

OS Assignment No. :1

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Problem 1: Read the instructions carefully and answer accordingly. If there is any need to insert some data, then do that as well.

Answers:

a) Navigate and List :

- `cd ~`
- `ls`
- `mkdir -p LinuxAssignment`
- `cd LinuxAssignment`

```
cdac@Akash: ~/LinuxAssignrr × + v
cdac@Akash:~$ pwd
/home/cdac
cdac@Akash:~$ cd ~
cdac@Akash:~$ mkdir -p LinuxAssignment
cdac@Akash:~$ cd LinuxAssignment
cdac@Akash:~/LinuxAssignment$ ls
cdac@Akash:~/LinuxAssignment$
```

b) File Management:

- `touch file1.txt`
- `cat file1.txt`

```
cdac@Akash: ~/LinuxAssignrr × + v
cdac@Akash:~$ pwd
/home/cdac
cdac@Akash:~$ cd ~
cdac@Akash:~$ mkdir -p LinuxAssignment
cdac@Akash:~$ cd LinuxAssignment
cdac@Akash:~/LinuxAssignment$ ls
cdac@Akash:~/LinuxAssignment$ touch file1.txt
cdac@Akash:~/LinuxAssignment$ ls
file1.txt
cdac@Akash:~/LinuxAssignment$ cat file1.txt
cdac@Akash:~/LinuxAssignment$ |
```

c) Directory Management:

- `mkdir docs`

```
cdac@Akash: ~/LinuxAssignnr × + v
cdac@Akash:~$ pwd
/home/cdac
cdac@Akash:~$ cd ~
cdac@Akash:~$ mkdir -p LinuxAssignment
cdac@Akash:~$ cd LinuxAssignment
cdac@Akash:~/LinuxAssignment$ ls
cdac@Akash:~/LinuxAssignment$ touch file1.txt
cdac@Akash:~/LinuxAssignment$ ls
file1.txt
cdac@Akash:~/LinuxAssignment$ cat file1.txt
cdac@Akash:~/LinuxAssignment$ mkdir docs
cdac@Akash:~/LinuxAssignment$ ls
docs  file1.txt
cdac@Akash:~/LinuxAssignment$ |
```

d) Copy and Move Files:

- cp file1.txt docs/file2.txt

```
cdac@Akash: ~/LinuxAssignnr × + v
cdac@Akash:~$ pwd
/home/cdac
cdac@Akash:~$ cd ~
cdac@Akash:~$ mkdir -p LinuxAssignment
cdac@Akash:~$ cd LinuxAssignment
cdac@Akash:~/LinuxAssignment$ ls
cdac@Akash:~/LinuxAssignment$ touch file1.txt
cdac@Akash:~/LinuxAssignment$ ls
file1.txt
cdac@Akash:~/LinuxAssignment$ cat file1.txt
cdac@Akash:~/LinuxAssignment$ mkdir docs
cdac@Akash:~/LinuxAssignment$ ls
docs  file1.txt
cdac@Akash:~/LinuxAssignment$ cp file1.txt docs/file2.txt
cdac@Akash:~/LinuxAssignment$ ls -a
.  .. docs  file1.txt
cdac@Akash:~/LinuxAssignment$ ls
docs  file1.txt
cdac@Akash:~/LinuxAssignment$ cd docs
cdac@Akash:~/LinuxAssignment/docs$ ls
file2.txt
cdac@Akash:~/LinuxAssignment/docs$ |
```

e) Permissions and Ownership:

- chmod u=rwx,o=r file2.txt
- ls -l file2.txt

```
cdac@Akash: ~/LinuxAssignnr × + v
cdac@Akash:~$ ls
LinuxAssignment  cdac  snap
cdac@Akash:~$ cd LinuxAssignment
cdac@Akash:~/LinuxAssignment$ ls
docs
cdac@Akash:~/LinuxAssignment$ cd docs
cdac@Akash:~/LinuxAssignment/docs$ ls
LinuxAssignment  file2.txt
cdac@Akash:~/LinuxAssignment/docs$ chmod u=rwx,o=r file2.txt
cdac@Akash:~/LinuxAssignment/docs$ ls -l file2.txt
-rwxr--r-- 1 cdac cdac 14 Aug 19 02:52 file2.txt
cdac@Akash:~/LinuxAssignment/docs$ |
```

f) Final Checklist:

- ls LinuxAssignment
- ls /

```
cdac@Akash: ~/LinuxAssignnr × + v
cdac@Akash:~$ ls
LinuxAssignment cdac snap
cdac@Akash:~$ cd LinuxAssignment
cdac@Akash:~/LinuxAssignment$ ls
docs
cdac@Akash:~/LinuxAssignment$ cd docs
cdac@Akash:~/LinuxAssignment/docs$ ls
LinuxAssignment file2.txt
cdac@Akash:~/LinuxAssignment/docs$ chmod u=rwx,o=r file2.txt
cdac@Akash:~/LinuxAssignment/docs$ ls -l file2.txt
-rwxr--r-- 1 cdac cdac 14 Aug 19 02:52 file2.txt
cdac@Akash:~/LinuxAssignment/docs$ ls LinuxAssignment
LinuxAssignment
cdac@Akash:~/LinuxAssignment/docs$ ls /
bin          dev  init          lib64      mnt  root  sbin.usr-is-merged  sys  var
bin.usr-is-merged  etc  lib          lost+found  opt  run  snap                tmp
boot         home lib.usr-is-merged  media      proc  sbin  srv                 usr
cdac@Akash:~/LinuxAssignment/docs$ |
```

g) File Searching:

a)

- find . -name "*.txt" or ls *.txt

```
cdac@Akash: ~/LinuxAssignnr × + v
cdac@Akash:~$ ls
LinuxAssignment cdac snap
cdac@Akash:~$ cd LinuxAssignment
cdac@Akash:~/LinuxAssignment$ ls
docs
cdac@Akash:~/LinuxAssignment$ cd docs
cdac@Akash:~/LinuxAssignment/docs$ ls
LinuxAssignment file2.txt
cdac@Akash:~/LinuxAssignment/docs$ chmod u=rwx,o=r file2.txt
cdac@Akash:~/LinuxAssignment/docs$ ls -l file2.txt
-rwxr--r-- 1 cdac cdac 14 Aug 19 02:52 file2.txt
cdac@Akash:~/LinuxAssignment/docs$ ls LinuxAssignment
LinuxAssignment
cdac@Akash:~/LinuxAssignment/docs$ ls /
bin          dev  init          lib64      mnt  root  sbin.usr-is-merged  sys  var
bin.usr-is-merged  etc  lib          lost+found  opt  run  snap                tmp
boot         home lib.usr-is-merged  media      proc  sbin  srv                 usr
cdac@Akash:~/LinuxAssignment/docs$ *.txt
file2.txt: command not found
cdac@Akash:~/LinuxAssignment/docs$ cat *.txt
hello world!
cdac@Akash:~/LinuxAssignment/docs$ ls *.txt
file2.txt
cdac@Akash:~/LinuxAssignment/docs$ find . -name "*.txt"
./file2.txt
cdac@Akash:~/LinuxAssignment/docs$
```

b) grep "html" file2.txt

```

cdac@Akash: ~/LinuxAssignrr x + v
cdac@Akash:~/LinuxAssignment/docs$ ls
LinuxAssignment  file2.txt
cdac@Akash:~/LinuxAssignment/docs$ cat file2.txt
hello world!
java
html
c++
css
Python
cdac@Akash:~/LinuxAssignment/docs$ grep "html" file2.txt
html
cdac@Akash:~/LinuxAssignment/docs$ |

```

h) System Information:

- date

```

cdac@Akash: ~/LinuxAssignrr x + v
cdac@Akash:~/LinuxAssignment/docs$ date
Tue Aug 19 13:12:32 UTC 2025
cdac@Akash:~/LinuxAssignment/docs$ |

```

i) Networking:

- hostname -I

```
cdac@Akash:~$ 182.15.70.180
```

- ping google.com

```

cdac@Akash: ~ x + v
cdac@Akash:~$ ls
LinuxAssignment  cdac  snap
cdac@Akash:~$ ping google.com
PING google.com (172.217.24.238) 56(84) bytes of data.

```

j) File Compression: a)

- zip -r docs.zip docs

```

cdac@Akash: ~/LinuxAssignrr x + v
cdac@Akash:~$ cd LinuxAssignment
cdac@Akash:~/LinuxAssignment$ touch docs1
cdac@Akash:~/LinuxAssignment$ zip -r docs.zip docs1
adding: docs1 (stored 0%)
cdac@Akash:~/LinuxAssignment$ ls -I
ls: option requires an argument -- 'I'
Try 'ls --help' for more information.
cdac@Akash:~/LinuxAssignment$ ls -l
total 8
drwxr-xr-x 2 cdac cdac 4096 Aug 19 03:28 docs
-rw-r--r-- 1 cdac cdac 160 Aug 19 13:56 docs.zip
-rw-r--r-- 1 cdac cdac 0 Aug 19 13:55 docs1
cdac@Akash:~/LinuxAssignment$ |

```

b)

- `unzip docs.zip -d docs`

```
cdac@Akash: ~/LinuxAssignnr × + v
cdac@Akash:~/LinuxAssignment$ ls
docs docs.zip docs1
cdac@Akash:~/LinuxAssignment$ unzip docs.zip -d docs
Archive: docs.zip
  extracting: docs/docs1
cdac@Akash:~/LinuxAssignment$
```

k) File Editing: a)

- `vi file1.txt`
- `cat file1.txt`

```
cdac@Akash: ~/LinuxAssignnr × + v
cdac@Akash:~/LinuxAssignment$ ls
docs docs.zip docs1
cdac@Akash:~/LinuxAssignment$ unzip docs.zip -d docs
Archive: docs.zip
  extracting: docs/docs1
cdac@Akash:~/LinuxAssignment$ vi file1.txt
cdac@Akash:~/LinuxAssignment$ cat file1.txt
Hello, this is my first file.
Learning Linux using vi editor.
```

b)

- `sed -i 's/c++/spring/g' file2.txt`
- `cat file2.txt`

```
cdac@Akash:~/LinuxAssignment/docs$ sed -i 's/c++/spring/g' file2.txt
cdac@Akash:~/LinuxAssignment/docs$ cat file2.txt
hellow world!
java
html
spring
css
Python
c#
cdac@Akash:~/LinuxAssignment/docs$ |
```

Problem 2: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

a)

- head -n 10 data.txt

```
cdac@Akash:~$ ls
LinuxAssignment cdac data.txt snap
cdac@Akash:~$ head -n 10 data.txt
java programming
c language
c++ oops
linux is os
python
html
css style add
JavaScript
SpringBoot
c#
cdac@Akash:~$
```

b)

- tail -n 5 data.txt

```
cdac@Akash:~$ ls
LinuxAssignment cdac data.txt snap
cdac@Akash:~$ head -n 10 data.txt
java programming
c language
c++ oops
linux is os
python
html
css style add
JavaScript
SpringBoot
c#
cdac@Akash:~$ tail -n 5 data.txt
css style add
JavaScript
SpringBoot
c#
React js
cdac@Akash:~$ |
```

c)

- head -n 15 numbers.txt

```
cdac@Akash:~$ head -n 15 numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
cdac@Akash:~$ |
```

d)

- `tail -n -3 numbers.txt`

```
cdac@Akash: ~  
cdac@Akash:~$ ls  
LinuxAssignment cdac data.txt numbers.txt snap  
cdac@Akash:~$ tail -n -3 numbers.txt  
13  
14  
15  
cdac@Akash:~$ |
```

e)

- `tr 'a-z' 'A-Z' < input.txt > output.txt`

```
cdac@Akash: ~  
cdac@Akash:~$ ls  
LinuxAssignment cdac data.txt input.txt numbers.txt output.txt snap  
cdac@Akash:~$ cat input.txt  
java  
c  
c++  
javascript  
web development  
cdac@Akash:~$ tr 'a-z' 'A-Z' < input.txt > output.txt  
cdac@Akash:~$ cat output.txt  
JAVA  
C  
C++  
JAVASCRIPT  
WEB DEVELOPMENT  
cdac@Akash:~$ |
```

f)

- `sort duplicate.txt | uniq`

```
cdac@Akash: ~  
cdac@Akash:~$ ls  
LinuxAssignment cdac data.txt duplicate.txt input.txt numbers.txt output.txt snap  
cdac@Akash:~$ cat duplicate.txt  
java  
c++  
c  
c++  
Python  
linux  
java  
oops  
java  
Python  
linux  
oops  
C++  
cdac@Akash:~$ uniq duplicate.txt  
java  
c++  
c  
c++  
Python  
linux  
java  
oops  
java  
Python  
linux  
oops  
C++  
cdac@Akash:~$ sort duplicate.txt | uniq  
C++  
Python  
c  
c++  
java  
linux  
oops  
cdac@Akash:~$ |
```

- `cat >> fruits.txt`
- `cat fruits.txt`
- `sort fruits.txt | uniq -c`

```
cdac@Akash: ~  
cdac@Akash:~$ ls  
LinuxAssignment cdac data.txt duplicate.txt fruits.txt input.txt numbers.txt output.txt snap  
cdac@Akash:~$ sort fruits.txt | uniq -c  
  1 Banana  
  1 Grapes  
  1 Guava  
  1 Kiwi  
  1 Orange  
  1 apple  
  1 mango  
cdac@Akash:~$ cat fruits.txt  
apple  
Orange  
mango  
Grapes  
Banana  
Guava  
Kiwi  
cdac@Akash:~$ |
```