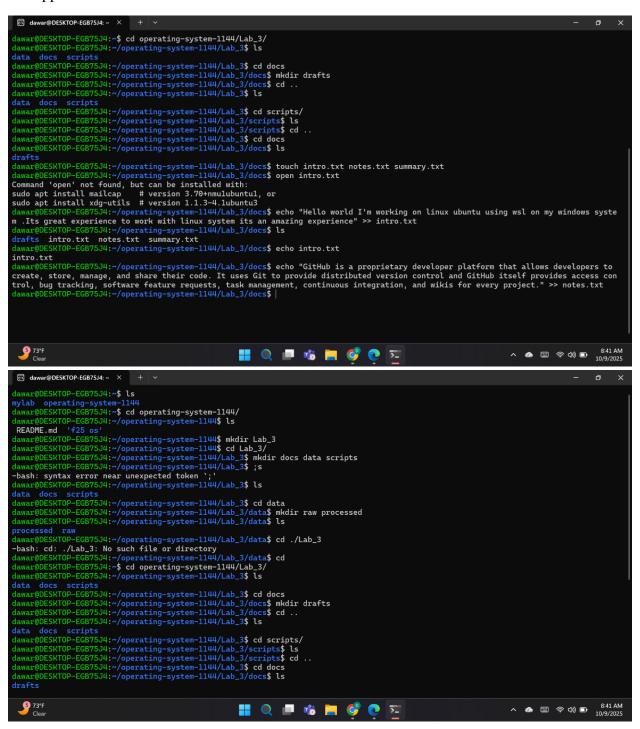
Lab3 Home Task

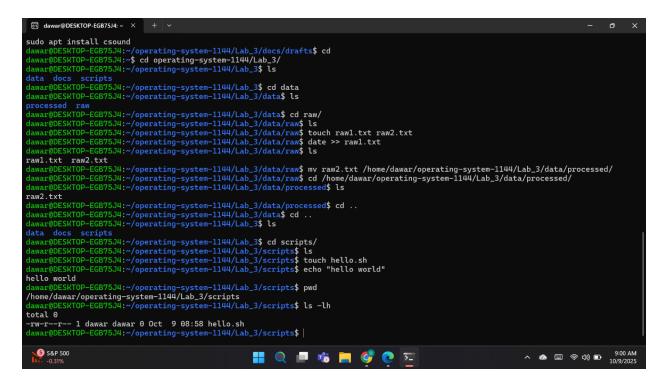
In the first question we used some basic commands of linux to make some directories and files and append some data in those files.



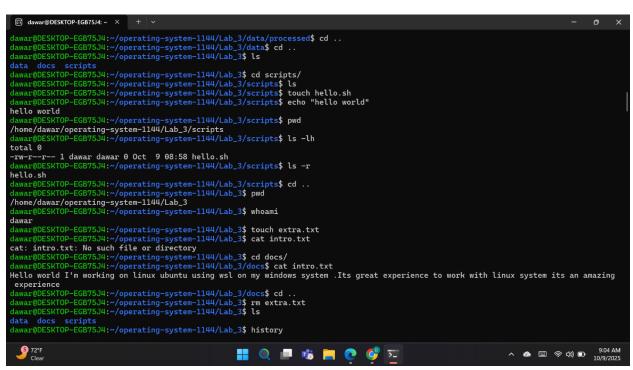
```
dawar@DESKTOP-EGB75J4: ~ ×
dawar@DESKTOP-EG875J4:~/operating-system-1144/Lab_3/docs$ echo "GitHub is a proprietary developer platform that allows developers to create, store, manage, and share their code. It uses Git to provide distributed version control and GitHub itself provides access con trol, bug tracking, software feature requests, task management, continuous integration, and wikis for every project." >> notes.txt dawar@DESKTOP-EG875J4:~/operating-system-1144/Lab_3/docs$ echo "GitHub is a proprietary developer platform that allows developers to create, store, manage, and share their code." >> summary.txt
dawar@DESKTOP-EG875J4:~/operating-system-1144/Lab_3/docs$ cp summary.txt copy_summary.txt /home/dawar/operating-system-1144/Lab_3/docs$
s/drafts/
s/drafts/
cp: cannot stat 'copy_summary.txt': No such file or directory
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ cp summary.txt /home/dawar/operating-system-1144/Lab_3/docs/drafts/
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ cd drafts/
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs/drafts$ ls
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs/drafts$ cs
Command 'cs' not found, but can be installed with:
sudo apt install csound
  dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs/drafts$ cd
dawar@DESKTOP-EGB75J4:~$ cd operating-system-1144/Lab_3/
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ ls
 data docs scripts
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ cd data
  dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/data$ ls
 processed raw
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/data$ cd raw/
  dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/data/raw$ ls
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/data/raw$ touch raw1.txt raw2.txt
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/data/raw$ date >> raw1.txt
                     DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/data/raw$ ls
GANALQUESKTOP-EGB7534:-/operating-system-1144/Lab_3/data/raw$ mv raw2.txt /home/dawar/operating-system-1144/Lab_3/data/processed/dawar@DESKTOP-EGB75J4:-/operating-system-1144/Lab_3/data/raw$ cd /home/dawar/operating-system-1144/Lab_3/data/processed/dawar@DESKTOP-EGB75J4:-/operating-system-1144/Lab_3/data/processed$ ls
     awar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/data/processed$
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    dawar@DESKTOP-EGB75J4: ~ × +
   dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ cd ...
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ ls
  dawar@DESKTOP-EGB75J4:~/operating-system=1144/Lab_3$ ts
dawar@DESKTOP-EGB75J4:~/operating-system=1144/Lab_3$ cd scripts/
dawar@DESKTOP-EGB75J4:~/operating-system=1144/Lab_3/scripts$ ts
dawar@DESKTOP-EGB75J4:~/operating-system=1144/Lab_3/scripts$ cd ..
dawar@DESKTOP-EGB75J4:~/operating-system=1144/Lab_3$ cd docs
dawar@DESKTOP-EGB75J4:~/operating-system=1144/Lab_3/docs$ ts
    lawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ touch intro.txt notes.txt summary.txt
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ open intro.txt
Command 'open' not found, but can be installed with:
Command Open Not Toutid, but can be instacted with:
sudo apt install mailcap # version 3.70+mmulubuntu1, or
sudo apt install xdg-utils # version 1.1.3-4.1ubuntu3
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ echo "Hello world I'm working on linux ubuntu using wsl on my windows syste
m.Its great experience to work with linux system its an amazing experience" >> intro.txt
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ ls
 drafts intro.txt notes.txt summary.txt
     awar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ echo intro.txt
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ echo "GitHub is a proprietary developer platform that allows developers to create, store, manage, and share their code. It uses Git to provide distributed version control and GitHub itself provides access con trol, bug tracking, software feature requests, task management, continuous integration, and wikis for every project." >> notes.txt dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ echo "GitHub is a proprietary developer platform that allows developers to create, store, manage, and share their code." >> summary.txt dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ cp summary.txt copy_summary.txt /home/dawar/operating-system-1144/Lab_3/docs$ cp summary.txt /home/dawar/operating-sys
s/drafts/
cp: cannot stat 'copy_summary.txt': No such file or directory dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ cp summary.txt /home/dawar/operating-system-1144/Lab_3/docs/drafts/dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ cd drafts/dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs/drafts$ ls
                        ESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs/drafts$
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```

In the second question we have seen on how to use some basic commands for details of files:

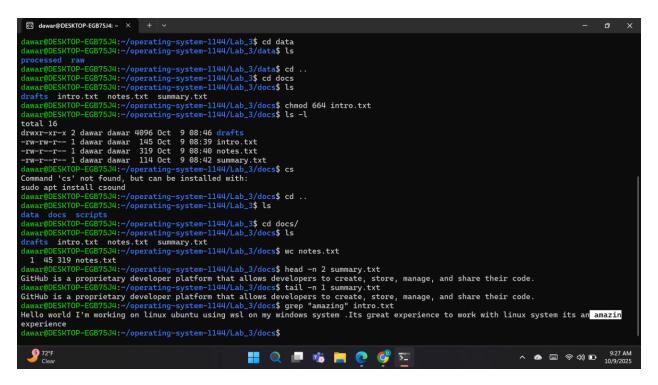


In the third question we have used some operations to change or set the file permissions so that for different users access should be different.

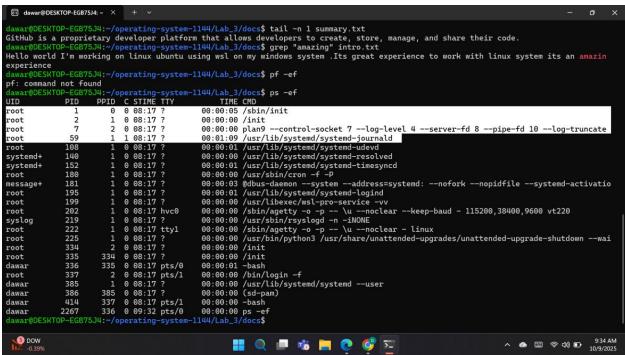


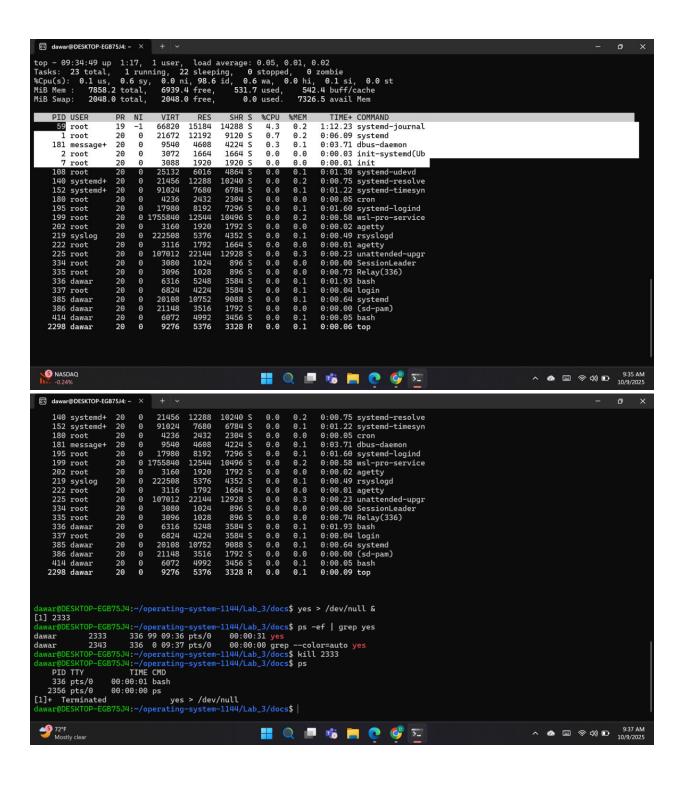
```
dawar@DESKTOP-EGB75J4: ~ × + v
 dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ chmod ug+rwx,o-rwx hello.sh dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ ls cat hello.sh ls: cannot access 'cat': No such file or directory
  dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ ./hello.sh
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ ls
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ echo "echo "hello world" pwd ls -lh" >> hello.sh dawar@DESKTOP-EGB75J4:-/operating-system-1144/Lab_3/scripts$ cat hello.sh echo hello world pwd ls -lh
                                              :~/operating-system-1144/Lab_3/scripts$ ./hello.sh
hello world pwd ls -lh
  dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ cd ..
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ ls
data docs scripts
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ chmod 664
chmod: missing operand after '664'
Try 'chmod --help' for more information.
   dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ cd data
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/data$ ls
  dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/data$ cd ...
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ cd docs
 dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ ls
drafts intro.txt notes.txt summary.txt
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ chmod 664 intro.txt
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ ls -l
 total 16
total 16
drwxr-xr-x 2 dawar dawar 4096 Oct 9 08:46 drafts
-rw-rw-r-- 1 dawar dawar 145 Oct 9 08:39 intro.txt
-rw-rw-rr-- 1 dawar dawar 319 Oct 9 08:40 notes.txt
-rw-rr--r-- 1 dawar dawar 114 Oct 9 08:42 summary.txt
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/docs$ |
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  ெ dawar@DESKTOP-EGB75J4: ~ × + ∨
   dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ ls
data docs scripts
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ cd scripts/
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ ls
hello.sh
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ chmod ug+rwx o-rwx
chmod: cannot access 'o-rwx': No such file or directory
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ chmod ug+rwx o-rwx hello.sh
chmod: cannot access 'o-rwx': No such file or directory
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ chmod ug+rwx,o-rwx hello.sh
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ ls cat hello.sh
ls: cannot access 'cat': No such file or directory
  nello.sh
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ ./hello.sh
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$ ls
   dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3/scripts$
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```

In the next section we see how to search for or read files.



In the 5th section of the task we have used and practiced some of the important linux process commands:





```
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ yes > /dev/null &
[1] 2333
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ ps -ef | grep yes
dawar 2333 336 99 99:36 pts/0 00:00:31 yes
dawar 2333 336 09 99:37 pts/0 00:00:09:09 grep --color=auto yes
dawar 2343 336 009:37 pts/0 00:00:09:09 grep --color=auto yes
dawar 2343 336 pts/0-perating-system-1144/Lab_3/docs$ kill 2333
dawar 20ESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ ps
PID TTV IIB CMD
336 pts/0 00:00:00 ps
[1]+ Terminated
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ sleep 60
^C
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ fg 1
sleep 60
^2
[1] + Stopped
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ ps
PID TTV IIB CMD
336 pts/0 00:00:00 ps
sleep 60
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ fg 1
sleep 60
42
[1] + Stopped
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ ps
PID TTV IIB CMD
336 pts/0 00:00:02 bash
2409 pts/0 00:00:02 bash
2409 pts/0 00:00:02 bash
2409 pts/0 00:00:02 bash
2409 pts/0 00:00:00 ps
[1]+ Terminated
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ ps
PID TTV IIB CMD
336 pts/0 00:00:00 ps
[1]+ Terminated
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ ps
PID TTV IIB CMD
336 pts/0 00:00:00 ps
[1]+ Terminated
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ ps
PID TTV IIB CMD
336 pts/0 00:00:00 ps
[1]+ Terminated
dawar@DESKTOP-EG875J4:-/operating-system-1144/Lab_3/docs$ ps
PID TTV IIB CMD
340 Mbs/ycar
```

In the last section of the task we have used c programs to achieve our objectives: First the child was execute with top command.

```
    dawar@DESKTOP-EGB75J4: ~ × + ∨

 Looking for compatibility check script at /home/dawar/.vscode-server/bin/385651c938df8a906869babee516bffd0ddb9829/bin/helpers/check-r
equirements.sh
Running compatibility check script
Compatibility check successful (0)
  dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$ cd ..
dawar@DESKTOP-EGB75J4:~/operating-system-1144$ ;s
 -bash: syntax error near unexpected token ';
-Dash: Syntax error near unexpected token;
dawar@DESKTOP-EGB75J4:~/operating-system-1144$ ls
Lab_3 README.md 'f25 os'
dawar@DESKTOP-EGB75J4:~/operating-system-1144$ cd f25\ os/
dawar@DESKTOP-EGB75J4:~/operating-system-1144/f25 os$;
-bash: syntax error near unexpected token ';
dawar@DESKTOP-EGB75J4:~/operating-system-1144/f25 os$ ls
Lab3.pdf lab3-task1-basic.c p-execute.c p-wait.c simple-classes.c dawar@DESKTOP-EGB75J4:~/operating-system-1144/f25 os$ cat lab3-task1-basic.c
  #include stdio.h>
#include <unistd.h>
int main() {
  printf("My PID: %d\n", getpid());
  printf("My Parent PID: %d\n", getppid());
  return 0;
}dawar@DESKTOP-EGB75J4:~/operating-system-1144/f25 os$ cat p-execute.c
   #include <stdio.h>
  #include <unistd.h>
int main() {
pid_t pid = fork();
  if (pid == 0) {
execlp("ls", "ls", "-l", NULL);
printf("This will not print if exec succeeds.\n");
  } else {
printf("Parent still running...\n");
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  dawar@DESKTOP-EGB75J4: ~
                                                                                                  0.0
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0.0
0.1
        336 dawar
                                                      6832
6824
                                                                    5760
                                                                                  3584 S
3584 S
                                                                                                                          0:02.50 bash
0:00.04 login
        337 root
                                   20
                                            0
                                                                    4224
                                                                                                                         0:00.04 login

0:01.00 systemd

0:00.00 (sd-pam)

0:00.05 bash

0:00.00 SessionLeader

0:00.00 Relay(3169)

0:00.02 sh

0:00.00 sh

0:00.00 SessionLeader

0:00.45 Relay(3193)

0:01.33 node
                                                                                 3584 S
9088 S
1792 S
3456 S
768 S
1024 S
1664 S
                                                                  10752
3516
         385 dawar
                                                     20108
                                   20
20
        386 dawar
                                            0
                                                     21148
        414 dawar
                                                       6072
                                                                     4992
                                                                                                              0.0
0.0
0.0
      3167 root
3168 root
                                   20
20
20
20
                                                       3076
3092
                                                                    904
1164
                                             0
                                                                                                   0.0
0.0
0.0
0.0
0.0
       3169 dawar
                                                       2800
                                                                    1664
                                   20
20
                                             0
                                                       2800
                                                                    1664
       3170 dawar
                                                                                  1792 S
896 S
896 S
                                                                                                              0.0
0.0
0.0
                                                                    1792
1032
       3176 dawar
      3191 root
3192 root
                                   20
20
                                             0
                                                       3088
                                                       3088
                                                                    1040
                                                                               896 S
44032 S
896 S
896 S
44032 S
48000 S
57120 S
22016 S
                                   20
20
20
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                                                                                                           0.8
0.0
0.7
0.7
10.8
0.5
0.3
0.0
0.0
                                                                                                                          0:01.33 node
0:00.00 SessionLeader
0:00.93 Relay(3202)
      3193 dawar
                                            0 1018584
0 3088
                                                                 60868
1032
      3200 root
       3201 root
                                                       3088
      3202 dawar
3222 dawar
                                   20
20
                                             0 1012256
                                                                  55488
                                                                                                  0.0
0.0
0.0
0.0
0.0
                                                                                                                          0:03.26 node
0:00.90 node
                                             0 1261796
                                                                  59488
                                                                                                                          2:01.66 node
0:10.20 cpptools
0:03.43 cpptools-srv
0:00.00 SessionLeader
0:00.02 Relay(6107)
       3240 dawar
                                   20
20
20
20
20
                                                    52.7g 870640
93996 37768
      5106 dawar
                                             0
                                                                               16764 S
896 S
896 S
3584 S
      5157 dawar
                                             0 4264144
                                                                  23496
      6102 root
6103 root
                                                      3080
                                                                    1032
      6107 dawar
                                   20
                                             0
                                                       6072
                                                                    5120
                                                                                                   0.0
                                                                                                                          0.00 16 bash
^C
dawar@DESKTOP-EGB75J4:-/operating-system-1144/Lab_3$ ls
data docs program2.c programm1 programm1.c scripts
dawar@DESKTOP-EGB75J4:-/operating-system-1144/Lab_3$ gcc program2.c -o program2
dawar@DESKTOP-EGB75J4:-/operating-system-1144/Lab_3$ ls
data docs program2 program2.c program11 programm1.c scripts
dawar@DESKTOP-EGB75J4:-/operating-system-1144/Lab_3$ ./program2
Thu Oct 9 10:53:18 PDT 2025
Child finished
  dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab_3$
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