-d yyyy-mm] [[month] year]
    ncal [-C] [-31j] [-A number] [-B number] [-d yyyy-mm] -m month [year]
    ncal [-31bhjpwysM] [-A number] [-B number] [-H yyyy-mm-dd] [-d yyyy-mm] [-s country_code] [[month] year]
    ncal [-31bhJeoSM] [-A number] [-B number] [-d yyyy-mm] [year]

DESCRIPTION
    The cal utility displays a simple calendar in traditional format and ncal offers an alternative layout, more options and the date of Easter. it makes a year fit on a 25x80 terminal. If arguments are not specified, the current month is displayed.

    The options are as follows:

    -h      Turns off highlighting of today.
```