CDAC MUMBAI

Concepts of Operating System

Assignment 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.

a) Navigate and List:

a. Start by navigating to your home directory and list its contents. Then, move into a

directory named "LinuxAssignment" if it exists; otherwise, create it.

cdac@LAPTOP-CGNJ1VVH:~$ pwd

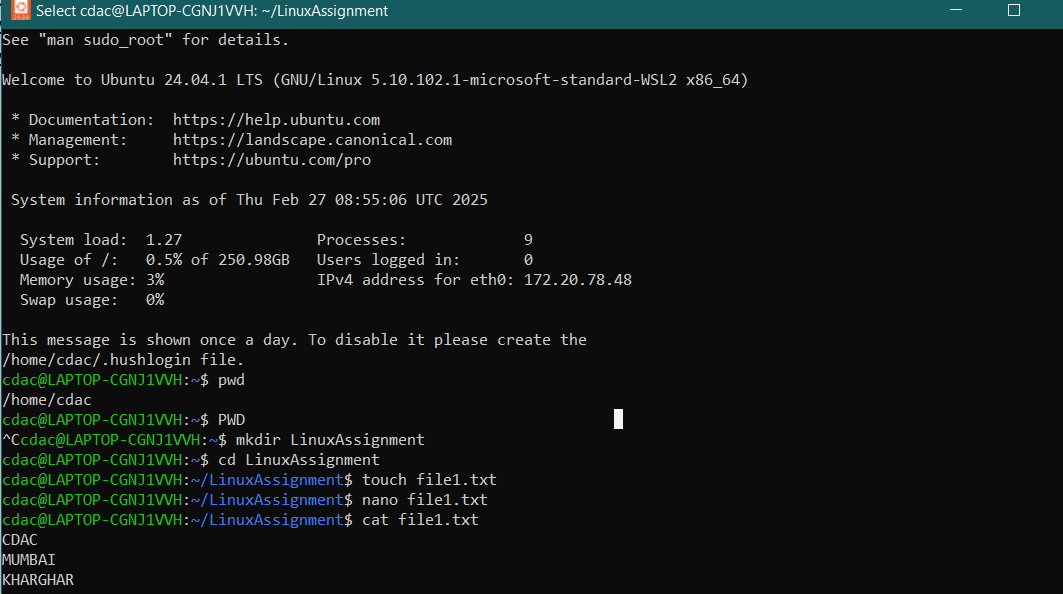
/home/cdac

cdac@LAPTOP-CGNJ1VVH:~$ PWD

cdac@LAPTOP-CGNJ1VVH:~$ mkdir LinuxAssignment

b) File Management:

a. Inside the "LinuxAssignment" directory, create a new file named "file1.txt". Display its contents.



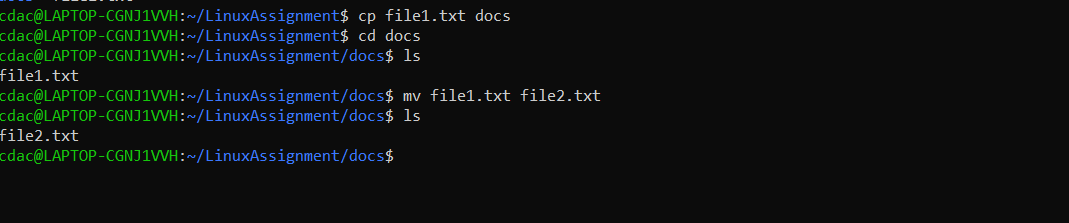
c) Directory Management:

a. Create a new directory named "docs" inside the "LinuxAssignment" directory.



d) Copy and Move Files:

a. Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".



e) Permissions and Ownership:

a. Change the permissions of "file2.txt" to allow read, write, and execute permissions for the owner and only read permissions for others. Then, change the owner of "file2.txt" to the current user.

cdac@LAPTOP-CGNJ1VVH:~/LinuxAssignment/docs$ chmod 704 file2.txt

cdac@LAPTOP-CGNJ1VVH:~/LinuxAssignment/docs$ ls -l

total 4

-rwx---r-- 1 cdac cdac 22 Feb 27 12:43 file2.txt

cdac@LAPTOP-CGNJ1VVH:~/LinuxAssignment/docs$ cd ..

cdac@LAPTOP-CGNJ1VVH:~/LinuxAssignment$ sudo adduser puja

[sudo] password for cdac:

info: Adding user `puja' ...

info: Selecting UID/GID from range 1000 to 59999 ...

info: Adding new group `puja' (1001) ...

info: Adding new user `puja' (1001) with group `puja (1001)' ...

info: Creating home directory `/home/puja' ...

info: Copying files from `/etc/skel' ...

New password:

Retype new password:

passwd: password updated successfully

Changing the user information for puja

Enter the new value, or press ENTER for the default

Full Name []: puja dadu shingare

Room Number []: 1

Work Phone []: 7558452385

Home Phone []: 9960444693

Other []:

Is the information correct? [Y/n] y

info: Adding new user `puja' to supplemental / extra groups `users' ...

info: Adding user `puja' to group `users' ...

cdac@LAPTOP-CGNJ1VVH:~/LinuxAssignment$ su puja

Password:

puja@LAPTOP-CGNJ1VVH:/home/cdac/LinuxAssignment$ ls

docs file1.txt

puja@LAPTOP-CGNJ1VVH:/home/cdac/LinuxAssignment$ cd

puja@LAPTOP-CGNJ1VVH:~$ chown file2.txt

chown: missing operand after ‘file2.txt’

Try 'chown --help' for more information.

puja@LAPTOP-CGNJ1VVH:~$ chown file2.txt puja

chown: invalid user: ‘file2.txt’

puja@LAPTOP-CGNJ1VVH:~$ chown puja file2.txt

chown: cannot access 'file2.txt': No such file or directory

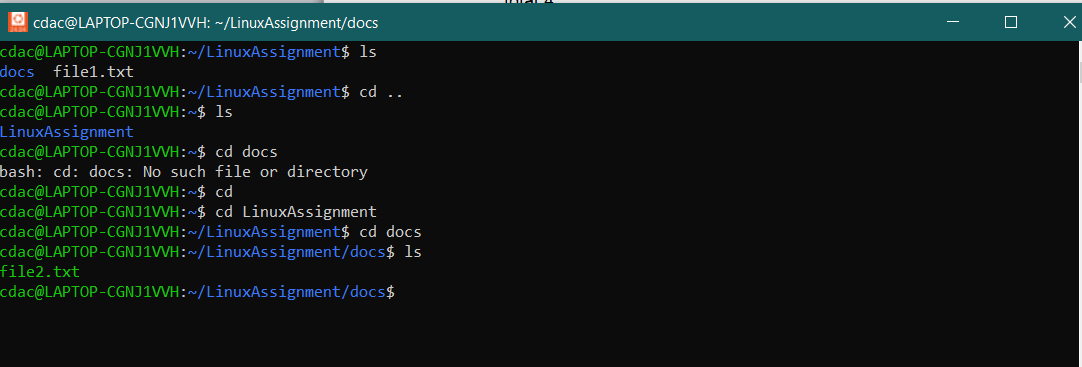
puja@LAPTOP-CGNJ1VVH:~$ mv file2.txt puja

mv: cannot stat 'file2.txt': No such file or directory

puja@LAPTOP-CGNJ1VVH:~$

f) Final Checklist:

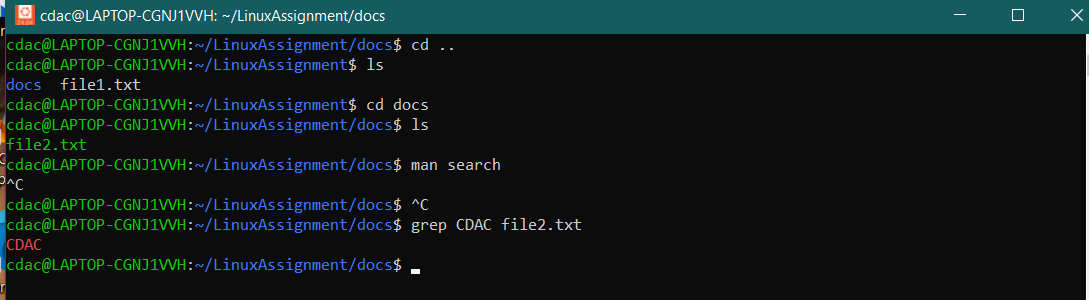
a. Finally, list the contents of the "LinuxAssignment" directory and the root directory to ensure that all operations were performed correctly.



g) File Searching:

a. Search for all files with the extension ".txt" in the current directory and its subdirectories.

b. Display lines containing a specific word in a file (provide a file name and the specific word to search).



h) System Information:

a. Display the current system date and time.



i) Networking:

a. Display the IP address of the system.

b. Ping a remote server to check connectivity (provide a remote server address to ping).

cdac@LAPTOP-CGNJ1VVH:~/LinuxAssignment/docs**$ ifconfig**

eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500

inet 172.20.78.48 netmask 255.255.240.0 broadcast 172.20.79.255

inet6 fe80::215:5dff:fe89:b108 prefixlen 64 scopeid 0x20<link>zip

ether 00:15:5d:89:b1:08 txqueuelen 1000 (Ethernet)

RX packets 323 bytes 230861 (230.8 KB)

RX errors 0 dropped 0 overruns 0 frame 0

TX packets 94 bytes 6585 (6.5 KB)

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

cdac@LAPTOP-CGNJ1VVH:~/LinuxAssignment/docs$ man ping

cdac@LAPTOP-CGNJ1VVH:~/LinuxAssignment/docs$ **ping 172.20.78.48**

PING 172.20.78.48 (172.20.78.48) 56(84) bytes of data.

64 bytes from 172.20.78.48: icmp\_seq=1 ttl=64 time=92.9 ms

64 bytes from 172.20.78.48: icmp\_seq=2 ttl=64 time=0.031 ms

64 bytes from 172.20.78.48: icmp\_seq=3 ttl=64 time=0.032 ms

64 bytes from 172.20.78.48: icmp\_seq=4 ttl=64 time=0.050 ms

64 bytes from 172.20.78.48: icmp\_seq=5 ttl=64 time=0.051 ms

64 bytes from 172.20.78.48: icmp\_seq=6 ttl=64 time=0.041 ms

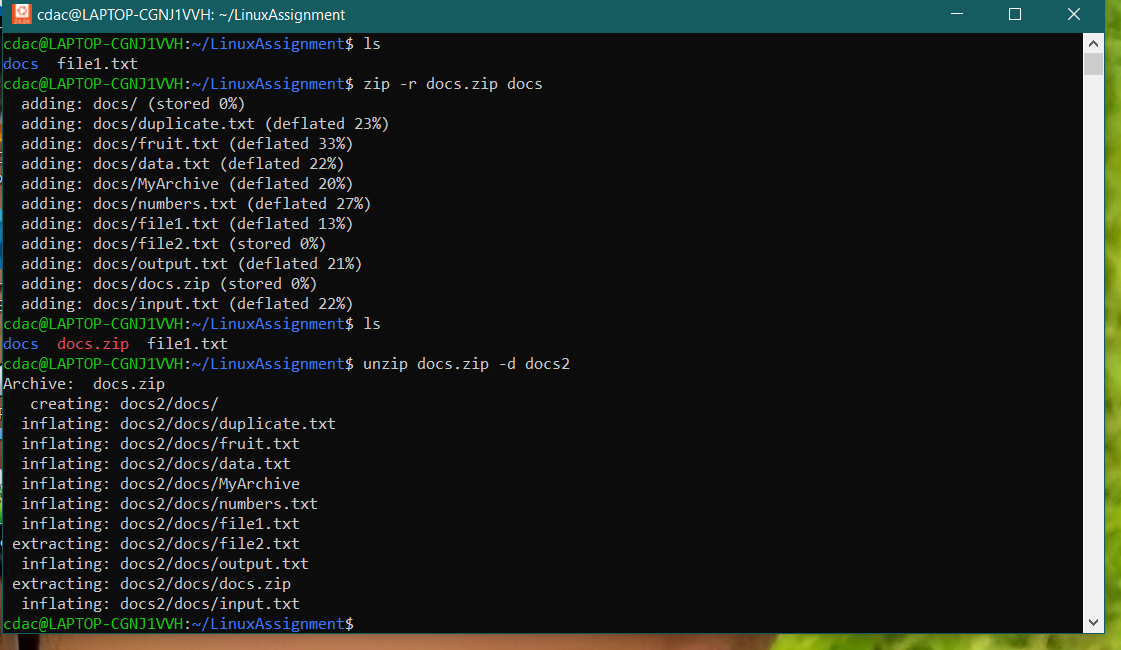
64 bytes from 172.20.78.48: icmp\_seq=7 ttl=64 time=0.033 ms

64 bytes from 172.20.78.48: icmp\_seq=8 ttl=64 time=0.03

j) File Compression:

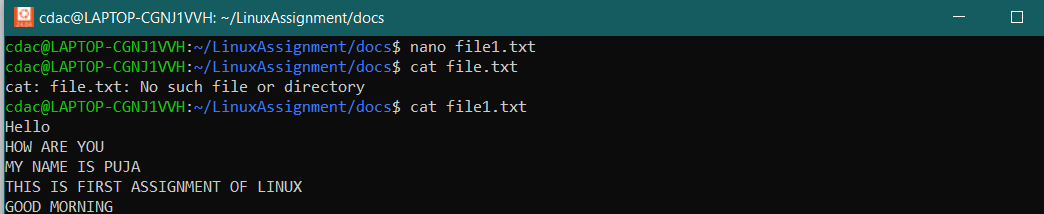
a. Compress the "docs" directory into a zip file.

b. Extract the contents of the zip file into a new directory.



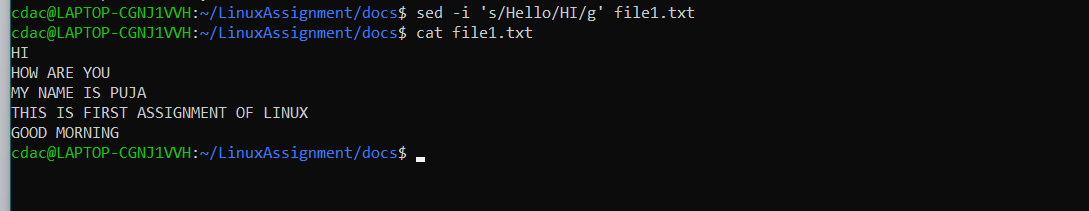
k) File Editing:

a. Open the "file1.txt" file in a text editor and add some text to it.



b. Replace a specific word in the "file1.txt" file with another word (provide the original

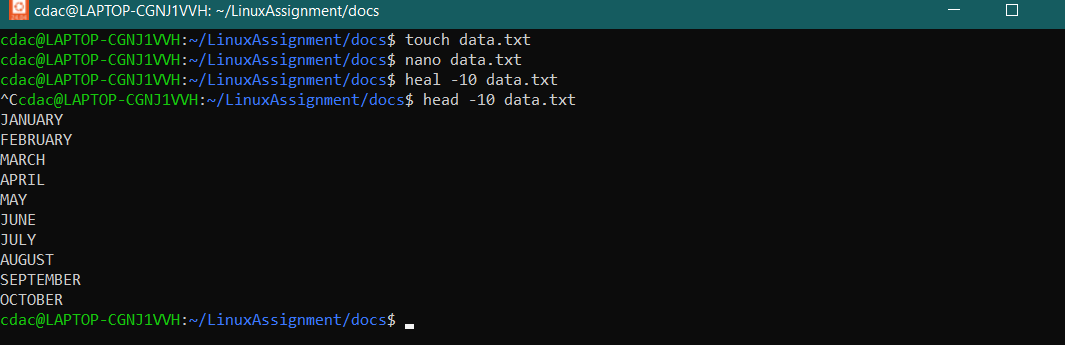
word and the word to replace it with).



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

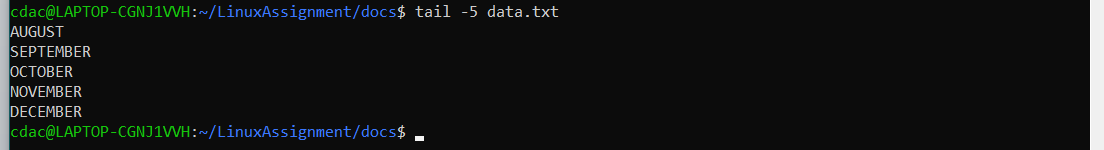
a. Suppose you have a file named "data.txt" containing important information. Display the

first 10 lines of this file to quickly glance at its contents using a command.



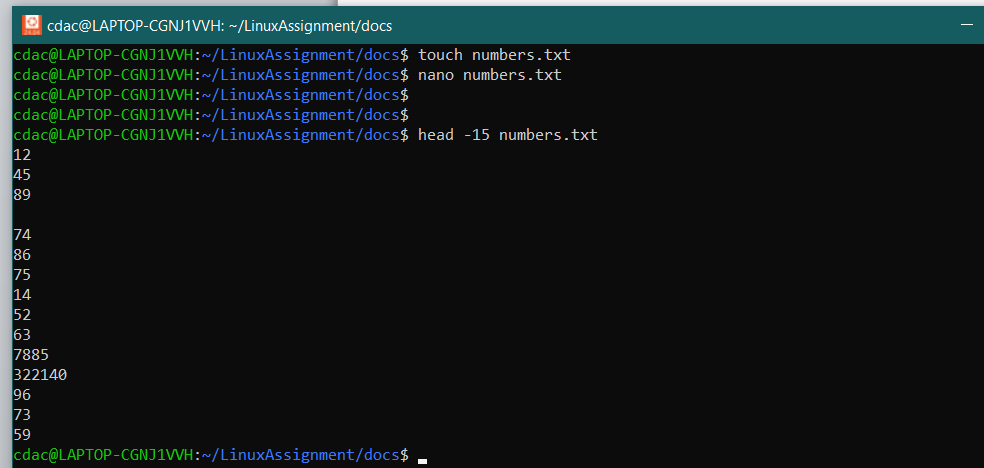
b. Now, to check the end of the file for any recent additions, display the last 5 lines of

"data.txt" using another command.

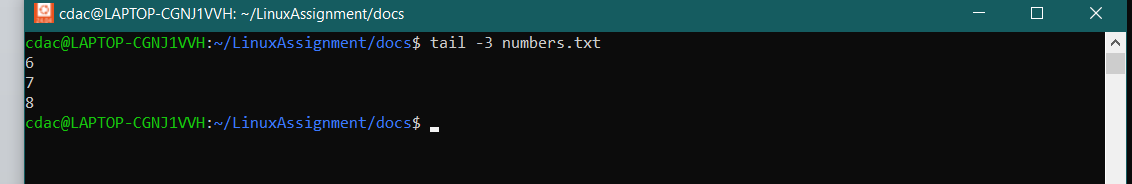


c. In a file named "numbers.txt," there are a series of numbers. Display the first 15 lines of

this file to analyze the initial data set.



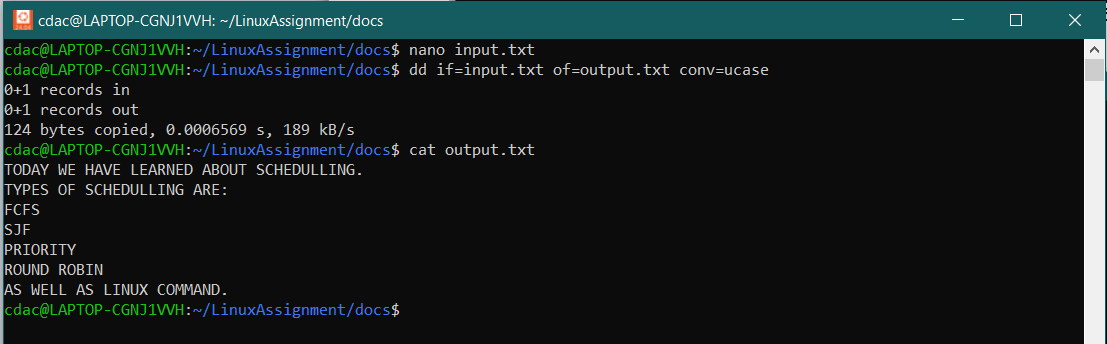
d. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".



e. Imagine you have a file named "input.txt" with text content. Use a command to translate

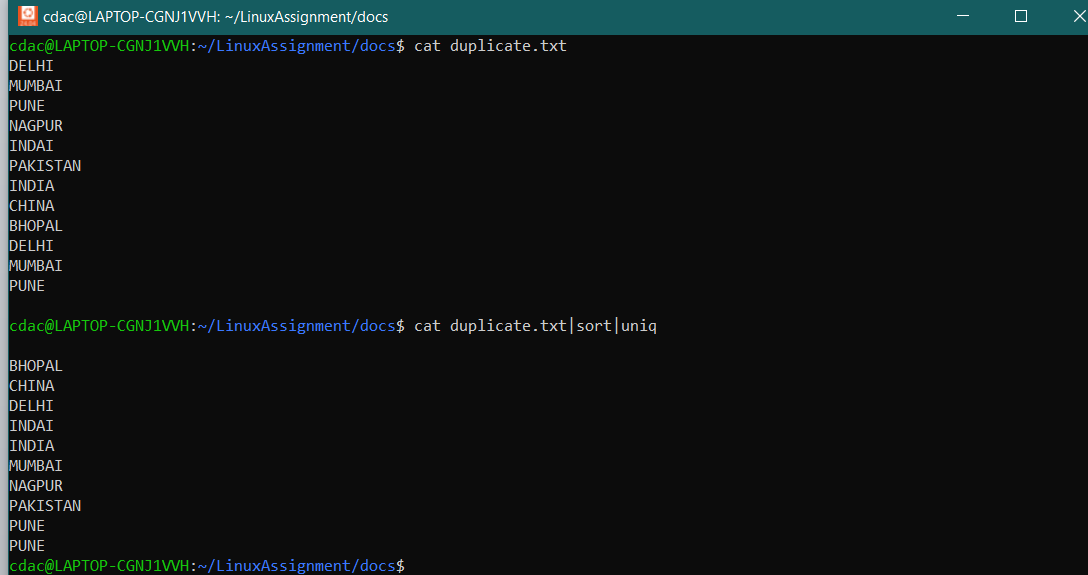
all lowercase letters to uppercase in "input.txt" and save the modified text in a new file

named "output.txt."



f. In a file named "duplicate.txt," there are several lines of text, some of which are

duplicates. Use a command to display only the unique lines from "duplicate.txt."



g. In a file named "fruit.txt," there is a list of fruits, but some fruits are repeated. Use a

command to display each unique fruit along with the count of its occurrences in

"fruit.txt."

