

OPERATING SYSTEM LAB ASSIGNMENT : 2

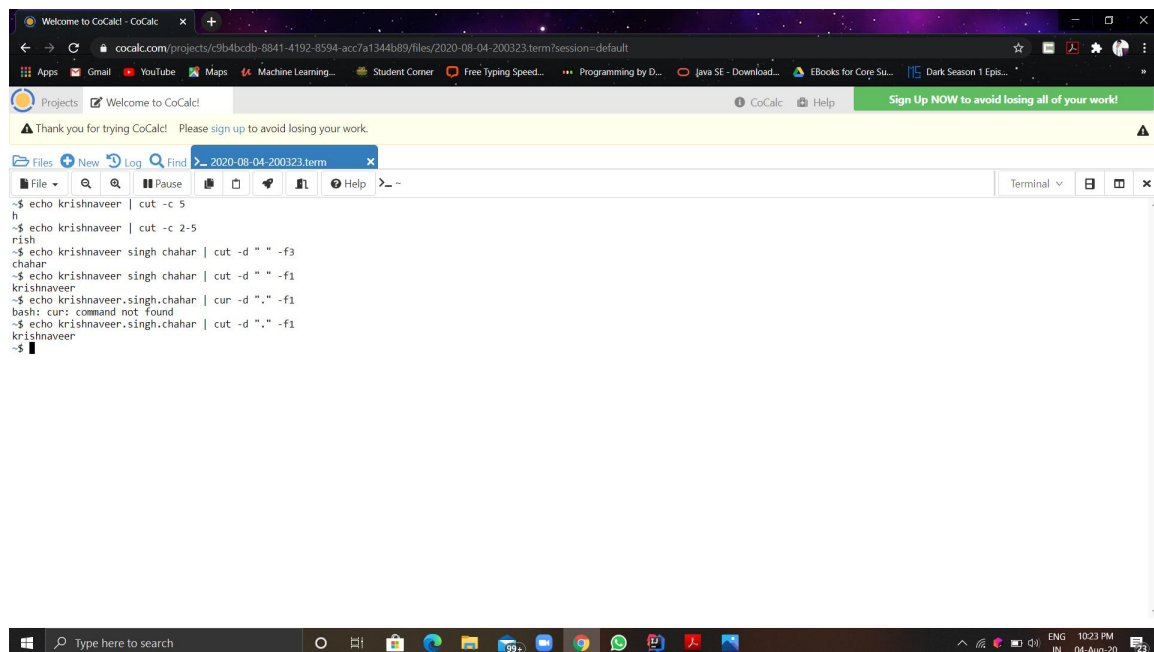
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Section : B

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cut : cut command is used to show a word or an attribute from a large output. It can display the only word or attribute we want from an output. It is always used with pipe command as it works only on output of previously executed command.

Syntax: cut option.. [file]..

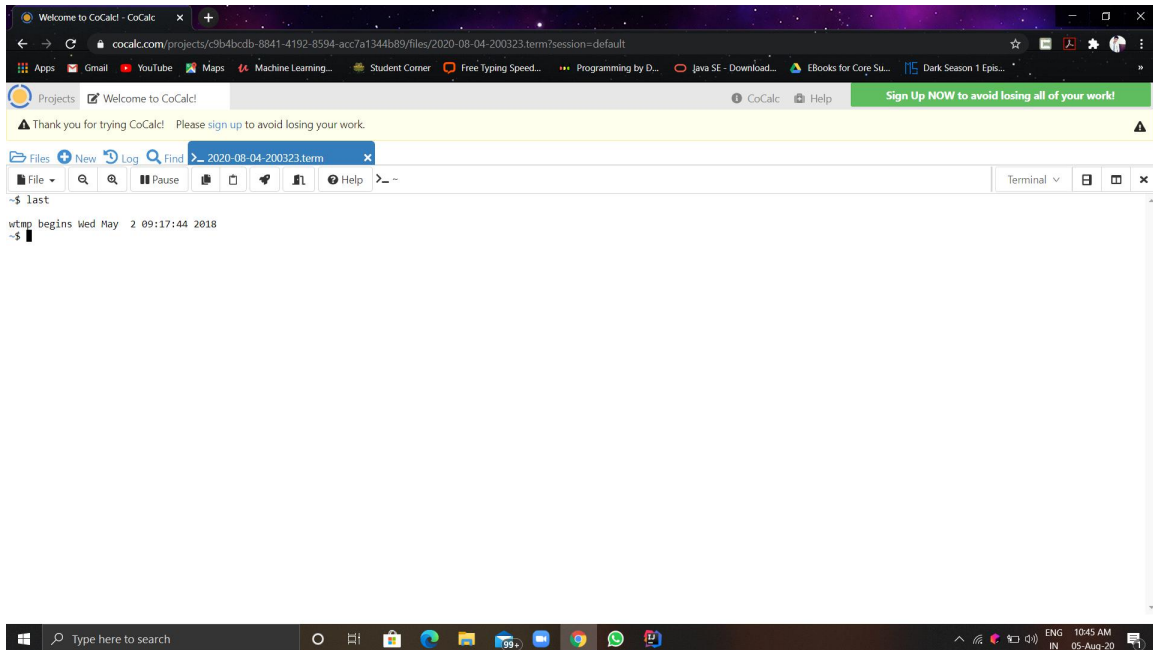


The screenshot shows a web browser window with a CoCalc terminal. The terminal displays the following commands and their outputs:

```
~$ echo krishnaveer | cut -c 5
h
~$ echo krishnaveer | cut -c 2-5
rish
~$ echo krishnaveer singh chahar | cut -d " " -f3
chahar
~$ echo krishnaveer singh chahar | cut -d " " -f1
krishnaveer
~$ echo krishnaveer.singh.chahar | cut -d "." -f1
bash: cur: command not found
~$ echo krishnaveer.singh.chahar | cut -d "." -f1
krishnaveer
~$
```

last: last command is used to display the list of all the users logged in and out since the file session was created . One or more usernames can be given as an argument to display their login in (and out) time and their host-name.

Syntax: last option



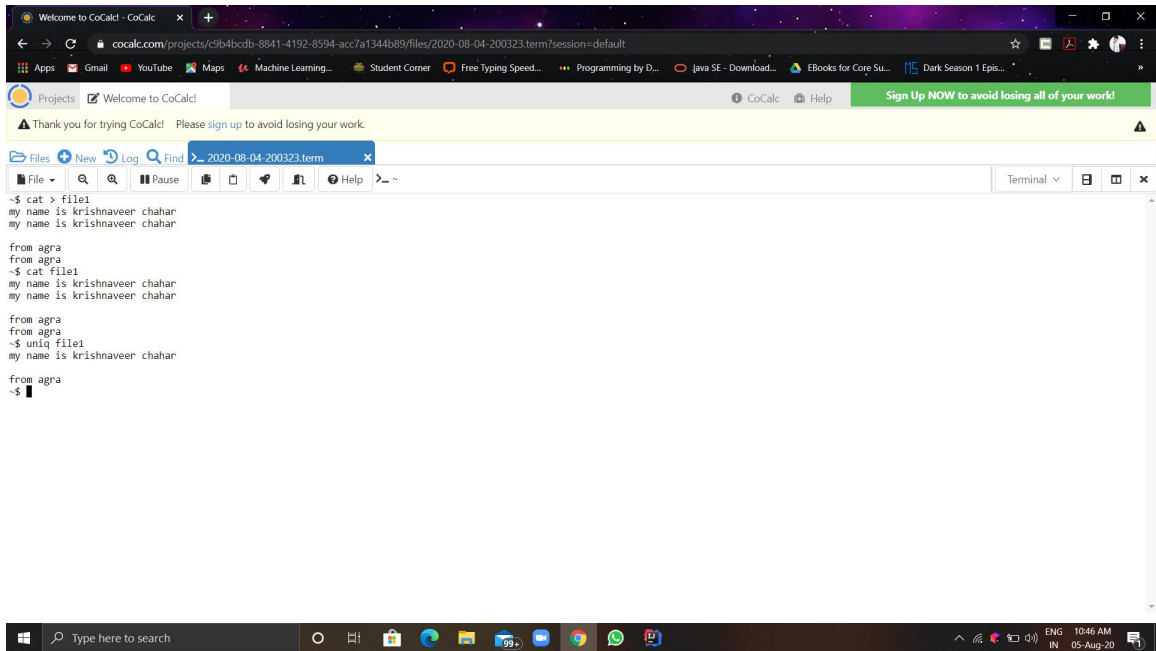
The screenshot shows a web browser window with a CoCalc terminal. The terminal window has a title bar that says "Welcome to CoCalc - CoCalc". Below the title bar, there is a navigation bar with "Files", "New", "Log", "Find", and a search bar. The terminal itself shows the command `~$ last` and its output:

```
~$ last
utmp begins Wed May 2 09:17:44 2018
~$
```

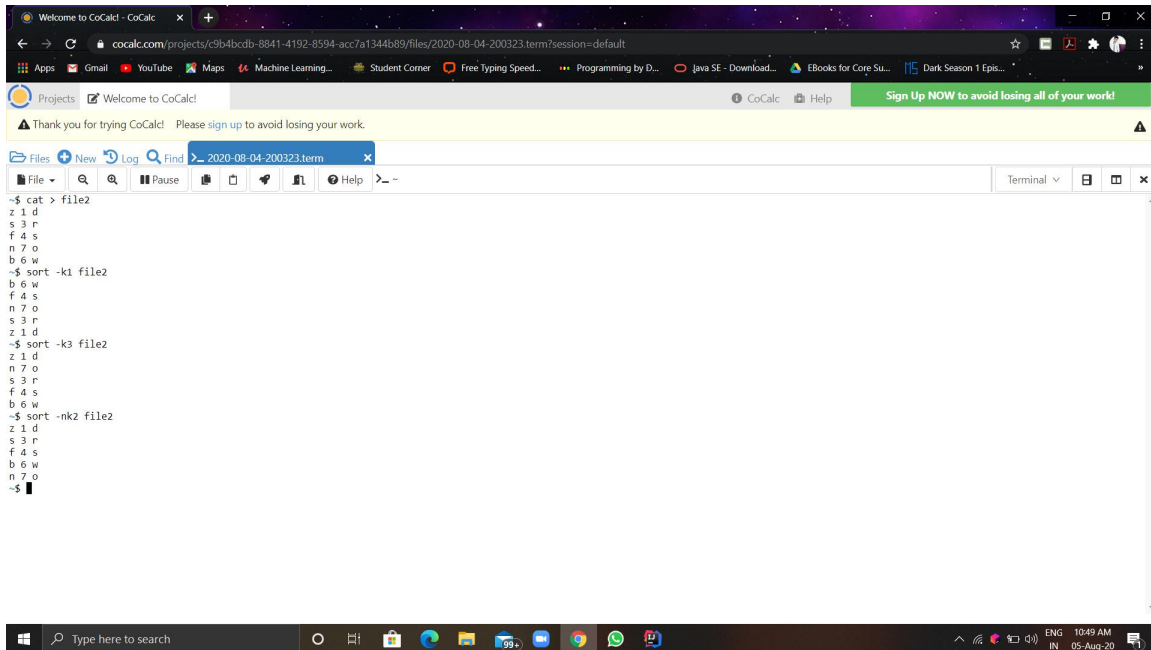
The terminal window also has a "Terminal" dropdown menu and a "x" button to close it. The browser's address bar shows the URL `cocalc.com/projects/c9b4bcd5-8841-4192-8594-acc7a1344b89/files/2020-08-04-200323.term?session=default`. The browser's taskbar at the bottom shows various application icons and the system clock indicating 10:45 AM on 05-Aug-20.

uniq: uniq command is used to view unique lines of a file. If a file contains similar line then with the help of unique command we can show only those line which are unique.

Syntax: uniq[file Name]



sort:sort command is used to sort content of a file. We can sort content of file on column basis as one column has names and other has marks another has marks so we can sort this data in accordance of any column we want. In -nk condition n is used in condition when we want to sort file according to number.
Syntax: sort -nk[column NO][file Name]



The screenshot shows a web browser window with the CoCalc interface. A terminal window is open, displaying the following commands and their output:

```
~$ cat > file2
z 1 d
s 3 r
f 4 s
n 7 o
b 6 w
~$ sort -k1 file2
b 6 w
f 4 s
n 7 o
s 3 r
z 1 d
~$ sort -k3 file2
z 1 d
n 7 o
s 3 r
f 4 s
b 6 w
~$ sort -nk2 file2
z 1 d
s 3 r
f 4 s
b 6 w
n 7 o
~$
```

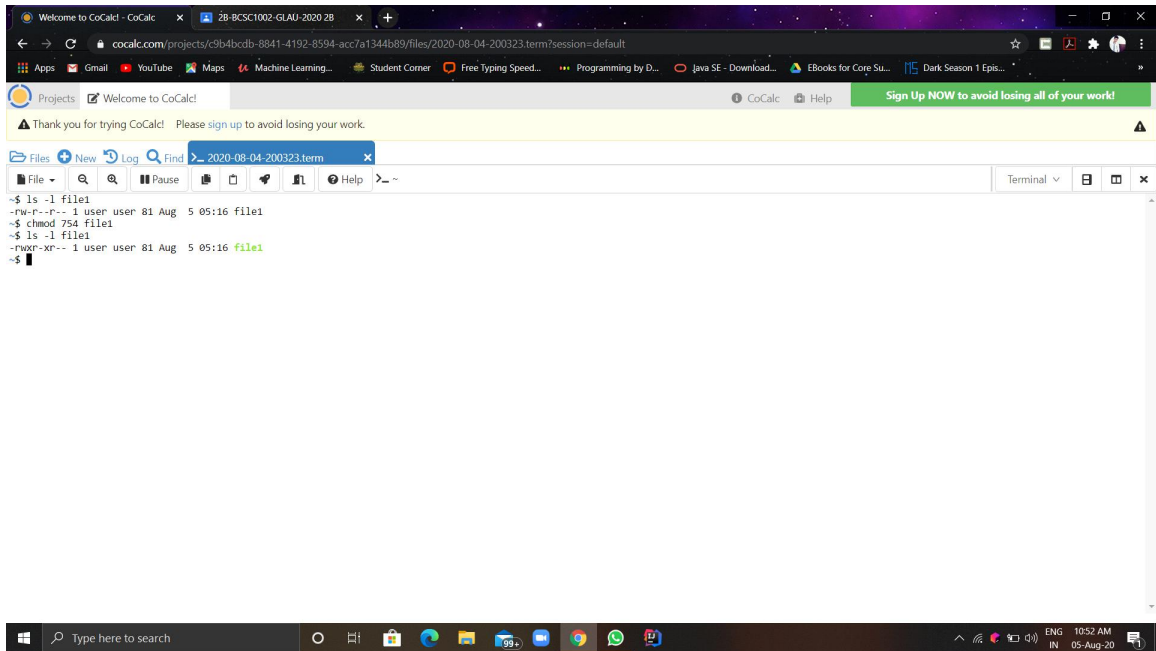
chmod:chmod command is used to change the working mode of a file. To decide read, write and execution criteria of a file for user and public .

Syntax: chmod [user group public][fileName]

Read=4

Write=2

Execution=1



If we had to give all three permission to user write and execution to group and only execution to public so we use: `chmod 731 fileName`.

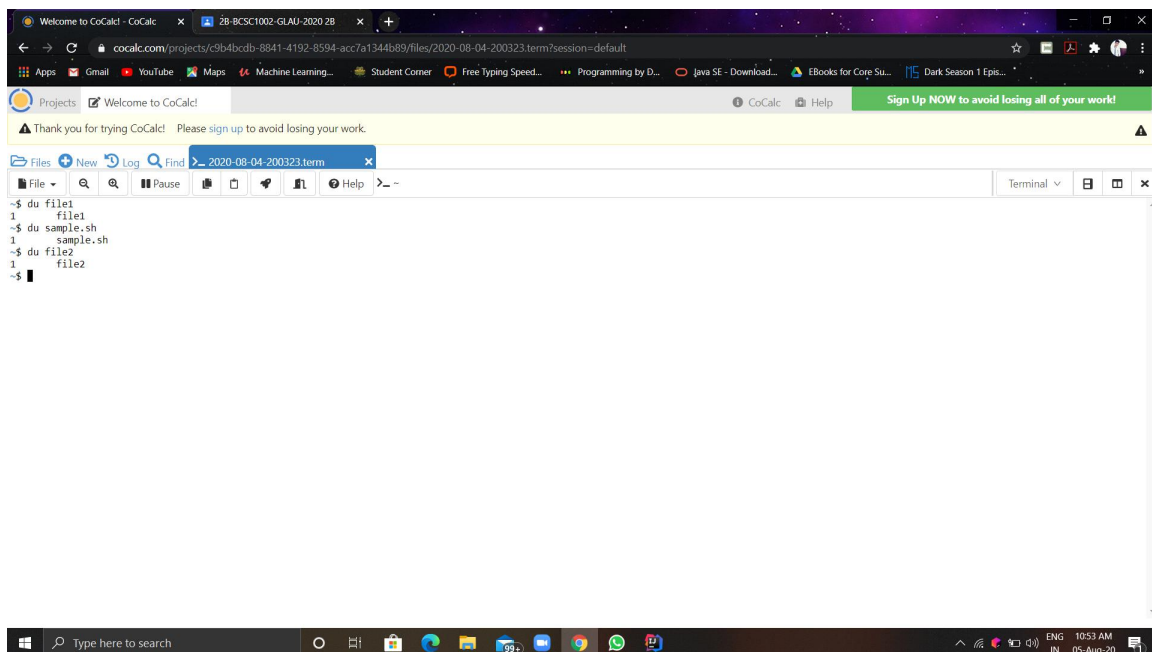
$7 = 4(\text{read}) + 2(\text{write}) + 1(\text{execution})$

$3 = 2(\text{write}) + 1(\text{execution})$

$1 = 1(\text{execution})$

du: `du` stands for disk usage. It is used to see size of a file, directory and its subdirectory on disk.

Syntax: `du [fileName]`

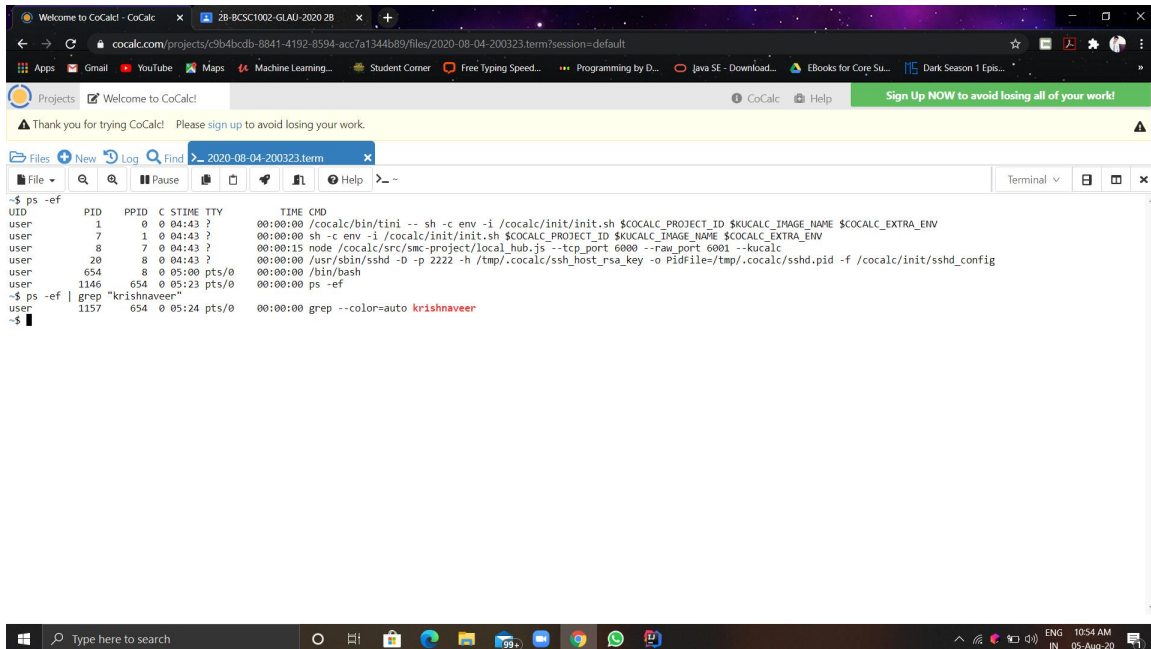


The screenshot shows a web browser window with the CoCalc interface. The address bar shows a URL from cocalc.com. Below the browser window, there is a terminal window titled '2020-08-04-200323.term'. The terminal displays the following commands and output:

```
~$ du file1
1 file1
~$ du sample.sh
1 sample.sh
~$ du file2
1 file2
~$
```

grep:grep command is used to highlight a particular thing in a file or output. It is used with pipe command as it work on output of previous command.

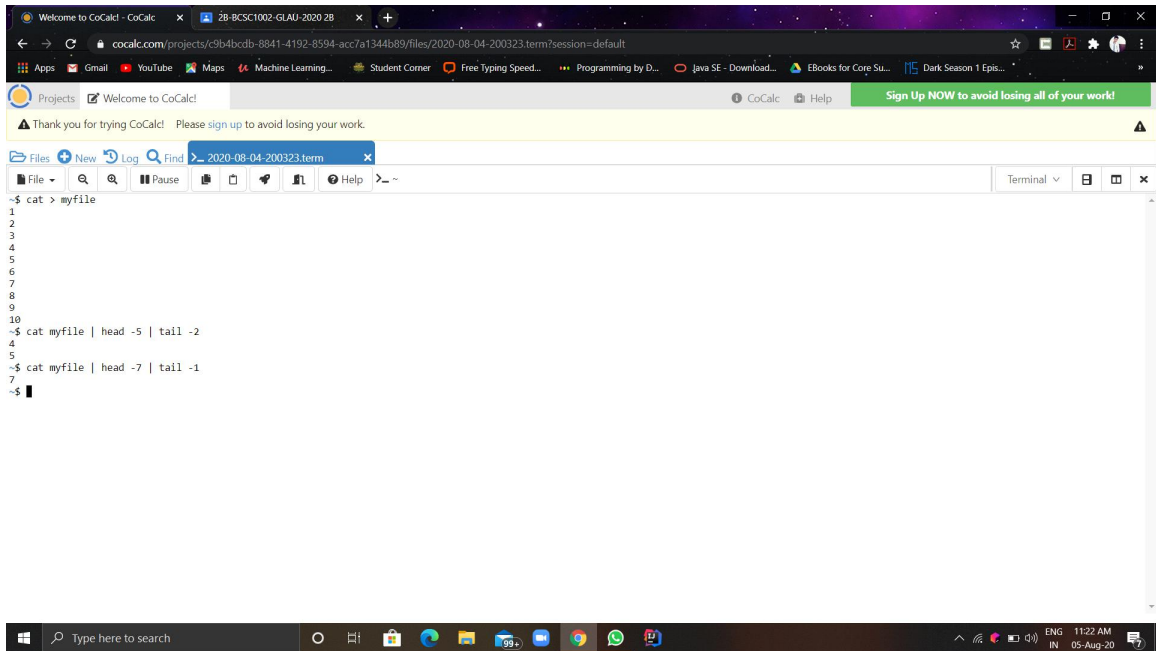
Syntax: [any command]grep | grep “Thing to be highlighted”



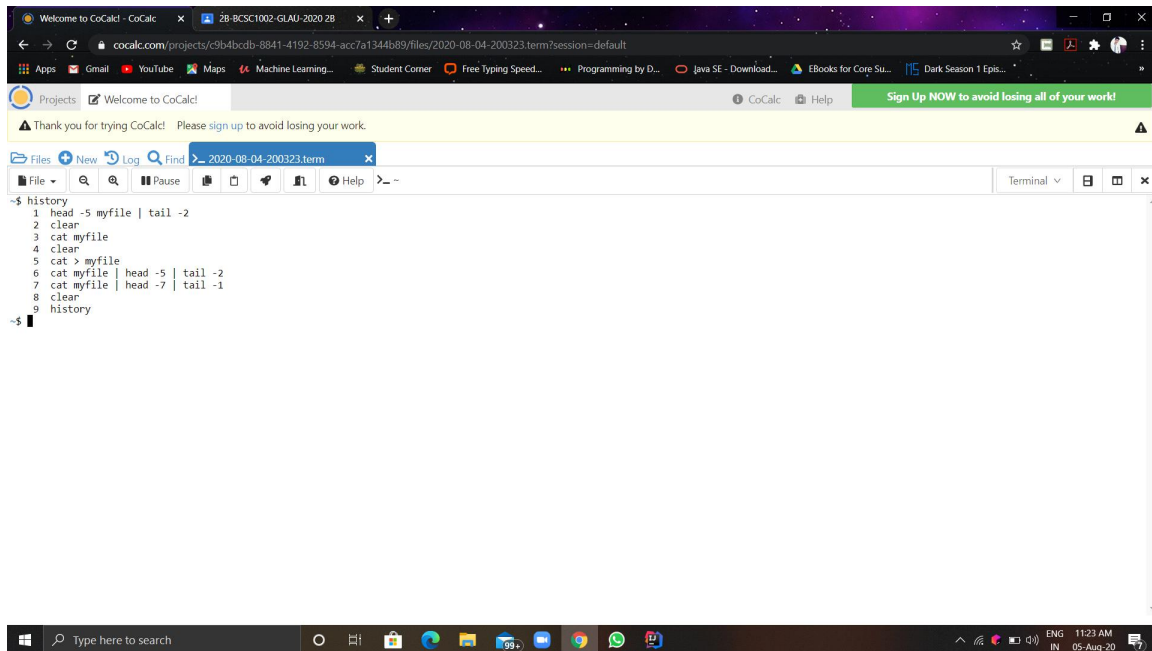
```
~$ ps -ef
UID          PID    PPID  C STIME TTY          TIME CMD
user          1        0  0 04:43 ?        00:00:00 /cocalc/bin/tini -- sh -c env -i /cocalc/init/init.sh $COCALC_PROJECT_ID $KUCALC_IMAGE_NAME $COCALC_EXTRA_ENV
user          7        1  0 04:43 ?        00:00:00 sh -c env -i /cocalc/init/init.sh $COCALC_PROJECT_ID $KUCALC_IMAGE_NAME $COCALC_EXTRA_ENV
user          8        7  0 04:43 ?        00:00:15 node /cocalc/src/smc-project/local_hub.js --tcp_port 6000 --raw_port 6001 --kucalc
user        20        8  0 04:43 ?        00:00:00 /usr/sbin/sshd -D -p 2222 -h /tmp/.cocalc/ssh_host_rsa_key -o PidFile=/tmp/.cocalc/ssh.pid -f /cocalc/init/ssh_config
user        654        8  0 05:00 pts/0    00:00:00 /bin/bash
user       1146       654  0 05:23 pts/0    00:00:00 ps -ef
~$ ps -ef | grep "krishnaaveer"
user       1157       654  0 05:24 pts/0    00:00:00 grep --color=auto krishnaaveer
~$
```

pipe:pipe command “|” is used to execute several command at once each command is run on the output of successive output of previous commands. There can be any number of command with pipe separation.

Syntax: first command | second command



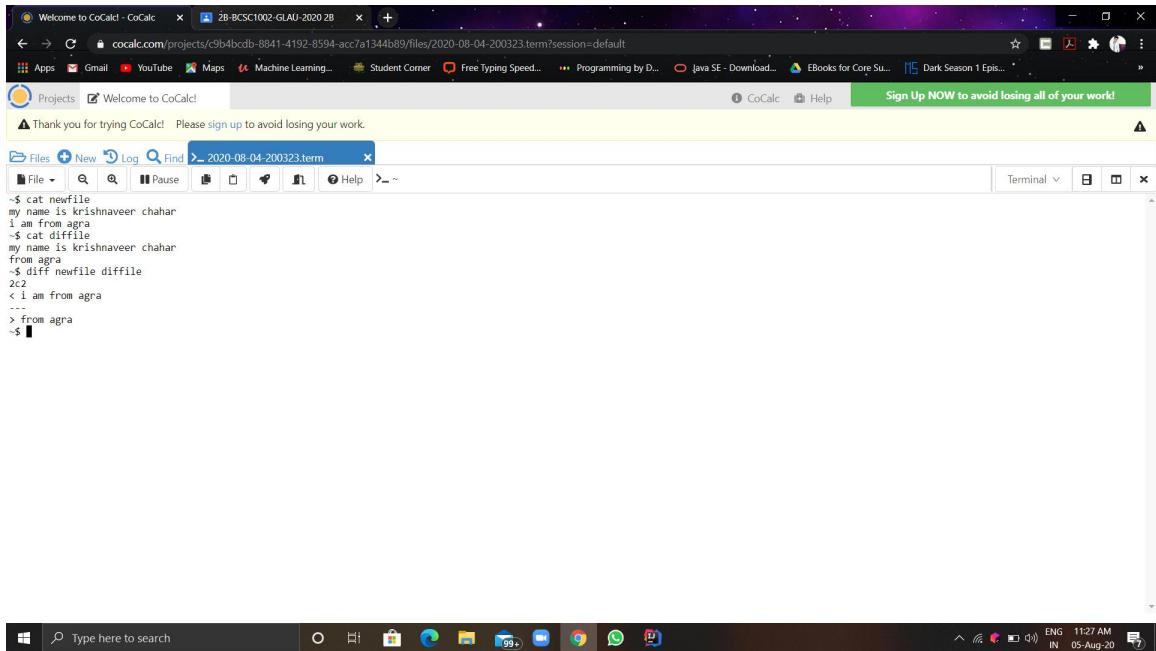
history:history is used to see all previous command of the log
history -c is used to clear history.
Syntax: history



The screenshot shows a web browser window with a CoCalc terminal. The terminal displays the output of the 'history' command, which lists the last 9 commands entered in the session. The commands are: 1. head -5 myfile | tail -2, 2. clear, 3. cat myfile, 4. clear, 5. cat > myfile, 6. cat myfile | head -5 | tail -2, 7. cat myfile | head -7 | tail -1, 8. clear, and 9. history. The terminal prompt is '~\$'.

```
~$ history
1 head -5 myfile | tail -2
2 clear
3 cat myfile
4 clear
5 cat > myfile
6 cat myfile | head -5 | tail -2
7 cat myfile | head -7 | tail -1
8 clear
9 history
~$
```

diff:diff command is used to compare line by line or to find
difference between two files.
Syntax: diff [filename][another filename]



sed: **sed command is used for substitute find or replace.**

Syntax: sed Option..Script..[file]

Question1) Total no of users connected to system currently.

Answer1) By who command we can check how many System are currently connected to our system.

Question2) Display only current local time of system.

Answer2) By "date | cut -d' ' -f4" command we can view only current time of system.

❖ Question3) Arranging the files of directory on ascending order of their sizes.

Answer3) By using du[file] | sort -nk1-r

Question4) Display 5th character of your name.

Answer4) By "echo Hemant" | cut -c5" command we can view 5th character of our name.

Question5) Display 7th line of a file.

Answer5) By "cat file | head -7 | tail -1" we can view 7th line of a file.

Question6) Sort a file on second column basis.

Answer6) By "sort -k2 file" we can sort file on the basis of 2nd column.