

DTL 40 Linux Commands

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Division: 2 (S1)

1) pwd

```
harshal@Harshal: ~/112103095$ mkdir 112103095
harshal@Harshal:~/112103095$ cd 112103095
harshal@Harshal:~/112103095$ pwd
/home/harshal/112103095
```

2) cd

```
harshal@Harshal: ~/112103095$ mkdir 112103095
harshal@Harshal:~/112103095$ cd 112103095
harshal@Harshal:~/112103095$ pwd
/home/harshal/112103095
```

3) mkdir

```
harshal@Harshal: ~/112103095$ mkdir 112103095
harshal@Harshal:~/112103095$ cd 112103095
harshal@Harshal:~/112103095$ pwd
/home/harshal/112103095
```

4) ls

```
harshal@Harshal:~/112103095/new$ ls
file.txt  hello.c
harshal@Harshal:~/112103095/new$ ls -a
.  ..  file.txt  hello.c
harshal@Harshal:~/112103095/new$ ls -l
total 8
-rw-r--r-- 1 harshal harshal 38 Jan 22 14:46 file.txt
drwxr-xr-x 2 harshal harshal 4096 Jan 22 14:47 hello.c
harshal@Harshal:~/112103095/new$
```

5) rmdir

```
harshal@Harshal:~/112103095$ ls
new
harshal@Harshal:~/112103095$ rmdir new
harshal@Harshal:~/112103095$ ls
harshal@Harshal:~/112103095$ █
```

6) clear

```
harshal@Harshal:~/112103095$ mkdir 112103095
harshal@Harshal:~/112103095$ cd 112103095
harshal@Harshal:~/112103095$ pwd
/home/harshal/112103095
harshal@Harshal:~/112103095$ mkdir new
harshal@Harshal:~/112103095$ ls
new
harshal@Harshal:~/112103095$ rmdir new
harshal@Harshal:~/112103095$ ls
harshal@Harshal:~/112103095$ clear
```

```
harshal@Harshal:~/112103095$ █
```

7) cat

```
harshal@Harshal:~/112103095/new$ cat file.txt
Hello This is linux operating system.
harshal@Harshal:~/112103095/new$ █
```

8) mv

```
harshal@Harshal:~/112103095$ mv hello.c /home/harshal/112103095/new
harshal@Harshal:~/112103095$ cd new
harshal@Harshal:~/112103095/new$ ls
file.txt  hello.c
harshal@Harshal:~/112103095/new$
```

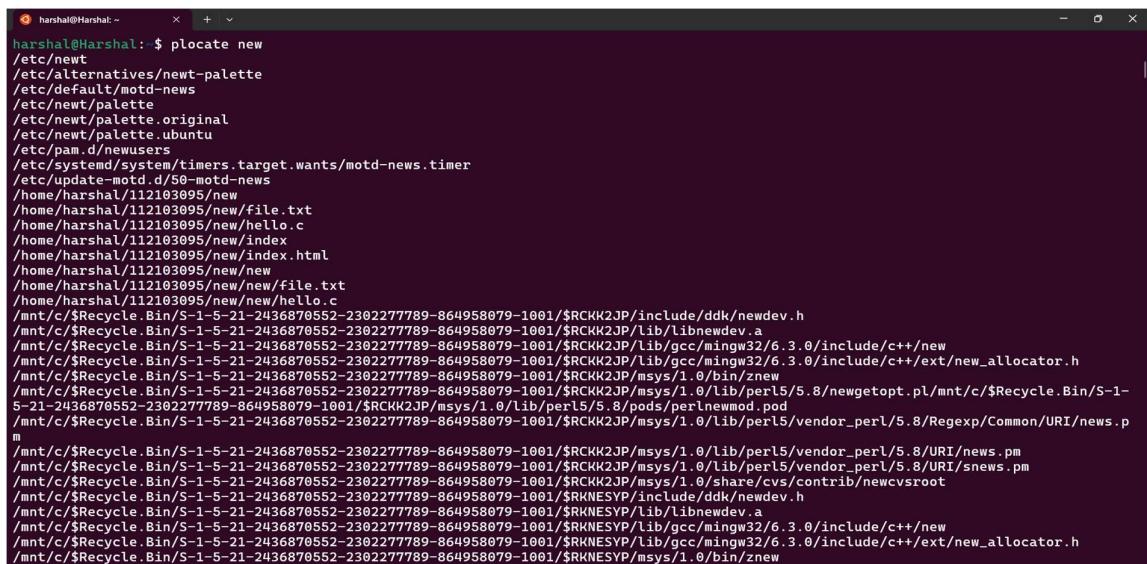
9) cp

```
harshal@Harshal:~/112103095$ ls
a.c  index  new
harshal@Harshal:~/112103095$ cp -r index /home/harshal/112103095/new
harshal@Harshal:~/112103095$ cd new
harshal@Harshal:~/112103095/new$ ls
file.txt  hello.c  index  new
harshal@Harshal:~/112103095/new$
```

10) touch

```
harshal@Harshal:~/112103095$ touch /home/harshal/112103095/new/index.html
harshal@Harshal:~/112103095$ cd new
harshal@Harshal:~/112103095/new$ ls
file.txt  hello.c  index  index.html  new
harshal@Harshal:~/112103095/new$
```

11. locate (plocate)



```
harshal@Harshal: ~
harshal@Harshal: $ plocate new
/etc/newt
/etc/alternatives/newt-palette
/etc/default/motd-news
/etc/newt/palette
/etc/newt/palette.original
/etc/newt/palette.ubuntu
/etc/pam.d/newusers
/etc/systemd/system/timers.target.wants/motd-news.timer
/etc/update-motd.d/50-motd-news
/home/harshal/112103095/new
/home/harshal/112103095/new/file.txt
/home/harshal/112103095/new/hello.c
/home/harshal/112103095/new/index
/home/harshal/112103095/new/index.html
/home/harshal/112103095/new/new
/home/harshal/112103095/new/new/file.txt
/home/harshal/112103095/new/new/hello.c
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/include/ddk/newdev.h
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/lib/libnewdev...
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/lib/gcc/mingw32/6.3.0/include/c++/new
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/lib/gcc/mingw32/6.3.0/include/c++/ext/new_allocator.h
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/msys/1.0/bin/znew
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/msys/1.0/lib/perl5/5.8/newgetopt.pl/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/msys/1.0/lib/perl5/s_8/pods/perlnewmod.pod
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/msys/1.0/lib/perl5/vendor_perl/5.8/Regexp/Common/URI/news.pm
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/msys/1.0/lib/perl5/vendor_perl/5.8/URI/news.pm
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/msys/1.0/lib/perl5/vendor_perl/5.8/URI/snews.pm
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RCKK2JP/msys/1.0/share/cvs/contrib/newcvsroot
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RKNESYP/include/ddk/newdev.h
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RKNESYP/lib/libnewdev.a
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RKNESYP/lib/gcc/mingw32/6.3.0/include/c++/new
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RKNESYP/lib/gcc/mingw32/6.3.0/include/c++/ext/new_allocator.h
/mnt/c/$Recycle.Bin/S-1-5-21-2436870552-2302277789-864958079-1001/$RKNESYP/msys/1.0/bin/znew
```

```
harshal@Harshal: ~ + - x
/usr/share/man/man1/newgrp.1.gz
/usr/share/man/man1/znew.1.gz
/usr/share/man/man2/_newselect.2.gz
/usr/share/man/man2/newfstatat.2.gz
/usr/share/man/man3/newlocale.3.gz
/usr/share/man/man8/newusers.8.gz
/usr/share/man/pl/man1/newgrp.1.gz
/usr/share/man/ru/man1/newgrp.1.gz
/usr/share/man/ru/man8/newusers.8.gz
/usr/share/man/sv/man1/newgrp.1.gz
/usr/share/man/zh_CN/man1/newgrp.1.gz
/usr/share/man/zh_CN/man8/newusers.8.gz
/usr/share/man/zh_TW/man1/newgrp.1.gz
/usr/share/mime/application/x-font-sunos-news.xml
/usr/share/mime/message/news.xml
/var/lib/dpkg/alternatives/newt-palette
/var/lib/dpkg/info/libnewt0.52:amd64.conffiles
/var/lib/dpkg/info/libnewt0.52:amd64.list
/var/lib/dpkg/info/libnewt0.52:amd64.md5sums
/var/lib/dpkg/info/libnewt0.52:amd64.postinst
/var/lib/dpkg/info/libnewt0.52:amd64.prem
/var/lib/dpkg/info/libnewt0.52:amd64.shlibs
/var/lib/dpkg/info/libnewt0.52:amd64.triggers
/var/lib/dpkg/info/motd-news-config.conffiles
/var/lib/dpkg/info/motd-news-config.list
/var/lib/dpkg/info/motd-news-config.md5sums
/var/lib/dpkg/info/python3-newt:amd64.list
/var/lib/dpkg/info/python3-newt:amd64.md5sums
/var/lib/dpkg/info/python3-newt:amd64.postinst
/var/lib/dpkg/info/python3-newt:amd64.prem
/var/lib/systemd/deb-systemd-helper-enabled/motd-news.timer.dsh-also
/var/lib/systemd/deb-systemd-helper-enabled/timers.target.wants/motd-news.timer
harshal@Harshal: $
```

12. find

```
harshal@Harshal:~$ find 112103095
112103095
112103095/index
112103095/new
112103095/new/index
112103095/new/file.txt
112103095/new/new
112103095/new/new/file.txt
112103095/new/new/hello.c
112103095/new/hello.c
112103095/new/index.html
112103095/a.c
112103095/index.html
harshal@Harshal:~$
```

13. df

```
harshal@Harshal:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/sdb        251G  1.5G  237G  1% /
none            3.9G  4.0K  3.9G  1% /mnt/wsl
tools           202G  172G  31G   85% /init
none            3.9G  4.0K  3.9G  1% /run
none            3.9G   0    3.9G  0% /run/lock
none            3.9G   0    3.9G  0% /run/shm
none            3.9G   0    3.9G  0% /run/user
tmpfs           3.9G   0    3.9G  0% /sys/fs/cgroup
drivers         202G  172G  31G   85% /usr/lib/wsl/drivers
lib              202G  172G  31G   85% /usr/lib/wsl/lib
drvfs           202G  172G  31G   85% /mnt/c
drvfs           127G   38G  90G   30% /mnt/d
drvfs           127G   23G  105G  19% /mnt/e
harshal@Harshal:~$ df -m
Filesystem    1M-blocks  Used Available Use% Mounted on
/dev/sdb       257007   1473   242411  1% /
none            3914     1    3914   1% /mnt/wsl
tools           206231  175273  30959   85% /init
none            3914     1    3914   1% /run
none            3914     0    3914   0% /run/lock
none            3914     0    3914   0% /run/shm
none            3914     0    3914   0% /run/user
tmpfs           3914     0    3914   0% /sys/fs/cgroup
drivers         206231  175273  30959   85% /usr/lib/wsl/drivers
lib              206231  175273  30959   85% /usr/lib/wsl/lib
drvfs           206231  175273  30959   85% /mnt/c
drvfs           130000  38183  91818   30% /mnt/d
drvfs           130000  23402  106599  19% /mnt/e
harshal@Harshal:~$
```

```
harshal@Harshal:~$ df -k
Filesystem    1K-blocks  Used Available Use% Mounted on
/dev/sdb       263174212 1507664 248228392  1% /
none            4007352     4   4007348  1% /mnt/wsl
tools           211180540 179479280 31701260  85% /init
none            4007352     4   4007348  1% /run
none            4007352     0   4007352  0% /run/lock
none            4007352     0   4007352  0% /run/shm
none            4007352     0   4007352  0% /run/user
tmpfs           4007352     0   4007352  0% /sys/fs/cgroup
drivers         211180540 179479280 31701260  85% /usr/lib/wsl/drivers
lib              211180540 179479280 31701260  85% /usr/lib/wsl/lib
drvfs           211180540 179479280 31701260  85% /mnt/c
drvfs           133119996 39098440  94021556  30% /mnt/d
drvfs           133119996 23962816 109157180  19% /mnt/e
harshal@Harshal:~$ df -T
Filesystem  Type  1K-blocks  Used Available Use% Mounted on
/dev/sdb    ext4  263174212 1507664 248228392  1% /
none        tmpfs  4007352     4   4007348  1% /mnt/wsl
tools        9p   211180540 179479568 31700972  85% /init
none        tmpfs  4007352     4   4007348  1% /run
none        tmpfs  4007352     0   4007352  0% /run/lock
none        tmpfs  4007352     0   4007352  0% /run/shm
none        tmpfs  4007352     0   4007352  0% /run/user
tmpfs        9p   4007352     0   4007352  0% /sys/fs/cgroup
drivers      9p   211180540 179479568 31700972  85% /usr/lib/wsl/drivers
lib          9p   211180540 179479568 31700972  85% /usr/lib/wsl/lib
drvfs        9p   211180540 179479568 31700972  85% /mnt/c
drvfs        9p   133119996 39098440  94021556  30% /mnt/d
drvfs        9p   133119996 23962816 109157180  19% /mnt/e
harshal@Harshal:~$
```

14. du

```
harshal@Harshal:~$ du -m
1      ./112103095/index
1      ./112103095/new/index
1      ./112103095/new/new/hello.c
1      ./112103095/new/new
1      ./112103095/new/hello.c
1      ./112103095/new
1      ./112103095/a.c
1      ./112103095
1      .
harshal@Harshal:~$ du -m /home/harshal/112103095
1      /home/harshal/112103095/index
1      /home/harshal/112103095/new/index
1      /home/harshal/112103095/new/new/hello.c
1      /home/harshal/112103095/new/new
1      /home/harshal/112103095/new/hello.c
1      /home/harshal/112103095/new
1      /home/harshal/112103095/a.c
1      /home/harshal/112103095
harshal@Harshal:~$ du -s /home/harshal/112103095
40      /home/harshal/112103095
```

```
harshal@Harshal:~$ du -k /home/harshal/112103095
4      /home/harshal/112103095/index
4      /home/harshal/112103095/new/index
4      /home/harshal/112103095/new/new/hello.c
12     /home/harshal/112103095/new/new
4      /home/harshal/112103095/new/hello.c
28     /home/harshal/112103095/new
4      /home/harshal/112103095/a.c
40      /home/harshal/112103095
harshal@Harshal:~$ du -h /home/harshal/112103095
4.0K   /home/harshal/112103095/index
4.0K   /home/harshal/112103095/new/index
4.0K   /home/harshal/112103095/new/new/hello.c
12K    /home/harshal/112103095/new/new
4.0K   /home/harshal/112103095/new/hello.c
28K    /home/harshal/112103095/new
4.0K   /home/harshal/112103095/a.c
40K    /home/harshal/112103095
harshal@Harshal:~$ █
```

15. head

```
harshal@Harshal:~/112103095$ head file
College of Engineering, Pune is known for having a vibrant campus life.

MindSpark is the annual technical festival of the college organised by the students. It is one of the biggest technical festivals in the country.

With more than 70 colleges participating, Zest, one of the biggest sports fests in the country, is the annual sports festival of CoEP.

The 88 year long tradition of the college that is Regatta, continues to draw huge crowds. The Regatta is an annual show which consists of students demonstrating the use of various boats such as kayaks, sculls, etc.

The students get a chance to showcase their cultural skills be it acting, singing or dancing in the Annual Social Gathering which is an intra-institute cultural festival. The college is also famous for its drama team as well as its 'Street play' and 'Mad Ads' team which has won many national level competitions.

harshal@Harshal:~/112103095$ file -n
Usage: file [-bcCdEhikLlNnprsSvzZ0] [--apple] [--extension] [--mime-encoding]
           [--mime-type] [-e <testname>] [-F <separator>] [-f <namefile>
           [-m <magicfiles>] [-P <parameter=value>] [--exclude-quiet]
           <file> ...
       file -C [-m <magicfiles>]
       file [--help]
harshal@Harshal:~/112103095$ file -c
cont    offset type   opcode mask   value desc
harshal@Harshal:~/112103095$ file -q
file: invalid option -- 'q'
Usage: file [-bcCdEhikLlNnprsSvzZ0] [--apple] [--extension] [--mime-encoding]
           [--mime-type] [-e <testname>] [-F <separator>] [-f <namefile>
           [-m <magicfiles>] [-P <parameter=value>] [--exclude-quiet]
           <file> ...
       file -C [-m <magicfiles>]
       file [--help]
harshal@Harshal:~/112103095$
```

16. tail

```
harshal@Harshal:~/112103095$ tail file
The students get a chance to showcase their cultural skills be it acting, singing or dancing in the Annual Social Gathering which is an intra-institute cultural festival. The college is also famous for its drama team as well as its 'Street play' and 'Mad Ads' team which has won many national level competitions.

The college magazine, Abhiyanta, is published every year, with each edition focussing on a particular department of the college.

CoEP encourages its students to cultivate many skills and develop multi-faceted personalities through these myriad activities. The College of Engineering, Pune (COEP) laid the foundation stone for Bhau Institute for Innovation, Entrepreneurship and Leadership on the auspicious day of Dassera. The institute will help students cultivate entrepreneurship qualities and support them to set up a new company till it's board is formed. Mr. Narendra Kale, founder-chairman of Kale Consultants and Mr. Sanjay Inamdar, founder of FLUCON Equipments opened the institute at the CoEP. They have donated Rs one crore each as seed money for it without expecting any return. The foundation stone was laid by renowned scientist Raghunath Mashelkar and entrepreneur Nikhil Jakatdar. Director of CoEP Anil Sahasra Buddhe welcomed the guests.

"We started the entrepreneurship course in 2007 as an elective (optional subject) for the final year students. So far, over 600 students have taken the course. Considering the response to the course, we decided to start a dedicated institute on the suggestion of F C K Ohli, chairman of board of governance of CoEP," said Narendra Kale, Founder - Chairman of Kale consultants. So far, the course has produced two companies - one deals with the waste water management and has already got contracts from various organisation, including the Pimpri-Chinchwad Municipal Corporation, while the other is a coaching class. The course will be offered as a part of the curriculum for last year and students will not have to pay anything extra for the course. "The institute will be built on 21,000 sq ft land on the COEP campus and would house an incubation centre. The Bhau building is expected to be complete in a year," said Kale.

"The incubation centre will help students during the initial stages after starting a company. When Kale and I started our companies, there was no one to guide us. Now, we want to share our experience with budding entrepreneurs. This is just like doing the duty of a big brother and that is why we have named the institute as Bhau," said Inamdar. "The institute will also run a three to six month certificate courses for budding entrepreneurs and second generation entrepreneurs who may not be CoEP students. But they will be charged for the courses," he said. "We have selected three more projects that will help the students to start their own company. Of these, one group of students has made notebook printer, second has created an instrument for bomb detection and the third one has designed a structure that won't need air conditioners but still keep the temperature inside a room relatively low." said Kale.
```

17. diff

```
harshal@Harshal:~/112103095$ ls
a.c file file1 file2 index.html new
harshal@Harshal:~/112103095$ diff file file1
1,13d0
< College of Engineering, Pune is known for having a vibrant campus life.
<
< MindSpark is the annual technical festival of the college organised by the students. It is one of the biggest technical festivals in
the country.
<
< With more than 70 colleges participating, Zest, one of the biggest sports fests in the country, is the annual sports festival of CoE
P.
<
< The 88 year long tradition of the college that is Regatta, continues to draw huge crowds. The Regatta is an annual show which consists
of students demonstrating the use of various boats such as kayaks, sculls, etc.
<
< The students get a chance to showcase their cultural skills be it acting, singing or dancing in the Annual Social Gathering which is
an intra-institute cultural festival. The college is also famous for its drama team as well as its 'Street play' and 'Mad Ads' team w
hich has won many national level competitions.
<
< The college magazine, Abhiyanta, is published every year, with each edition focussing on a particular department of the college.
<
< CoEP encourages its students to cultivate many skills and develop multi-faceted personalities through these myriad activities.
harshal@Harshal:~/112103095$
```

18. tar

```
harshal@Harshal:~/112103095$ tar -cvf newarchive.tar /home/harshal/112103095
tar: Removing leading '/' from member names
/home/harshal/112103095/
/home/harshal/112103095/file2/
/home/harshal/112103095/new/
/home/harshal/112103095/new/index/
/home/harshal/112103095/new/file.txt
/home/harshal/112103095/new/new/
/home/harshal/112103095/new/new/file.txt
/home/harshal/112103095/new/new/hello.c/
/home/harshal/112103095/new/hello.c/
/home/harshal/112103095/new/index.html
/home/harshal/112103095/file1
/home/harshal/112103095/file
tar: /home/harshal/112103095/newarchive.tar: file is the archive; not dumped
/home/harshal/112103095/a.c/
/home/harshal/112103095/index.html
harshal@Harshal:~/112103095$ ls
a.c file file1 file2 index.html new newarchive.tar
harshal@Harshal:~/112103095$
```

19. zip, unzip

```
harshal@Harshal:~/112103095$ zip new.zip /home/harshal/112103095
    adding: home/harshal/112103095/ (stored 0%)
harshal@Harshal:~/112103095$ ls
a.c file file1 file2 index.html new new.zip newarchive.tar
harshal@Harshal:~/112103095$
```

```
harshal@Harshal:~/112103095$ unzip new.zip
Archive: new.zip
      creating: home/harshal/112103095/
harshal@Harshal:~/112103095$ ls
a.c file file1 file2 home index.html new new.zip newarchive.tar
harshal@Harshal:~/112103095$
```

19. chmod

```
harshal@Harshal:~/112103095$ ls
a.c file file1 file2 index.html new newarchive.tar
harshal@Harshal:~/112103095$ ls -l
total 40
drwxr-xr-x 2 harshal harshal 4096 Jan 22 14:58 a.c
-rw-r--r-- 1 harshal harshal 3691 Jan 22 15:30 file
-rw-r--r-- 1 harshal harshal 2540 Jan 22 15:43 file1
drwxr-xr-x 2 harshal harshal 4096 Jan 22 15:43 file2
-rw-r--r-- 1 harshal harshal 0 Jan 22 15:01 index.html
drwxr-xr-x 5 harshal harshal 4096 Jan 22 15:02 new
-rw-r--r-- 1 harshal harshal 20480 Jan 22 15:46 newarchive.tar
harshal@Harshal:~/112103095$ chmod +x file
harshal@Harshal:~/112103095$ ls -l
total 40
drwxr-xr-x 2 harshal harshal 4096 Jan 22 14:58 a.c
-rwxr-xr-x 1 harshal harshal 3691 Jan 22 15:30 file
-rw-r--r-- 1 harshal harshal 2540 Jan 22 15:43 file1
drwxr-xr-x 2 harshal harshal 4096 Jan 22 15:43 file2
-rw-r--r-- 1 harshal harshal 0 Jan 22 15:01 index.html
drwxr-xr-x 5 harshal harshal 4096 Jan 22 15:02 new
-rw-r--r-- 1 harshal harshal 20480 Jan 22 15:46 newarchive.tar
harshal@Harshal:~/112103095$ chmod -311 index.html
harshal@Harshal:~/112103095$ ls -l
total 40
drwxr-xr-x 2 harshal harshal 4096 Jan 22 14:58 a.c
-rwxr-xr-x 1 harshal harshal 3691 Jan 22 15:30 file
-rw-r--r-- 1 harshal harshal 2540 Jan 22 15:43 file1
drwxr-xr-x 2 harshal harshal 4096 Jan 22 15:43 file2
-rw-r--r-- 1 harshal harshal 0 Jan 22 15:01 index.html
drwxr-xr-x 5 harshal harshal 4096 Jan 22 15:02 new
-rw-r--r-- 1 harshal harshal 20480 Jan 22 15:46 newarchive.tar
harshal@Harshal:~/112103095$
```

20. hostname

```
harshal@Harshal:~/112103095$ hostname
Harshal
```

21. ifconfig

```
harshal@Harshal:~/112103095$ whatis ifconfig
ifconfig (8)           - configure a network interface
```

```
harshal@Harshal:~/112103095$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 172.21.28.72 netmask 255.255.240.0 broadcast 172.21.31.255
        inet6 fe80::215:5dff:fedb:83f3 prefixlen 64 scopeid 0x20<link>
            ether 00:15:5d:db:83:f3 txqueuelen 1000 (Ethernet)
                RX packets 59112 bytes 77110442 (77.1 MB)
                RX errors 0 dropped 0 overruns 0 frame 0
                TX packets 30585 bytes 2166902 (2.1 MB)
                TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
            loop txqueuelen 1000 (Local Loopback)
                RX packets 0 bytes 0 (0.0 B)
                RX errors 0 dropped 0 overruns 0 frame 0
                TX packets 0 bytes 0 (0.0 B)
                TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

22. sudo

```
harshal@Harshal:~/112103095$ sudo apt install zip
[sudo] password for harshal:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
    unzip
The following NEW packages will be installed:
    unzip zip
0 upgraded, 2 newly installed, 0 to remove and 22 not upgraded.
Need to get 350 kB of archives.
After this operation, 929 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 unzip amd64 6.0-26ubuntu3.1 [174 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 zip amd64 3.0-12build2 [176 kB]
Fetched 350 kB in 18s (19.5 kB/s)
Selecting previously unselected package unzip.
(Reading database ... 28448 files and directories currently installed.)
Preparing to unpack .../unzip_6.0-26ubuntu3.1_amd64.deb ...
Unpacking unzip (6.0-26ubuntu3.1) ...
Selecting previously unselected package zip.
Preparing to unpack .../zip_3.0-12build2_amd64.deb ...
Unpacking zip (3.0-12build2) ...
Setting up unzip (6.0-26ubuntu3.1) ...
Setting up zip (3.0-12build2) ...
Processing triggers for man-db (2.10.2-1) ...
harshal@Harshal:~/112103095$
```

23. free

```
harshal@Harshal:~/112103095$ free
              total        used        free      shared  buff/cache   available
Mem:       8014708      137376     7283356          72      593976     7637136
Swap:      2097152          0     2097152
harshal@Harshal:~/112103095$ free -m
              total        used        free      shared  buff/cache   available
Mem:        7826         133        7112          0          580        7458
Swap:      2048          0        2048
harshal@Harshal:~/112103095$ free -k
              total        used        free      shared  buff/cache   available
Mem:       8014708      137132     7283600          72      593976     7637380
Swap:      2097152          0     2097152
harshal@Harshal:~/112103095$ free -b
              total        used        free      shared  buff/cache   available
Mem:     8207060992    140673024   7458156544    73728    608231424   7820427264
Swap:      2147483648          0    2147483648
harshal@Harshal:~/112103095$
```

24. watch

```
Every 2.0s: free -b                                         Harshal: Sun Jan 22 16:09:53 2023
total        used        free      shared  buff/cache   available
Mem:   8207060992  140697600  7458131968    73728   608231424  7820427264
Swap:  2147483648          0  2147483648

Every 2.0s: free -b                                         Harshal: Sun Jan 22 16:10:30 2023
total        used        free      shared  buff/cache   available
Mem:   8207060992  140836864  7457984512    73728   608239616  7820279808
Swap:  2147483648          0  2147483648
```

25. cal

```
harshal@Harshal:~/112103095$ cal
January 2023
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
29 30 31

harshal@Harshal:~/112103095$ ncal
January 2023
Su  1  8 15 22 29
Mo  2  9 16 23 30
Tu  3 10 17 24 31
We  4 11 18 25
Th  5 12 19 26
Fr  6 13 20 27
Sa  7 14 21 28
harshal@Harshal:~/112103095$
```

```
harshal@Harshal:~ x + v
harshal@Harshal:$ cal 2023
            2023
January           February           March
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
 1  2  3  4  5  6  7   1  2  3  4   1  2  3  4
 8  9 10 11 12 13 14   5  6  7  8  9 10 11   5  6  7  8  9 10 11
15 16 17 18 19 20 21   12 13 14 15 16 17 18   12 13 14 15 16 17 18
22 23 24 25 26 27 28   19 20 21 22 23 24 25   19 20 21 22 23 24 25
29 30 31              26 27 28 29 30 31       26 27 28 29 30 31

April             May                June
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
 1   1  2  3  4  5   1   1  2  3  4  5   1   2  3
 2  3  4  5  6  7  8   7  8  9 10 11 12 13   4  5  6  7  8  9 10
 9 10 11 12 13 14 15  14 15 16 17 18 19 20  11 12 13 14 15 16 17
16 17 18 19 20 21 22  21 22 23 24 25 26 27  18 19 20 21 22 23 24
23 24 25 26 27 28 29  28 29 30 31          25 26 27 28 29 30
30

July              August             September
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
 1   1  2  3  4  5   1   2  3  4  5   1   2
 2  3  4  5  6  7  8   6  7  8  9 10 11 12   3  4  5  6  7  8  9
 9 10 11 12 13 14 15  13 14 15 16 17 18 19  10 11 12 13 14 15 16
16 17 18 19 20 21 22  20 21 22 23 24 25 26  17 18 19 20 21 22 23
23 24 25 26 27 28 29  27 28 29 30 31          24 25 26 27 28 29 30
30 31

October           November            December
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
 1   1  2  3  4  5   1   2  3  4  5   1   2
 8  9 10 11 12 13 14  5  6  7  8  9 10 11  3  4  5  6  7  8  9
15 16 17 18 19 20 21  12 13 14 15 16 17 18  10 11 12 13 14 15 16
22 23 24 25 26 27 28  19 20 21 22 23 24 25  17 18 19 20 21 22 23
29 30 31          26 27 28 29 30          24 25 26 27 28 29 30
31
```

26. useradd

```
harshal@Harshal:~$ sudo useradd hack -m  
harshal@Harshal:~$ sudo passwd hack  
New password:  
Retype new password:  
passwd: password updated successfully  
harshal@Harshal:~$ ls /home/  
abhi  hack  harshal
```

27. userdel

```
harshal@Harshal:~$ ls /home/  
abhi  hack  harshal  
harshal@Harshal:~$ sudo userdel -r hack  
userdel: hack mail spool (/var/mail/hack) not found  
harshal@Harshal:~$ ls /home/  
abhi  harshal
```

28. top

```
top - 16:25:58 up 2:52, 0 users, load average: 0.00, 0.00, 0.00  
Tasks: 5 total, 1 running, 4 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 0.0 us, 0.0 sy, 0.0 ni,100.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st  
MiB Mem : 7826.9 total, 7110.6 free, 133.8 used, 582.5 buff/cache  
MiB Swap: 2048.0 total, 2048.0 free, 0.0 used. 7458.5 avail Mem  


| PID  | USER    | PR | NI | VIRT | RES  | SHR  | S | %CPU | %MEM | TIME+   | COMMAND |
|------|---------|----|----|------|------|------|---|------|------|---------|---------|
| 1    | root    | 20 | 0  | 2092 | 1400 | 1108 | S | 0.0  | 0.0  | 0:00.40 | init    |
| 1695 | root    | 20 | 0  | 2440 | 636  | 0    | S | 0.0  | 0.0  | 0:00.00 | init    |
| 1696 | root    | 20 | 0  | 2440 | 636  | 0    | S | 0.0  | 0.0  | 0:00.16 | init    |
| 1697 | harshal | 20 | 0  | 6204 | 5200 | 3480 | S | 0.0  | 0.1  | 0:00.18 | bash    |
| 1791 | harshal | 20 | 0  | 7804 | 3680 | 3076 | R | 0.0  | 0.0  | 0:00.00 | top     |


```

29. uname

```
harshal@Harshal: $ uname  
Linux  
harshal@Harshal: $ uname -a  
Linux Harshal 5.10.16.3-microsoft-standard-WSL2 #1 SMP Fri Apr 2 22:23:49 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux  
harshal@Harshal: $ uname -s  
Linux  
harshal@Harshal: $ uname -n  
Harshal  
harshal@Harshal: $ █
```

30. wget

```
harshal@Harshal: $ wget https://www.coep.org.in/sites/default/files/Academic%20Calender%202021-22-SY-UG.pdf  
--2023-01-22 16:33:27-- https://www.coep.org.in/sites/default/files/Academic%20Calender%202021-22-SY-UG.pdf  
Resolving www.coep.org.in (www.coep.org.in)... 210.212.183.5, 64:ff9b:d2d4:b705  
Connecting to www.coep.org.in (www.coep.org.in)|210.212.183.5|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 301888 (295K) [application/pdf]  
Saving to: 'Academic Calender 2021-22-SY-UG.pdf'  
  
Academic Calender 2021-22-SY-UG.pdf 100%[=====] 294.81K 9.53KB/s in 31s  
  
2023-01-22 16:34:00 (9.53 KB/s) - 'Academic Calender 2021-22-SY-UG.pdf' saved [301888/301888]
```

31. man

```
harshal@Harshal:~$ man sudo
```

```
SUDO(8)                               BSD System Manager's Manual                               SUDO(8)

NAME
    sudo, sudoedit - execute a command as another user

SYNOPSIS
    sudo -h | -k | -v
    sudo -v [-ABknS] [-g group] [-h host] [-p prompt] [-u user]
    sudo -l [-ABknS] [-g group] [-h host] [-p prompt] [-U user] [-u user] [command]
    sudo [-ABbEHnPS] [-C num] [-D directory] [-g group] [-h host] [-p prompt] [-R directory] [-r role] [-t type] [-T timeout] [-u user]
          [-VAR=value] [-i] [-s] [command]
    sudoedit [-ABknS] [-C num] [-D directory] [-g group] [-h host] [-p prompt] [-R directory] [-r role] [-t type] [-T timeout] [-u user]
          [file ...]

DESCRIPTION
    sudo allows a permitted user to execute a command as the superuser or another user, as specified by the security policy. The invoking user's real (not effective) user-ID is used to determine the user name with which to query the security policy.

    sudo supports a plugin architecture for security policies, auditing, and input/output logging. Third parties can develop and distribute their own plugins to work seamlessly with the sudo front-end. The default security policy is sudoers, which is configured via the file /etc/sudoers, or via LDAP. See the Plugins section for more information.

    The security policy determines what privileges, if any, a user has to run sudo. The policy may require that users authenticate themselves with a password or another authentication mechanism. If authentication is required, sudo will exit if the user's password is not entered within a configurable time limit. This limit is policy-specific; the default password prompt timeout for the sudoers security policy is 0 minutes.

    Security policies may support credential caching to allow the user to run sudo again for a period of time without requiring authentication. By default, the sudoers policy caches credentials on a per-terminal basis for 15 minutes. See the timestamp_type and timestamp_timeout options in sudoers(5) for more information. By running sudo with the -v option, a user can update the cached credentials without running a command.

    On systems where sudo is the primary method of gaining superuser privileges, it is imperative to avoid syntax errors in the security policy configuration files. For the default security policy, sudoers(5), changes to the configuration files should be made using the visudo(8) utility which will ensure that no syntax errors are introduced.

    When invoked as sudoedit, the -e option (described below), is implied.

Manual page sudo(8) line 1 (press h for help or q to quit)
```

32. echo

```
harshal@Harshal:~$ echo ThisLinuxOperatingSystem.
ThisLinuxOperatingSystem.
```

33. whoami

```
harshal@Harshal:~$ whoami
harshal
harshal@Harshal:~$
```

34. netstat

```
harshal@Harshal: $ whatis netstat
netstat (8)           - Print network connections, routing tables, interface statistics, masquerade connections, and multicast memberships
harshal@Harshal: $ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type      State      I-Node Path
harshal@Harshal: $
```

35. less

```
Every 2.0s: free -b                                Harshal: Sun Jan 22 16:10:30 2023

          total        used        free      shared  buff/cache   available
Mem:     8207060992  140836864  7457984512          73728   608239616  7820279808
Swap:    2147483648          0  2147483648
```

harshal@Harshal:~/11210309\$

College of Engineering, Pune is known for having a vibrant campus life.

MindSpark is the annual technical festival of the college organised by the students. It is one of the biggest technical festivals in the country.

With more than 70 colleges participating, Zest, one of the biggest sports fests in the country, is the annual sports festival of CoEP.

The 88 year long tradition of the college that is Regatta, continues to draw huge crowds. The Regatta is an annual show which consists of students demonstrating the use of various boats such as kayaks, sculls, etc.

The students get a chance to showcase their cultural skills be it acting, singing or dancing in the Annual Social Gathering which is an intra-institute cultural festival. The college is also famous for its drama team as well as its 'Street play' and 'Mad Ads' team which has won many national level competitions.

The college magazine, Abhiyanta, is published every year, with each edition focussing on a particular department of the college.

CoEP encourages its students to cultivate many skills and develop multi-faceted personalities through these myriad activities. The College of Engineering, Pune (COEP) laid the foundation stone for Bhau Institute for Innovation, Entrepreneurship and Leadership on the auspicious day of Dassera. The institute will help students cultivate entrepreneurship qualities and support them to set up a new company till its board is formed. Mr. Narendra Kale, founder-chairman of Kale Consultants and Mr. Sanjay Inamdar, founder of FLUCON Equipments opened the institute at the CoEP. They have donated Rs one crore each as seed money for it without expecting any return. The foundation stone was laid by renowned scientist Raghunath Mashelkar and entrepreneur Nikhil Jakatdar. Director of CoEP Anil Sahasrabudhe welcomed the guests.

"We started the entrepreneurship course in 2007 as an elective (optional subject) for the final year students. So far, over 600 students have taken the course. Considering the response to the course, we decided to start a dedicated institute on the suggestion of F C Kohli, chairman of board of governance of CoEP," said Narendra Kale, Founder - Chairman of Kale consultants. So far, the course has produced two companies - one deals with the waste water management and has already got contracts from various organisation, including the Pimpri-Chinchwad Municipal Corporation, while the other is a coaching class. The course will be offered as a part of the curriculum for last year and students will not have to pay anything extra for the course. "The institute will be built on 21,000 sq ft land on the COEP campus and would house an incubation centre. The Bhau building is expected to be complete in a year," said Kale.

"The incubation centre will help students during the initial stages after starting a company. When Kale and I started our companies, there was no one to guide us. Now, we want to share our experience with budding entrepreneurs. This is just like doing the duty of a big brother and that is why we have named the institute as Bhau," said Inamdar. "The institute will also run a three to six month certificate courses for budding entrepreneurs and second generation entrepreneurs who may not be CoEP students. But they will be charged for the courses," he said. "We have selected three more projects that will help the students to start their own company. Of these, one group of students has made notebook printer, second has created an instrument for bomb detection and the third one has designed a structure that won't need air conditioners but still keep the temp

29°C Sunny ENG IN 19-01-2023 11:44

36. ping

```
harshal@Harshal:~/11210309$ ping www.coep.org.in
PING www.coep.org.in (210.212.183.5) 56(84) bytes of data.
64 bytes from coop.org.in (210.212.183.5): icmp_seq=1 ttl=45 time=130 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=2 ttl=45 time=50.4 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=3 ttl=45 time=71.8 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=4 ttl=45 time=69.9 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=5 ttl=45 time=68.2 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=6 ttl=45 time=66.2 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=7 ttl=45 time=70.1 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=8 ttl=45 time=63.7 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=9 ttl=45 time=62.9 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=10 ttl=45 time=58.3 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=11 ttl=45 time=303 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=12 ttl=45 time=55.7 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=13 ttl=45 time=76.1 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=14 ttl=45 time=71.0 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=15 ttl=45 time=79.0 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=16 ttl=45 time=314 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=17 ttl=45 time=68.5 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=18 ttl=45 time=69.7 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=19 ttl=45 time=109 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=20 ttl=45 time=52.6 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=21 ttl=45 time=68.0 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=22 ttl=45 time=58.9 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=23 ttl=45 time=162 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=24 ttl=45 time=53.2 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=25 ttl=45 time=76.6 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=26 ttl=45 time=52.3 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=27 ttl=45 time=70.6 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=28 ttl=45 time=188 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=29 ttl=45 time=208 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=30 ttl=45 time=163 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=31 ttl=45 time=135 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=32 ttl=45 time=62.9 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=33 ttl=45 time=263 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=34 ttl=45 time=305 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=35 ttl=45 time=259 ms
64 bytes from coop.org.in (210.212.183.5): icmp_seq=36 ttl=45 time=265 ms
```

37. grep

```
harshal@Harshal:~/11210309$ grep college file
MindSpark is the annual technical festival of the college organised by the students. It is one of the biggest technical festivals in the country.

With more than 70 colleges participating, Zest, one of the biggest sports fests in the country, is the annual sports festival of CoEP.

The 88 year long tradition of the college that is Regatta, continues to draw huge crowds. The Regatta is an annual show which consists of students demonstrating the use of various boats such as kayaks, sculls, etc.

The students get a chance to showcase their cultural skills be it acting, singing or dancing in the Annual Social Gathering which is an intra-institute cultural festival. The college is also famous for its drama team as well as its 'Street play' and 'Mad Ads' team which has won many national level competitions.

The college magazine, Abhiyanta, is published every year, with each edition focussing on a particular department of the college.

harshal@Harshal:~/11210309$ grep "technical festival" file
MindSpark is the annual technical festival of the college organised by the students. It is one of the biggest technical festivals in the country.

harshal@Harshal:~/11210309$ grep -i Festival file
MindSpark is the annual technical festival of the college organised by the students. It is one of the biggest technical festivals in the country.

With more than 70 colleges participating, Zest, one of the biggest sports fests in the country, is the annual sports festival of CoEP.

The students get a chance to showcase their cultural skills be it acting, singing or dancing in the Annual Social Gathering which is an intra-institute cultural festival. The college is also famous for its drama team as well as its 'Street play' and 'Mad Ads' team which has won many national level competitions.

harshal@Harshal:~/11210309$
```

38. Apt-get

```
harshal@Harshal:~$ apt-get
apt 2.4.8 (amd64)
Usage: apt-get [options] command
      apt-get [options] install|remove pkg1 [pkg2 ...]
      apt-get [options] source pkg1 [pkg2 ...]

apt-get is a command line interface for retrieval of packages
and information about them from authenticated sources and
for installation, upgrade and removal of packages together
with their dependencies.

Most used commands:
  update - Retrieve new lists of packages
  upgrade - Perform an upgrade
  install - Install new packages (pkg is libc6 not libc6.deb)
  reinstall - Reinstall packages (pkg is libc6 not libc6.deb)
  remove - Remove packages
  purge - Remove packages and config files
  autoremove - Remove automatically all unused packages
  dist-upgrade - Distribution upgrade, see apt-get(8)
  dselect-upgrade - Follow dselect selections
  build-dep - Configure build-dependencies for source packages
  satisfy - Satisfy dependency strings
  clean - Erase downloaded archive files
  autoclean - Erase old downloaded archive files
  check - Verify that there are no broken dependencies
  source - Download source archives
  download - Download the binary package into the current directory
  changelog - Download and display the changelog for the given package

See apt-get(8) for more information about the available commands.
Configuration options and syntax is detailed in apt.conf(5).
Information about how to configure sources can be found in sources.list(5).
Package and version choices can be expressed via apt_preferences(5).
Security details are available in apt-secure(8).

This APT has Super Cow Powers.

harshal@Harshal:~$
```

39. history

```
harshal@Harshal:~/112103095$ history
1  pwd
2  sudo apt install cmatrix
3  sudo apt-get install cmatrix
4  clear
5  sudo apt-get update
6  sudo apt install cmatrix
7  clear
8  sudo apt install cmatrix
9  pwd
10 sudo apt install cmatrix
11 sudo apt install gcc
12 sudo apt install gcc
13 sudo apt-get update
14 sudo apt install gcc
15 clear
16 sudo
17 clear
18 ls
19 clear
20 pwd
21 mkdir 112103095
22 cd 112103095
23 pwd
24 ls
25 cat add.c
26 cat > add.c
27 cat add.c
28 ls
29 mkdir new
30 cp add.c /home/harshal/112103095/new
31 cd new
32 ls
33 cd ..
```

```
302 ping www.coep.ac.in
303 ping www.coep.org.in
304 clear
305 history
harshal@Harshal:~/112103095$ history -c
harshal@Harshal:~/112103095$ history
1 history
harshal@Harshal:~/112103095$ █
```

40. exit

```
harshal@Harshal:~/112103095$ exit
```