

# OS Assignment 1

## BASIC LINUX COMMANDS

- **ls command: -**

The **ls** is the list command in Linux. It will show the full list or content of your directory. Just type `ls` and press the enter key. The whole content will be shown.

ls option	Description
<a href="#"><u>ls -a</u></a>	In Linux, hidden files start with . (dot) symbol and they are not visible in the regular directory. The (ls -a) command will enlist the whole list of the current directory including the hidden files.
<a href="#"><u>ls -l</u></a>	It will show the list in a long list format.
ls -lh	This command will show you the file sizes in human readable format. Size of the file is very difficult to read when displayed in terms of byte. The (ls -lh)command will give you the data in terms of Mb, Gb, Tb, etc.
ls -lhS	If you want to display your files in descending order (highest at the top) according to their size, then you can use (ls -lhS) command.
<a href="#"><u>ls -l - -block-size=[SIZE]</u></a>	It is used to display the files in a specific size format. Here, in [SIZE] you can assign size according to your requirement.
<a href="#"><u>ls -d */</u></a>	It is used to display only subdirectories.
<a href="#"><u>ls -g or ls -lG</u></a>	With this you can exclude column of group information and owner.
ls -n	It is used to print group ID and owner ID instead of their names.
<a href="#"><u>ls --color=[VALUE]</u></a>	This command is used to print list as colored or discolored.
ls -li	This command prints the index number if file is in the first column.
ls -p	It is used to identify the directory easily by marking the directories with a slash (/) line sign.
ls -r	It is used to print the list in reverse order.

ls -R	It will display the content of the sub-directories also.
ls -lX	It will group the files with same extensions together in the list.
ls -lt	It will sort the list by displaying recently modified files at top.
<u>ls ~</u>	It gives the contents of home directory.
<u>ls ../</u>	It gives the contents of parent directory.
ls --version	It checks the version of ls command.

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls ../
'18 05 22 Lec'      DP          numberGuessingGame.c
2P                  dsal.cpp    p
3ca                  emp.lst     Pictures
a2Practice.cpp      emp.txt     pointerArithmetic.c
a3.cpp              factorialUsingRecursion.c
acg3                ff          pointers.c
ample.txt           FF.cpp      pointersPracticeSet.c
a.out               fileIOPracticeSet.c
App                 firstOpenGLApp
areaFunction.c      floodFill.cpp
arrays.c            fopen.c     pointerSwap.c
arraysInFunc.c      forloop.c   PSA
arraysPracticeSet.c FP          PSA.cpp
as2                 funcPracticeSet.c
assign2.cpp          function.c  Public
assign3.cpp          funcWithParameters.c
BSA                  greaterNo.c
CG3                  kill
CGP3                 laptop.cpp
circleArea.c         leapYear.c
DBP                  loopPracticeSet.c
DBP.cpp              lowercase.c
DDA                  lp
Desktop              main.c
dma.c                main.cpp
Documents            mdArrays.c
dowhileloop.c        me.txt
Downloads            Music
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls --version
ls (GNU coreutils) 8.30
Copyright (C) 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.

Written by Richard M. Stallman and David MacKenzie.
```

```

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~$ cd Desktop
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls
a.out      'CPP Programs'  FH1.cpp        'OS PRACTICALS SEM 5'
CG         Database.txt    FH.cpp         SAIRAJCG
CG.zip     'DBMS PRACTICE' newFile.txt    test.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -la
.          CG.zip          FH1.cpp        SAIRAJCG
..         'CPP Programs' FH.cpp         test.txt
a.out      Database.txt    newFile.txt
CG         'DBMS PRACTICE' 'OS PRACTICALS SEM 5'
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -l
total 160
-rwxrwxr-x 1 sahil sahil 29128 Dec 30 2022 a.out
drwxrwxr-x 2 sahil sahil 4096 Jun 10 06:41 CG
-rw-rw-r-- 1 sahil sahil 65417 Jun 7 05:33 CG.zip
drwxrwxr-x 2 sahil sahil 4096 Dec 31 2022 'CPP Programs'
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 Database.txt
-rw-rw-r-- 1 sahil sahil 25458 Jun 3 15:34 'DBMS PRACTICE'
-rw-rw-r-- 1 sahil sahil 2768 Dec 30 2022 FH1.cpp
-rw-rw-r-- 1 sahil sahil 3151 Dec 30 2022 FH.cpp
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 newFile.txt
drwxrwxr-x 2 sahil sahil 4096 Jul 25 00:17 'OS PRACTICALS SEM 5'
drwxrwxr-x 2 sahil sahil 4096 Jun 9 13:47 SAIRAJCG
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 test.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -lh
total 160K
-rwxrwxr-x 1 sahil sahil 29K Dec 30 2022 a.out
drwxrwxr-x 2 sahil sahil 4.0K Jun 10 06:41 CG
-rw-rw-r-- 1 sahil sahil 64K Jun 7 05:33 CG.zip
drwxrwxr-x 2 sahil sahil 4.0K Dec 31 2022 'CPP Programs'
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 Database.txt
-rw-rw-r-- 1 sahil sahil 25K Jun 3 15:34 'DBMS PRACTICE'
-rw-rw-r-- 1 sahil sahil 2.8K Dec 30 2022 FH1.cpp
-rw-rw-r-- 1 sahil sahil 3.1K Dec 30 2022 FH.cpp
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 newFile.txt
drwxrwxr-x 2 sahil sahil 4.0K Jul 25 00:17 'OS PRACTICALS SEM 5'
drwxrwxr-x 2 sahil sahil 4.0K Jun 9 13:47 SAIRAJCG
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 test.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -lhs
total 160K
-rw-rw-r-- 1 sahil sahil 64K Jun 7 05:33 CG.zip
-rwxrwxr-x 1 sahil sahil 29K Dec 30 2022 a.out
-rw-rw-r-- 1 sahil sahil 25K Jun 3 15:34 'DBMS PRACTICE'
drwxrwxr-x 2 sahil sahil 4.0K Jun 10 06:41 CG
drwxrwxr-x 2 sahil sahil 4.0K Dec 31 2022 'CPP Programs'
drwxrwxr-x 2 sahil sahil 4.0K Jul 25 00:17 'OS PRACTICALS SEM 5'

```

```

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -l --block-size=[M]
ls: invalid --block-size argument '[M]'
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -l --block-size=M
total 1M
-rwxrwxr-x 1 sahil sahil 1M Dec 30 2022 a.out
drwxrwxr-x 2 sahil sahil 1M Jun 10 06:41 CG
-rw-rw-r-- 1 sahil sahil 1M Jun 7 05:33 CG.zip
drwxrwxr-x 2 sahil sahil 1M Dec 31 2022 'CPP Programs'
-rw-rw-r-- 1 sahil sahil 1M Dec 30 2022 Database.txt
-rw-rw-r-- 1 sahil sahil 1M Jun 3 15:34 'DBMS PRACTICE'
-rw-rw-r-- 1 sahil sahil 1M Dec 30 2022 FH1.cpp
-rw-rw-r-- 1 sahil sahil 1M Dec 30 2022 FH.cpp
-rw-rw-r-- 1 sahil sahil 1M Dec 30 2022 newFile.txt
drwxrwxr-x 2 sahil sahil 1M Jul 25 00:17 'OS PRACTICALS SEM 5'
drwxrwxr-x 2 sahil sahil 1M Jun 9 13:47 SAIRAJCG
-rw-rw-r-- 1 sahil sahil 1M Dec 30 2022 test.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -d */
CG/ 'CPP Programs/' 'OS PRACTICALS SEM 5/' SAIRAJCG/
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -g
total 160
-rwxrwxr-x 1 sahil 29128 Dec 30 2022 a.out
drwxrwxr-x 2 sahil 4096 Jun 10 06:41 CG
-rw-rw-r-- 1 sahil 65417 Jun 7 05:33 CG.zip
drwxrwxr-x 2 sahil 4096 Dec 31 2022 'CPP Programs'
-rw-rw-r-- 1 sahil 41 Dec 30 2022 Database.txt
-rw-rw-r-- 1 sahil 25458 Jun 3 15:34 'DBMS PRACTICE'
-rw-rw-r-- 1 sahil 2768 Dec 30 2022 FH1.cpp
-rw-rw-r-- 1 sahil 3151 Dec 30 2022 FH.cpp
-rw-rw-r-- 1 sahil 41 Dec 30 2022 newFile.txt
drwxrwxr-x 2 sahil 4096 Jul 25 00:17 'OS PRACTICALS SEM 5'
drwxrwxr-x 2 sahil 4096 Jun 9 13:47 SAIRAJCG
-rw-rw-r-- 1 sahil 41 Dec 30 2022 test.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -n
total 160
-rwxrwxr-x 1 1000 1000 29128 Dec 30 2022 a.out
drwxrwxr-x 2 1000 1000 4096 Jun 10 06:41 CG
-rw-rw-r-- 1 1000 1000 65417 Jun 7 05:33 CG.zip
drwxrwxr-x 2 1000 1000 4096 Dec 31 2022 'CPP Programs'
-rw-rw-r-- 1 1000 1000 41 Dec 30 2022 Database.txt
-rw-rw-r-- 1 1000 1000 25458 Jun 3 15:34 'DBMS PRACTICE'
-rw-rw-r-- 1 1000 1000 2768 Dec 30 2022 FH1.cpp
-rw-rw-r-- 1 1000 1000 3151 Dec 30 2022 FH.cpp
-rw-rw-r-- 1 1000 1000 41 Dec 30 2022 newFile.txt
drwxrwxr-x 2 1000 1000 4096 Jul 25 00:17 'OS PRACTICALS SEM 5'
drwxrwxr-x 2 1000 1000 4096 Jun 9 13:47 SAIRAJCG
-rw-rw-r-- 1 1000 1000 41 Dec 30 2022 test.txt

```

```

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls --color=auto
a.out  'CPP Programs'  FH1.cpp  'OS PRACTICALS SEM 5'
CG     Database.txt    FH.cpp   SAIRAJCG
CG.zip 'DBMS PRACTICE' newFile.txt test.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -li
total 160
11408735 -rwxrwxr-x 1 sahil sahil 29128 Dec 30 2022 a.out
11535768 drwxrwxr-x 2 sahil sahil 4096 Jun 10 06:41 CG
11406184 -rw-rw-r-- 1 sahil sahil 65417 Jun 7 05:33 CG.zip
11408793 drwxrwxr-x 2 sahil sahil 4096 Dec 31 2022 'CPP Programs'
11415341 -rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 Database.txt
11405460 -rw-rw-r-- 1 sahil sahil 25458 Jun 3 15:34 'DBMS PRACTICE'
11414322 -rw-rw-r-- 1 sahil sahil 2768 Dec 30 2022 FH1.cpp
11410882 -rw-rw-r-- 1 sahil sahil 3151 Dec 30 2022 FH.cpp
11415343 -rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 newFile.txt
11535297 drwxrwxr-x 2 sahil sahil 4096 Jul 25 00:17 'OS PRACTICALS SEM 5'
11535668 drwxrwxr-x 2 sahil sahil 4096 Jun 9 13:47 SAIRAJCG
11415301 -rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 test.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -p
a.out  'CPP Programs' /  FH1.cpp  'OS PRACTICALS SEM 5' /
CG/    Database.txt    FH.cpp   SAIRAJCG/
CG.zip 'DBMS PRACTICE' newFile.txt test.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -r
test.txt          newFile.txt  'DBMS PRACTICE'  CG.zip
SAIRAJCG          FH.cpp       Database.txt      CG
'OS PRACTICALS SEM 5' FH1.cpp      'CPP Programs'   a.out
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -R
.:
a.out  'CPP Programs'  FH1.cpp  'OS PRACTICALS SEM 5'
CG     Database.txt    FH.cpp   SAIRAJCG
CG.zip 'DBMS PRACTICE' newFile.txt test.txt

./CG:
animation.cpp  CG17.cpp  CG30  DDA.c  testing.cpp
bf             CG19      CG30.cpp final_prac.cpp Transformation.cpp
BoundaryFill.cpp CG19.cpp  CG3.cpp fp    truck.cpp
Bresenhams.cpp CG1.cpp   CG4    lc     ts
CG1            CG21      CG4.cpp line_clipping.cpp tst
CG16           CG21.cpp  CG5    p1     w
CG16.cpp       CG25      CG5.cpp practic.cpp
CG17           CG25.cpp  CG6    rangoli.cpp
CG17.c         CG3       CG6.cpp star.cpp

'./CPP Programs':
a.out  cq.cpp  heapSort.cpp

```

```

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -lX
total 160
drwxrwxr-x 2 sahil sahil 4096 Jun 10 06:41 CG
drwxrwxr-x 2 sahil sahil 4096 Dec 31 2022 'CPP Programs'
-rw-rw-r-- 1 sahil sahil 25458 Jun 3 15:34 'DBMS PRACTICE'
drwxrwxr-x 2 sahil sahil 4096 Jul 25 00:17 'OS PRACTICALS SEM 5'
drwxrwxr-x 2 sahil sahil 4096 Jun 9 13:47 SAIRAJCG
-rw-rw-r-- 1 sahil sahil 2768 Dec 30 2022 FH1.cpp
-rw-rw-r-- 1 sahil sahil 3151 Dec 30 2022 FH.cpp
-rwxrwxr-x 1 sahil sahil 29128 Dec 30 2022 a.out
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 Database.txt
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 newFile.txt
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 test.txt
-rw-rw-r-- 1 sahil sahil 65417 Jun 7 05:33 CG.zip
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls -lt
total 160
drwxrwxr-x 2 sahil sahil 4096 Jul 25 00:17 'OS PRACTICALS SEM 5'
drwxrwxr-x 2 sahil sahil 4096 Jun 10 06:41 CG
drwxrwxr-x 2 sahil sahil 4096 Jun 9 13:47 SAIRAJCG
-rw-rw-r-- 1 sahil sahil 65417 Jun 7 05:33 CG.zip
-rw-rw-r-- 1 sahil sahil 25458 Jun 3 15:34 'DBMS PRACTICE'
drwxrwxr-x 2 sahil sahil 4096 Dec 31 2022 'CPP Programs'
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 newFile.txt
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 test.txt
-rwxrwxr-x 1 sahil sahil 29128 Dec 30 2022 a.out
-rw-rw-r-- 1 sahil sahil 2768 Dec 30 2022 FH1.cpp
-rw-rw-r-- 1 sahil sahil 41 Dec 30 2022 Database.txt
-rw-rw-r-- 1 sahil sahil 3151 Dec 30 2022 FH.cpp
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ ls ~
'18 05 22 Lec' DP numberGuessingGame.c
2P dsal.cpp P
3ca emp.lst Pictures
a2Practice.cpp emp.txt pointerArithmetic.c
a3.cpp factorialUsingRecursion.c pointers.c
acg3 ff pointersPracticeSet.c
ample.txt FF.cpp pointerSwap.c
a.out fileIOPracticeSet.c PSA
App firstOpenGLApp PSA.cpp
areaFunction.c floodFill.cpp Public
arrays.c fopen.c recArea.c
arraysInFunc.c forloop.c rg
arraysPracticeSet.c FP sample.txt
as2 funcPracticeSet.c sedktop
assign2.cpp function.c snap
assign3.cpp funcWithParameters.c SPSGame.c
PSA greaterNo.c st

```

- **pwd command: -**

PWD stands for Print Working Directory. It writes the complete path name of the working directory to standard output in UNIX-like and other operating systems.

Options	Explanation
<b>pwd</b>	This command is used to show the current working directory. For example, <b>/home/foobar</b>
<b>pwd -L</b>	This command is used to show the logical path of the current working directory with the name of the symbolic link if any. <b>For example</b> , if existing in a dir /home/symlinked, it's a symlink to /home/readdir; it would display /home/symlinked.
<b>pwd -R</b>	This command is used to show the physical path of the current working directory without the name of the symbolic link if any. <b>For example</b> , if existing in a dir /home/symlinked, it's a symlink to /home/readdir; it would display /home/readdir.
<b>--help</b>	It shows the help message.
<b>--version</b>	It provides the program version.

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ man pwd
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ pwd
/home/sahil/Desktop
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ pwd -L
/home/sahil/Desktop
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ pwd -P
/home/sahil/Desktop
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop$ 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.
```



- **tee command: -**

Linux tee command is quite similar to the 'cat' command, with only one difference. It puts stdin on stdout and also put them into a file. It is one of the most used commands with other commands through piping. It allows us to write whatever is provided from std input to std output. Optionally, it provides writing to one or more files. The command name tee comes from T splitter used in plumbing.

The following are some useful options that can be used with the tee command to make it more specific:

- **-a, --append:** It is used to append the data to the given files, it does not overwrite data.
- **-i, --ignore-interrupts:** It is used to ignore the interrupt signals.
- **-p:** It is used to diagnose errors writing to non-pipes.
- **--output-error[=MODE]:** It is used to set behavior on write error mode.
- **--help:** It is used to display the help documentation.
- **--version:** it is used to display the version information.

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat weeks.txt
sunday
monday
tuesday
wednesday
thursday
friday
saturday

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat weeks.txt|tee newfile.txt
sunday
monday
tuesday
wednesday
thursday
friday
saturday

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat newfile.txt
sunday
monday
tuesday
wednesday
thursday
friday
saturday

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ echo 'Saturday and Sunday are week offs' | tee -a newfile.txt
Saturday and Sunday are week offs
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat newfile.txt
sunday
monday
tuesday
wednesday
thursday
friday
saturday

Saturday and Sunday are week offs

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ echo " add text" | tee file1.txt file2.txt
add text
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat file1.txt
add text
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat file2.txt add text
```



- touch command: -

touch command is a way to create empty files (there are some other methods also). You can update the modification and access time of each file with the help of touch command.

Option	Function
<a href="#">touch -a</a>	To change file access and modification time.
<a href="#">touch -m</a>	It is used to only modify time of a file.
<a href="#">touch -r</a>	To update time of one file with reference to the other file.
<a href="#">touch -t</a>	To create a file by specifying the time.
<a href="#">touch -c</a>	It doesn't create an empty file.
-d=, --date=	This option is used to modify the timestamp with a date string.
-h, --no-dereference	It modifies the timestamp of a symbolic link.
-f No effect.	The option forces modifications in older BSD.
--version, -v	It shows the program version.
--help	It shows the help menu.

```

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ stat sample.txt
  File: sample.txt
  Size: 977          Blocks: 8           IO Block: 4096   regular file
Device: 806h/2054d  Inode: 11535427  Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   sahil)   Gid: ( 1000/   sahil)
Access: 2023-07-25 00:30:24.390815707 +0530
Modify: 2023-07-25 00:17:41.110302123 +0530
Change: 2023-07-25 00:17:41.110302123 +0530
Birth: -
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ touch -a sample.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ stat sample.txt
  File: sample.txt
  Size: 977          Blocks: 8           IO Block: 4096   regular file
Device: 806h/2054d  Inode: 11535427  Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   sahil)   Gid: ( 1000/   sahil)
Access: 2023-07-25 00:57:43.142947225 +0530
Modify: 2023-07-25 00:17:41.110302123 +0530
Change: 2023-07-25 00:57:43.142947225 +0530
Birth: -
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ touch -m sample.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ stat sample.txt
  File: sample.txt
  Size: 977          Blocks: 8           IO Block: 4096   regular file
Device: 806h/2054d  Inode: 11535427  Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   sahil)   Gid: ( 1000/   sahil)
Access: 2023-07-25 00:57:43.142947225 +0530
Modify: 2023-07-25 00:58:52.103998860 +0530
Change: 2023-07-25 00:58:52.103998860 +0530
Birth: -
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ stat file1.txt
  File: file1.txt
  Size: 10           Blocks: 8           IO Block: 4096   regular file
Device: 806h/2054d  Inode: 11536145  Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   sahil)   Gid: ( 1000/   sahil)
Access: 2023-07-25 00:54:26.823034472 +0530
Modify: 2023-07-25 00:54:11.403646651 +0530
Change: 2023-07-25 00:54:11.403646651 +0530
Birth: -
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ stat file2.txt
  File: file2.txt
  Size: 10           Blocks: 8           IO Block: 4096   regular file
Device: 806h/2054d  Inode: 11536153  Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   sahil)   Gid: ( 1000/   sahil)
Access: 2023-07-25 00:54:30.786876489 +0530
Modify: 2023-07-25 00:54:11.403646651 +0530
Change: 2023-07-25 00:54:11.403646651 +0530

```

```

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ touch -r file1.txt file2.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ stat file1.txt
  File: file1.txt
  Size: 10           Blocks: 8           IO Block: 4096   regular file
Device: 806h/2054d  Inode: 11536145  Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   sahil)   Gid: ( 1000/   sahil)
Access: 2023-07-25 00:54:26.823034472 +0530
Modify: 2023-07-25 00:54:11.403646651 +0530
Change: 2023-07-25 00:54:11.403646651 +0530
Birth: -
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ stat file2.txt
  File: file2.txt
  Size: 10           Blocks: 8           IO Block: 4096   regular file
Device: 806h/2054d  Inode: 11536153  Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   sahil)   Gid: ( 1000/   sahil)
Access: 2023-07-25 00:54:26.823034472 +0530
Modify: 2023-07-25 00:54:11.403646651 +0530
Change: 2023-07-25 01:00:25.359941663 +0530
Birth: -
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ touch -t 20160752052.37 file1.txt
touch: invalid date format '20160752052.37'
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ touch -t 20160752052 file1.txt
touch: invalid date format '20160752052'
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ man touch
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ touch -t 201607052052 file1.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ stat file1.txt
  File: file1.txt
  Size: 10           Blocks: 8           IO Block: 4096   regular file
Device: 806h/2054d  Inode: 11536145  Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   sahil)   Gid: ( 1000/   sahil)
Access: 2016-07-05 20:52:00.000000000 +0530
Modify: 2016-07-05 20:52:00.000000000 +0530
Change: 2023-07-25 01:04:10.945866679 +0530
Birth: -
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ touch c sahil
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ ls
c file1.txt file2.txt newfile.txt sahil sample.txt weeks.txt

```

- **head command: -**

The 'head' command displays the starting content of a file. By default, it displays starting 10 lines of any file.

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat state.txt
Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal Pradesh
Jammu and Kashmir
Jharkhand
Karnataka
Kerala
Madhya Pradesh
Maharashtra
Manipur
Meghalaya
Mizoram
Nagaland
Odisha
Punjab
Rajasthan
Sikkim
Tamil Nadu
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat capitals.txt
Hyderabad
Itanagar
Dispur
Patna
Raipur
Panaji
Gandhinagar
Chandigarh
Shimla
Srinagar
```

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ head state.txt
Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal Pradesh
Jammu and Kashmir
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ head -n 5 state.txt
Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chhattisgarh
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ head -c 6 state.txt
Andhrasahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ head state.txt capital.txt
```

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ head state.txt capitals.txt
==> state.txt <==
Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal Pradesh
Jammu and Kashmir

==> capitals.txt <==
Hyderabad
Itanagar
Dispur
Patna
Raipur
Panaji
Gandhinagar
Chandigarh
Shimla
Srinagar
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ head -q state.txt capitals.txt
Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal Pradesh
Jammu and Kashmir
Hyderabad
Itanagar
Dispur
Patna
Raipur
Panaji
Gandhinagar
Chandigarh
Shimla
Srinagar
```

- tail command: -

Linux tail command is used to display the last ten lines of one or more files. Its main purpose is to read the error message. By default, it displays the last ten lines of a file.

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ tail state.txt
Odisha
Punjab
Rajasthan
Sikkim
Tamil Nadu
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ tail -n 3 state.txt
Uttar Pradesh
Uttarakhand
West Bengal
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ tail +25 state.txt
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ tail -c -6 state.txt
engal
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ tail state.txt capitals.txt
==> state.txt <==
Odisha
Punjab
Rajasthan
Sikkim
Tamil Nadu
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal

==> capitals.txt <==
Hyderabad
Itanagar
Dispur
Patna
Raipur
Panaji
Gandhinagar
Chandigarh
Shimla
```

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ tail -q state.txt capitals.t
Odisha
Punjab
Rajasthan
Sikkim
Tamil Nadu
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal
Hyderabad
Itanagar
Dispur
Patna
Raipur
Panaji
Gandhinagar
Chandigarh
Shimla
Srinagar
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ tail -v state.txt
==> state.txt <==
Odisha
Punjab
Rajasthan
Sikkim
Tamil Nadu
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ tail -n 7 state.txt
Sikkim
Tamil Nadu
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal
```

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ tail -n 7 state.txt | sort -r
West Bengal
Uttar Pradesh
Uttarakhand
Tripura
Telangana
Tamil Nadu
Sikkim
```

- **cut command: -**

Linux cut command is useful for selecting a specific column of a file. It is used to cut a specific sections by byte position, character, and field and writes them to standard output.

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cut -b 1,2,3 state.txt
And
Aru
Ass
Bih
Chh
Goa
Guj
Har
Him
Jam
Jha
Kar
Ker
Mad
Mah
Man
Meg
Miz
Nag
Odi
Pun
Raj
Sik
Tam
Tel
Tri
Utt
Utt
Wes
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cut -b 1-3,5-7 state.txt
Andra
Aruach
Assm
Bihr
Chhhti
Goa
Gujrat
Harana
Himcha
Jamu a
Jhakha
Karata
Kerla
Madya
Mahras
```



```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cut -c 2,5,7 state.txt
nr
rah
sm
ir
hti
o
urt
aaa
ica
aua
hka
aaa
el
ay
ars
apr
eaa
irm
aln
dh
ua
ash
ii
alN
ena
rua
trP
trk
e e
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cut -d " " -f 1 state.txt
Andhra
Arunachal
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal
Jammu
Jharkhand
Karnataka
Kerala
Madhya
Maharashtra
```

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cut -d " " -f 1,2 state.txt --output-delimiter='%'
Andhra%Pradesh
Arunachal%Pradesh
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal%Pradesh
Jammu%and
Jharkhand
Karnataka
Kerala
Madhya%Pradesh
Maharashtra
Manipur
Meghalaya
Mizoram
Nagaland
Odisha
Punjab
Rajasthan
Sikkim
Tamil%Nadu
Telangana
Tripura
Uttar%Pradesh
Uttarakhand
West%Bengal
```

- sort command: -

The 'sort' command sorts the file content in an alphabetical order.

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat > fil.txt
abhishek
chitransh
satish
rajan
naveen
divyam
harsh

^C
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat fil.txt
abhishek
chitransh
satish
rajan
naveen
divyam
harsh

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sort fil.txt

abhishek
chitransh
divyam
harsh
naveen
rajan
satish
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sort -r fil.txt
satish
rajan
naveen
harsh
divyam
chitransh
abhishek
```

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat > number.txt
50
39
1589
200
^C
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sort -n number.txt
39
50
200
1589
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sort -nr number.txt
1589
200
50
39
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sort -c fil.txt
sort: fil.txt:4: disorder: rajan
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat > new.txt
audi
bmw
dog
bmw
^C
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sort -u new.txt
audi
bmw
dog
```

- **grep command:** -

The 'grep' command stands for "**global regular expression print**". grep command filters the content of a file which makes our search easy.

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat > greptest.txt
unix is great os. unix was developed in Bell labs.
learn operating system.
Unix linux which one you choose.
uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
^C
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep -i "UNIX" greptest.txt
unix is great os. unix was developed in Bell labs.
Unix linux which one you choose.
uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep -c "unix" greptest.txt
2
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep -l "unix" *
> ^C
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep -l "unix" *
greptest.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep -w "unix" greptest.txt
unix is great os. unix was developed in Bell labs.
uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep -o "unix" greptest.txt
unix
unix
unix
unix
unix
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep -n "unix" greptest.txt
1:unix is great os. unix was developed in Bell labs.
4:uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep -v "unix" greptest.txt
learn operating system.
Unix linux which one you choose.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep "^unix" greptest.txt
unix is great os. unix was developed in Bell labs.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep "os$" greptest.txt
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ grep -A1 learn greptest.txt
learn operating system.
Unix linux which one you choose.
uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
```

- sed command: -

Linux 'sed' command stands for stream editor. It is used to edit streams (files) using regular expressions. But this editing is not permanent. It remains only in display, but in actual, file content remains the same.

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ cat > sedtest.txt
unix is great os. unix is opensource. unix is free os.
learn operating system.
unix linux which one you choose.
unix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
^C
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sed 's/unix/linux' sedtest.txt
sed: -e expression #1, char 12: unterminated 's' command
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ man sed
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sed '/unix/linux' sedtest.txt
sed: -e expression #1, char 8: extra characters after command
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sed 's/unix/linux/' sedtest.txt
linux is great os. unix is opensource. unix is free os.
learn operating system.
linux linux which one you choose.
linux is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sed 's/unix/linux/2' sedtest.txt
unix is great os. linux is opensource. unix is free os.
learn operating system.
unix linux which one you choose.
unix is easy to learn.linux is a multiuser os.Learn linux .linux is a powerful.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sed 's/unix/linux/g' sedtest.txt
linux is great os. linux is opensource. linux is free os.
learn operating system.
linux linux which one you choose.
linux is easy to learn.linux is a multiuser os.Learn linux .linux is a powerful.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sed 's/unix/linux/3g' sedtest.txt
unix is great os. unix is opensource. linux is free os.
learn operating system.
unix linux which one you choose.
unix is easy to learn.unix is a multiuser os.Learn linux .linux is a powerful.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ echo "Welcome To The Geek Stuff" | sed 's/(\b[A-Z])/\1/g'
(W)elcome (T)o (T)he (G)eek (S)tuff
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sed '3 s/unix/linux/' sedtest.txt
unix is great os. unix is opensource. unix is free os.
learn operating system.
linux linux which one you choose.
unix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sed 's/unix/linux/p' sedtest.txt
linux is great os. unix is opensource. unix is free os.
linux is great os. unix is opensource. unix is free os.
learn operating system.
linux linux which one you choose.
linux linux which one you choose.
linux is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
linux is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
```

```
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ sed '2d' sedtest.txt
unix is great os. unix is opensource. unix is free os.
unix linux which one you choose.
unix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.
```