Ex.No: 1   **BASIC UNIX COMMANDS**
Date   : 27.02.2021

Aim
To understand the basic commands used to work with Unix environment.

General Command Structure

Syntax:
           Command [-options] arguments
Where,
  Command   name of the command
  Arguments   file name, user name or some other information that the program needs.
  Options   which is a option for a program. So it is put inside square brackets.

BASIC COMMANDS

1. Command   : **who**
   Purpose   : It is used to get the information about all the users currently working in the system.
   Syntax   : who
   Example   **:** $ who

2. Command   : **who am i**
   Purpose   : It is used to know in which terminal the user is currently logged on.
   Syntax   : who am i
   Example   : $ who am I

3. Command   : **date**
   Purpose   : It is used to display the system date and time.
   Syntax   : date
   Example   : $ date

4. Command   : **cal**
   Purpose   : It prints the calendar for the specified year and month.
   Syntax   :cal<month><year>
   Example   : $ cal 05 2003

5. Command   : **id**
   Purpose   : It is used to display the login name.
   Syntax   : id
   Example   : $ id

6. Command   : **clear**
   Purpose   : It is used to clear the screen.

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```
Syntax        : clear
Example       : $ clear
```

7. Command   : **uname**
    Purpose   : It is used to display the details about the OS in which we are working.
    Syntax   :uname [options]
    Example   : $ uname –n

8. Command   : **tty**
    Purpose   : It is used to know the terminal name on which we work.
    Syntax   :tty
    Example   : $ tty

9. Command   : **pwd**
    Purpose   : It is used to display the absolute pathname of current working directory.
    Syntax   :pwd
    Example   : $ pwd

10. Command   : **bc**
    Purpose   : It is used to perform simple mathematical calculations.
    Syntax   :bc filename
Example   : $ bcpp

11. Command   :**echo**
    Purpose   : It echoes the argument on the standard output textce.
    Syntax   : echo [options] <string>
    Example   : $ echo 'BOOM'

12. Command   : **man**
    Purpose   : It gives details about the unix commands.
    Syntax   :man < command name >
    Example   : $ man echo

FILE MANIPULATION COMMANDS

1. Command   **:cat**
    Purpose   **:** It is used to create a new file
    Syntax   **:** cat   ><file name>
    Example   **:** $ cat >
                  This is sample File in Unix
                  Ctrl – d

    To append the content of already existing file.
    Example   : $ cat>>

    It is also used to display the contents of the fileas well as used to create a new file.

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```
Syntax        : cat   <file name >
Example       : $ cat
                This is sample File in Unix
```

To display the contents of two or more files, specify the filenames with the cat commands separated by a space in between them.

Example:
```
      $cat 1 2 3
      1 file
      2 file
      3 file
```

2. Command   : **ls**
    Purpose   : It is used to display the files in the current working directory.
    Syntax   : ls [options] <arguments>
    Options
          a   - to list all diretory entries
    d - to list name of directories
          l - to list files in long form
          r - to list file in the reverse order
          t - to list the files sorted by time
          lrt - list content of current directory. Output will be sorted based on modification date & time.

    Example   : $ ls –l

3. Command   : **tail**
    Purpose   : It is used to Prints the last several lines of the specified files.
    Syntax   : tail [options] <file name>
    Example   : $ tail -5 text

4. Command   : **head**
    Purpose   : It is used to display the top portion of the file where top portion represents the no'sof lines.
    Syntax   : head [options] <file name>
    Example   : $ head -5 text

5. Command   : **cmp**
    Purpose   : Compare two files, and if they differ, tells the first byte and line number where they differ.
    Syntax   : cmp file1 file2
    Example   : $ cmp a1 a2

6. Command   : **diff**
    Purpose   : The diff command analyses line by line and displays a list of changes between two files.

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Syntax :diff file1 file2
Example :$ diff a1 a2

7. Command **: wc**
 Purpose **:** It is used to count the number of lines,words and characters in a file or group of files.
 Syntax :wc [options] <file name >
 Example **:** $ wc .txt
      2 15 95 .txt

The options used with **wc** commands are listed.

Option	Description
-c	Count number of characters in the file
-w	Counts the number of words in the file
-l	Counts number of lines in the file

Example:
 $ wc –c .txt
 95 .txt
 $ wc –w .txt
 15 .txt
 $ wc –l .txt
 2 .txt

8. Command **: sort**
 Purpose **:** Sorts the specified files. The command has many useful arguments..
 Syntax :sort [options] <file name >
 Option-r reverse
 Example **:** $ sort .txt

9. Command : **pr**
 Purpose : It is used to display the contents of the file by separating them into pages and each page begins with the header information.
 Syntax : pr [options] <file name >
 Example : $ pr

10. Command : **cut**
 Purpose : It is used to extract selected fields or columns from each line of one or more files and display them on the standard output textce.
 Syntax : cut [options] <file name >
 Example : $ cut –c5

11. Command **: paste**
 Purpose **:** It concatenates the line from each input file column by column with tab characters in between them.
 Syntax **:** paste [options] <file name >
 Example **:** $ paste f1 f2

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12. Command   **: join**
   Purpose   **:** It is used to extracts common lines from two sorted files and there should be the common field in both file.
   Syntax   **:** join [options] <file name1 ><file name 2>
   Example   **:** $ join –a1 f1 f2

13. Command   **:uniq**
   Purpose   **:** It compares adjacent lines in the file and displays the output by eliminating duplicate adjacent lines in it.
   Syntax   **:**uniq [options] <file name >
   Example   **:**$ uniq -c text

14. Command   **:nl**
   Purpose   **:** It is used to add the line numbers to the file.
   Syntax   **:**nl [options] [filename]
   Example   **:** $ nl text

15. Command   **: tr**
   Purpose   **:** It is used to translate or delete a character or a string from the standard input to produce the required output.
   Syntax   **:**tr [options] <string1><string2>
   Example   : $ tr –s 'a' 'b' < text

16. Command   **:tee**
   Purpose   **:** It is used to read the contents from standardinput or from output of another command and reproduces the output to both in standardoutput and direct into output to one or more files.
   Syntax   **:**command | tee [options] <file name >
   Example   **:** $ date | tee dat.txt

17. Command   **:grep**
   Purpose   **:** It is used to search the specified pattern from one or more files.
   Syntax   **:**grep [options] <pattern><file name >
   Example   **:** $ grep welcometext

DIRECTORY MANUPULATION COMMANDS

1. Command   **:**mkdir
   Purpose   **:** It is used to create new directory or more than one directory.
   Syntax   **:**mkdir<directory name >
   Example   **:**$ mkdirsudhan

2. Command   **:**cd
   Purpose   **:** It is used to change the control from oneworking directory to another specified directory.

Syntax   **:**cd <directory name >
Example   **:** $ cd sudhan

3. Command   **:**rmdir
   Purpose   **:** It is used to remove the directory if it is empty.
   Syntax   **:**rmdir<directory name >
   Example   **:** $ rmdirsudhan

   You can use the –r(recursive) option with the rmdir command so that it deletes the directory
   even when it is not empty.
   For example, $rmdir –r haran

4. Command   **:**cp
   Purpose   **:** It is used to copy one or more files.
   Syntax   **:**cp<source file name ><destination file name>
   Example   **:** $ cptexttext1

5. Command   **:** more
   Purpose   **:** It is used to control the information on the screen from a line to a screen
   full.
   Syntax   **:** more   options <file name >
   Example   **:**$ more

   This command displays one screen full of information from the file. To display the next
   screen press enter key or space bar. To quit press Q.

6. Command   **:**passwd
   Example   : passwd user
   Changes the current user's password, or that of the specified user (requires root privileges).
   The command prompts for the new password.

7. Command   **:** mv
   Purpose   **:** It is used to move a file within a directory with different names and also
   used to move a file to different directory with its original name.
   Syntax   **:**mv<source file name ><destination directory name>
   Example   **:** $ mv texttext2

8. **chmod command**
   You set the access modes of a directory or file by using the chmod command, which has
   the following pattern:
         chmod
         nnn directory-or-file

   The argument *nnn* is a three-digit number, which gives the access mode for the owner,
   group, and other users.

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For example, the argument 751 is equivalent to rwxr-x--x, which gives the owner every possible permission, gives the group read and execute permission, and gives other users execute permission.

9. Command   **:** write
    Purpose   **:** the write command can be used by any user to write something on someone else's terminal, provided the recipient of the message permits communication
    Syntax   **:** write <user name>
    Example   **:** $ write user2
            This is sample message.
            Ctrl d

    On executing this command the message would be relayed to the user whose login name is user2. He would hear a beep on his terminal, followed by the message.
    There are two prerequisites for a smooth write operation:
    1. The recipient must be logged in; else an error message is inevitable.
    2. The recipient must have given permission for messages to reach his or her terminal.

10. wall command

Prints a message to each user except those who've disabled message reception.Type **Ctrl-D** to end the message.

11. Command   **:** news
Purpose   **:** The system administrator is the sole person whocan make news under the Unix OS. He types the information which he wants everyone on the network to know of in different files in /usr/news directory.

Syntax   **:** 1) $news filename
                          2) $news [-options]

Options :   **:** 1)   -n   option only lists the names of the news items from the /usr/news directory that have not yet been read by you.
                          2) –s option which provides a count of the unread new items in the /usr/news directory.
                          3) –a   shows all the news.
Example 1   **:** $ news sample

Where sample is the file name in which the news items are available.

Example 2   : $news –s

It provides the count of the unread new items.

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Sample Output:

```
################################
# webminal.org - your linux  ~ #
################################

- Share files with others, See /common_pool/README.txt
- See 'Root' menu for Webminal Desktop Root and Webminal Root features
- For Teachers/Students, partial sudo (plus C programming) platform available - mail us.

[srigayathiri@webminal.org ~]$who
[srigayathiri@webminal.org ~]$whoami
srigayathiri
[srigayathiri@webminal.org ~]$date
Wed Mar  3 14:42:54 CET 2021
[srigayathiri@webminal.org ~]$cal
    March 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

[srigayathiri@webminal.org ~]$id
uid=246124(srigayathiri) gid=246183(srigayathiri) groups=246183(srigayathiri) context=guest_u:guest_r:g
uest_t:s0
[srigayathiri@webminal.org ~]$clear
```

```
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

       --block-size=SIZE
              scale   sizes   by   SIZE   before   printing   them;   e.g.,
 Manual page ls(1) line 1 (press h for help or q to quit)
```

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```
[srigayathiri@webminal.org ~]$uname
Linux
[srigayathiri@webminal.org ~]$tty
/dev/pts/119
[srigayathiri@webminal.org ~]$pwd
/home/srigayathiri
[srigayathiri@webminal.org ~]$bc 5+2
-sh: bc: command not found
[srigayathiri@webminal.org ~]$man ls
[srigayathiri@webminal.org ~]$echo "os"
os
[srigayathiri@webminal.org ~]$cat > subject
OS
DBMS
CA
OOPS
DAA
PQT
[srigayathiri@webminal.org ~]$cat >> subject
java
[srigayathiri@webminal.org ~]$cat subject
OS
DBMS
CA
OOPS
DAA
PQT
java
```

```
[srigayathiri@webminal.org ~]$ls
alphabet    currentdate  file.txt      numbers   prg.c       software
count.txt   file         myfile.txt    os        sfile.txt   subject
[srigayathiri@webminal.org ~]$ls -a
.           .bash_history  .bashrc       .emacs       .magic_string.txt   os         software
..          .bash_logout   count.txt     file         myfile.txt          prg.c      subject
alphabet    .bash_profile  currentdate   file.txt     numbers             sfile.txt  .zshrc
[srigayathiri@webminal.org ~]$ls -d
.
[srigayathiri@webminal.org ~]$ls -l
total 44
-rw-rw-r--. 1 srigayathiri srigayathiri   32 Mar  1 15:48 alphabet
-rw-rw-r--. 1 srigayathiri srigayathiri  268 Mar  1 16:24 count.txt
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 27 06:51 currentdate
-rw-rw-r--. 1 srigayathiri srigayathiri   32 Mar  1 15:55 file
-rw-rw-r--. 1 srigayathiri srigayathiri   36 Mar  1 15:30 file.txt
-rw-rw-r--. 1 srigayathiri srigayathiri   43 Mar  1 15:36 myfile.txt
-rw-rw-r--. 1 srigayathiri srigayathiri    6 Mar  3 14:53 numbers
drwxrwxr-x. 6 srigayathiri srigayathiri 4096 Feb 28 07:06 os
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 28 06:23 prg.c
-rw-rw-r--. 1 srigayathiri srigayathiri   53 Mar  1 15:40 sfile.txt
drwxrwxr-x. 2 srigayathiri srigayathiri    6 Mar  1 14:38 software
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Mar  3 14:52 subject
[srigayathiri@webminal.org ~]$ls -t
numbers   count.txt  alphabet   myfile.txt  software  prg.c
subject   file       sfile.txt  file.txt    os        currentdate
```

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```
[srigayathiri@webminal.org ~]$ls -lrt
total 44
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 27 06:51 currentdate
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 28 06:23 prg.c
drwxrwxr-x. 6 srigayathiri srigayathiri 4096 Feb 28 07:06 os
drwxrwxr-x. 2 srigayathiri srigayathiri    6 Mar  1 14:38 software
-rw-rw-r--. 1 srigayathiri srigayathiri   36 Mar  1 15:30 file.txt
-rw-rw-r--. 1 srigayathiri srigayathiri   43 Mar  1 15:36 myfile.txt
-rw-rw-r--. 1 srigayathiri srigayathiri   53 Mar  1 15:40 sfile.txt
-rw-rw-r--. 1 srigayathiri srigayathiri   32 Mar  1 15:48 alphabet
-rw-rw-r--. 1 srigayathiri srigayathiri   32 Mar  1 15:55 file
-rw-rw-r--. 1 srigayathiri srigayathiri  268 Mar  1 16:24 count.txt
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Mar  3 14:52 subject
-rw-rw-r--. 1 srigayathiri srigayathiri    6 Mar  3 14:53 numbers
[srigayathiri@webminal.org ~]$
```

```
[srigayathiri@webminal.org ~]$ls
[srigayathiri@webminal.org ~]$tail -3 subject
DAA
PQT
java
[srigayathiri@webminal.org ~]$head -1 numbers
1
[srigayathiri@webminal.org ~]$cat > string
how are you
[srigayathiri@webminal.org ~]$cmp subject numbers
subject numbers differ: byte 1, line 1
[srigayathiri@webminal.org ~]$cmp subject string
subject string differ: byte 1, line 1
[srigayathiri@webminal.org ~]$cmp string numbers
string numbers differ: byte 1, line 1
[srigayathiri@webminal.org ~]$diff subject numbers
1,7c1,3
< OS
< DBMS
< CA
< OOPS
< DAA
< PQT
< java
---
> 1
> 2
> 3
[srigayathiri@webminal.org ~]$wc -c subject
29 subject
[srigayathiri@webminal.org ~]$wc -l subject
7 subject
[srigayathiri@webminal.org ~]$wc -w subject
7 subject
```

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```
[srigayathiri@webminal.org ~]$cut -c3 subject

M

P
A
T
v
[srigayathiri@webminal.org ~]$paste subject numbers
OS       1
DBMS     2
CA       3
OOPS
DAA
PQT
java
[srigayathiri@webminal.org ~]$cat > stringb
HOW ARE YOU
[srigayathiri@webminal.org ~]$join string stringb
[srigayathiri@webminal.org ~]$cat subject
OS
DBMS
CA
OOPS
DAA
PQT
java
[srigayathiri@webminal.org ~]$cat >> subject
java
```

```
[srigayathiri@webminal.org ~]$sort -r numbers
3
2
1
[srigayathiri@webminal.org ~]$pr subject


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OS
DBMS
CA
OOPS
DAA
PQT
java
```

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```
[srigayathiri@webminal.org ~]$cat subject
OS
DBMS
CA
OOPS
DAA
PQT
java
java
[srigayathiri@webminal.org ~]$uniq subject
OS
DBMS
CA
OOPS
DAA
PQT
java
[srigayathiri@webminal.org ~]$uniq -c subject
      1 OS
      1 DBMS
      1 CA
      1 OOPS
      1 DAA
      1 PQT
      2 java
[srigayathiri@webminal.org ~]$nl subject
     1  OS
     2  DBMS
     3  CA
     4  OOPS
     5  DAA
     6  PQT
     7  java
     8  java
[srigayathiri@webminal.org ~]$date | tee subject
Wed Mar  3 15:18:58 CET 2021
```

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```
[srigayathiri@webminal.org ~]$paste subject numbers
OS        1
DBMS      2
CA        3
OOPS
DAA
PQT
java
[srigayathiri@webminal.org ~]$cat > stringb
HOW ARE YOU
[srigayathiri@webminal.org ~]$join string stringb
[srigayathiri@webminal.org ~]$cat subject
OS
DBMS
CA
OOPS
DAA
PQT
java
```

```
[srigayathiri@webminal.org ~]$cat >> subject
[srigayathiri@webminal.org ~]$mkdir test
[srigayathiri@webminal.org ~]$cd test
[srigayathiri@webminal.org test]$cd ..
[srigayathiri@webminal.org ~]$ls
alphabet   currentdate file.txt    numbers  prg.c      software  stringb  test
count.txt  file        myfile.txt  os       sfile.txt  string    subject
[srigayathiri@webminal.org ~]$rmdir test
[srigayathiri@webminal.org ~]$ls
alphabet   currentdate file.txt    numbers  prg.c      software  stringb
count.txt  file        myfile.txt  os       sfile.txt  string    subject
[srigayathiri@webminal.org ~]$cp subject numbers
-sh: subject: command not found
[srigayathiri@webminal.org ~]$cp subject numbers
[srigayathiri@webminal.org ~]$cat string
how are you
[srigayathiri@webminal.org ~]$passwd
-sh: /bin/passwd: Permission denied
[srigayathiri@webminal.org ~]$ls /
bin   common_pool  etc   lib    lost+found  mnt      opt   root  sbin  sys   test2  tmpuserdata  var
boot  dev          home  lib64  media       mnt_pt   proc  run   srv   test  tmp    usr
```

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```
[srigayathiri@webminal.org ~]$ls
currentdate  numbers  os  prg.c  software  subject
[srigayathiri@webminal.org ~]$ls /
bin   common_pool  etc   lib    lost+found  mnt      opt   root  sbin  sys   test2  tmpuserdata  var
boot  dev          home  lib64  media       mnt_pt   proc  run   srv   test  tmp    usr
[srigayathiri@webminal.org ~]$ls -l
total 20
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 27 06:51 currentdate
-rw-rw-r--. 1 srigayathiri srigayathiri   10 Feb 28 06:01 numbers
drwxrwxr-x. 6 srigayathiri srigayathiri 4096 Feb 28 07:06 os
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 28 06:23 prg.c
drwxrwxr-x. 2 srigayathiri srigayathiri    6 Mar  1 14:38 software
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 28 06:19 subject
[srigayathiri@webminal.org ~]$ls -a
.   .bash_history  .bash_profile  currentdate    .magic_string.txt  os     software  .zshrc
..  .bash_logout   .bashrc        .emacs         numbers            prg.c  subject
[srigayathiri@webminal.org ~]$ls -lrt
total 20
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 27 06:51 currentdate
-rw-rw-r--. 1 srigayathiri srigayathiri   10 Feb 28 06:01 numbers
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 28 06:19 subject
-rw-rw-r--. 1 srigayathiri srigayathiri   29 Feb 28 06:23 prg.c
drwxrwxr-x. 6 srigayathiri srigayathiri 4096 Feb 28 07:06 os
drwxrwxr-x. 2 srigayathiri srigayathiri    6 Mar  1 14:38 software
```

```
[srigayathiri@webminal.org ~]$cut -c3 subject

M

P
A
T
v
[srigayathiri@webminal.org ~]$paste subject numbers
OS       1
DBMS     2
CA       3
OOPS
DAA
PQT
java
[srigayathiri@webminal.org ~]$cat > stringb
HOW ARE YOU
[srigayathiri@webminal.org ~]$join string stringb
```

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```
[srigayathiri@webminal.org ~]$cat subject
OS
DBMS
CA
OOPS
DAA
PQT
java
[srigayathiri@webminal.org ~]$cat >> subject
[srigayathiri@webminal.org ~]$write

Usage:
 write [options] <user> [<ttyname>]

Options:
 -V, --version     output version information and exit
 -h, --help        display this help and exit

[srigayathiri@webminal.org ~]$wall
[srigayathiri@webminal.org ~]$news fname
-sh: news: command not found
```

Observation(20)	
Record(5)	
Total(25)	
Initial	

Result:

      Thus the basic Unix commands were executed and outputs were noted.

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