



Bansilal Ramnath Agarwal Charitable Trust's

Vishwakarma Institute of Technology

(An Autonomous Institute affiliated to Savitribai Phule Pune University)

Operating System Lab

Assignment No. - 1

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Roll No : 21

Q1 - 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:
passwd: password updated successfully
```

Q2 - Display the system's date.

```
(kali@kali)-[~]
$ date
Fri Dec  9 09:09:59 PM UTC 2022

(kali@kali)-[~]
$ date +"%h %y"
Dec 22
```

Q3 - Count the number of lines in the /etc/passwd file.

```
(kali@kali)-[~]
$ cat /etc/passwd | wc -l
58
```

Q4 - Find out who else is on the system.

```
(kali@kali)-[~]
$ who
kali      :1                2022-12-09 20:33 (:1)
```

Q5 - Direct the output of the man pages for the date command to a file named mydate.

```
(kali㉿kali)-[~/Documents]
$ cd Assignment

(kali㉿kali)-[~/Documents/Assignment]
$ man date > mydate

(kali㉿kali)-[~/Documents/Assignment]
$ ls
mydate
```

Q6 - Create a subdirectory called mydir.

```
(kali㉿kali)-[~/Documents/Assignment]
$ mkdir mydir

(kali㉿kali)-[~/Documents/Assignment]
$ ls
mydate  mydir
```

Q7 - Move the file mydate into the new subdirectory.

```
(kali㉿kali)-[~/Documents/Assignment]
$ mv mydate mydir

(kali㉿kali)-[~/Documents/Assignment]
$ ls mydir
mydate
```

Q8 - Go to the subdirectory mydir and copy the file mydate to a new file called ourdate.

```
(kali@kali) - [~/Documents/Assignment/mydir]
$ cp ../mydate ourdate

(kali@kali) - [~/Documents/Assignment/mydir]
$ ls
ourdate
```

Q9 - List the contents of mydir

```
(kali@kali) - [~/Documents/Assignment/mydir]
$ ls
mydate  ourdate
```

Q10 - Do a long listing on the file ourdate and note the permissions.

```
(kali@kali) - [~/Documents/Assignment/mydir]
$ ls -la
total 16
drwxr-xr-x 2 kali kali 4096 Dec  9 21:21 .
drwxr-xr-x 3 kali kali 4096 Dec  9 21:20 ..
-rw-r--r-- 1 kali kali 6616 Dec  9 21:21 ourdate
```

Q11 - Display the name of the current directory starting from the root.

```
(kali@kali) - [~/Documents/Assignment/mydir]
$ pwd
/home/kali/Documents/Assignment/mydir
```

Q12 - Move the files in the directory mydir back to your home directory.

```
(kali㉿kali)-[~/Documents/Assignment/mydir]
$ mv mydate ~/

(kali㉿kali)-[~/Documents/Assignment/mydir]
$ mv ourdate ~/

(kali㉿kali)-[~/Documents/Assignment/mydir]
$ ls ~/
Desktop  Documents  Downloads  Music  mydate  mydir  nvim-config  ourdate  Pictures  Public  Templates  Videos
```

Q13 - Display the first 5 lines of mydate.

```
(kali㉿kali)-[~]
$ cat mydate | head -5
DATE(1)                                User Commands                                DATE(1)

NAME
    date - print or set the system date and time
```

Q14 - Display the last 8 lines of mydate.

```
(kali㉿kali)-[~]
$ cat mydate | tail -8
    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                                October 2021                                DATE(1)
```

Q15 - Remove the directory mydir.

```
(kali㉿kali)-[~/Documents/Assignment]
$ ls
mydate  mydir

(kali㉿kali)-[~/Documents/Assignment]
$ rm -rf mydir

(kali㉿kali)-[~/Documents/Assignment]
$ ls
mydate
```

Q16 - Redirect the output of the long listing of files to a file named list.

```

(kali㉿kali)-[~]
$ ls -la > list

(kali㉿kali)-[~]
$ cat list
total 324
drwxr-xr-x 22 kali kali 4096 Dec  9 23:04 .
drwxr-xr-x  1 root root 4096 Nov 14 00:20 ..
-rw-r--r--  1 kali kali  220 Oct 14 00:38 .bash_logout
-rw-r--r--  1 kali kali 5551 Oct 14 00:38 .bashrc
-rw-r--r--  1 kali kali 3526 Oct 14 00:38 .bashrc.original
drwxr-xr-x 25 kali kali 4096 Dec  6 10:32 .cache
drwxr-xr-x 30 kali kali 4096 Dec  6 10:32 .config
drwxr-xr-x  2 kali kali 4096 Oct 14 00:38 Desktop
-rw-r--r--  1 kali kali   35 Oct 14 01:55 .dmrc
drwxr-xr-x  7 kali kali 4096 Dec  9 21:19 Documents
drwxr-xr-x  2 kali kali 4096 Dec  9 21:05 Downloads

```

Q17 - 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 capita

```

(kali㉿kali)-[~/Documents/Assignment]
$ vim capitals1

(kali㉿kali)-[~/Documents/Assignment]
$ cat capitals1
Amravati
Itanagar
Dispur
patan
Raipur`

(kali㉿kali)-[~/Documents/Assignment]
$ vim capitals2

(kali㉿kali)-[~/Documents/Assignment]
$ cat capitals2
Gandhinagar
Shimla
Bengaluru
Bhopal
Mumbai

```

```

(kali㉿kali)-[~/Documents/Assignment]
$ vim capitals3

(kali㉿kali)-[~/Documents/Assignment]
$ cat capitals3
Shillong
Kohima
Jaipur
Chennai
Hyderabad

(kali㉿kali)-[~/Documents/Assignment]
$ cat capitals1 capitals2 capitals3 > capitals

(kali㉿kali)-[~/Documents/Assignment]
$ cat capitals
Amravati
Itanagar
Dispur
patan
Raipur`
Gandhinagar
Shimla
Bengaluru
Bhopal
Mumbai
Shillong

```

Q18 - Concatenate the file capitals2 at the end of file capitals.

```

(kali㉿kali)-[~/Documents/Assignment]
$ cat capitals2 >> capitals

(kali㉿kali)-[~/Documents/Assignment]
$ cat capitals | head -5
Amravati
Itanagar
Dispur
patan
Raipur`

```

Q19 - Give read and write permissions to all users for the file capitals.

```
(kali㉿kali)-[~/Documents/Assignment]
$ chmod u+rw capitals

(kali㉿kali)-[~/Documents/Assignment]
$ ls -la | grep "capitals"
-rw-r--r-- 1 kali kali 166 Dec  9 23:13 capitals
-rw-r--r-- 1 kali kali  39 Dec  9 23:07 capitals1
-rw-r--r-- 1 kali kali  43 Dec  9 23:10 capitals2
-rw-r--r-- 1 kali kali  41 Dec  9 23:11 capitals3
```

Q20 - Give read permissions only to the owner of the file capitals. Open the file, make some changes and try to save it. What happens ?

```
Chennai
Hyderabad
Gandhinagar
Shimla
Bengaluru
Bhopal
Mumbai
Delhi
E45: 'readonly' option is set (add ! to override)
Press ENTER or type command to continue
```

Q21 - 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)-[~/Documents/Assignment]
$ alias "print = cat capitals1 capitals2 capitals3 > capitals"

(kali㉿kali)-[~/Documents/Assignment]
$ print

(kali㉿kali)-[~/Documents/Assignment]
$ cat capitals
Amravati
Itanagar
Dispur
patan
Raipur`
Gandhinagar
Shimla
Bengaluru
Bhopal
Mumbai
Shillong
Kohima
```


Q22 - Find out the number of times the string "the" appears in the file mydate.

```
(kali@kali)-[~/Documents/Assignment]
$ cat mydate | grep -c "the"
18

(kali@kali)-[~/Documents/Assignment]
$ cat mydate | grep -c -i "the"
20
```

Q23 - Find out the line numbers on which the string "date" exists in mydate.

```
(kali@kali)-[~/Documents/Assignment]
$ 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]]
12:  date.
17:  -d, --date=STRING
21:      annotate the parsed date, and warn about questionable usage
25:      like --date; once for each line of DATEFILE
28:      output date/time in ISO 8601 format.  FMT='date' for date
30:      for date and time to the indicated precision.  Example:
34:      output date and time in RFC 5322 format.  Example: Mon, 14
38:      output date/time in RFC 3339 format.  FMT='date', 'seconds',
39:      or 'ns' for date and time to the indicated precision.  Exam-
68:  %c      locale's date and time (e.g., Thu Mar 3 23:05:25 2005)
74:  %D      date; same as %m/%d/%y
78:  %F      full date; like %+4Y-%m-%d
135:  %x      locale's date representation (e.g., 12/31/99)
154:  By default, date pads numeric fields with zeroes.  The following
176:  Convert seconds since the epoch (1970-01-01 UTC) to a date
178:      $ date --date='@2147483647'
183:      $ TZ='America/Los_Angeles' date
187:      $ date --date='TZ="America/Los_Angeles" 09:00 next Fri'
190:  The --date=STRING is a mostly free format human readable date
```

Q24 - Print all lines of mydate except those that have the letter "i" in them.

```
(kali㉿kali)-[~/Documents/Assignment]
$ grep -n "i" mydate
4:      date - print or set the system date and time
8:      date [-u|--utc|--universal] [MMDDhhmm[[CC]YY][.ss]]
11:     Display the current time in the given FORMAT, or set the system
14:     Mandatory arguments to long options are mandatory for short options
18:     display time described by STRING, not 'now'
21:     annotate the parsed date, and warn about questionable usage
24:     -f, --file=DATEFILE
25:         like --date; once for each line of DATEFILE
27:     -I[FMT], --iso-8601[=FMT]
28:         output date/time in ISO 8601 format.  FMT='date' for date
29:         only (the default), 'hours', 'minutes', 'seconds', or 'ns'
30:         for date and time to the indicated precision.  Example:
33:     -R, --rfc-email
34:         output date and time in RFC 5322 format.  Example: Mon, 14
38:         output date/time in RFC 3339 format.  FMT='date', 'seconds',
39:         or 'ns' for date and time to the indicated precision.  Exam-
43:         display the last modification time of FILE
46:         set time described by STRING
48:     -u, --utc, --universal
49:         print or set Coordinated Universal Time (UTC)
51:     --help display this help and exit
53:     --version
54:         output version information and exit
58:     %%      a literal %
60:     %a      locale's abbreviated weekday name (e.g., Sun)
```

Q25 - List the words of 4 letters from the file mydate.

```
kali@kali ~/D/Assignment> grep -o -E '\b[[:a:um:]]{4}\b' mydate
DATE
User
DATE
NAME
date
date
time
date
date
time
date
long
date
time
date
warn
file
like
```

Q26 - 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 ~/D/Assignment> paste northeast.txt northcapitals.txt
Assam    Dispur
Arunachal    Itanagar
Manipur    Imphal
Meghalaya    Shillong
Nagaland    Kohima
```

Q27 - Use the cut command to print the 1st and 3rd columns of the /etc/passwd file for all students in this class.

```
kali@kali ~/D/Assignment [1]> cut -d ":" /etc/passwd -f 1,3
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
gnats:41
nobody:65534
_apt:100
```

Q28 - Count the number of people logged in and also trap the users in a file using the tee command.

```
kali@kali ~/D/Assignment> who | tee
kali      :1          2023-01-04 13:55 (:1)
kali@kali ~/D/Assignment> |
```

Q29 - Convert the contents of mystates into uppercase.

```
kali@kali ~/D/Assignment> cat capitals | tr 'a-z' 'A-Z'
AMRAVATI
ITANAGAR
DISPUR
PATAN
RAIPUR`
GANDHINAGAR
SHIMLA
BENGALURU
BHOPAL
MUMBAI
SHILLONG
KOHIMA
JAIPUR
CHENNAI
```

Q30 - Create any two files & display the common values between them.

```
kali@kali ~/D/Assignment> comm capitals capitals1
      Amravati
Dispur
      Itanagar
comm: file 1 is not in sorted order
Dispur
      patan
      Raipur`
```