OPRATING SYSTEM

Lab Assignment

Linux Commands

Name: Onkar Anil Waghmode

Div: SY-CS-D

Roll No: 72

PRN: 12210334

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

```
onkar2004@DESKTOP-U4B25LI:~$ passwd
Changing password for onkar2004.
Current password:
New password:
Retype new password:
passwd: password updated successfully
```

2. Display the system's date

```
onkar2004@DESKTOP-U4B25LI:~$ date
Sun Jul  9 11:29:04 IST 2023
onkar2004@DESKTOP-U4B25LI:~$
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ wc -l /etc/passwd
27 /etc/passwd
onkar2004@DESKTOP-U4B25LI:~$
```

4. Find out who else is on the system

```
onkar2004@DESKTOP-U4B25LI:~$ w
 11:33:08 up 20 min,  0 users,  load average: 0.13, 0.11, 0.06
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
onkar2004@DESKTOP-U4B25LI:~$
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ man date > mydate
onkar2004@DESKTOP-U4B25LI:~$
```

6. Create a subdirectory called mydir

```
onkar2004@DESKTOP-U4B25LI:~$ mkdir mydir
onkar2004@DESKTOP-U4B25LI:~$ |
```

7. Move the file mydate into the new subdirectory

```
onkar2004@DESKTOP-U4B25LI:~$ mv mydate mydir
onkar2004@DESKTOP-U4B25LI:~$ |
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ cd mydir
onkar2004@DESKTOP-U4B25LI:~/mydir$ cp mydate ourdate
onkar2004@DESKTOP-U4B25LI:~/mydir$ |
```

9. List the contents of mydir

```
onkar2004@DESKTOP-U4B25LI:~$ ls mydir
mydate   ourdate
onkar2004@DESKTOP-U4B25LI:~$ |
```

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

```
onkar2004@DESKTOP-U4B25LI:~/mydir$ ls -l ourdate
-rw-r--r-- 1 onkar2004 onkar2004 6450 Jul  9 11:37 ourdate
onkar2004@DESKTOP-U4B25LI:~/mydir$ |
```

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

```
onkar2004@DESKTOP-U4B25LI:~/mydir$ pwd
/home/onkar2004/mydir
onkar2004@DESKTOP-U4B25LI:~/mydir$ |
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ mv mydir/* ~/
onkar2004@DESKTOP-U4B25LI:~$ |
```

13. Display the first 5 lines of mydate

```
onkar2004@DESKTOP-U4B25LI:~$ head -n 5 mydate
DATE(1)                                    User Commands                                    DATE(1)

NAME
      date - print or set the system date and time

onkar2004@DESKTOP-U4B25LI:~$ |
```

14. Display the last 8 lines of mydate

```
onkar2004@DESKTOP-U4B25LI:~$ tail -n 8 mydate
      Copyright © 2020 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.

SEE ALSO
      Full documentation <https://www.gnu.org/software/coreutils/date>
      or available locally via: info '(coreutils) date invocation'

GNU coreutils 8.32                              February 2022                              DATE(1)
onkar2004@DESKTOP-U4B25LI:~$ |
```

15. Remove the directory mydir

```
onkar2004@DESKTOP-U4B25LI:~$ rm -r mydir
onkar2004@DESKTOP-U4B25LI:~$ |
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ ls -l > list
onkar2004@DESKTOP-U4B25LI:~$ |
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ echo "Delhi" > capitals1
onkar2004@DESKTOP-U4B25LI:~$ echo "Mumbai" >> capitals1
onkar2004@DESKTOP-U4B25LI:~$ echo "Kolkata" >> capitals1
onkar2004@DESKTOP-U4B25LI:~$ echo "Chennai" >> capitals1
onkar2004@DESKTOP-U4B25LI:~$ echo "Gandhinagar" >> capitals1
onkar2004@DESKTOP-U4B25LI:~$  echo "Hyderabad" > capitals2
onkar2004@DESKTOP-U4B25LI:~$ echo "Jaipur" >> capitals2
onkar2004@DESKTOP-U4B25LI:~$ echo "Bhopal" >> capitals2
onkar2004@DESKTOP-U4B25LI:~$ echo "" >> capitals2
onkar2004@DESKTOP-U4B25LI:~$ echo "Manipur" >> capitals2
onkar2004@DESKTOP-U4B25LI:~$ echo "Agartala" >> capitals2
onkar2004@DESKTOP-U4B25LI:~$  echo "Patna" > capitals3
onkar2004@DESKTOP-U4B25LI:~$ echo "Thiruvananthapuram" >> capitals3
onkar2004@DESKTOP-U4B25LI:~$ echo "Ranchi" >> capitals3
onkar2004@DESKTOP-U4B25LI:~$ echo "Dispur" >> capitals3
onkar2004@DESKTOP-U4B25LI:~$ echo "Chandigarh" >> capitals3
onkar2004@DESKTOP-U4B25LI:~$  cat capitals1 capitals2 capitals3 > capitals
onkar2004@DESKTOP-U4B25LI:~$ |
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ cat capitals2 >> capitals
onkar2004@DESKTOP-U4B25LI:~$ |
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ chmod a+rw 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?

```
onkar2004@DESKTOP-U4B25LI:~$ chmod u+r capitals
onkar2004@DESKTOP-U4B25LI:~$ |
```

When I open the file "capitals" with a notepad and make changes while having only read permissions, I am not be able to save the changes. Notepad give error message indicating that the file is read-only or that I do not have permission to save the changes.

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

```
onkar2004@DESKTOP-U4B25LI:~$ alias concat_capitals='cat capitals1 capitals2 capitals3 > capitals'
onkar2004@DESKTOP-U4B25LI:~$
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ grep -c "the" mydate
18
onkar2004@DESKTOP-U4B25LI:~$
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ grep -n "date" mydate
4:       date - print or set the system date and time
7:       date [OPTION]... [+FORMAT]
8:       date [-u|--utc|--universal] [MMDDhhmm[[CC]YY][.ss]]
11:       Display the current time in the given FORMAT, or set the system date.
15:       -d, --date=STRING
19:              annotate the parsed date, and warn about questionable usage to stderr
22:              like --date; once for each line of DATEFILE
25:              output  date/time in ISO 8601 format. FMT='date' for date only (the default), 'hours', 'minutes', 'seconds', or 'ns' for date and time to
29:              output date and time in RFC 5322 format.  Example: Mon, 14 Aug 2006 02:34:56 -0600
32:              output date/time in RFC 3339 format.  FMT='date', 'seconds', or 'ns' for date and time to the indicated  precision.   Example:  2006-08-14
61:       %c     locale's date and time (e.g., Thu Mar  3 23:05:25 2005)
67:       %D     date; same as %m/%d/%y
71:       %F     full date; like %+4Y-%m-%d
125:       %x     locale's date representation (e.g., 12/31/99)
143:       By default, date pads numeric fields with zeroes.  The following optional flags may follow '%':
161:       Convert seconds since the epoch (1970-01-01 UTC) to a date
163:              $ date --date='@2147483647'
167:              $ TZ='America/Los_Angeles' date
171:              $ date --date='TZ="America/Los_Angeles" 09:00 next Fri'
174:       The --date=STRING is a mostly free format human readable date string such as "Sun, 29 Feb 2004 16:21:42 -0800" or "2004-02-29 16:21:42"  or  even

175:       "next  Thursday".   A  date string may contain items indicating calendar date, time of day, time zone, day of week, relative time, relative date,

176:       and numbers.  An empty string indicates the beginning of the day.  The date string format is more complex than is easily documented here  but  is

191:       Full documentation <https://www.gnu.org/software/coreutils/date>
192:       or available locally via: info '(coreutils) date invocation'
onkar2004@DESKTOP-U4B25LI:~$
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ grep -v "i" mydate
DATE(1)                                    User Commands                                    DATE(1)

NAME

SYNOPSIS
        date [OPTION]... [+FORMAT]

DESCRIPTION

        -d, --date=STRING

        --debug


        --rfc-3339=FMT
                02:34:56-06:00

        -r, --reference=FILE

        -s, --set=STRING


        FORMAT controls the output.   Interpreted sequences are:


        %A      locale's full weekday name (e.g., Sunday)

        %B      locale's full month name (e.g., January)

        %d      day of month (e.g., 01)
        %D      date; same as %m/%d/%y
        %e      day of month, space padded; same as %_d


        %h      same as %b
        %H      hour (00..23)
        %I      hour (01..12)
        %j      day of year (001..366)
        %k      hour, space padded ( 0..23); same as %_H
        %l      hour, space padded ( 1..12); same as %_I
        %m      month (01..12)

        %N      nanoseconds (000000000..999999999)

        %q      quarter of year (1..4)


        %S      second (00..60)
          %t      a tab




        %Y      year




EXAMPLES

               $ date --date='@2147483647'


DATE STRING
AUTHOR
REPORTING BUGS
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ grep -o '\b[a-zA-Z]\{4\}\b' mydate
DATE
User
DATE
NAME
date
date
time
date
date
time
date
long
date
time
date
warn
file
like
date
once
each
line
date
time
date
date
only
date
time
date
time
date
time
date
date
time
FILE
exit
name
full
name
name
full
name
date
time
like
omit
last
date
same
same
full
date
like
last
year
week
year
week
only
with
same
hour
hour
year
hour
same
hour
same
like
case
year
hour
time
hour
```

```
date
date
next
DATE
date
free
date
such
even
next
date
date
time
time
zone
week
time
date
date
more
than
here
info
BUGS
help
bugs
team
Free
html
This
free
free
ALSO
Full
date
info
date
DATE
onkar2004@DESKTOP-U4B25LI:~$
```

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

```
onkar2004@DESKTOP-U4B25LI:~$  echo "Arunachal Pradesh" > mystates
onkar2004@DESKTOP-U4B25LI:~$  echo "Itanagar" > mycapitals
onkar2004@DESKTOP-U4B25LI:~$ echo "Assam" >> mystates
onkar2004@DESKTOP-U4B25LI:~$  echo "Dispur" >> mycapitals
onkar2004@DESKTOP-U4B25LI:~$ echo "Manipur" >> mystates
onkar2004@DESKTOP-U4B25LI:~$  echo "Imphal" >> mycapitals
onkar2004@DESKTOP-U4B25LI:~$ echo "Meghalaya" >> mystates
onkar2004@DESKTOP-U4B25LI:~$ echo "Shillong" >> mycapitals
onkar2004@DESKTOP-U4B25LI:~$ echo "Nagaland" >> mystates
onkar2004@DESKTOP-U4B25LI:~$ paste mystates mycapitals > northeast_states_capitals
onkar2004@DESKTOP-U4B25LI:~$
```

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.

```
onkar2004@DESKTOP-U4B25LI:~$ cut -d: -f1,3 /etc/passwd | grep "onkar2004"
onkar2004:1000
onkar2004@DESKTOP-U4B25LI:~$
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ who | tee logged_in_users.txt | wc -l
0
onkar2004@DESKTOP-U4B25LI:~$
```

29. Convert the contents of mystates into uppercase

```
onkar2004@DESKTOP-U4B25LI:~$ tr '[:lower:]' '[:upper:]' < mystates > mystates_uppercase
onkar2004@DESKTOP-U4B25LI:~$
```

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

```
onkar2004@DESKTOP-U4B25LI:~$ echo "VIT" > file1.txt
onkar2004@DESKTOP-U4B25LI:~$ echo "COEP" >> file1.txt
onkar2004@DESKTOP-U4B25LI:~$ echo "PCCOE" >> file1.txt
onkar2004@DESKTOP-U4B25LI:~$ echo "PICT" > file2.txt
onkar2004@DESKTOP-U4B25LI:~$ echo "VIT" >> file2.txt
onkar2004@DESKTOP-U4B25LI:~$ echo "COEP" >> file2.txt
onkar2004@DESKTOP-U4B25LI:~$ comm -12 <(sort file1.txt) <(sort file2.txt)
COEP
VIT
onkar2004@DESKTOP-U4B25LI:~$
```