

Assignment 1: Linux Commands

Name: Pradnya Subhash Bhoje

Roll no: 68

Div.: CS-A (SY)

PRN: 12310080

1. Change your password to a password you would like to use for the remainder of the semester.

```
└─(kali㉿kali)-[~]  
└─$ passwd  
Changing password for kali.  
Current password:  
New password:  
Retype new password:  
The password has not been changed.  
New password:  
Retype new password:  
passwd: password updated successfully
```

2. Display the system's date.

```
└─(kali㉿kali)-[~]  
└─$ date  
Thu Jan 9 01:34:29 PM EST 2025
```

3. Count the number of lines in the /etc/passwd file.

```
└─(kali㉿kali)-[~]  
└─$ wc -l /etc/passwd  
58 /etc/passwd
```

4. Find out who else is on the system.

```
└─(kali㉿kali)-[~]  
└─$ whoami  
kali
```

5. Direct the output of the man pages for the date command to a file named mydate.

```
└─(kali㉿kali)-[~]  
└─$ man date > mydate
```

```
└─(kali㉿kali)-[~]
```

```
└─$ more mydate
```

```
DATE(1)
```

User Commands

```
DATE(1)
```

NAME

date - print or set the system date and time

SYNOPSIS

date [OPTION]... [+FORMAT]

date [-u|--utc|--universal] [MMDDhhmm[[CC]YY][.ss]]

DESCRIPTION

Display date and time in the given FORMAT. With -s, or with [MMDDhhmm[[CC]YY][.ss]], set the date and time.

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

-d, --date=STRING

display time described by STRING, not 'now'

--debug

annotate the parsed date, and warn about questionable usage to stderr

-f, --file=DATEFILE

like --date; once for each line of DATEFILE

-I[FMT], --iso-8601[=FMT]

output date/time in ISO 8601 format. FMT='date' for date only (the default), 'hours', 'minutes', 'seconds', or 'ns' for date and time to the indicated precision. Example: 2006-08-14T02:34:56-06:00

--resolution

output the available resolution of timestamps Example: 0.000000001

-R, --rfc-email

output date and time in RFC 5322 format. Example: Mon, 14 Aug 2006 02:34:56 -0600

--rfc-3339=FMT

output date/time in RFC 3339 format. FMT='date', 'seconds', or 'ns' for date and time to the indicated precision. Example: 2006-08-14 02:34:56-06:00

-r, --reference=FILE

display the last modification time of FILE

-s, --set=STRING

set time described by STRING
-u, --utc, --universal
print or set Coordinated Universal Time (UTC)

--help display this help and exit
--version
output version information and exit

All options that specify the date to display are mutually exclusive. I.e.: --date, --file, --reference, --resolution.

6. Create a subdirectory called mydir.

```
└─(kali㉿kali)-[~]  
└─$ mkdir mydir
```

```
└─(kali㉿kali)-[~]  
└─$ more mydir
```

*** mydir: directory ***

7. Move the file mydate into the new subdirectory.

```
└─(kali㉿kali)-[~]  
└─$ mv mydate mydir
```

```
└─(kali㉿kali)-[~]  
└─$ more mydir
```

*** mydir: directory ***

8. Go to the subdirectory mydir and copy the file mydate to a new file called ourdate

```
└─(kali㉿kali)-[~]  
└─$ cd mydir
```

```
└─(kali㉿kali)-[~/mydir]  
└─$ cp mydate ourdate
```

```
└─(kali㉿kali)-[~/mydir]  
└─$ more ourdate
```

NAME

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display the last modification time of FILE

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set time described by STRING

-u, --utc, --universal

print or set Coordinated Universal Time (UTC)

--help display this help and exit

--version

output version information and exit

All options that specify the date to display are mutually exclusive. I.e.: --date, --file, --reference, -resolution.

9. List the contents of mydir.

```
└─(kali㉿kali)-[~/mydir]
└─$ ls mydir
```

10. Do a long listing on the file ourdate and note the permissions.

```
└─(kali㉿kali)-[~/mydir]
└─$ ls -l ourdate
-rw-rw-r-- 1 kali kali 6850 Jan  9 16:25 ourdate
```

11. Display the name of the current directory starting from the root.

```
└─(kali㉿kali)-[~/mydir]
└─$ pwd
/home/kali/mydir
```

12. Move the files in the directory mydir back to your home directory.

```
└─(kali㉿kali)-[~]
└─$ mv mydir ourdate
```

```
└─(kali㉿kali)-[~]
└─$ ls ourdate
mydate newfile.txt ourdate
```

13. Display the first 5 lines of mydate.

```
└─(kali㉿kali)-[~/mydir]
└─$ head -5 mydate
HELlo World
OS First Lab
Pradnya Bhoye
From CSA- SY
ROll No. 68
```

14. Display the last 8 lines of mydate.

```
└─(kali㉿kali)-[~/mydir]
└─$ tail -8 mydate
HELlo World
```

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15. Remove the directory mydir.

```
└─(kali㉿kali)-[~/mydir]
└─$ rmdir mydir
```

```
└─(kali㉿kali)-[~/mydir]
└─$ more mydir
more: cannot open mydir: No such file or directory
```

16. Redirect the output of the long listing of files to a file named list.

```
└─(kali㉿kali)-[~/mydir]
└─$ ls -l > list
```

```
└─(kali㉿kali)-[~/mydir]
└─$ more list
```

```
total 8
-rw-rw-r-- 1 kali kali  0 Jan 14 13:48 list
-rw-rw-r-- 1 kali kali 75 Jan 14 13:32 mydate
-rw-rw-r-- 1 kali kali  0 Jan 14 13:33 newfile.txt
drwxrwxr-x 2 kali kali 4096 Jan 14 13:33 ourdate
```

17. Select any 5 capitals of states in India and enter them in a file named capitals1. Choose 5 more capitals and enter them in a file named capitals2. Choose 5 more capitals and enter them in a file named capitals3. Concatenate all 3 files and redirect the output to a file named capitals.

```
└─(kali㉿kali)-[~/mydir]
└─$ echo "Mumbai\nDelhi\nChandigarh\nNagpur\nImphal"> capitals1
```

```
└─(kali㉿kali)-[~/mydir]
└─$ echo "Kolkata\nChennai\nBangalore\nHydrabad\nJaipur"> capitals2
```

```
└─(kali㉿kali)-[~/mydir]
└─$ echo "Ahemadabad\nSurat\nKanpur\nShrinagar\nShilong"> capitals3
```

└─(kali⊗kali)-[~/mydir]

└─\$ more capitals1

Mumbai

Delhi

Chandigadh

Nagpur

Imphal

└─(kali⊗kali)-[~/mydir]

└─\$ more capitals2

Kolkata

Chennai

Banglore

Hydrabad

Jaipur

└─(kali⊗kali)-[~/mydir]

└─\$ more capitals3

Ahemadabad

Surat

Kanpur

Shrinagar

Shilong

└─(kali⊗kali)-[~/mydir]

└─\$ cat capitals1 capitals2 capitals3

Mumbai

Delhi

Chandigadh

Nagpur

Imphal

Kolkata

Chennai

Banglore

Hydrabad

Jaipur

Ahemadabad

Surat

Kanpur

Shrinagar

Shilong

18. Concatenate the file capitals2 at the end of file capitals.

```
└─(kali㉿kali)-[~/mydir]
└─$ cat capitals capitals2
Mumbai
Delhi
Chandigadh
Nagpur
Imphal
Kolkata
Chennai
Banglore
Hydrabad
Jaipur
Ahemadabad
Surat
Kanpur
Shrinagar
Shilong
Kolkata
Chennai
Banglore
Hydrabad
Jaipur
```

19. Give read and write permissions to all users for the file capitals.

```
└─(kali㉿kali)-[~/mydir]
└─$ chmod 666 capitals
```

```
└─(kali㉿kali)-[~/mydir]
└─$ ls -l capitals
-rw-rw-rw- 1 kali kali 121 Jan 14 14:04 capitals
```

20. Give read permissions only to the owner of the file capitals. Open the file, make some changes and try to save it. What happens?

```
└─(kali㉿kali)-[~/mydir]
└─$ chmod 400 capitals
```

```
└─(kali㉿kali)-[~/mydir]
└─$ ls -l capitals
-r----- 1 kali kali 121 Jan 14 14:04 capitals
```

```
└─(kali㉿kali)-[~/mydir]
└─$ echo "Itanagar"> capitals
```


zsh: permission denied: capitals

21. Create an alias to concatenate the 3 files capitals1, capitals2, capitals3 and redirect the output to a file named capitals. Activate the alias and make it run.

```
└─(kali㉿kali)-[~/mydir]
└─$ alias concat_caps='cat capitals1 capitals2 capitals3 > capitals'
```

```
└─(kali㉿kali)-[~/mydir]
└─$ concat_caps
zsh: permission denied: capitals
```

```
└─(kali㉿kali)-[~/mydir]
└─$ more capitals
Mumbai
Delhi
Chandigadh
Nagpur
Imphal
Kolkata
Chennai
Banglore
Hydrabad
Jaipur
Ahemadabad
Surat
Kanpur
Shrinagar
Shilong
```

22. Find out the number of times the string “the” appears in the file mydate.

```
└─(kali㉿kali)-[~]
└─$ grep -r -i -w "the" mydate | wc -l
3
```

23. Find out the line numbers on which the string “date” exists in mydate.

```
└─(kali㉿kali)-[~]
└─$ grep -r -n "date" mydate
mydate/file2.txt:2:Another line with the word date in it.
mydate/file1.txt:2:This is a line with the word date in it.
```

24. Print all lines of mydate except those that have the letter “i” in them.

```
└─(kali㉿kali)-[~]  
└─$ grep -v -n "i" mydate  
grep: mydate: Is a directory
```

25. List the words of 4 letters from the file mydate.

```
└─(kali㉿kali)-[~]  
└─$ grep -o "\b\w\{4\}\b" l1  
This  
Kali
```

26. List 5 states in north east India in a file mystates. List their corresponding capitals in a file mycapitals. Use the paste command to join the 2 files.

```
└─(kali㉿kali)-[~]  
└─$ echo "Aasam\nNagaland\nArunachal Pradesh\nMeghalay"> mystates
```

```
└─(kali㉿kali)-[~]  
└─$ echo "Dispur\nKohima\nItanagar\nShilong"> mycapitals
```

```
└─(kali㉿kali)-[~]  
└─$ paste mystates mycapitals  
Aasam  Dispur  
Nagaland  Kohima  
Arunachal Pradesh  Itanagar  
Meghalay  Shilong
```

27. Use the cut command to print the 1 st and 3 rd columns of the /etc/passwd file for all students in this class.

```
└─(kali㉿kali)-[~]  
└─$ cut -d: -f1,3 /etc/passwd  
root:0  
daemon:1  
bin:2  
sys:3  
sync:4  
games:5  
man:6  
lp:7  
mail:8  
news:9  
uucp:10  
proxy:13
```

www-data:33
backup:34list:38
irc:39
_apt:42
nobody:65534
systemd-network:998
dhcpcd:100
systemd-timesync:992
messagebus:101
tss:102
strongswan:103
tcpdump:104
sshd:105
dnsmasq:999
avahi:106
nm-openvpn:107
speech-dispatcher:108
usbmux:109
pulse:110
nm-openconnect:111
lightdm:112
sane:113
polkitd:991
rtkit:114
colord:115
_galera:116
mysql:117
stunnel4:990
_rpc:118
geoclue:119
Debian-snmpp:120
sshd:121
ntppsec:122
cups-pk-helper:123
redsocks:124
_gophish:125
iodine:126
miredo:127
statd:128
redis:129
postgres:130
mosquitto:131
inetsim:132
_gvm:133
kali:1000

28. Count the number of people logged in and also trap the users in a file using the tee command.

```
└─(kali㉿kali)-[~]  
└─$ whoami | tee file | wc -l  
1
```

29. Convert the contents of mystates into uppercase.

```
└─(kali㉿kali)-[~]  
└─$ tr '[:lower:]' '[:upper:]' < mystates > mystates_upper
```

```
└─(kali㉿kali)-[~]  
└─$ cat mystates_upper  
AASAM  
NAGALAND  
ARUNACHAL PRADESH  
MEGHALAY
```

30. Create any two files & display the common values between them

```
└─(kali㉿kali)-[~]  
└─$ echo "Mango\nApple"> l1
```

```
└─(kali㉿kali)-[~]  
└─$ echo "Pineapple\nMango"> l2
```

```
└─(kali㉿kali)-[~]  
└─$ comm -12 <(sort l1) <(sort l2)  
Mango
```