Lab Session 08

1. **Explain the following commands (with examples) and practice them:**

Commands	Purpose	Example
lockfile	Creates a lock file to prevent multiple access to file/program	`lockfile mylock`
cksum	Prints CRC checksum + bytes size of a file	`cksum file.txt`

comm	Compares two sorted files line-by-line	`sort file1.txt > f1`
		`sort file2.txt > f2`
		`comm f1 f2`

csplit	Splits a file into smaller files based on pattern/line numbers	`csplit file.txt 5`
chattr	Changes file attributes	`chattr +i file.txt`
touch	Creates a new empty file or updates timestamp	`touch newfile.txt`

2. **What do the following commands do?**
   cat ch1
   cat ch1 ch2 ch3 > G2
   cat note5 >> notes
   cat > temp1
   cat > temp2 << "Usman Rasheed Siddiqui"

   1. Displays the content of ch1.
   2. Merges three files into a new file named G2.
   3. Appends contents of note5 at the end of notes.
   4. Create a file temp1 and allows you to enter text until CTRL+D is pressed.
   5. Takes input until Usman Rasheed Siddiqui is typed, then it is saved in temp2.

3. **Practice the following commands and explain each**

Commands	Purpose	Example
cpio	Backup and restore files	`ls *.txt | cpio -ov > archive.cpio` `cpio -idv <archive.cpio`
sort	Sort text lines	`sort file1.txt`
fuser	Shows which process is using a file/folder	`fuser /home`
file	Shows file type	`file image.jpg`

4. What does the z option of the tar command do? Explain with examples.

Command	Action
`tar -czvf backup.tar.gz home/Usman`	create gzip archive
`tar -xzvf backup.tar.gz`	Extracts compressed archive

5. Difference between cp and cpio command:

cp	cpio
Copies files one by one	Used for backup/restoring of multiple files
Simple file copy	Archive, compress, preserves permission
`cp file1.txt /home/Usman/work/`	`ls *.txt	cpio -ov > backup.cpio`

6. Write two commands to take the backup of your home-folder and all sub-folders. The destination folder should be /home/bkup. NOTE: size of backup should be smaller than original folder.

Using `tar`	Using `cpio + gzip`
`tar -czvf` `/home/bkup/home_backup.tar.gz` `/home/Usman`	`cd /home/username` `ls	cpio -ov	gzip >` `/home/bkup/home_backup.cpio.gz`

7. What is the difference between the permissions 777 and 775 of the chmod command?

777	775
Full right to everyone	Full right for owner and group, but limited for others
Owner, Group, Other – read + write + execute (rwx)	Others – only read + execute (r-x)