

**NAME: GINI CHACKO**

**SEMESTER: IV**

**CLASS: SE COMPS B**

**BATCH: B**

**ROLL: 8942**

**TOPIC: OS EXPERIMENT 1 - Exploring basic commands for handling File  
system under Unix/Linux**

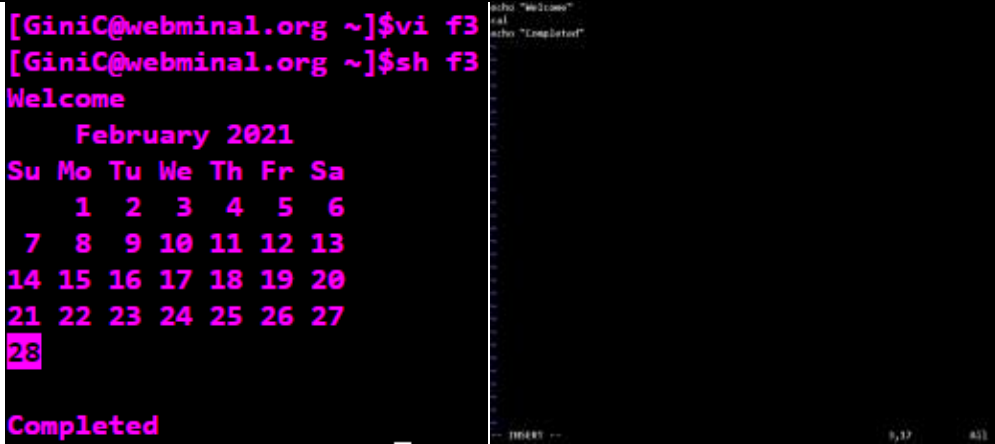
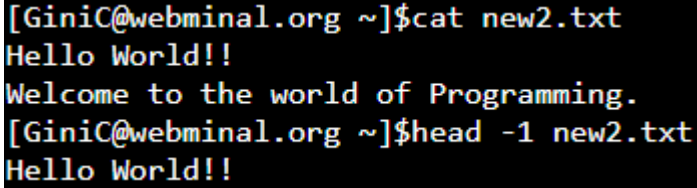
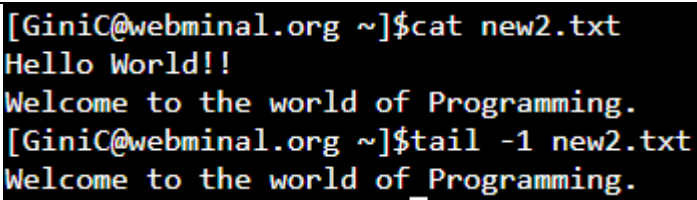
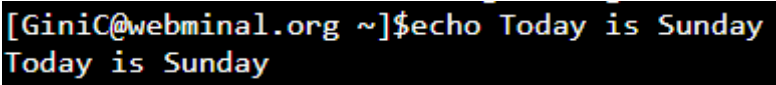
<u>Command</u>	<u>Short description</u>	<u>Output</u>
<b>pwd</b>	To show the “present working directory” or current directory.	<pre>[GiniC@webminal.org ~]\$pwd /home/GiniC</pre>
<b>cd</b>	To change current directory to your HOME directory.	<pre>[GiniC@webminal.org ~]\$mkdir check1 [GiniC@webminal.org ~]\$pwd /home/GiniC [GiniC@webminal.org ~]\$cd check1 [GiniC@webminal.org check1]\$</pre>
<b>cd ..</b>	To change current directory to the parent directory of the current directory.	<pre>[GiniC@webminal.org check1]\$cd .. [GiniC@webminal.org ~]\$</pre>
<b>cddirpath</b>	It is used to change to a directory specified by a path name. We need to type cd followed by a space and the path name (e.g., cd /usr/local/lib) and then press [Enter]. To confirm that you've switched to the directory you wanted, type pwd and press [Enter]. You'll see the path name of the current directory.	<pre>[GiniC@webminal.org ~]\$cd /home/GiniC/dir1 [GiniC@webminal.org dir1]\$pwd /home/GiniC/dir1</pre>
<b>cd \$STRMWORK</b>	To Change current directory to the directory defined by the environment variable 'STRMWORK'	<pre>[GiniC@webminal.org dir1]\$cd \$STRMWORK [GiniC@webminal.org ~]\$pwd /home/GiniC</pre>

<b>ls</b>	To list a directory	<pre>[GiniC@webminal.org ~]\$ls dir1  exp1.txt  Gini  new1  new.txt  xyz</pre>
<b>ls -l</b>	To list a directory in long ( detailed ) format	<pre>[GiniC@webminal.org ~]\$ls -l total 4 drwxrwxr-x. 3 GiniC GiniC 17 Feb 23 07:23 dir1 -rw-rw-r--. 1 GiniC GiniC 46 Feb 23 07:28 exp1.txt drwxrwxr-x. 3 GiniC GiniC 20 Feb 23 07:13 Gini drwxrwxr-x. 2 GiniC GiniC  6 Feb 23 07:22 new1 -rw-rw-r--. 1 GiniC GiniC  0 Feb 23 07:15 new.txt -rw-rw-r--. 1 GiniC GiniC  0 Feb 23 07:15 xyz</pre>
<b>ls -a</b>	To List the current directory including hidden files. Hidden files start with “.”	<pre>[GiniC@webminal.org ~]\$ls -a .          .bash_logout  dir1      Gini      new.txt ..         .bash_profile .emacs    .magic_string.txt xyz .bash_history .bashrc      exp1.txt  new1      .zshrc</pre>
<b>ls -ld*</b>	To list all the file and directory names in the current directory using long format. Without the “d” option, ls would list the contents of any sub-directory of the current. With the “d” option, ls just list them like regular files.	<pre>[GiniC@webminal.org ~]\$ls -ld * -rw-rw-rwx. 1 GiniC GiniC  0 Feb 28 10:42 2.c drwxrwxr-x. 2 GiniC GiniC  6 Feb 28 19:07 check1 drwxrwxr-x. 3 GiniC GiniC 17 Feb 23 07:23 dir1 -rw-rw-r--. 1 GiniC GiniC 46 Feb 23 07:28 exp1.txt -rw-rw-r--. 1 GiniC GiniC 36 Feb 28 12:56 f3 -rw-rw-r--. 1 GiniC GiniC  0 Feb 28 10:54 file1 -rw-rw-r--. 1 GiniC GiniC  0 Feb 28 13:52 file2 drwxrwxr-x. 3 GiniC GiniC 20 Feb 23 07:13 Gini drwxrwxr-x. 2 GiniC GiniC 21 Feb 28 12:27 new1 -rw-rw-r--. 1 GiniC GiniC 51 Feb 28 12:38 new2.txt drwxrwxr-x. 2 GiniC GiniC  6 Feb 28 09:09 test3</pre>

<b>chmod(numeric mode)</b>	Using chmod(numeric mode), we can set the permissions for all three user classes (owner, group, and all others)at the same time.	<pre>[GiniC@webminal.org ~]\$touch 1.c [GiniC@webminal.org ~]\$ls -l 1.c -rw-r--r--. 1 GiniC GiniC 0 Feb 28 10:35 1.c [GiniC@webminal.org ~]\$chmod 764 1.c [GiniC@webminal.org ~]\$ls -l 1.c -rwxrw-r--. 1 GiniC GiniC 0 Feb 28 10:35 1.c</pre>
<b>chmod (symbolic mode)</b>	chmod (symbolic mode) is the command and the system call which is used to change the access permissions of file system objects (files and directories) by using special mode flags.	<pre>[GiniC@webminal.org ~]\$touch 2.c [GiniC@webminal.org ~]\$ls -l 2.c -rw-rw-r--. 1 GiniC GiniC 0 Feb 28 10:42 2.c [GiniC@webminal.org ~]\$chmod o+wx 2.c [GiniC@webminal.org ~]\$ls -l 2.c -rw-rw-rwx. 1 GiniC GiniC 0 Feb 28 10:42 2.c</pre>
<b>chgrp</b>	chgrp command in Linux is used to change the group ownership of a file or directory. We can set the group by using “chgrp” command.	<pre>[GiniC@webminal.org ~]\$chgrp GiniC 2.c [GiniC@webminal.org ~]\$ls -l total 12 -rw-rw-rwx. 1 GiniC GiniC 0 Feb 28 10:42 2.c</pre>
<b>chown</b>	The chown command changes user ownership of a file, directory, or link in Linux. We can set the owner by using “chown” command.	<pre>[GiniC@webminal.org ~]\$chown GiniC new2.txt [GiniC@webminal.org ~]\$ls -l new2.txt -rw-rw-r--. 1 GiniC GiniC 51 Feb 28 12:38 new2.txt</pre>

<b>cp</b>	To copy a file	<pre>[GiniC@webminal.org ~]\$cat exp1.txt Programing is fun I know c, c++ Need to learn [GiniC@webminal.org ~]\$cp exp1.txt exp2.txt [GiniC@webminal.org ~]\$cat exp2.txt Programing is fun I know c, c++ Need to learn</pre>
<b>mv</b>	To move or rename a file	<pre>[GiniC@webminal.org ~]\$ls 1.c 2.c dir1 exp1.txt exp2.txt file1 Gini new1 new.txt test2 test3 xyz [GiniC@webminal.org ~]\$mv exp2.txt ./new1/ [GiniC@webminal.org ~]\$ls 1.c 2.c dir1 exp1.txt file1 Gini new1 new.txt test2 test3 xyz [GiniC@webminal.org ~]\$cd new1/ [GiniC@webminal.org new1]\$ls exp2.txt</pre>
<b>rm</b>	To remove or delete a file	<pre>[GiniC@webminal.org ~]\$ls 1.c 2.c dir1 exp1.txt file1 Gini new1 new.txt test2 test3 xyz [GiniC@webminal.org ~]\$rm -i 1.c rm: remove regular empty file '1.c'? yes [GiniC@webminal.org ~]\$ls 2.c dir1 exp1.txt file1 Gini new1 new.txt test2 test3 xyz</pre>
<b>mkdir</b>	To create directories	<pre>[GiniC@webminal.org ~]\$mkdir test3 [GiniC@webminal.org ~]\$ls dir1 exp1.txt Gini new1 new.txt test2 test3 xyz</pre>

<b>rmdir</b>	To remove an empty directory	<pre>[GiniC@webminal.org ~]\$ls 2.c  dir1  exp1.txt  file1  Gini  new1  new.txt  test2  test3  xyz [GiniC@webminal.org ~]\$rmdir test2 [GiniC@webminal.org ~]\$ls 2.c  dir1  exp1.txt  file1  Gini  new1  new.txt  test3  xyz</pre>
<b>mkdir dirpath</b>	<b>-p</b> To create the directory dirpath, including all implied directories in the path.	<pre>[GiniC@webminal.org ~]\$mkdir -p box/pencil [GiniC@webminal.org ~]\$cd box [GiniC@webminal.org box]\$ls pencil</pre>
<b>cat filename</b>	To dump a file to the screen in ascii.	<pre>[GiniC@webminal.org ~]\$cat &gt; new2.txt Hello World!! Welcome to the world of Programming. [GiniC@webminal.org ~]\$ls 2.c  dir1  exp1.txt  file1  Gini  new1  new2.txt  new.txt  test3  xyz [GiniC@webminal.org ~]\$cat new2.txt Hello World!! Welcome to the world of Programming.</pre>
<b>more</b>	To Progressively dump a file to the screen that is it is basically used to view the text files in the command prompt.	<pre>[GiniC@webminal.org ~]\$ls 2.c  dir1  exp1.txt  file1  Gini  new1  new2.txt  new.txt  test3  xyz [GiniC@webminal.org ~]\$more exp1.txt Programing is fun I know c, c++ Need to learn</pre>
<b>less</b>	It displays the contents of a file, one page at a time. It is similar to more but has more advanced features and allows you to navigate both forward and backward through the file.	<pre>[GiniC@webminal.org ~]\$less exp1.txt Programing is fun I know c, c++ Need to learn exp1.txt (END)</pre>

<b>vi</b>	To edit a file using the vi editor. All UNIX systems will have vi in some form.	 <pre>[GiniC@webminal.org ~]\$vi f3 [GiniC@webminal.org ~]\$sh f3 Welcome     February 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 Completed</pre>
<b>head</b>	To show the first few lines of a file.	 <pre>[GiniC@webminal.org ~]\$cat new2.txt Hello World!! Welcome to the world of Programming. [GiniC@webminal.org ~]\$head -1 new2.txt Hello World!!</pre>
<b>tail</b>	To show the last few lines of a file.	 <pre>[GiniC@webminal.org ~]\$cat new2.txt Hello World!! Welcome to the world of Programming. [GiniC@webminal.org ~]\$tail -1 new2.txt Welcome to the world of Programming.</pre>
<b>echo</b>	To display line of text/string that are passed as an argument. This is a built in command that is mostly used in shell scripts and batch files to output status text to the screen or a file.	 <pre>[GiniC@webminal.org ~]\$echo Today is Sunday Today is Sunday</pre>





## history

The history will show the last five hundred commands you have entered.

```
[bin@terminal.org ~]$ history
```

```
1  pwd
2  cd
3  pwd
4  ls
5  cd/home/di1
6  cd..
7  ls -l
8  ls
9  ls
10 ls -l
11 ls -a
12 ls -ld*
13 ls -ld
14 ls -ld*
15 cd..
16 cd..
17 addirpath
18 cd $HOME
19 pwd
20 clear
21 mkdir
22 pwd
23 mkdir
24 cd dir test2
25 mkdir test2
26 pwd
27 ls
28 mkdir test3
29 ls
30 clear
31 pwd
32 pwd
33 ls
```

## top

The top command shows the summary information of the system and the list of processes or threads which are currently managed by the Linux Kernel.

```
top - 10:39:01 up 697 days, 50 min, 0 users, load average: 9.09, 9.77, 9.73
Tasks: 372 total, 31 running, 342 sleeping, 17 stopped, 2 zombie
MiB Mem: 54.7 us, 45.3 sy, 0.0 ni, 0.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem: 140/1184 total, 2979356 free, 3354164 used, 8537664 buff/cache
MiB Swap: 0 total, 0 free, 0 used, 9226076 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	PCPU	MEM	TIME	COMMAND
3604	guest23+	20	0	14416	6964	504 K	41.5	0.0	1:25.91	hzip2	
3603	guest23+	20	0	108888	656	560 K	36.5	0.0	1:24.30	dd	
3980	guest23+	20	0	14416	6960	504 K	36.5	0.0	0:05.33	hzip2	
3732	guest23+	20	0	14416	6964	504 K	34.9	0.0	1:00.36	hzip2	
3743	guest23+	20	0	14416	6964	504 K	34.2	0.0	1:02.00	hzip2	
3731	guest23+	20	0	108888	660	560 K	31.9	0.0	0:58.98	dd	
3979	guest23+	20	0	108888	656	560 K	29.6	0.0	0:05.09	dd	
3740	guest23+	20	0	108888	660	560 K	29.2	0.0	1:02.54	dd	
3960	guest23+	20	0	14416	6960	504 K	27.6	0.0	0:13.50	hzip2	
3959	guest23+	20	0	108888	660	560 K	26.9	0.0	0:13.02	dd	
3993	guest23+	20	0	14416	6960	504 K	21.9	0.0	0:00.66	hzip2	
3992	guest23+	20	0	108888	660	560 K	15.9	0.0	0:00.60	dd	
3991	mbcshw+	20	0	152192	5200	2644 K	1.7	0.0	0:00.05	vln	
2162	lswat	20	0	162340	2568	1592 K	0.3	0.0	0:00.00	top	
3962	findf	20	0	162340	2536	1580 K	0.3	0.0	0:05.63	top	
394	Dhay?	20	0	116464	2312	1684 K	0.0	0.0	0:00.04	sh	
404	tailag+	20	0	116344	2384	1716 K	0.0	0.0	0:00.07	bash	
470	Pratap+	20	0	116196	1868	1328 K	0.0	0.0	0:00.01	sh	
622	8003A	20	0	115596	1912	1172 K	0.0	0.0	0:00.00	nano	
776	NotroDan	20	0	116340	2368	1696 K	0.0	0.0	0:00.06	bash	
1007	lordch+	20	0	115596	1860	1284 K	0.0	0.0	0:00.00	nano	
1043	anifkab+	20	0	1098064	53368	52872 K	0.0	0.4	0:00.00	unlinux	
1044	anifkab+	20	0	1098064	53368	52872 K	0.0	0.4	0:00.07	unlinux	
1045	anifkab+	20	0	1098064	53368	52872 K	0.0	0.4	0:00.01	unlinux	
1046	istoiko+	20	0	116464	2344	1680 K	0.0	0.0	0:00.03	sh	
1104	Prunthi+	20	0	116464	2312	1680 K	0.0	0.0	0:00.05	sh	
1109	saetang+	20	0	114060	696	504 K	0.0	0.0	1:32.58	sh	

<b>ps</b>	The ps command known as the Process Status, is a command line utility that is used to display or view information related to the processes running in a Linux system.	<pre>[GiniC@webminal.org ~]\$ps   PID TTY          TIME CMD 26772 pts/129    00:00:00 sh 28039 pts/129    00:00:00 ps</pre>
<b>renice</b>	The renice command modifies the priority of running processes. It is basically used for the processes that are already running.	<pre>[GiniC@webminal.org ~]\$ps -l F S  UID      PID  PPID  C PRI  NI ADDR SZ WCHAN  TTY          TIME CMD 4 S  244878 26772 26763  0 80   0 - 29118 wait  pts/129    00:00:00 sh 0 S  244878 28420 26772  0 99  19 - 27211 hrtime pts/129    00:00:00 sleep 0 R  244878 28424 26772  0 80   0 - 38458 -      pts/129    00:00:00 ps [GiniC@webminal.org ~]\$renice -n 10 28420 28420 (process ID) old priority 19, new priority 19 [GiniC@webminal.org ~]\$ps -l F S  UID      PID  PPID  C PRI  NI ADDR SZ WCHAN  TTY          TIME CMD 4 S  244878 26772 26763  0 80   0 - 29118 wait  pts/129    00:00:00 sh 0 S  244878 28420 26772  0 99  19 - 27211 hrtime pts/129    00:00:00 sleep 0 R  244878 28527 26772  0 80   0 - 38458 -      pts/129    00:00:00 ps</pre>
<b>free</b>	The free command is used to get a detailed report on the system's memory usage. The free command provides information about the total amount of the physical and swap memory, as well as the free and used memory.	<pre>[GiniC@webminal.org ~]\$free               total        used        free      shared  buff/cache   available Mem:          14871184      3179232      3384808      1663640       8307144       9413228 Swap:           0              0              0</pre>
<b>df</b>	The 'df' stands for "disk filesystem" which defines the number of blocks used, the number of blocks available, and the directory where the file system is mounted.	<pre>[GiniC@webminal.org ~]\$df /home Filesystem      1K-blocks    Used Available Use% Mounted on /dev/sdc1        31440900 19905800  11535100  64% /home</pre>

<b>apropos</b>	apropos command helps the user when they don't remember the exact command but knows a few keywords related to the command that define its uses or functionality. It searches the Linux man page with the help of the keyword provided by the user to find the command and its functions.	<pre>[GiniC@webminal.org ~]\$apropos -w tail* tail (1)          - output the last part of files tailf (1)         - follow the growth of a log file Unicode::Collate::Locale (3pm) - Linguistic tailoring for DUCET via Unicode::Collate virt-tail (1)     - Follow (tail) files in a virtual machine</pre>
<b>compress</b>	compress command is used to reduce the file size. After compression, the file will be available with an added .Z extension. This command is part of ncompress package, which contains utilities for fast compression and decompression.	<pre>[GiniC@webminal.org ~]\$compress -rv new.txt -sh: compress: command not found</pre>
<b>gzip</b>	gzip command compresses files. Each single file is compressed into a single file. If given a file as an argument, gzip compresses the file, adds a “.gz” suffix, and deletes the original file. With no arguments, gzip compresses the standard input and writes the	<pre>[GiniC@webminal.org ~]\$gzip new.txt [GiniC@webminal.org ~]\$</pre>

	compressed file to standard output.	
<b>bzip2</b>	bzip2 command in Linux is used to compress and decompress the files i.e. it helps in binding the files into a single file which takes less storage space as the original file use to take. It has a slower decompression time and higher memory use.	<pre>[GiniC@webminal.org ~]\$bzip2 xyz [GiniC@webminal.org ~]\$</pre>
<b>tar with all options</b>	<p>The tar command stands for “tape archive”. It is the “standard” way to read and write archives (collections of files and whole directory trees).</p> <p><b>Tar Examples:</b></p> <ol style="list-style-type: none"> <li><b>1. tar xv</b> - Extracts (x) files from the default tape drive while listing (v = verbose) the file names to the screen.</li> <li><b>2. tar tv</b> - Lists the files from the default tape device without extracting them.</li> </ol>	

3. **tar cv file1 file2** - Write files “file1” and “file2” to the default tape device.

```
[GiniC@webminal.org ~]$tar cv file1 file2
file1
file2
file1000066407362160736311000000000014016664113010563 0ustar  GiniCGiniCfile200006640
73621607363110000000000014016710773010570 0ustar  GiniCGiniC[GiniC@webminal.org ~]$
```

4. **tar cvf archive.tar file1 [file2...]** - Create a tar archive as a file “archive.tar” containing file1, file2...etc.

```
[GiniC@webminal.org ~]$tar cvf archieve.tar file1 file2
file1
file2
```

5. **tar xvf archive.tar** - extract from the archive file

```
[GiniC@webminal.org ~]$tar xvf archieve.tar
file1
file2
```

6. **tar cvfz archive.tar.gz dname** - Create a gzip compressed tar archive containing everything in the directory “dname”. This does not work with all versions of tar.

```
[GiniC@webminal.org ~]$tar cvfz archieve.tar.gz test3/
test3/
```

7. **tar xvfz archive.tar.gz** - Extract a gzip compressed tar archive. Does not work with all versions of tar.

```
[GiniC@webminal.org ~]$tar xvfz archieve.tar.gz
test3/
```

	<p><b>8. tar cvfI archive.tar.bz2 dname</b> - Create a bz2 compressed tar archive. Does not work with all versions of tar</p>	<pre>[GiniC@webminal.org ~]\$tar cvfI archieve.tar.bz2 test3 tar: Cowardly refusing to create an empty archive</pre>
<b>find</b>	<p>Find command is used to search and locate the list of files and directories based on conditions you specify for files that match the arguments.</p> <p>Find can be used in a variety of conditions like you can find files by permissions, users, groups, file type, date, size, and other possible criteria.</p>	<pre>[GiniC@webminal.org ~]\$find . ./.bash_profile ./.emacs ./.bash_history ./.bashrc ./.bash_logout ./.zshrc ./.magic_string.txt ./Gini ./Gini/sample1 ./new1 ./new1/exp2.txt ./dir1 ./dir1/dir2 ./dir1/dir2/dir3 ./exp1.txt ./test3 ./2.c ./new2.txt ./f3 ./file1 ./file2 ./check1 ./box ./box/pencil ./box/.f3.swp ./.viminfo</pre>