Architecture of Unix Operating System :

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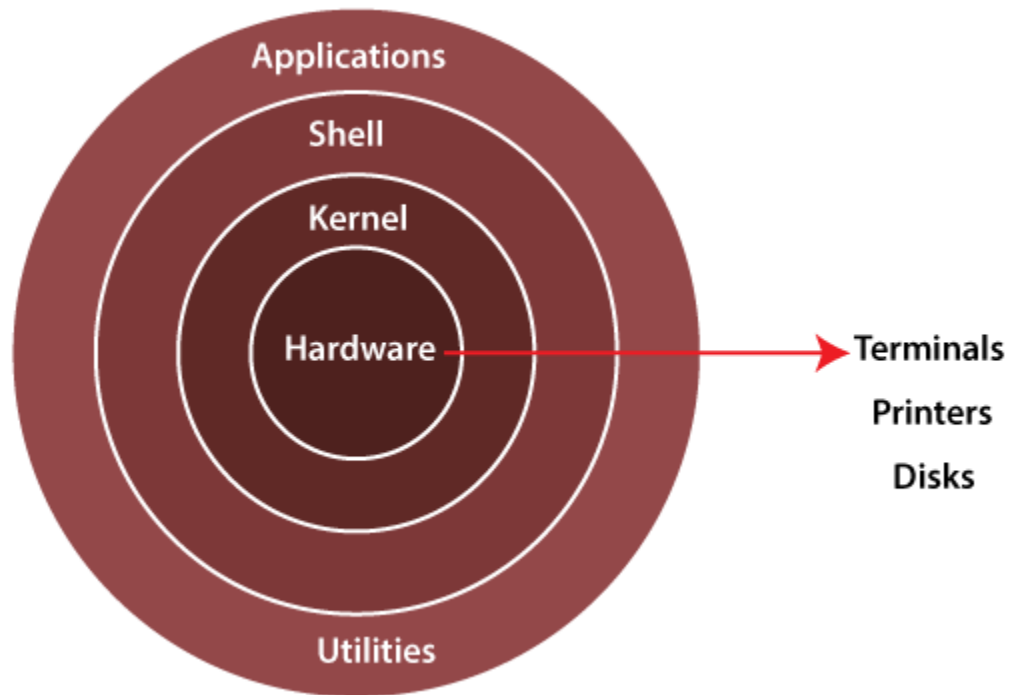
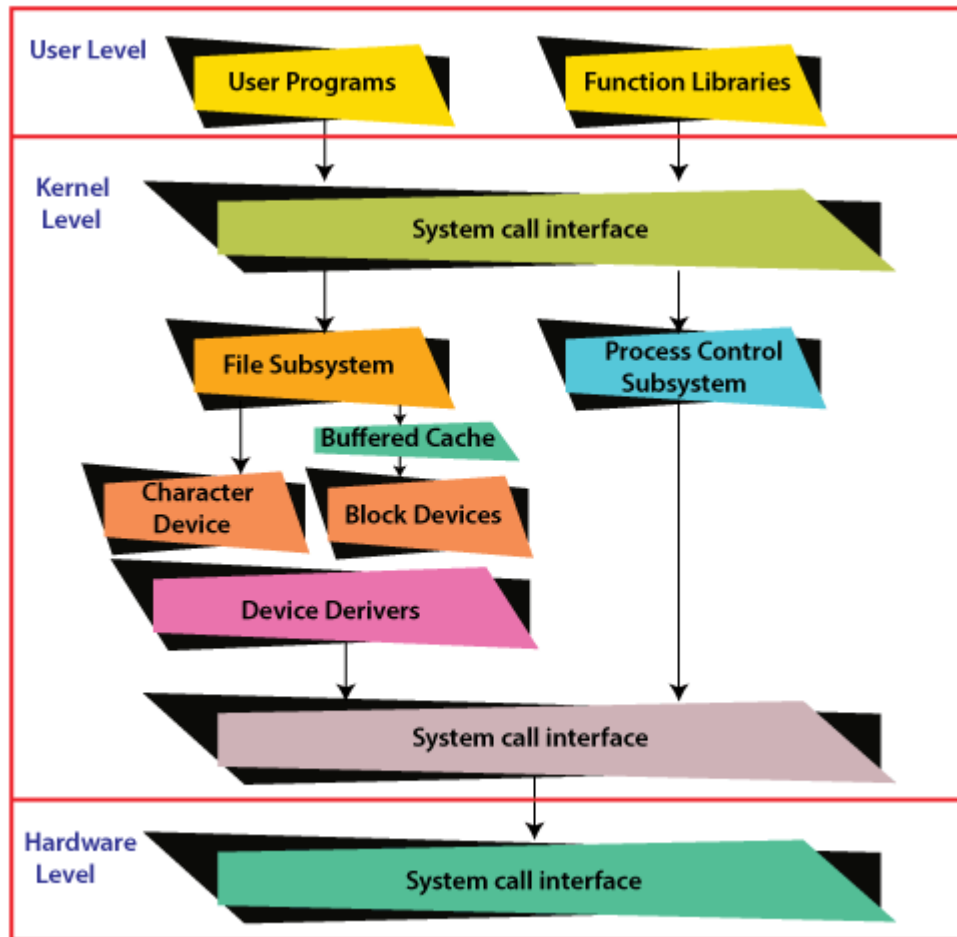Types of Shell in UNIX System:

Types of shell in unix
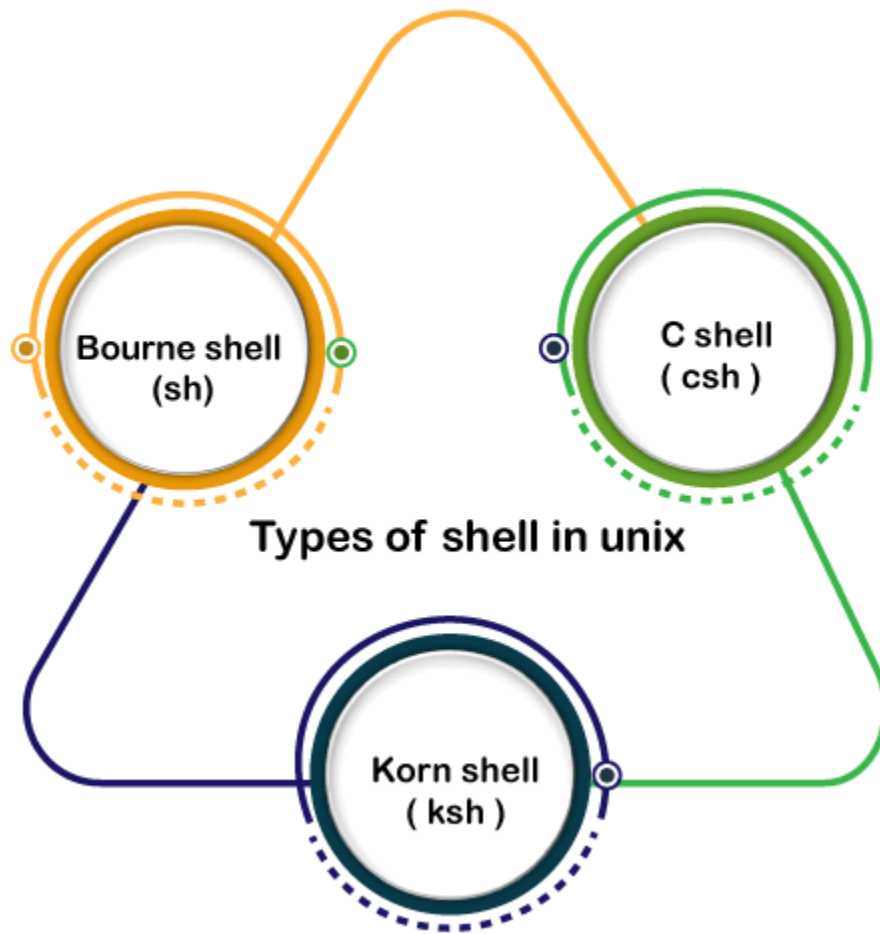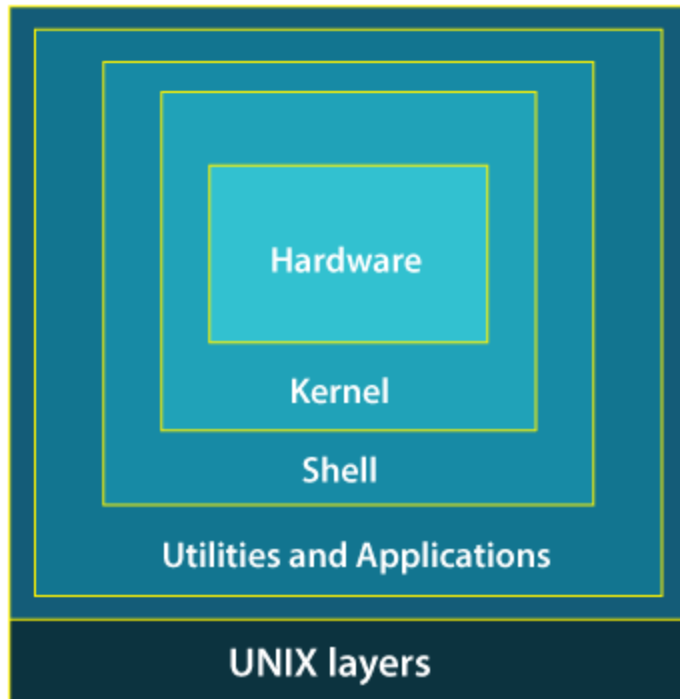
Kernel Architecture :

The core of the operating system that's liable for maintaining the full functionality is named the kernel. The kernel of UNIX runs on the particular machine hardware and interacts with the hardware effectively.

Kernel Architecture

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Architecture of Unix OS as follows:

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Features of UNIX Operating System:

Features of Unix

Multitasking

Command Structure

File security and protection

Communi-cation

Accounting

Unix tools and utilities
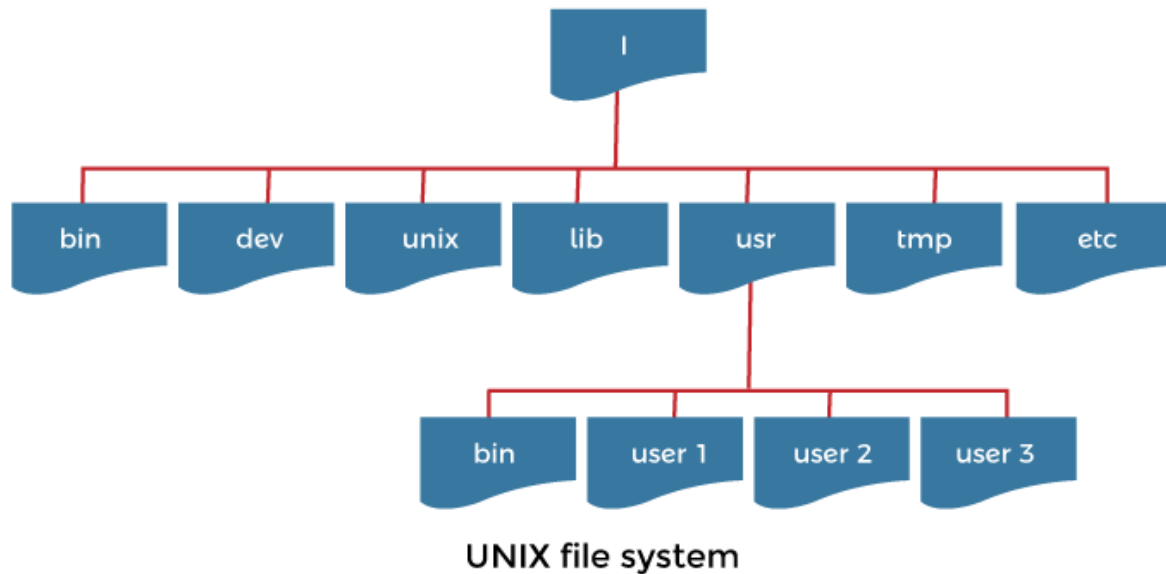
Open Source

Portable

Multiuser

UNIX file system

All the files in the UNIX system are related to one another.

UNIX file system

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Basic VI Editor Commands

To start vi:

Example: > **vi letter** *will open a new file called letter to edit, or if letter already exits, open the exiting file.*

Command	Effect
vi filename	edit *filename* starting at line 1
vi +n filename	edit *filename* beginning at line n
vi +filename	edit *filename* beginning at the last line
vi -r filename	recover *filename* after a system crash
vi +/patter filename	edit *filename* starting at the first line containing **pattern**

Command Mode vs. Insert Mode

Insert mode is the mode to be in when inserting text into the file. **Command mode** is the mode to be in when giving commands which will move the cursor, delete text, copy and paste, save the file etc.

When entering a file, vi is in command mode. To enter text, you must enter insert mode. If in insert mode, enter command mode by hitting the escape, <esc>, key.

To insert text:

Command	Insert Text
i	before cursor
a	after cursor
A	at the end of the line
o	open a line below the current line
O	open a line above the current line
r	replace the current character
R	replace characters until <ESC>, overwrite

To move the cursor:

You must be in Command Mode to use commands that move the cursor. Each of these commands can be preceded with a Repeat Factor.

Examples:
8j will move the cursor down 8 lines
3w will move the cursor 3 words to the right.

Command	Moves the cursor
SPACE, l (el), or right arrow	Space to the right
h or left arrow	space to the left
j or down arrow	down one line
k or up arrow	up one line
w	word to the right
b	word to the left
$	end of the line
0 (zero)	beginning of the line
e	end of the word to the right
-	beginning of previous line

)	end of the sentence
(	beginning of the sentence
}	end of paragraph
{	beginning of paragraph

To Delete Text:

The **d** command removes text from the Work Buffer. The amount removed depends on the Repeat Factor and the Unit of Measure you enter after **d**. **If you delete by mistake:** give the command **u** (undo) immediately after you give the delete command.

Examples: **3dd** will delete 3 lines beginning with the current line.
3dw or **d3w** will delete 3 words

Command	Action
d0	delete to beginning of line
dw	delete to end of word
d3w	delete to end of third word
db	delete to beginning of word
dW	delete to end of blank delimited word
dB	delete to beginning of blank delimited word
dd	delete current line
5dd	delete 5 lines starting with the current line
dL	delete through the last line on the screen
dH	delete through the first line on the screen
d)	delete through the end of the sentence
d(	delete through the beginning of the sentence
x	delete the current character
nx	delete the number of characters specified by **n.**

nX	delete **n** characters before the current character

Viewing Different Parts of the Work Buffer:

^Character means that you should hold down the **Control** key while striking the indicated character key.

Command	Moves the cursor
^D	forward one-half screenful
^U	backward one-half screenful
^F	forward one screenful
^B	backward one screenful
nG	to line **n** (Ex: **25G** moves the cursor to line #25)
H	to the top of the screen
M	to the middle of the screen
L	to the bottom of the screen
^L	refresh the screen

Yanking (copy) and Putting (paste) Text:

Example: **3yy** will yank (copy) 3 lines
p will put the 3 lines just yanked on the line below the current cursor.

In the following list **M** is a Unit of Measure that you can precede with a Repeat Factor, n.

Command	Effect
yM	yank text specified by M
y3w	yank 3 words
nyy	yank **n** lines
Y	yank to the end of the line
P	put text above current line
p	put text below current line

Changing Text

Example: **cw** allows you to change a word. The word may be replaced by as many word as needed. Stop the change by hitting < esc &gt.

c3w allows you to change 3 words.

Ending an Editing Session

Command	Effect
:w	writes the contents of the work buffer to the file
:q	quit
:q!	quit without saving changes
ZZ	save and quit
:wq	save and quit
:w *filename*	saves to *filename* (allows you to change the name of the file)

Miscellaneous commands

Command	Effect
J	join the current line and the following line
:set number	number the lines on the screen (not actually added to file)
:set nonumber	turns off numbering of lines
:r *filename*	reads *filename* into the current file at the location of the cursor
:set showmode	displays INPUT MODE at the lower right hand corner of screen
~	change uppercase to lowercase and vice-versa

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File System Navigation Unix Command

Command	Description	Example
cd	Changes the current working directory.	cd Documents
ls	Lists files and directories in the current directory.	ls
pwd	Prints the current working directory.	pwd
mkdir	Creates a new directory.	mkdir new_folder
rmdir	Removes an empty directory.	rmdir empty_folder
mv	Moves files or directories.	mv file1.txt Documents/

File Manipulation Unix Command

Command	Description	Example
touch	Creates an empty file	touch new_file.txt
cp	Copies files or directories.	cp file1.txt file2.txt
mv	Moves files or directories.	mv file1.txt Documents
rm	Remove files or directories.	rm old_file.txt
chmod	Changes the permissions of a file or directory.	chmod 644 file.txt