

1) The apropos command allows to search the system's manual pages for commands that match a specific task or keyword. This is particularly useful when you need to find a command that performs a specific task but you don't know the name of the command.

(i) apropos "search for files"

(ii) apropos "list directory contents". or

apropos "^list.\*directory" The ^ denotes that there is no other character before the word 'list' in the search.

(iii) apropos "file compress"

(iv) apropos "file.\*copy\$" The \$ denotes that there is no character to be searched after the word 'copy'.

```
ibab@IBAB-RA-Comp203:~$ apropos 'search for files'
find (1) - search for files in a directory hierarchy
suspicious-source (1) - search for files that do not meet the GPL...
ibab@IBAB-RA-Comp203:~$ apropos 'list directory contents'
dir (1) - list directory contents
ls (1) - list directory contents
ntfsls (8) - list directory contents on an NTFS filesystem
vdir (1) - list directory contents
ibab@IBAB-RA-Comp203:~$ apropos '^list.*directory'
> ^C
ibab@IBAB-RA-Comp203:~$ apropos '^list.*directory'
dir (1) - list directory contents
ls (1) - list directory contents
ntfsls (8) - list directory contents on an NTFS filesystem
vdir (1) - list directory contents
ibab@IBAB-RA-Comp203:~$ apropos 'file compress'
bunzip2 (1) - a block-sorting file compressor, v1.0.8
bzip2 (1) - a block-sorting file compressor, v1.0.8
Dpkg::Compression::FileHandle (3perl) - class dealing transparent...
ibab@IBAB-RA-Comp203:~$ apropos 'file.*copy$'
scp (1) - OpenSSH secure file copy
```

We are able to create more such examples using the apropos command.

```
ibab@IBAB-RA-Comp203:~$ apropos 'copy files'
cp (1) - copy files and directories
cpio (1) - copy files to and from archives
git-checkout-index (1) - Copy files from the index to the working...
install (1) - copy files and set attributes
ibab@IBAB-RA-Comp203:~$ apropos 'rename files'
rename.ul (1) - rename files
zipnote (1) - write the comments in zipfile to stdout, e...
ibab@IBAB-RA-Comp203:~$ apropos 'unzip files'
unzip files: nothing appropriate.
ibab@IBAB-RA-Comp203:~$ apropos 'delete files'
delete files: nothing appropriate.
ibab@IBAB-RA-Comp203:~$ apropos 'remove files'
git-rm (1) - Remove files from the working tree and fro...
rm (1) - remove files or directories
ibab@IBAB-RA-Comp203:~$
```

2) i.

We create a new file using the command touch. We then list all the files and hidden files using ls -al. The permissions for newfile are -rw-rw-r-- :

User: rw- read/write

Group: rw- read/write

Others: r-- read only

```
ibab@IBAB-RA-Comp203:~$ touch newfile
ibab@IBAB-RA-Comp203:~$ ls -al
total 304
drwxr-x--- 25 ibab ibab 4096 Aug  8 15:39 .
drwxr-xr-x  6 root root 4096 Aug  5  2024 ..
-rw-----  1 ibab ibab 10749 Aug  8 15:03 .bash_history
-rw-----  1 ibab ibab    0 Jan  3  2025 .bash_history-03027.tmp
-rw-----  1 ibab ibab    0 Aug  7 15:42 .bash_history-03509.tmp
-rw-----  1 ibab ibab    0 Mar 11 17:38 .bash_history-04829.tmp
-rw-----  1 ibab ibab 43625 Aug 29  2024 .bash_history-05498.tmp
-rw-----  1 ibab ibab    0 Jul 18 15:55 .bash_history-05963.tmp
-rw-----  1 ibab ibab    0 Aug  7 15:40 .bash_history-09407.tmp
-rw-----  1 ibab ibab    0 Sep  5  2025 .bash_history-10061.tmp
-rw-----  1 ibab ibab    0 Oct 29  2024 .bash_history-11893.tmp
-rw-----  1 ibab ibab 44708 Apr 16 13:20 .bash_history-19728.tmp
-rw-----  1 ibab ibab    0 Jul 21 11:11 .bash_history-20703.tmp
-rw-----  1 ibab ibab    0 Aug  7 15:47 .bash_history-29975.tmp
-rw-r--r--  1 ibab ibab  220 Apr 19  2024 .bash_logout
-rw-r--r--  1 ibab ibab 3823 Aug  7 16:28 .bashrc
drwx----- 22 ibab ibab 4096 Aug 29  2024 .cache
drwx----- 21 ibab ibab 4096 Aug  8 14:56 .config
drwxr-xr-x  2 ibab ibab 4096 Jul 18 14:46 Desktop
drwxr-xr-x  3 ibab ibab 4096 Sep  4  2025 Documents
drwxr-xr-x  2 ibab ibab 4096 Aug  8 15:11 Downloads
drwx-----  2 ibab ibab 4096 Sep  7  2025 .gnupg
drwxrwxr-x  2 ibab ibab 4096 Jul 31 10:51 .gphoto
drwxrwxr-x  4 ibab ibab 4096 Sep 12  2024 .java
drwxrwxr-x  2 ibab ibab 4096 Sep  4  2025 Lab4
drwxrwxr-x  2 ibab ibab 4096 Sep  7  2025 Lab5
drwxrwxr-x  2 ibab ibab 4096 Aug  7 15:19 Lab6
-rw-----  1 ibab ibab  20 Aug  8 14:13 .lessht
drwx-----  4 ibab ibab 4096 Aug  2  2024 .local
drwxr-xr-x  2 ibab ibab 4096 Aug  2  2024 Music
-rw-rw-r--  1 ibab ibab    0 Aug  8 15:39 newfile
-rw-rw-r--  1 ibab ibab 1492 Aug  2  2024 .nvidia-settings-rc
drwxrwxr-x 21 ibab ibab 4096 Jul 17 15:00 'old students'
drwxr-xr-x  3 ibab ibab 4096 Sep  2  2024 Pictures
```

ii. umask gives us the default permission that is removed from the full permission.

```
ibab@IBAB-RA-Comp203:~$ umask
0002
```

Full permission for files is 666 (read/write for all). Hence after removing the default,  $666 - 002 = 664$  which results in rw-rw-r-- for files.

For directories:  $777 - 002 = 775 \rightarrow$  rwxr-xw-rx

iii. The current permissions for the new\_file are : -rw-rw-r--.

The permissions match the default permissions subtracted from the full permissions.

The permissions for newfile are -rw-rw-r-- :

User: rw- read/write

Group: rw- read/write

Others: r-- read only

```
ibab@IBAB-RA-Comp203:~$ mkdir Lab7
ibab@IBAB-RA-Comp203:~$ cd Lab7
ibab@IBAB-RA-Comp203:~/Lab7$ touch new_file
ibab@IBAB-RA-Comp203:~/Lab7$ ls -l
total 0
-rw-rw-r-- 1 ibab ibab 0 Aug  8 15:53 new_file
ibab@IBAB-RA-Comp203:~/Lab7$
```

iv. The current permissions for the file\_perm is drwxrwxr-x.

The permissions match the default permissions subtracted from the full permissions.

The permissions for file\_perm is drwxrwxr-x :

User: rwx read/write/execute

Group: rwx read/write/ execute

Others: r-x read and execute

```
ibab@IBAB-RA-Comp203:~/Lab7$ mkdir file_perm
ibab@IBAB-RA-Comp203:~/Lab7$ ls
file_perm new_file
ibab@IBAB-RA-Comp203:~/Lab7$ ls -l
total 4
drwxrwxr-x 2 ibab ibab 4096 Aug  8 16:07 file_perm
-rw-rw-r-- 1 ibab ibab  0 Aug  8 15:53 new_file
ibab@IBAB-RA-Comp203:~/Lab7$ uname
Linux
ibab@IBAB-RA-Comp203:~/Lab7$ umask
0002
ibab@IBAB-RA-Comp203:~/Lab7$
```

v. Using the cp command we can say that, File retains original permissions and Copying does not change permissions.

```
ibab@IBAB-RA-Comp203:~/Lab7$ cp new_file file_perm
ibab@IBAB-RA-Comp203:~/Lab7$ ls -l
total 4
drwxrwxr-x 2 ibab ibab 4096 Aug  8 16:15 file_perm
-rw-rw-r-- 1 ibab ibab  0 Aug  8 15:53 new_file
ibab@IBAB-RA-Comp203:~/Lab7$
```



vi. To change the permission to readable, writable and executable by user and the group and only readable by everyone else, the code is 774 . Therefore we use the command `chmod 774 <dirname>`. The files inside the directory don't change but remain unchanged. Therefore we conclude it only changes the directory.

```
ibab@IBAB-RA-Comp203:~/Lab7$ ls -l
total 4
drw---r-- 2 ibab ibab 4096 Aug  8 16:15 file_perm
-rw-rw-r-- 1 ibab ibab  0 Aug  8 15:53 new_file
ibab@IBAB-RA-Comp203:~/Lab7$ chmod 774 fileperm
chmod: cannot access 'fileperm': No such file or directory
ibab@IBAB-RA-Comp203:~/Lab7$ chmod 774 file_perm
ibab@IBAB-RA-Comp203:~/Lab7$ ls -l
total 4
drwxrwxr-- 2 ibab ibab 4096 Aug  8 16:15 file_perm
-rw-rw-r-- 1 ibab ibab  0 Aug  8 15:53 new_file
ibab@IBAB-RA-Comp203:~/Lab7$
```

vii. The moving action does not change the permissions for the previous directory.

```
ibab@IBAB-RA-Comp203:~$ cd Lab7
ibab@IBAB-RA-Comp203:~/Lab7$ mkdir lab7dir
ibab@IBAB-RA-Comp203:~/Lab7$ mv file_perm lab7fir
ibab@IBAB-RA-Comp203:~/Lab7$ ls -l
total 8
drwxrwxr-x 2 ibab ibab 4096 Aug  8 17:04 lab7dir
drwxrwxr-- 2 ibab ibab 4096 Aug  8 16:15 lab7fir
-rw-rw-r-- 1 ibab ibab  0 Aug  8 15:53 new_file
ibab@IBAB-RA-Comp203:~/Lab7$ cd lab7dir
ibab@IBAB-RA-Comp203:~/Lab7/lab7dir$ ls -l
total 0
ibab@IBAB-RA-Comp203:~/Lab7/lab7dir$
```