

### Question 1:

**Title :** 1. 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

### Answer:

ls command

```
ajit@ajit-VirtualBox:~$ ls
Desktop  Downloads  OSLAB  Pictures  Templates
Documents Music      OS.txt  Public    Videos

ajit@ajit-VirtualBox:~$ ls -a
.          .config  .local  Pictures  .sudo_as_admin_successful
..         Desktop  .mozilla .profile  Templates
.bash_logout Documents Music     Public    Videos
.bashrc    Downloads OSLAB    .python_history
.cache     .gnupg   OS.txt   .ssh

ajit@ajit-VirtualBox:~$ ls -l
total 36
drwxr-xr-x 2 ajit ajit 4096 Aug 13 20:03 Desktop
drwxr-xr-x 2 ajit ajit 4096 Aug 13 20:03 Documents
drwxr-xr-x 2 ajit ajit 4096 Aug 13 20:03 Downloads
drwxr-xr-x 2 ajit ajit 4096 Aug 13 20:03 Music
drwxrwxr-x 2 ajit ajit 4096 Aug 19 12:43 OSLAB
-rw-rw-r-- 1 ajit ajit   0 Nov 28 21:57 OS.txt
drwxr-xr-x 2 ajit ajit 4096 Aug 13 20:03 Pictures
drwxr-xr-x 2 ajit ajit 4096 Aug 13 20:03 Public
drwxr-xr-x 2 ajit ajit 4096 Aug 13 20:03 Templates
drwxr-xr-x 2 ajit ajit 4096 Aug 13 20:03 Videos

ajit@ajit-VirtualBox:~$ ls -r
Videos  Public  OS.txt  Music  Documents
Templates Pictures OSLAB  Downloads Desktop
```

man command

```
ajit@ajit-VirtualBox:~$ man ls
LS(1)                                User Commands                                LS(1)

NAME
    ls - list directory contents

SYNOPSIS
    ls [OPTION]... [FILE]...

DESCRIPTION
    List information about the FILES (the current directory by default).
    Sort entries alphabetically if none of -cftuvSUX nor --sort is speci-
    fied.

    Mandatory arguments to long options are mandatory for short options
    too.

    -a, --all
        do not ignore entries starting with .

    -A, --almost-all
        do not list implied . and ..

    --author
        with -l, print the author of each file

    -b, --escape
        print C-style escapes for nongraphic characters

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

pwd command

```
ajit@ajit-VirtualBox:~$ cd OSLAB
ajit@ajit-VirtualBox:~/OSLAB$ pwd
/home/ajit/OSLAB
ajit@ajit-VirtualBox:~/OSLAB$ pwd -L
/home/ajit/OSLAB
ajit@ajit-VirtualBox:~/OSLAB$ pwd -P
/home/ajit/OSLAB
ajit@ajit-VirtualBox:~/OSLAB$
```

who command

```
ajit@ajit-VirtualBox:~/OSLAB$ who -a
          system boot  2021-11-28 19:00
          run-level 5  2021-11-28 19:01
ajit      ? :0         2021-11-28 19:01  ?          6511 (:0)
ajit@ajit-VirtualBox:~/OSLAB$

ajit@ajit-VirtualBox:~/OSLAB$ who -u
ajit      :0         2021-11-28 19:01  ?          6511 (:0)
ajit@ajit-VirtualBox:~/OSLAB$
```

whoami command

```
ajit@ajit-VirtualBox:~/OSLAB$ whoami
ajit
ajit@ajit-VirtualBox:~/OSLAB$
```

date command

```
ajit@ajit-VirtualBox:~/OSLAB$ date
Sunday 28 November 2021 11:18:17 PM IST
ajit@ajit-VirtualBox:~/OSLAB$

ajit@ajit-VirtualBox:~/OSLAB$ date -u
Sunday 28 November 2021 05:49:07 PM UTC
ajit@ajit-VirtualBox:~/OSLAB$

ajit@ajit-VirtualBox:~/OSLAB$ date --date="11/26/2021"
Friday 26 November 2021 12:00:00 AM IST
ajit@ajit-VirtualBox:~/OSLAB$

ajit@ajit-VirtualBox:~/OSLAB$ date --date="1 month ago"
Thursday 28 October 2021 11:21:35 PM IST
ajit@ajit-VirtualBox:~/OSLAB$
```

cal command

```
ajit@ajit-VirtualBox:~/OSLAB$ cal
November 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

ajit@ajit-VirtualBox:~/OSLAB$

ajit@ajit-VirtualBox:~/OSLAB$ cal -y
2021
January February March
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  3  4  5  6  7  8  9  1  2  3  4  5  6  7  8  9 10 11 12 13
10 11 12 13 14 15 16 14 15 16 17 18 19 20 14 15 16 17 18 19 20
17 18 19 20 21 22 23 21 22 23 24 25 26 27 21 22 23 24 25 26 27
24 25 26 27 28 29 30 28 28 29 30 31
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
  4  5  6  7  8  9 10  2  3  4  5  6  7  8  6  7  8  9 10 11 12
11 12 13 14 15 16 17  9 10 11 12 13 14 15 13 14 15 16 17 18 19
18 19 20 21 22 23 24 16 17 18 19 20 21 22 20 21 22 23 24 25 26
25 26 27 28 29 30 23 24 25 26 27 28 29 27 28 29 30
30 31

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

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

ajit@ajit-VirtualBox:~/OSLAB$

ajit@ajit-VirtualBox:~/OSLAB$ cal 10 2021
October 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

ajit@ajit-VirtualBox:~/OSLAB$
```



mkdir command

```
ajit@ajit-VirtualBox:~/OSLAB$ mkdir OS_assignment
ajit@ajit-VirtualBox:~/OSLAB$ ls
OS_assignment
ajit@ajit-VirtualBox:~/OSLAB$ █

ajit@ajit-VirtualBox:~/OSLAB$ mkdir --version
mkdir (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 David MacKenzie.
ajit@ajit-VirtualBox:~/OSLAB$ █
```

rm command

```
ajit@ajit-VirtualBox:~/OSLAB$ touch file1.txt
ajit@ajit-VirtualBox:~/OSLAB$ ls
file1.txt  OS_assignment
ajit@ajit-VirtualBox:~/OSLAB$ rm file1.txt
ajit@ajit-VirtualBox:~/OSLAB$ ls
OS_assignment
ajit@ajit-VirtualBox:~/OSLAB$
```

rmdir command

```
ajit@ajit-VirtualBox:~/OSLAB$ ls
OS_assignment
ajit@ajit-VirtualBox:~/OSLAB$ rmdir OS_assignment
ajit@ajit-VirtualBox:~/OSLAB$ ls
ajit@ajit-VirtualBox:~/OSLAB$ █
```

cat command

```
ajit@ajit-VirtualBox:~/OSLAB$ cat >abc
Hello world
this is a file
created using cat command
ajit@ajit-VirtualBox:~/OSLAB$ cat >>abc
now this file is appended using cat command
ajit@ajit-VirtualBox:~/OSLAB$ cat abc
Hello world
this is a file
created using cat command
now this file is appended using cat command
ajit@ajit-VirtualBox:~/OSLAB$
```

head command

```
ajit@ajit-VirtualBox:~/OSLAB$ head -2 abc
Hello world
this is a file
ajit@ajit-VirtualBox:~/OSLAB$
ajit@ajit-VirtualBox:~/OSLAB$ head -2 abc | head -c 5
Helloajit@ajit-VirtualBox:~/OSLAB$
```

tail command

```
ajit@ajit-VirtualBox:~/OSLAB$ tail -2 abc
created using cat command
now this file is appended using cat command
ajit@ajit-VirtualBox:~/OSLAB$
ajit@ajit-VirtualBox:~/OSLAB$ tail -2 abc | tail -c 8
command
ajit@ajit-VirtualBox:~/OSLAB$
```

head and tail command

```
ajit@ajit-VirtualBox:~/OSLAB$ head -2 abc | tail -1
this is a file
ajit@ajit-VirtualBox:~/OSLAB$
ajit@ajit-VirtualBox:~/OSLAB$ head -2 abc | tail -1 | tail -c 11 | head -c 5
is a
ajit@ajit-VirtualBox:~/OSLAB$
```

more command

```
ajit@ajit-VirtualBox:~/OSLAB$ more abc
Hello world
this is a file
created using cat command
now this file is appended using cat command
ajit@ajit-VirtualBox:~/OSLAB$
```

Less command

```
ajit@ajit-VirtualBox:~/OSLAB$ less abc

Hello world
this is a file
created using cat command
now this file is appended using cat command
abc (END)
```

cp command

```
ajit@ajit-VirtualBox:~/OSLAB$ ls
abc
ajit@ajit-VirtualBox:~/OSLAB$ cp abc pqr
ajit@ajit-VirtualBox:~/OSLAB$ ls
abc  pqr
ajit@ajit-VirtualBox:~/OSLAB$ cat abc
Hello world
this is a file
created using cat command
now this file is appended using cat command
ajit@ajit-VirtualBox:~/OSLAB$ cat pqr
Hello world
this is a file
created using cat command
now this file is appended using cat command
ajit@ajit-VirtualBox:~/OSLAB$
```

mv command

```
ajit@ajit-VirtualBox:~/OSLAB$ cat >xyz
1
2
3
4
ajit@ajit-VirtualBox:~/OSLAB$ cat xyz
1
2
3
4
ajit@ajit-VirtualBox:~/OSLAB$ mv abc xyz
ajit@ajit-VirtualBox:~/OSLAB$ cat xyz
Hello world
this is a file
created using cat command
now this file is appended using cat command
ajit@ajit-VirtualBox:~/OSLAB$
```

echo command

```
ajit@ajit-VirtualBox:~/OSLAB$ echo "hello world"
hello world
ajit@ajit-VirtualBox:~/OSLAB$ echo "hello \nworld"
hello \nworld
ajit@ajit-VirtualBox:~/OSLAB$ echo -e "hello \nworld"
hello
world
ajit@ajit-VirtualBox:~/OSLAB$
```

## Question 2:

**Title :** Implement the following basic commands used in LINUX UNIX OS ( Also perform all the commands with their switches) cut uniq chmod du diff history last sort sed grep sed

### Answer:

cut command

```
ajit@ajit-VirtualBox:~/OSLAB$ cut -b 1,2,3 pqr
Hel
thi
cre
now
ajit@ajit-VirtualBox:~/OSLAB$
```

uniq command

```
ajit@ajit-VirtualBox:~/OSLAB$ cat >abc
hi
hi
hello
hello
ajit@ajit-VirtualBox:~/OSLAB$ uniq abc
hi
hello
ajit@ajit-VirtualBox:~/OSLAB$
```

chmod command

```
ajit@ajit-VirtualBox:~/OSLAB$ touch sample.sh
ajit@ajit-VirtualBox:~/OSLAB$ chmod 754 sample.sh
ajit@ajit-VirtualBox:~/OSLAB$
```

sort command

```
ajit@ajit-VirtualBox:~/OSLAB$ cat pqr
Hello world
this is a file
created using cat command
now this file is appended using cat command
ajit@ajit-VirtualBox:~/OSLAB$ sort pqr
created using cat command
Hello world
now this file is appended using cat command
this is a file
ajit@ajit-VirtualBox:~/OSLAB$
```



### Question 3:

**Title :** Write a shell script to merge the content of 2 files into one file.

**Answer:**

```
ajit@ajit-VirtualBox:~/OSLAB$ cat >file1.sh
1
2
3
ajit@ajit-VirtualBox:~/OSLAB$ cat >file2.sh
4
5
6
ajit@ajit-VirtualBox:~/OSLAB$ paste -d '\n' file1.sh file2.sh
1
4
2
5
3
6
ajit@ajit-VirtualBox:~/OSLAB$
```

### Question 4:

**Title :** c. Write a shell script to take name as a input and display a greeting message to the user by checking system clock. (Ex :- Hello John Good Morning in morning time else Hello John Good Afternoon in afternoon time else Hello John Good Evening in Evening time)

**Answer:**

```
ajit@ajit-VirtualBox:~/OSLAB$ cat >john.sh
read name
time=$(date +%H)
if [ $h -gt 6 -a $h -le 16 ]
then
echo "Hello $name Good Morning"
elif [ $h -gt 12 -a $h -le 16 ]
then
echo "Hello $name Good Afternoon"
else
echo "Hello $name Good Night"
fi
ajit@ajit-VirtualBox:~/OSLAB$ chmod 754 john.sh
ajit@ajit-VirtualBox:~/OSLAB$ ./john.sh
John
./john.sh: line 3: [: too many arguments
./john.sh: line 6: [: too many arguments
Hello John Good Night
ajit@ajit-VirtualBox:~/OSLAB$
```



**Question 5:**

**Title :** Implement the special shell scripting variables such as \$\$,\$0,\$1,\$\*,\$@,\$ etc.

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**Answer:**

```
ajit@ajit-VirtualBox:~/OSLAB$ cat >script1.sh
echo "$0 $1 $2 $3 $4 $5 $6 $7 $8 $9"
echo "$$ $# $* @$"
ajit@ajit-VirtualBox:~/OSLAB$ chmod 754 script1.sh
ajit@ajit-VirtualBox:~/OSLAB$ ./script1.sh 1 2 3 4 5 6 7 8 9
./script1.sh 1 2 3 4 5 6 7 8 9
2552 9 1 2 3 4 5 6 7 8 9 1 2 3 4 5 6 7 8 9
ajit@ajit-VirtualBox:~/OSLAB$ cat >script1.sh
```