

OS Lab Assignment - 2

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CLASS : AI-C

ROLL NO. : 06
BATCH : B2

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

```
rushi@rushi-81MV:~/VIT/OS_Lab$ passwd
Changing password for rushi.
Current password:
New password:
Retype new password:
passwd: password updated successfully
rushi@rushi-81MV:~/VIT/OS_Lab$
```

- 2) Display the system's date.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ date
Wed Jan 24 06:13:42 PM IST 2024
rushi@rushi-81MV:~/VIT/OS_Lab$
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab$ wc /etc/passwd
49  90 2923 /etc/passwd
rushi@rushi-81MV:~/VIT/OS_Lab$ _
```

- 4) Find out who else is on the system.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ who
rushi    seat0      2024-01-24 15:33 (login screen)
rushi    tty2        2024-01-24 15:33 (tty2)
rushi@rushi-81MV:~/VIT/OS_Lab$
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab$ man date > mydate
rushi@rushi-81MV:~/VIT/OS_Lab$ ls
2temp.txt 3temp.txt 4temp.txt mydate t.txt
rushi@rushi-81MV:~/VIT/OS_Lab$ cat 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 [MMD-
    Dhhmm[[CC]YY][.ss]], set the date and time.
```

- 6) Create a subdirectory called mydir.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ mkdir mydir
rushi@rushi-81MV:~/VIT/OS_Lab$ ls
2temp.txt 3temp.txt 4temp.txt mydate mydir t.txt
rushi@rushi-81MV:~/VIT/OS_Lab$ _
```

- 7) Move the file mydate into the new subdirectory.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ mv mydate mydir/
rushi@rushi-81MV:~/VIT/OS_Lab$ cd mydir/
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ ls
mydate
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ _
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ cp mydate ourdate
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ ls
mydate ourdate
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ cat ourdate
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.
```

9) List the contents of mydir.

```
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ ls
mydate  ourdate
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ ls -l ourdate
-rw-rw-r-- 1 rushi rushi 6595 Jan 24 18:21 ourdate
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ pwd
/home/rushi/VIT/OS_Lab/mydir
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ _
```

12) Move the files in the directory mydir back to the HOME directory.

```
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ ls
mydate  ourdate
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ sudo mv -f -i /home/rushi/VIT/OS_Lab/mydir/* /home/
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ ls
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$
```

13) List all the files in your HOME directory.

```
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$ ls /home
mydate  mydir  ourdate  rushi
rushi@rushi-81MV:~/VIT/OS_Lab/mydir$
```

14) Display the first 5 lines of mydate.

```
rushi@rushi-81MV:/home$ head -5 myd
head: cannot open 'myd' for reading: No such file or directory
rushi@rushi-81MV:/home$ head -5 mydate
DATE(1)                                User Commands                                DATE(1)

NAME
    date - print or set the system date and time
rushi@rushi-81MV:/home$ _
```


15) Display the last 8 lines of mydate.

```
rushi@rushi-81MV:/hone$ tail -8 mydate
This is free software: you are free to change and redistribute it. There is NO WAR-
RANTY, 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 9.1                                January 2023                                DATE(1)
rushi@rushi-81MV:/hone$
```

16) Remove the directory mydir.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ rmdir mydir/
rushi@rushi-81MV:~/VIT/OS_Lab$ ls
2temp.txt 3temp.txt 4temp.txt t.txt
rushi@rushi-81MV:~/VIT/OS_Lab$
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab$ ls -l t.txt > list
rushi@rushi-81MV:~/VIT/OS_Lab$ ls
2temp.txt 3temp.txt 4temp.txt list t.txt
rushi@rushi-81MV:~/VIT/OS_Lab$ cat list
-rw-r--r-- 1 rushi rushi 24 Jan 24 18:01 t.txt
rushi@rushi-81MV:~/VIT/OS_Lab$
```

18) 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.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ cat > capitals1.txt
hello
rushi@rushi-81MV:~/VIT/OS_Lab$ cat > capitals2.txt
VIT
rushi@rushi-81MV:~/VIT/OS_Lab$ cat > capitals3.txt
Here !
rushi@rushi-81MV:~/VIT/OS_Lab$ cat capitals1.txt capitals2.txt capitals3.txt > capitals.txt
rushi@rushi-81MV:~/VIT/OS_Lab$ ls
2temp.txt 4temp.txt capitals2.txt capitals.txt t.txt
3temp.txt capitals1.txt capitals3.txt list
rushi@rushi-81MV:~/VIT/OS_Lab$ cat capitals.txt
hello
VIT
Here !
rushi@rushi-81MV:~/VIT/OS_Lab$
```

19) Concatenate the file capitals2 at the end of file capitals.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ cat capitals2.txt >> capitals.txt
rushi@rushi-81MV:~/VIT/OS_Lab$ cat capitals.txt
hello
VIT
Here !
VIT
rushi@rushi-81MV:~/VIT/OS_Lab$ _
```

20) Redirect the file capitals as an input to the command "wc -l".

```
rushi@rushi-81MV:~/VIT/OS_Lab$ wc -l < capitals.txt
3
rushi@rushi-81MV:~/VIT/OS_Lab$ _
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab$ chmod 666 capitals.txt
rushi@rushi-81MV:~/VIT/OS_Lab$ _
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab$ chmod 400 capitals.txt
rushi@rushi-81MV:~/VIT/OS_Lab$ cat > capitals.txt
bash: capitals.txt: Permission denied
rushi@rushi-81MV:~/VIT/OS_Lab$
```

23) 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.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ alias concat="cat capitals1.txt capitals2.txt capitals3.txt > capitals.txt"
rushi@rushi-81MV:~/VIT/OS_Lab$ concat
rushi@rushi-81MV:~/VIT/OS_Lab$
```

24) What are the environment variables PATH, HOME and TERM set to on your terminal ?

```
rushi@rushi-81MV:~/VIT/OS_Lab$ echo "$PATH"
/home/rushi/.local/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games
:/usr/local/games:/snap/bin:/snap/bin
rushi@rushi-81MV:~/VIT/OS_Lab$ echo "$HOME"
/home/rushi
rushi@rushi-81MV:~/VIT/OS_Lab$ echo "$TERM"
xterm-256color
rushi@rushi-81MV:~/VIT/OS_Lab$
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab$ grep -c 'the' mydate
23
rushi@rushi-81MV:~/VIT/OS_Lab$ _
```

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


```

rushy@rushy-81MV:~/VIT/OS_Lab$ 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 date and time in the given FORMAT. With -s, or with [MMD-
12:     Dhhmm[[CC]YY][.ss]], set the date and time.
16:     -d, --date=STRING
20:         annotate the parsed date, and warn about questionable usage to stderr
23:         like --date; once for each line of DATEFILE
26:         output date/time in ISO 8601 format. FMT='date' for date only (the default),
27:         'hours', 'minutes', 'seconds', or 'ns' for date and time to the indicated
34:         output date and time in RFC 5322 format. Example: Mon, 14 Aug 2006 02:34:56
38:         output date/time in RFC 3339 format. FMT='date', 'seconds', or 'ns' for date
67:     %c      locale's date and time (e.g., Thu Mar 3 23:05:25 2005)
73:     %D      date; same as %m/%d/%y
77:     %F      full date; like %+4Y-%m-%d
131:    %x      locale's date representation (e.g., 12/31/99)
149:    By default, date pads numeric fields with zeroes. The following optional flags ma
y
169:    Convert seconds since the Epoch (1970-01-01 UTC) to a date
171:        $ date --date=@2147483647'
175:        $ TZ='America/Los_Angeles' date
179:        $ date --date='TZ="America/Los_Angeles" 09:00 next Fri'
182:    The --date=STRING is a mostly free format human readable date string such as "Sun
,
184:    date string may contain items indicating calendar date, time of day, time zone, da
y
185:    of week, relative time, relative date, and numbers. An empty string indicates th
e
186:    beginning of the day. The date string format is more complex than is easily docu
-
203:    Full documentation <https://www.gnu.org/software/coreutils/date>
204:    or available locally via: info '(coreutils) date invocation'
rushy@rushy-81MV:~/VIT/OS_Lab$ _

```

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

```

rushy@rushy-81MV:~/VIT/OS_Lab$ grep -v 'i' mydate
DATE(1)                                User Commands                                DATE(1)

NAME
date [OPTION]... [+FORMAT]

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

DESCRIPTION
-d, --date=STRING
--debug
--epoch=SECONDS
--rfc-3339=FMT
-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)

```

28) Create the file monotonic as follows: ^a?b?b?c?x?y?z\$

Run the egrep command for monotonic against /usr/dict/words and search for all 4 letter words.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ grep monotonic /usr/dict/words
grep: /usr/dict/words: No such file or directory
rushi@rushi-81MV:~/VIT/OS_Lab$ _
```

29) 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.

```
rushi@rushi-81MV:~/VIT/OS_Lab$ cat > mystates
maharashtra
gujrat
rajasthan
kerala
uttar pradesh
rushi@rushi-81MV:~/VIT/OS_Lab$ cat > mycapitals
mumbai
gandhinagar
jaipur
thiruvananthapuram
lucknow
rushi@rushi-81MV:~/VIT/OS_Lab$ paste mystates mycapitals
maharashtra      mumbai
gujrat  gandhinagar
rajasthan      jaipur
kerala  thiruvananthapuram
uttar pradesh  lucknow
rushi@rushi-81MV:~/VIT/OS_Lab$
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab$ cut -d: -f 1,3 /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:34
list:38
irc:39
_apt:42
nobody:65534
```

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

```
rushi@rushi-81MV:~/VIT/OS_Lab$ cut -d: -f 1,3 /etc/passwd | tee user_list
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:34
list:38
irc:39
_apt:42
nobody:65534
systemd-network:998
```