USP

Q1 Describe the methods to change the file permissions with examples

Q2 Bring out the differences between hard links and soft links with example.

Q3 Use find command to locate from your home directory
i) All files having inode number 9076.
ii) All directories having permissions 666.
iii) All files not accessed for more than a year.
iv) All but C files.

Q4 Explain the following with examples. i) Command substitution (ii) set and shift (iii) trap (iv) here.

Q5 Write a shell script that accepts filenames as arguments. for every filename it should first check whether it exists in current directory and then convert its name to uppercase, but only if a file with new name does not exist.

Q6 A file's

Ans 1 There are two ways to give permission in Unix OS.

i) Relative method

It lets us modify with single letter.

u → user

g → group a → everyone

o → other

+ (add access)

= (set exact access)

- (remove access)

r (read)

w (write)

x (execute)

Ex → To give permission to everyone for accessing a file to read is

chmod a+r myfile.

ii) Absolute ~~for~~ method

Absolute method is to use set of three numbers that together determine all access classes and types.

(Read)$_r$ → 4

(write)$_w$ → 2

(Execute)$_x$ → 1

Ex → For myfile, to grant read, write and execute permissions to yourself (4+2+1 = 7), read and execute permission to users in your group (4+0+1 = 5), and only execute permission to others (0+0+1 = 1)

chmod 751 myfile.

Ans 2

	Hard link	Soft link
1)	Each hard linked file is assigned the same inode value as original file. i.e. reference same physical file location	Each soft linked file contains an seperate inode value that points to the original file.
2)	ls -l command shows all links with column shows number of link	ls -l command shows all links with first value 1 and the links points to the original file.
3)	Links have actual file contents.	Link contains path for actual file and not contents.
4)	Removing any link just reduces the link count, but does not affect other links.	Removing link does not affect anything but removing original file, link points to non-existant file.
5)	If we change filename of original file, links properly works.	If we change filename of file, the link becomes worthless

Ans 4) i) Command substitution :- It allows us to capture the o/p of any command as an argument to another command.

```
today='date'
echo "$today"
```

o/p → Monday 20 December 2021 02:59:35 PM IST

ii) set and shift :- The set command assigns the value to a variable or multiple values to multiple variables. Shift commands shifts / moves the command line argument one position to the left.

```
$ shift [num]
$ shift 4
```

iii) trap :- It allows you to catch signals and execute when they occur, if no arguments are supplied, trap prints list of command associated with each signals.

iv) here - The most syntax for here documents, originate in Unix shells, is << followed by a delimiting (EOF or END) followed, starting in the next line, by the text to be quoted, and then closed by the same delimiting identifier on its own line.

Ans 3) i) find /-inum 9076 -print.

ii) find $HOME -perm 666 -type d print.

iii) find /home -a time +365 -print

iv) find : / -name "*.c" -print.