UNIX BASICS

shell

a utility program that enables the user to interact with the UNIX operating system. Commands entered by the user are passed by the shell to the operating system which carries them out. The results are then passed back by the shell and displayed on the user's display.
There are several shells available. The user may select which one they wish to use.

shell prompt

a character at the start of the command line which indicates that the shell is ready to receive your commands. The character is usually a '%' (percent sign) or a $ (dollar sign). It may be different on your system.

standard input

the source of information for a command. This is assumed to be the keyboard unless input is redirected or piped from a file or another command.

standard output

the destination for information from a command. This is assumed to be the terminal display unless output is redirected or piped to a file or another command.

Where are commands located?

Unix commands are executable binary files located in directories with the name bin (for binary). Many of the commands that you use are located in the directory /usr/bin.
When you enter the name of a command the shell checks to see if it is a built-in command. If it is not, it looks for the the binary file that the command name refers to in each of the directories that are defined in the PATH environment variable.

COMMONLY USED UNIX COMMANDS

1. LISTING OF FILES
   SYNTAX: ls –[options][filelist][directory list]
   ls   list visible files in the working directory.
   ls -a list all enteries including filenames beginning with a period.
   ls -l   list visible files using long format (includes modes, size, date etc).
   ls /   will display the name of the files in the root directory.

2. CREATING A FILE

   SYNTAX : cat >filename

```
               ……………
               ……………
               ^D
```

3. SHOWING THE CONTENTS OF A FILE

   SYNTAX : cat / more / page / head / tail filename

4. TO COPY THE CONTENTS FROM ONE FILE TO ANOTHER

   SYNTAX: cp sourcefile targetfile

5. TO CHANGE THE NAME OF THE EXISTING FILE

   SYNTAX : mv oldfile newfile

6. TO DELETE THE FILE/FILES

   SYNTAX : rm [options][filelist]

   rm – i [filelist] to prompt the user to confirm the action of deleting the file.

7. DISPLAY THE ID'S OF THE USERS CURRENTLY LOGGED IN.

   SYNTAX : who

8. TO CREATE A DIR IN THE CURRENT WORKING DIR.

   SYNTAX: mkdir dirname

9. TO CHANGE THE SPECIFIED DIR TO BECOME THE CURRENT DIR.

   SYNTAX: cd dirname

10. TO PLACE THE USER IN THE HOME DIR FROM ANYWHERE IN THE FILE SYSTEM.

    SYNTAX : cd

12. TO CHANGE THE WORKING DIR TO THE PARENT OF THE CURRENT WORKING DIR.

    SYNTAX : cd ..

13. PRINTING THE CURRENT WORKING DIRECTORY

    SYNTAX: pwd

14. TO CHANGE THE MODE OF THE FILE.

SYNTAX : chmod new-mode filename

The new-mode is a 3-digit number computed by adding together the numeric equivalents of the desired permissions, r(read), w(write) & x(execute).

User(owner)	group	others
r = 4	r = 4	r = 4
w = 2	w = 2	w = 2
x = 1	x =1	x = 1

777 gives all the permissions to the owner , group, others.
000 denies all permissions.
644 gives read & write permission to the owner, read only to the group & the others.

15. TO DISPLAY CURRENT DATE & TIME

SYNTAX: date

16. TO CLEAR THE SCREEN

SYNTAX: clear

17. OBTAINING ON-LINE HELP

SYNTAX: man command
man –k keyword

18. SETTING YOUR PASSWORD

SYNTAX: passwd

19. ELECTRONIC MAIL

SYNTAX: SENDING MAIL

```
mail userid
…………
…………
^D
```

RECEIVING MAIL

```
mail
```

20. COUNTING THE WORDS IN A FILE:

SYNTAX: wc filename

21. TERMINATING A PROCESS

SYNTAX: ^C

22. PAUSING OUTPUT
SYNTAX: ^S ……suspend terminal output
^Q ……resume terminal output

23. END OF INPUT
SYNTAX: ^D

24. LOGGING OUT
SYNTAX: ^D

25. DISPLAYING INFORMATION
SYNTAX: echo {arg}*

SCREEN EDITOR vi

SYNTAX vi file_name

vi operates in 2 modes – command mode & edit mode.

- In the command mode it execute the commands.
- In order to enter text, we have to press i or a to switch to edit mode.
- In order to execute the command after entering the text mode, press ESC to switch to the command mode.

CURSOR-MOVEMENT COMMANDS

j	moves the cursor down one line
k	moves the cursor up one line
h	moves the cursor left one space character
l	moves the cursor right one space character
0	moves the cursor to the beginning of a line
$	moves the cursor to the end of a line

TEXT-DELETION COMMANDS

x	deletes character under cursor
dw	deletes from cursor to beginning of next word
dd	deletes line containing cursor
d)	deletes rest of sentence
d}	deletes rest of paragraph

TEXT MOVING AND ALTERATION COMMANDS

u	undo last command
yy	save line(s) in temporary buffer
p	put saved buffer after cursor
P	put saved buffer before the cursor

SAVING THE TEXT AND QUITTING COMMANDS

```
Esc :w    write file
Esc: q     quit
Esc :wq  save and quit
Esc :q!     quit without saving
```

COMPILATION & EXECUTION OF PROGRAMS

COMPILING PROGRAMS

```
cc filename .c
```

compiles the c program in the file named filename.c and produces an executable file named a.out.

```
cc  filename.c –o filename
```

compiles the c program in the file named filename.c and produces an executable file named filename.

EXECUTING PROGRAMS

```
./a.out
```

to execute the c program that has been compiled into the executable file named a.out

EXERCISE:

1. Write a simple C program to display the message “Hello There!”.
2. Write a C program to read and display n numbers.
3. Write a C program to sort n numbers using any sorting algorithm.
4. Write a C program to search a number in the array.

REFERENCE:

DOS to UNIX Translation

A quick reference for users of DOS who are moving to UNIX. Look for a task or DOS command and then select the UNIX command for further details.

To ...	DOS	UNIX
display list of files	dir/w dir	ls
	dir	ls -l
display contents of file	type	cat
display file with pauses	type filename | more	more
copy file	copy	cp
find string in file	find	grep
		fgrep
compare files	comp	diff
rename file	rename OR ren	mv
delete file	erase OR del	rm
delete directory	rmdir OR rd	rmdir
change file protection	attrib	chmod
create directory	mkdir OR md	mkdir
change working directory	chdir OR cd	cd
get help	help	man
		apropos
display date and time	date, time	date
display free disk space	chkdsk	df
print file	print	lpr
display print queue	print	lpq

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