BASIC COMMANDS

Date
```
[2025_01@fedora ~]$ date
Fri Jul 28 02:48:40 PM IST 2023
[2025_01@fedora ~]$ date -d
date: option requires an argument -- 'd'
Try 'date --help' for more information.
[2025_01@fedora ~]$ date +%%
%
[2025_01@fedora ~]$ date +%a
Fri
[2025_01@fedora ~]$ date +%b
Jul
[2025_01@fedora ~]$ date +%A
Friday
[2025_01@fedora ~]$ date +%b
Jul
[2025_01@fedora ~]$ date +B%
B%
[2025_01@fedora ~]$ date +%B
July
[2025_01@fedora ~]$ date +%c
Fri 28 Jul 2023 02:55:44 PM IST
[2025_01@fedora ~]$ date +%C
20
[2025_01@fedora ~]$ date +%D
07/28/23
[2025_01@fedora ~]$ date +%D
07/28/23
[2025_01@fedora ~]$ date +%e
28
[2025_01@fedora ~]$ date +%F

2023-07-28
[2025_01@fedora ~]$ date +%g
23
[2025_01@fedora ~]$ date +%G
2023
[2025_01@fedora ~]$ date +%h
Jul
[2025_01@fedora ~]$ date +%H
14
[2025_01@fedora ~]$ date +%I
02
[2025_01@fedora ~]$ date +%j
209
[2025_01@fedora ~]$ date +%k
14
[2025_01@fedora ~]$ date +%l
2
[2025_01@fedora ~]$ date +%m
07
[2025_01@fedora ~]$ date +%M
59
[2025_01@fedora ~]$ date +%n

[2025_01@fedora ~]$ date +%N
```

```
746045161
[2025_01@fedora ~]$ date +%p
PM
[2025_01@fedora ~]$ date +%P
pm
[2025_01@fedora ~]$ date +%q

3
[2025_01@fedora ~]$ date +%r
03:00:28 PM
[2025_01@fedora ~]$ date +%R
15:00
[2025_01@fedora ~]$ date +%s
1690536634
[2025_01@fedora ~]$ date +%S
36
[2025_01@fedora ~]$ date +%t

[2025_01@fedora ~]$ date +%T
15:00:50
[2025_01@fedora ~]$ date +%u
5
[2025_01@fedora ~]$ date +%U
30
[2025_01@fedora ~]$ date +%V
30
[2025_01@fedora ~]$ date +%W
30
[2025_01@fedora ~]$ date +%x
07/28/2023
[2025_01@fedora ~]$ date +%X
03:01:27 PM
[2025_01@fedora ~]$ date +%y
23
[2025_01@fedora ~]$ date +%Y
2023
[2025_01@fedora ~]$ date +%z
+0530

[2025_01@fedora ~]$ date +%:z
+05:30
[2025_01@fedora ~]$ date +%::z
+05:30:00
[2025_01@fedora ~]$ date +%:::z
+05:30
[2025_01@fedora ~]$ date


CAL
[2025_1@fedora ~]$ cal
      July 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
```

```
[2025_1@fedora ~]$ cal -1
     July 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
[2025_1@fedora ~]$ cal -3
      June 2023           July 2023          August 2023
Su Mo Tu We Th Fr Sa  Su Mo Tu We Th Fr Sa  Su Mo Tu We Th Fr Sa
             1  2  3                     1         1  2  3  4  5
 4  5  6  7  8  9 10   2  3  4  5  6  7  8   6  7  8  9 10 11 12
11 12 13 14 15 16 17   9 10 11 12 13 14 15  13 14 15 16 17 18 19
18 19 20 21 22 23 24  16 17 18 19 20 21 22  20 21 22 23 24 25 26
25 26 27 28 29 30     23 24 25 26 27 28 29  27 28 29 30 31
                      30 31
[2025_1@fedora ~]$ cal -n

[2025_1@fedora ~]$ cal -n 6
     July 2023          August 2023         September 2023
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
 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 2023         November 2023        December 2023
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
 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
[2025_1@fedora ~]$ cal -s
     July 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
[2025_1@fedora ~]$ cal -S
     July 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
[2025_1@fedora ~]$ cal -m
     July 2023
```

```
Mo Tu We Th Fr Sa Su
                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
[2025_1@fedora ~]$ cal -v
    July 2023
Su     2  9 16 23 30
Mo     3 10 17 24 31
Tu     4 11 18 25
We     5 12 19 26
Th     6 13 20 27
Fr     7 14 21 28
Sa  1  8 15 22 29
[2025_1@fedora ~]$ cal --iso
      July 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
[2025_1@fedora ~]$ cal -j
         July 2023
Sun Mon Tue Wed Thu Fri Sat
                        182
183 184 185 186 187 188 189
190 191 192 193 194 195 196
197 198 199 200 201 202 203
204 205 206 207 208 209 210
211 212


        July 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
[2025_1@fedora ~]$ cal --reform 1752
       July 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
[2025_1@fedora ~]$ cal -Y
        July 2023            August 2023          September 2023
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
 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 2023           November 2023           December 2023
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
 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
      January 2024           February 2024            March 2024
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                 1  2  3                       1  2
 7  8  9 10 11 12 13     4  5  6  7  8  9 10     3  4  5  6  7  8  9
14 15 16 17 18 19 20    11 12 13 14 15 16 17    10 11 12 13 14 15 16
21 22 23 24 25 26 27    18 19 20 21 22 23 24    17 18 19 20 21 22 23
28 29 30 31             25 26 27 28 29          24 25 26 27 28 29 30
                                                31
       April 2024             May 2024               June 2024
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              1  2  3  4                          1
 7  8  9 10 11 12 13     5  6  7  8  9 10 11     2  3  4  5  6  7  8
14 15 16 17 18 19 20    12 13 14 15 16 17 18     9 10 11 12 13 14 15
21 22 23 24 25 26 27    19 20 21 22 23 24 25    16 17 18 19 20 21 22
28 29 30                26 27 28 29 30 31       23 24 25 26 27 28 29
                                                30
[2025_1@fedora ~]$ cal -y
                              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                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  6                 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
 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  2  3  4  5  6  7              1  2  3  4                       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
[2025_1@fedora ~]$ cal -w
      July 2023
   Su Mo Tu We Th Fr Sa
26                    1
27  2  3  4  5  6  7  8
28  9 10 11 12 13 14 15
29 16 17 18 19 20 21 22
30 23 24 25 26 27 28 29
31 30 31
[2025_1@fedora ~]$ cal --color
      July 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


Who
[2025_1@fedora ~]$ who
2025_33  pts/0        2023-07-28 14:45 (172.16.1.92)
2025_32  pts/1        2023-07-28 14:39 (172.16.1.72)
2025_24  pts/2        2023-07-28 14:40 (172.16.6.194)
2025_11  pts/3        2023-07-28 14:40 (172.16.1.88)
2025_13  pts/4        2023-07-28 14:40 (172.16.1.74)
2025_30  pts/5        2023-07-28 14:41 (172.16.6.229)
2025_9   pts/6        2023-07-28 15:09 (172.16.1.85)
2025_10  pts/7        2023-07-28 14:41 (172.16.1.81)
2025_3   pts/8        2023-07-28 14:41 (172.16.1.93)
2025_10  pts/9        2023-07-28 14:42 (172.16.1.81)
2025_27  pts/10       2023-07-28 14:41 (172.16.1.87)
2025_24  pts/11       2023-07-28 14:42 (172.16.6.194)
2025_7   pts/12       2023-07-28 14:42 (172.16.1.83)
2025_34  pts/13       2023-07-28 15:11 (172.16.6.168)
2025_55  pts/14       2023-07-28 14:42 (172.16.1.158)
2025_23  pts/15       2023-07-28 14:42 (172.16.1.65)
2025_1   pts/16       2023-07-28 14:42 (172.16.6.12)
2025_1   pts/17       2023-07-28 14:42 (172.16.6.143)
2025_16  pts/18       2023-07-28 15:26 (172.16.8.9)
2025_1   pts/19       2023-07-28 14:42 (172.16.6.12)
2025_21  pts/20       2023-07-28 14:43 (172.16.1.86)
2025_27  pts/21       2023-07-28 14:43 (172.16.1.87)
2025_1   pts/22       2023-07-28 14:43 (172.16.6.143)
2025_28  pts/23       2023-07-28 14:43 (172.16.1.80)
2025_44  pts/24       2023-07-28 14:44 (172.16.1.154)
2025_22  pts/25       2023-07-28 14:45 (172.16.1.48)
2025_4   pts/26       2023-07-28 14:51 (172.16.1.73)
2025_15  pts/27       2023-07-28 14:45 (172.16.6.35)
2025_31  pts/28       2023-07-28 14:46 (172.16.1.71)
2025_30  pts/29       2023-07-28 14:45 (172.16.6.229)
2025_28  pts/30       2023-07-28 14:46 (172.16.1.80)
2025_17  pts/31       2023-07-28 14:56 (172.16.6.9)
2025_33  pts/32       2023-07-28 14:46 (172.16.1.92)
```

```
2025_8    pts/33       2023-07-28 14:48 (172.16.1.77)
2025_25   pts/34       2023-07-28 14:50 (172.16.15.91)
2025_12   pts/35       2023-07-28 14:50 (172.16.1.62)
2025_27   pts/36       2023-07-28 15:02 (172.16.1.87)
2025_35   pts/37       2023-07-28 14:50 (172.16.1.90)
2025_35   pts/38       2023-07-28 14:51 (172.16.1.90)
2025_19   pts/39       2023-07-28 14:52 (172.16.1.95)
2025_14   pts/40       2023-07-28 14:52 (172.16.1.61)
2025_17   pts/41       2023-07-28 15:02 (172.16.6.9)
2025_29   pts/42       2023-07-28 14:57 (172.16.1.64)
2025_25   pts/43       2023-07-28 14:58 (172.16.15.91)
2025_5    pts/44       2023-07-28 15:06 (172.16.1.78)
2025_15   pts/45       2023-07-28 15:06 (172.16.6.35)
2025_17   pts/46       2023-07-28 15:08 (172.16.6.9)
2025_17   pts/47       2023-07-28 15:12 (172.16.6.9)
2025_11   pts/48       2023-07-28 15:20 (172.16.1.88)
2025_16   pts/49       2023-07-28 15:25 (172.16.8.9)
[2025_1@fedora ~]$ who -a
          system boot  2023-07-28 09:18
          run-level 5  2023-07-28 09:19
2025_33  + pts/0        2023-07-28 14:45    .        22897 (172.16.1.92)
2025_32  + pts/1        2023-07-28 14:39    .        19247 (172.16.1.72)
2025_24  + pts/2        2023-07-28 14:40    .        19580 (172.16.6.194)
2025_11  + pts/3        2023-07-28 14:40 00:11       19630 (172.16.1.88)
2025_13  + pts/4        2023-07-28 14:40 00:20       19739 (172.16.1.74)
2025_30  + pts/5        2023-07-28 14:41 00:01       19251 (172.16.6.229)
2025_9   + pts/6        2023-07-28 15:09 00:03       27860 (172.16.1.85)
2025_10  + pts/7        2023-07-28 14:41 00:16       20116 (172.16.1.81)
2025_3   + pts/8        2023-07-28 14:41 00:05       20279 (172.16.1.93)
2025_10  + pts/9        2023-07-28 14:42 00:47       20468 (172.16.1.81)
2025_27  + pts/10       2023-07-28 14:41 00:45       20470 (172.16.1.87)
2025_24  + pts/11       2023-07-28 14:42 00:47       20392 (172.16.6.194)
2025_7   + pts/12       2023-07-28 14:42 00:11       20677 (172.16.1.83)
2025_34  + pts/13       2023-07-28 15:11 00:01       28122 (172.16.6.168)
2025_55  + pts/14       2023-07-28 14:42    .        19808 (172.16.1.158)
2025_23  + pts/15       2023-07-28 14:42 00:05       21007 (172.16.1.65)
2025_1   + pts/16       2023-07-28 14:42    .        20953 (172.16.6.12)
2025_1   + pts/17       2023-07-28 14:42    .        21151 (172.16.6.143)
2025_16  + pts/18       2023-07-28 15:26 00:02       29542 (172.16.8.9)
2025_1   + pts/19       2023-07-28 14:42 00:01       21393 (172.16.6.12)
2025_21  + pts/20       2023-07-28 14:43    .        21140 (172.16.1.86)
2025_27  + pts/21       2023-07-28 14:43 00:30       21437 (172.16.1.87)
2025_1   + pts/22       2023-07-28 14:43    .        21553 (172.16.6.143)
2025_28  + pts/23       2023-07-28 14:43 00:01       21684 (172.16.1.80)
2025_44  + pts/24       2023-07-28 14:44 00:14       22025 (172.16.1.154)
2025_22  + pts/25       2023-07-28 14:45 00:13       22434 (172.16.1.48)
2025_4   + pts/26       2023-07-28 14:51 00:01       24808 (172.16.1.73)
2025_15  + pts/27       2023-07-28 14:45 00:04       22526 (172.16.6.35)
2025_31  + pts/28       2023-07-28 14:46 00:13       22972 (172.16.1.71)
2025_30  + pts/29       2023-07-28 14:45 00:01       22530 (172.16.6.229)
2025_28  + pts/30       2023-07-28 14:46 00:42       23078 (172.16.1.80)
2025_17  + pts/31       2023-07-28 14:56 00:27       25609 (172.16.6.9)
2025_33  + pts/32       2023-07-28 14:46 00:13       23289 (172.16.1.92)
2025_8   + pts/33       2023-07-28 14:48 00:01       23730 (172.16.1.77)
2025_25  + pts/34       2023-07-28 14:50 00:14       24336 (172.16.15.91)
2025_12  + pts/35       2023-07-28 14:50 00:13       24339 (172.16.1.62)
2025_27  + pts/36       2023-07-28 15:02 00:01       26707 (172.16.1.87)
2025_35  + pts/37       2023-07-28 14:50    .        24469 (172.16.1.90)
```

```
2025_35  + pts/38        2023-07-28 14:51 00:03         24755 (172.16.1.90)
2025_19  + pts/39        2023-07-28 14:52 00:10         25138 (172.16.1.95)
2025_14  + pts/40        2023-07-28 14:52 00:09         24767 (172.16.1.61)
2025_17  + pts/41        2023-07-28 15:02 00:21         26761 (172.16.6.9)
2025_29  + pts/42        2023-07-28 14:57   .           25702 (172.16.1.64)
2025_25  + pts/43        2023-07-28 14:58   .           25958 (172.16.15.91)
2025_5   + pts/44        2023-07-28 15:06   .           27269 (172.16.1.78)
2025_15  + pts/45        2023-07-28 15:06   .           27378 (172.16.6.35)
2025_17  + pts/46        2023-07-28 15:08 00:17         27627 (172.16.6.9)
2025_17  + pts/47        2023-07-28 15:12   .           28335 (172.16.6.9)
2025_11  + pts/48        2023-07-28 15:20   .           29102 (172.16.1.88)
2025_16  + pts/49        2023-07-28 15:25 00:03         29410 (172.16.8.9)
[2025_1@fedora ~]$ who -b
         system boot  2023-07-28 09:18
[2025_1@fedora ~]$ who -d
[2025_1@fedora ~]$ who -H
NAME       LINE       TIME            COMMENT
2025_33  pts/0      2023-07-28 14:45 (172.16.1.92)
2025_32  pts/1      2023-07-28 14:39 (172.16.1.72)
2025_24  pts/2      2023-07-28 14:40 (172.16.6.194)
2025_11  pts/3      2023-07-28 14:40 (172.16.1.88)
2025_13  pts/4      2023-07-28 14:40 (172.16.1.74)
2025_30  pts/5      2023-07-28 14:41 (172.16.6.229)
2025_9   pts/6      2023-07-28 15:09 (172.16.1.85)
2025_10  pts/7      2023-07-28 14:41 (172.16.1.81)
2025_3   pts/8      2023-07-28 14:41 (172.16.1.93)
2025_10  pts/9      2023-07-28 14:42 (172.16.1.81)
2025_27  pts/10     2023-07-28 14:41 (172.16.1.87)
2025_24  pts/11     2023-07-28 14:42 (172.16.6.194)
2025_7   pts/12     2023-07-28 14:42 (172.16.1.83)
2025_34  pts/13     2023-07-28 15:11 (172.16.6.168)
2025_55  pts/14     2023-07-28 14:42 (172.16.1.158)
2025_23  pts/15     2023-07-28 14:42 (172.16.1.65)
2025_1   pts/16     2023-07-28 14:42 (172.16.6.12)
2025_1   pts/17     2023-07-28 14:42 (172.16.6.143)
2025_16  pts/18     2023-07-28 15:26 (172.16.8.9)
2025_1   pts/19     2023-07-28 14:42 (172.16.6.12)
2025_21  pts/20     2023-07-28 14:43 (172.16.1.86)
2025_27  pts/21     2023-07-28 14:43 (172.16.1.87)
2025_1   pts/22     2023-07-28 14:43 (172.16.6.143)
2025_28  pts/23     2023-07-28 14:43 (172.16.1.80)
2025_44  pts/24     2023-07-28 14:44 (172.16.1.154)
2025_22  pts/25     2023-07-28 14:45 (172.16.1.48)
2025_4   pts/26     2023-07-28 14:51 (172.16.1.73)
2025_15  pts/27     2023-07-28 14:45 (172.16.6.35)
2025_31  pts/28     2023-07-28 14:46 (172.16.1.71)
2025_30  pts/29     2023-07-28 14:45 (172.16.6.229)
2025_28  pts/30     2023-07-28 14:46 (172.16.1.80)
2025_17  pts/31     2023-07-28 14:56 (172.16.6.9)
2025_33  pts/32     2023-07-28 14:46 (172.16.1.92)
2025_8   pts/33     2023-07-28 14:48 (172.16.1.77)
2025_25  pts/34     2023-07-28 14:50 (172.16.15.91)
2025_12  pts/35     2023-07-28 14:50 (172.16.1.62)
2025_27  pts/36     2023-07-28 15:02 (172.16.1.87)
2025_35  pts/37     2023-07-28 14:50 (172.16.1.90)
2025_35  pts/38     2023-07-28 14:51 (172.16.1.90)
2025_19  pts/39     2023-07-28 14:52 (172.16.1.95)
2025_14  pts/40     2023-07-28 14:52 (172.16.1.61)
```

```
2025_17  pts/41        2023-07-28 15:02 (172.16.6.9)
2025_29  pts/42        2023-07-28 14:57 (172.16.1.64)
2025_25  pts/43        2023-07-28 14:58 (172.16.15.91)
2025_5   pts/44        2023-07-28 15:06 (172.16.1.78)
2025_15  pts/45        2023-07-28 15:06 (172.16.6.35)
2025_17  pts/46        2023-07-28 15:08 (172.16.6.9)
2025_17  pts/47        2023-07-28 15:12 (172.16.6.9)
2025_11  pts/48        2023-07-28 15:20 (172.16.1.88)
2025_16  pts/49        2023-07-28 15:25 (172.16.8.9)
2025_52  pts/50        2023-07-28 15:30 (172.16.1.155)
[2025_1@fedora ~]$ who -l
[2025_1@fedora ~]$ who --lookup
2025_33  pts/0         2023-07-28 14:45 (172.16.1.92)
2025_32  pts/1         2023-07-28 14:39 (172.16.1.72)
2025_24  pts/2         2023-07-28 14:40 (172.16.6.194)
2025_11  pts/3         2023-07-28 14:40 (172.16.1.88)
2025_13  pts/4         2023-07-28 14:40 (172.16.1.74)
2025_30  pts/5         2023-07-28 14:41 (172.16.6.229)
2025_9   pts/6         2023-07-28 15:09 (172.16.1.85)
2025_10  pts/7         2023-07-28 14:41 (172.16.1.81)
2025_3   pts/8         2023-07-28 14:41 (172.16.1.93)
2025_10  pts/9         2023-07-28 14:42 (172.16.1.81)
2025_27  pts/10        2023-07-28 14:41 (172.16.1.87)
2025_24  pts/11        2023-07-28 14:42 (172.16.6.194)
2025_7   pts/12        2023-07-28 14:42 (172.16.1.83)
2025_34  pts/13        2023-07-28 15:11 (172.16.6.168)
2025_55  pts/14        2023-07-28 14:42 (172.16.1.158)
2025_23  pts/15        2023-07-28 14:42 (172.16.1.65)
2025_1   pts/16        2023-07-28 14:42 (172.16.6.12)
2025_1   pts/17        2023-07-28 14:42 (172.16.6.143)
2025_16  pts/18        2023-07-28 15:26 (172.16.8.9)
2025_1   pts/19        2023-07-28 14:42 (172.16.6.12)
2025_21  pts/20        2023-07-28 14:43 (172.16.1.86)
2025_27  pts/21        2023-07-28 14:43 (172.16.1.87)
2025_1   pts/22        2023-07-28 14:43 (172.16.6.143)
2025_28  pts/23        2023-07-28 14:43 (172.16.1.80)
2025_44  pts/24        2023-07-28 14:44 (172.16.1.154)
2025_22  pts/25        2023-07-28 14:45 (172.16.1.48)
2025_4   pts/26        2023-07-28 14:51 (172.16.1.73)
2025_15  pts/27        2023-07-28 14:45 (172.16.6.35)
2025_31  pts/28        2023-07-28 14:46 (172.16.1.71)
2025_30  pts/29        2023-07-28 14:45 (172.16.6.229)
2025_28  pts/30        2023-07-28 14:46 (172.16.1.80)
2025_17  pts/31        2023-07-28 14:56 (172.16.6.9)
2025_33  pts/32        2023-07-28 14:46 (172.16.1.92)
2025_8   pts/33        2023-07-28 14:48 (172.16.1.77)
2025_25  pts/34        2023-07-28 14:50 (172.16.15.91)
2025_12  pts/35        2023-07-28 14:50 (172.16.1.62)
2025_27  pts/36        2023-07-28 15:02 (172.16.1.87)
2025_35  pts/37        2023-07-28 14:50 (172.16.1.90)
2025_35  pts/38        2023-07-28 14:51 (172.16.1.90)
2025_19  pts/39        2023-07-28 14:52 (172.16.1.95)
2025_14  pts/40        2023-07-28 14:52 (172.16.1.61)
2025_17  pts/41        2023-07-28 15:02 (172.16.6.9)
2025_29  pts/42        2023-07-28 14:57 (172.16.1.64)
2025_25  pts/43        2023-07-28 14:58 (172.16.15.91)
2025_5   pts/44        2023-07-28 15:06 (172.16.1.78)
2025_15  pts/45        2023-07-28 15:06 (172.16.6.35)
```

```
2025_17  pts/46        2023-07-28 15:08 (172.16.6.9)
2025_17  pts/47        2023-07-28 15:12 (172.16.6.9)
2025_11  pts/48        2023-07-28 15:20 (172.16.1.88)
2025_16  pts/49        2023-07-28 15:25 (172.16.8.9)
2025_52  pts/50        2023-07-28 15:30 (172.16.1.155)
[2025_1@fedora ~]$ who -m
2025_1  pts/16        2023-07-28 14:42 (172.16.6.12)
[2025_1@fedora ~]$ who -p
[2025_1@fedora ~]$ who -q
2025_33 2025_32 2025_24 2025_11 2025_13 2025_30 2025_9 2025_10 2025_3
2025_10 2025_27 2025_24 2025_7 2025_34 2025_55 2025_23 2025_1 2025_1
2025_16 2025_1 2025_21 2025_27 2025_1 2025_28 2025_44 2025_22 2025_4
2025_15 2025_31 2025_30 2025_28 2025_17 2025_33 2025_8 2025_25 2025_12
2025_27 2025_35 2025_35 2025_19 2025_14 2025_17 2025_29 2025_25 2025_5
2025_15 2025_17 2025_17 2025_11 2025_16 2025_52
# users=51
[2025_1@fedora ~]$ who -r
         run-level 5  2023-07-28 09:19
[2025_1@fedora ~]$ who -s
2025_33  pts/0        2023-07-28 14:45 (172.16.1.92)
2025_32  pts/1        2023-07-28 14:39 (172.16.1.72)
2025_24  pts/2        2023-07-28 14:40 (172.16.6.194)
2025_11  pts/3        2023-07-28 14:40 (172.16.1.88)
2025_13  pts/4        2023-07-28 14:40 (172.16.1.74)
2025_30  pts/5        2023-07-28 14:41 (172.16.6.229)
2025_9   pts/6        2023-07-28 15:09 (172.16.1.85)
2025_10  pts/7        2023-07-28 14:41 (172.16.1.81)
2025_3   pts/8        2023-07-28 14:41 (172.16.1.93)
2025_10  pts/9        2023-07-28 14:42 (172.16.1.81)
2025_27  pts/10       2023-07-28 14:41 (172.16.1.87)
2025_24  pts/11       2023-07-28 14:42 (172.16.6.194)
2025_7   pts/12       2023-07-28 14:42 (172.16.1.83)
2025_34  pts/13       2023-07-28 15:11 (172.16.6.168)
2025_55  pts/14       2023-07-28 14:42 (172.16.1.158)
2025_23  pts/15       2023-07-28 14:42 (172.16.1.65)
2025_1  pts/16        2023-07-28 14:42 (172.16.6.12)
2025_1   pts/17       2023-07-28 14:42 (172.16.6.143)
2025_16  pts/18       2023-07-28 15:26 (172.16.8.9)
2025_1  pts/19        2023-07-28 14:42 (172.16.6.12)
2025_21  pts/20       2023-07-28 14:43 (172.16.1.86)
2025_27  pts/21       2023-07-28 14:43 (172.16.1.87)
2025_1   pts/22       2023-07-28 14:43 (172.16.6.143)
2025_28  pts/23       2023-07-28 14:43 (172.16.1.80)
2025_44  pts/24       2023-07-28 14:44 (172.16.1.154)
2025_22  pts/25       2023-07-28 14:45 (172.16.1.48)
2025_4   pts/26       2023-07-28 14:51 (172.16.1.73)
2025_15  pts/27       2023-07-28 14:45 (172.16.6.35)
2025_31  pts/28       2023-07-28 14:46 (172.16.1.71)
2025_30  pts/29       2023-07-28 14:45 (172.16.6.229)
2025_28  pts/30       2023-07-28 14:46 (172.16.1.80)
2025_17  pts/31       2023-07-28 14:56 (172.16.6.9)
2025_33  pts/32       2023-07-28 14:46 (172.16.1.92)
2025_8   pts/33       2023-07-28 14:48 (172.16.1.77)
2025_25  pts/34       2023-07-28 14:50 (172.16.15.91)
2025_12  pts/35       2023-07-28 14:50 (172.16.1.62)
2025_27  pts/36       2023-07-28 15:02 (172.16.1.87)
2025_35  pts/37       2023-07-28 14:50 (172.16.1.90)
2025_35  pts/38       2023-07-28 14:51 (172.16.1.90)
```

```
2025_19   pts/39        2023-07-28 14:52 (172.16.1.95)
2025_14   pts/40        2023-07-28 14:52 (172.16.1.61)
2025_17   pts/41        2023-07-28 15:02 (172.16.6.9)
2025_29   pts/42        2023-07-28 14:57 (172.16.1.64)
2025_25   pts/43        2023-07-28 14:58 (172.16.15.91)
2025_5    pts/44        2023-07-28 15:06 (172.16.1.78)
2025_15   pts/45        2023-07-28 15:06 (172.16.6.35)
2025_17   pts/46        2023-07-28 15:08 (172.16.6.9)
2025_17   pts/47        2023-07-28 15:12 (172.16.6.9)
2025_11   pts/48        2023-07-28 15:20 (172.16.1.88)
2025_16   pts/49        2023-07-28 15:25 (172.16.8.9)
2025_52   pts/50        2023-07-28 15:30 (172.16.1.155)
[2025_1@fedora ~]$ who -t
[2025_1@fedora ~]$ who -T
2025_33  + pts/0        2023-07-28 14:45 (172.16.1.92)
2025_32  + pts/1        2023-07-28 14:39 (172.16.1.72)
2025_24  + pts/2        2023-07-28 14:40 (172.16.6.194)
2025_11  + pts/3        2023-07-28 14:40 (172.16.1.88)
2025_13  + pts/4        2023-07-28 14:40 (172.16.1.74)
2025_30  + pts/5        2023-07-28 14:41 (172.16.6.229)
2025_9   + pts/6        2023-07-28 15:09 (172.16.1.85)
2025_10  + pts/7        2023-07-28 14:41 (172.16.1.81)
2025_3   + pts/8        2023-07-28 14:41 (172.16.1.93)
2025_10  + pts/9        2023-07-28 14:42 (172.16.1.81)
2025_27  + pts/10       2023-07-28 14:41 (172.16.1.87)
2025_24  + pts/11       2023-07-28 14:42 (172.16.6.194)
2025_7   + pts/12       2023-07-28 14:42 (172.16.1.83)
2025_34  + pts/13       2023-07-28 15:11 (172.16.6.168)
2025_55  + pts/14       2023-07-28 14:42 (172.16.1.158)
2025_23  + pts/15       2023-07-28 14:42 (172.16.1.65)
2025_1   + pts/16       2023-07-28 14:42 (172.16.6.12)
2025_1   + pts/17       2023-07-28 14:42 (172.16.6.143)
2025_16  + pts/18       2023-07-28 15:26 (172.16.8.9)
2025_1   + pts/19       2023-07-28 14:42 (172.16.6.12)
2025_21  + pts/20       2023-07-28 14:43 (172.16.1.86)
2025_27  + pts/21       2023-07-28 14:43 (172.16.1.87)
2025_1   + pts/22       2023-07-28 14:43 (172.16.6.143)
2025_28  + pts/23       2023-07-28 14:43 (172.16.1.80)
2025_44  + pts/24       2023-07-28 14:44 (172.16.1.154)
2025_22  + pts/25       2023-07-28 14:45 (172.16.1.48)
2025_4   + pts/26       2023-07-28 14:51 (172.16.1.73)
2025_15  + pts/27       2023-07-28 14:45 (172.16.6.35)
2025_31  + pts/28       2023-07-28 14:46 (172.16.1.71)
2025_30  + pts/29       2023-07-28 14:45 (172.16.6.229)
2025_28  + pts/30       2023-07-28 14:46 (172.16.1.80)
2025_17  + pts/31       2023-07-28 14:56 (172.16.6.9)
2025_33  + pts/32       2023-07-28 14:46 (172.16.1.92)
2025_8   + pts/33       2023-07-28 14:48 (172.16.1.77)
2025_25  + pts/34       2023-07-28 14:50 (172.16.15.91)
2025_12  + pts/35       2023-07-28 14:50 (172.16.1.62)
2025_27  + pts/36       2023-07-28 15:02 (172.16.1.87)
2025_35  + pts/37       2023-07-28 14:50 (172.16.1.90)
2025_35  + pts/38       2023-07-28 14:51 (172.16.1.90)
2025_19  + pts/39       2023-07-28 14:52 (172.16.1.95)
2025_14  + pts/40       2023-07-28 14:52 (172.16.1.61)
2025_17  + pts/41       2023-07-28 15:02 (172.16.6.9)
2025_29  + pts/42       2023-07-28 14:57 (172.16.1.64)
2025_25  + pts/43       2023-07-28 14:58 (172.16.15.91)
```

```
2025_5   + pts/44      2023-07-28 15:06 (172.16.1.78)
2025_15  + pts/45      2023-07-28 15:06 (172.16.6.35)
2025_17  + pts/46      2023-07-28 15:08 (172.16.6.9)
2025_17  + pts/47      2023-07-28 15:12 (172.16.6.9)
2025_11  + pts/48      2023-07-28 15:20 (172.16.1.88)
2025_16  + pts/49      2023-07-28 15:25 (172.16.8.9)
2025_52  + pts/50      2023-07-28 15:30 (172.16.1.155)
[2025_1@fedora ~]$ who -u
2025_33  pts/0      2023-07-28 14:45 00:02      22897 (172.16.1.92)
2025_32  pts/1      2023-07-28 14:39 00:03      19247 (172.16.1.72)
2025_24  pts/2      2023-07-28 14:40    .       19580 (172.16.6.194)
2025_11  pts/3      2023-07-28 14:40 00:16      19630 (172.16.1.88)
2025_13  pts/4      2023-07-28 14:40 00:25      19739 (172.16.1.74)
2025_30  pts/5      2023-07-28 14:41 00:06      19251 (172.16.6.229)
2025_9   pts/6      2023-07-28 15:09    .       27860 (172.16.1.85)
2025_10  pts/7      2023-07-28 14:41 00:01      20116 (172.16.1.81)
2025_3   pts/8      2023-07-28 14:41    .       20279 (172.16.1.93)
2025_10  pts/9      2023-07-28 14:42 00:51      20468 (172.16.1.81)
2025_27  pts/10     2023-07-28 14:41 00:49      20470 (172.16.1.87)
2025_24  pts/11     2023-07-28 14:42 00:52      20392 (172.16.6.194)
2025_7   pts/12     2023-07-28 14:42 00:15      20677 (172.16.1.83)
2025_34  pts/13     2023-07-28 15:11    .       28122 (172.16.6.168)
2025_55  pts/14     2023-07-28 14:42 00:01      19808 (172.16.1.158)
2025_23  pts/15     2023-07-28 14:42    .       21007 (172.16.1.65)
2025_1   pts/16     2023-07-28 14:42    .       20953 (172.16.6.12)
2025_1   pts/17     2023-07-28 14:42    .       21151 (172.16.6.143)
2025_16  pts/18     2023-07-28 15:26 00:07      29542 (172.16.8.9)
2025_1   pts/19     2023-07-28 14:42 00:06      21393 (172.16.6.12)
2025_21  pts/20     2023-07-28 14:43 00:03      21140 (172.16.1.86)
2025_27  pts/21     2023-07-28 14:43 00:35      21437 (172.16.1.87)
2025_1   pts/22     2023-07-28 14:43 00:03      21553 (172.16.6.143)
2025_28  pts/23     2023-07-28 14:43 00:06      21684 (172.16.1.80)
2025_44  pts/24     2023-07-28 14:44 00:19      22025 (172.16.1.154)
2025_22  pts/25     2023-07-28 14:45    .       22434 (172.16.1.48)
2025_4   pts/26     2023-07-28 14:51 00:01      24808 (172.16.1.73)
2025_15  pts/27     2023-07-28 14:45 00:09      22526 (172.16.6.35)
2025_31  pts/28     2023-07-28 14:46 00:18      22972 (172.16.1.71)
2025_30  pts/29     2023-07-28 14:45    .       22530 (172.16.6.229)
2025_28  pts/30     2023-07-28 14:46 00:47      23078 (172.16.1.80)
2025_17  pts/31     2023-07-28 14:56 00:31      25609 (172.16.6.9)
2025_33  pts/32     2023-07-28 14:46 00:01      23289 (172.16.1.92)
2025_8   pts/33     2023-07-28 14:48    .       23730 (172.16.1.77)
2025_25  pts/34     2023-07-28 14:50 00:19      24336 (172.16.15.91)
2025_12  pts/35     2023-07-28 14:50 00:17      24339 (172.16.1.62)
2025_27  pts/36     2023-07-28 15:02 00:06      26707 (172.16.1.87)
2025_35  pts/37     2023-07-28 14:50    .       24469 (172.16.1.90)
2025_35  pts/38     2023-07-28 14:51 00:07      24755 (172.16.1.90)
2025_19  pts/39     2023-07-28 14:52 00:15      25138 (172.16.1.95)
2025_14  pts/40     2023-07-28 14:52 00:14      24767 (172.16.1.61)
2025_17  pts/41     2023-07-28 15:02 00:26      26761 (172.16.6.9)
2025_29  pts/42     2023-07-28 14:57 00:03      25702 (172.16.1.64)
2025_25  pts/43     2023-07-28 14:58 00:03      25958 (172.16.15.91)
2025_5   pts/44     2023-07-28 15:06    .       27269 (172.16.1.78)
2025_15  pts/45     2023-07-28 15:06 00:01      27378 (172.16.6.35)
2025_17  pts/46     2023-07-28 15:08 00:22      27627 (172.16.6.9)
2025_17  pts/47     2023-07-28 15:12 00:03      28335 (172.16.6.9)
2025_11  pts/48     2023-07-28 15:20    .       29102 (172.16.1.88)
2025_16  pts/49     2023-07-28 15:25 00:08      29410 (172.16.8.9)
```

```
2025_52  pts/50       2023-07-28 15:30 00:03       29854 (172.16.1.155)
[2025_1@fedora ~]$

Echo
[2025_1@fedora ~]$ echo operating_system
operating_system
[2025_1@fedora ~]$ echo -n operating_sytem
operating_sytem[2025_1@fedora ~]$ echo -e operating_system
operating_system
[2025_1@fedora ~]$ echo -E operating_system
operating_system

[2025_1@fedora ~]$ bc
bc 1.07.1
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006, 2008, 2012-2017 Free
Software Foundation, Inc.
This is free software with ABSOLUTELY NO WARRANTY.
For details type `warranty'.
x=5

++x
6
--x
5
x++
5
x--
6
5+6
11
6-5
1
6*6
36
6/6
1
9%4
1
2^5
32
var os=5
(standard_in) 13: syntax error
var <os>=6
0
os
0
x
5
var <x>
(standard_in) 18: syntax error
x <op>= 5
0
5.4
5.4
5>5
0
5<4
0
```

```
5<=6
1
6>= 20
0
6==6
1
7!=5
1
!9
0
!0
1
5 && 5
1
5||4
1
sqrt 81
(standard_in) 30: syntax error
sqrt (81)
9
scale(1.098)
3
length(35356)
5


(interrupt) Exiting bc.
[2025_1@fedora ~]$ bc -l
bc 1.07.1
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006, 2008, 2012-2017 Free
Software Foundation, Inc.
This is free software with ABSOLUTELY NO WARRANTY.
For details type `warranty'.
s (30)
-.98803162409286178998
x=45
c (x)
.52532198881772969604
a (x)
1.54857776146817756029
l (x)
3.80666248977031975739
e (x)
34934271057485095348.03479723340609953341
j(5,2)
.00703962975587168548

COMMANDS FOR NAVIGATING THE LINUX FILE SYSTEM

Pwd
[2025_1@fedora ~]$ pwd
/home/2025_1
[2025_1@fedora ~]$ pwd -L
/home/2025_1
[2025_1@fedora ~]$ pwd -P
/home/2025_1


ls -a
[2025_1@fedora ~]$ ls -a
```

```
.      a.out            .bash_logout   .bashrc          .binsearch.c.swp
.lesshst  quicksort.c
..  .bash_history  .bash_profile  bellman_ford.c  .knapsack.c.swp
.mozilla
[2025_1@fedora ~]$ ls -C
a.out  bellman_ford.c  quicksort.c

[2025_1@fedora ~]$ ls -l -a
total 84
drwx------. 1 2025_1 2025_1   244 Jul 28 14:58 .
drwxr-xr-x. 1 root   root    7730 Jul 24 14:55 ..
-rwxr-xr-x. 1 2025_1 2025_1 25088 May 23 12:07 a.out
-rw-------. 1 2025_1 2025_1   715 May 23 12:34 .bash_history
-rw-r--r--. 1 2025_1 2025_1    18 Jul 21  2021 .bash_logout
-rw-r--r--. 1 2025_1 2025_1   141 Jul 21  2021 .bash_profile
-rw-r--r--. 1 2025_1 2025_1   492 Jul 21  2021 .bashrc
-rw-r--r--. 1 2025_1 2025_1  1293 May 23 11:04 bellman_ford.c
-rw-------. 1 2025_1 2025_1 16384 May 18 11:08 .binsearch.c.swp
-rw-r--r--. 1 2025_1 2025_1 12288 Apr 13 12:41 .knapsack.c.swp
-rw-------. 1 2025_1 2025_1    20 Jul 28 14:58 .lesshst
drwxr-xr-x. 1 2025_1 2025_1    34 Jul 23  2021 .mozilla
-rw-r--r--. 1 2025_1 2025_1   934 May 23 12:06 quicksort.c
```

INFORMATIONAL COMMANDS
```
[2025_1@fedora ~]$ ps
    PID TTY          TIME CMD
  21324 pts/16   00:00:00 bash
  31365 pts/16   00:00:00 ps
[2025_1@fedora ~]$ w
 15:40:23 up  6:21, 53 users,  load average: 0.02, 0.06, 0.05
USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
2025_33  pts/0      14:45    4.00s  0.39s  0.39s -bash
2025_32  pts/1      14:39    9:35   0.83s  0.20s -bash
2025_24  pts/2      14:40    7.00s  0.24s  0.24s -bash
2025_11  pts/3      14:40    22:38  0.14s  0.14s -bash
2025_13  pts/4      14:40    31.00s 0.09s  0.00s less
2025_30  pts/5      14:41    6.00s  0.04s  0.02s less
2025_9   pts/6      15:09    16.00s 0.18s  0.18s -bash
2025_10  pts/7      14:41    2:22   0.09s  0.09s -bash
2025_3   pts/8      14:41    15.00s 0.19s  0.10s less
2025_10  pts/9      14:42    58:12  0.01s  0.01s -bash
2025_27  pts/10     14:41    56:13  0.01s  0.00s less
2025_24  pts/11     14:42    58:21  0.01s  0.01s -bash
2025_7   pts/12     14:42    7.00s  0.11s  0.11s -bash
2025_34  pts/13     15:11    1:11   0.12s  0.12s -bash
2025_55  pts/14     14:42    1:11   0.08s  0.08s -bash
2025_23  pts/15     14:42    6:23   0.13s  0.13s -bash
2025_1   pts/16     14:42    6.00s  0.18s  0.01s w
2025_1   pts/17     14:42    47.00s 0.14s  0.14s -bash
2025_16  pts/18     15:26    13:31  0.01s  0.01s -bash
2025_1   pts/19     14:42    15.00s 0.05s  0.02s less
2025_21  pts/20     14:43    7.00s  0.20s  0.20s -bash
2025_27  pts/21     14:43    41:58  0.05s  0.00s less
2025_1   pts/22     14:43    9:41   0.05s  0.00s less
2025_28  pts/23     14:43    3:43   0.10s  0.10s -bash
2025_44  pts/24     14:44    1:11   0.03s  0.03s -bash
2025_22  pts/25     14:45    1:19   0.08s  0.08s -bash
2025_4   pts/26     14:51    38.00s 0.14s  0.14s -bash
```

```
2025_15   pts/27    14:45    1:06   0.11s  0.11s -bash
2025_31   pts/28    14:46   24:39   0.05s  0.05s -bash
2025_30   pts/29    14:45    2:47   0.10s  0.10s -bash
2025_28   pts/30    14:46    2:54   0.01s  0.01s -bash
2025_17   pts/31    14:56   38:07   0.02s  0.00s bc
2025_33   pts/32    14:46   15.00s  0.09s  0.01s less
2025_8    pts/33    14:48    2:39   0.09s  0.09s -bash
2025_25   pts/34    14:50   25:31   0.06s  0.04s less
2025_12   pts/35    14:50    1:24   0.05s  0.05s -bash
2025_27   pts/36    15:02   12:54   0.07s  0.07s -bash
2025_35   pts/37    14:50    7:06   0.12s  0.12s -bash
2025_35   pts/38    14:51    1:11   0.04s  0.00s less
2025_19   pts/39    14:52   39.00s  0.06s  0.00s less
2025_14   pts/40    14:52    1:35   0.06s  0.00s less
2025_17   pts/41    15:02   32:31   0.03s  0.00s cat
2025_29   pts/42    14:57    9:43   0.09s  0.08s -bash
2025_25   pts/43    14:58    9:55   0.07s  0.07s -bash
2025_5    pts/44    15:06    4.00s  0.09s  0.09s -bash
2025_15   pts/45    15:06    1:11   0.10s  0.10s -bash
2025_17   pts/46    15:08   28:27   0.02s  0.00s cat
2025_17   pts/47    15:12    2:31   0.09s  0.09s -bash
2025_11   pts/48    15:20    1:02   0.10s  0.05s bash
2025_16   pts/49    15:25   14:48   0.01s  0.01s -bash
2025_52   pts/50    15:30    9:59   0.01s  0.01s -bash
2025_23   pts/51    15:39    1:05   0.01s  0.01s -bash
2025_54   pts/52    15:39   45.00s  0.01s  0.01s -bash
[2025_1@fedora ~]$ id
uid=1101(2025_1) gid=1101(2025_1) groups=1101(2025_1)
context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
[2025_1@fedora ~]$ top
top - 15:41:49 up  6:22, 52 users,  load average: 0.06, 0.07, 0.06
Tasks: 664 total,   1 running, 604 sleeping,  59 stopped,   0 zombie
%Cpu(s):  1.4 us,  1.2 sy,  0.0 ni, 97.1 id,  0.0 wa,  0.1 hi,  0.2 si,
0.0 st
MiB Mem :   7766.1 total,   4149.2 free,   1326.3 used,   2290.5
buff/cache
MiB Swap:   7766.0 total,   7766.0 free,      0.0 used.   6165.3 avail
Mem

    PID USER       PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+
COMMAND
  19207 2025_30    20   0  176492   7568     20 S   0.0   0.1   0:00.00
(sd-pam)
  19216 2025_30    20   0   16696   5976   4416 S   0.0   0.1   0:00.00
sshd
  19228 2025_30    20   0    5932   3888   3476 S   0.0   0.0   0:00.00
sftp-server
  19247 root       20   0   16800  11064   9512 S   0.0   0.1   0:00.03
sshd
  19251 root       20   0   16804  10980   9424 S   0.0   0.1   0:00.02
sshd
  19256 2025_32    20   0   16688   6108   4560 S   0.0   0.1   0:00.38
sshd
  19268 2025_32    20   0  224192   5728   3712 S   0.0   0.1   0:00.21
bash
  19298 root       20   0   16672  10612   9100 S   0.0   0.1   0:00.02
sshd
```

```
19305 2025_11   20   0    21492  13924  10640 S   0.0   0.2   0:00.18
systemd
19316 2025_11   20   0   176492   7568     20 S   0.0   0.1   0:00.00
(sd-pam)
19332 2025_11   20   0    16692   6084   4532 S   0.0   0.1   0:00.00
sshd
19338 2025_11   20   0     5932   3928   3516 S   0.0   0.0   0:00.00
sftp-server
19360 root      20   0    16804  10956   9404 S   0.0   0.1   0:00.02
sshd
19362 root      20   0    16800  10972   9424 S   0.0   0.1   0:00.03
sshd
19370 2025_24   20   0    21508  14212  10936 S   0.0   0.2   0:00.16
systemd
19381 2025_24   20   0   176492   7568     20 S   0.0   0.1   0:00.00
(sd-pam)
19392 2025_27   20   0    21504  13800  10540 S   0.0   0.2   0:00.16
systemd
19404 2025_24   20   0    16700   6004   4452 S   0.0   0.1   0:00.00
sshd
19406 2025_27   20   0   176492   7568     20 S   0.0   0.1   0:00.00
(sd-pam)
19421 2025_24   20   0     5932   3908   3496 S   0.0   0.0   0:00.00
sftp-server
19444 2025_27   20   0    16696   5996   4448 S   0.0   0.1   0:00.00
sshd
19453 2025_27   20   0     5932   3908   3496 S   0.0   0.0   0:00.00
sftp-server
19475 root      20   0    16672  10912   9368 S   0.0   0.1   0:00.03
sshd
19482 2025_13   20   0    21504  13920  10648 S   0.0   0.2   0:00.16
systemd
19494 2025_13   20   0   176344   7552     20 S   0.0   0.1   0:00.00
(sd-pam)
19504 2025_13   20   0    16820   6024   4476 S   0.0   0.1   0:00.00
sshd
19515 2025_13   20   0     5932   4024   3616 S   0.0   0.1   0:00.00
sftp-server
19538 root      20   0    16676  10912   9364 S   0.0   0.1   0:00.02
sshd
19543 2025_24   20   0    16696   5984   4432 S   0.0   0.1   0:00.00
sshd
19555 2025_24   20   0   222648   3848   3484 S   0.0   0.0   0:00.00
bash
19578 root      20   0    16804  11056   9500 S   0.0   0.1   0:00.03
sshd
19580 root      20   0    16676  11004   9456 S   0.0   0.1   0:00.03
sshd
19588 2025_13   20   0    16696   6016   4460 S   0.0   0.1   0:00.01
sshd
19598 2025_13   20   0   222648   3936   3572 S   0.0   0.0   0:00.00
bash
19630 root      20   0    16676  11060   9508 S   0.0   0.1   0:00.03
sshd
19635 2025_24   20   0    16696   6044   4492 S   0.0   0.1   0:00.52
sshd
19653 2025_24   20   0   224708   6208   3664 S   0.0   0.1   0:00.26
bash
```

```
   19679 root        20   0   16676   11068    9524 S   0.0   0.1   0:00.03
sshd
   19687 2025_55     20   0   21508   14124   10884 S   0.0   0.2   0:00.16
systemd
   19699 2025_55     20   0  176492    7568      20 S   0.0   0.1   0:00.00
(sd-pam)
   19708 2025_55     20   0   16692    6100    4552 S   0.0   0.1   0:00.00
sshd
   19720 2025_55     20   0    5932    3912    3496 S   0.0   0.0   0:00.00
sftp-server
   19739 root        20   0   16676   11096    9544 S   0.0   0.1   0:00.03
sshd
   19744 2025_11     20   0   16692    6044    4492 S   0.0   0.1   0:00.21
sshd
[2025_1@fedora ~]$ free
               total        used        free      shared  buff/cache
available
Mem:         7952448     1358824     4248052       20328     2345572
6312544
Swap:        7952380           0     7952380
[2025_1@fedora ~]$ uname -a
Linux fedora 5.19.9-100.fc35.x86_64 #1 SMP PREEMPT_DYNAMIC Thu Sep 15
09:55:09 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux


Working with Files and Directories
[student@localhost ~]$ touch file
[student@localhost ~]$ file file
file: empty
[student@localhost ~]$ cat file
[student@localhost ~]$ cat >file
I study in STCET.
I am in CSE.
Our Teacher is TBB Mam.
^C
[student@localhost ~]$ cat file
I study in STCET.
I am in CSE.
Our Teacher is TBB Mam.
[student@localhost ~]$ head file
I study in STCET.
I am in CSE.
Our Teacher is TBB Mam.
[student@localhost ~]$ tail file
I study in STCET.
I am in CSE.
Our Teacher is TBB Mam.
[student@localhost ~]$ cp file file1
[student@localhost ~]$ cat file1
I study in STCET.
I am in CSE.
Our Teacher is TBB Mam.
[student@localhost ~]$ mv file1
mv: missing destination file operand after 'file1'
Try 'mv --help' for more information.
[student@localhost ~]$ del file
bash: del: command not found...
[student@localhost ~]$ rm file
[student@localhost ~]$ mkdir file
```

```
[student@localhost ~]$ rmdir file
[student@localhost ~]$ tree
.
├── 01_TejasAdvik_AIML
│   ├── 01_AIML_PCA2_TejasAdvik.pdf
│   ├── a.out
│   ├── prims.c
│   └── towerofhanoi.c
├── 28_Harsh
│   ├── a.out
│   ├── bfs.c
│   ├── chainmul.c
│   ├── chainmultiplication.c
│   ├── dfs.c
│   └── minmax.c
├── 33_Arun
│   ├── a.out
│   ├── binary.c
│   ├── bubble.c
│   ├── insertion.c
│   ├── linear.c
│   ├── multiply.c
│   └── select.c
├── allarm.c
├── allprime.c
├── am25
├── aman25
│   ├── a.out
│   ├── bellman_ford.c
│   ├── binary
│   ├── binary_search.c
│   ├── bubble
│   ├── bubblrsort.c
│   ├── fractional_knapsack.c
│   ├── heap_sort.c
│   ├── linearsearch.c
│   ├── marge_sort.c
│   ├── matrix_multiplication.c
│   ├── selection.c
│   └── selectionsort.c
├── a.out
├── arm2.c
├── arm.c
├── asad
│   └── a.txt
├── bellman_ford.c
├── bin.c
├── bisection.c
├── cal.c
├── circularq.c
├── cll.c
├── count.c
├── counter.c
├── d.c
├── Desktop
├── Downloads
│   └── Win10_1909_EnglishInternational_x64.iso
├── elimination.c
```

```
├── Email.cpp
├── exam.c
├── f9.c
├── fact2.c
├── fact.c
├── fact_permu_combi_func.c
├── fibbo.c
├── file1
├── floyd_warshall.c
├── gcd.c
├── in.c
├── insertion.c
├── interpole48.c
├── IT33
├── ITS33
│   ├── a.out
│   └── quicksort.c
├── jeet
├── leapyear_func.c
├── linedraw_func.c
├── matrix.c
├── mean_sd.c
├── Music
├── num2.c
├── num.c
├── p1.c
├── p2.c
├── p3.c
├── p4.c
├── p5.c
├── p6.c
├── p7.c
├── pal_string.c
├── p.c
├── Polygon.cpp
├── Poushali_34
│   ├── a.out
│   ├── ascitest.c
│   ├── checktest.c
│   ├── converttest.c
│   ├── daystest.c
│   ├── inter1test.c
│   ├── intertest.c
│   ├── maxtest.c
│   ├── P2test.c
│   ├── P3test.c
│   ├── p4test.c
│   ├── P4test.c
│   ├── PoushaliP1test.c
│   └── rectest.c
├── pow_func.c
├── pp1.c
├── pp2.c
├── pp3.c
├── prime.c
├── Priya_11
│   ├── 3q
│   ├── a.out
```

```
│   │   ├── bellman.c
│   │   ├── dijktrass.c
│   │   ├── manmin.c
│   │   ├── maxmin.c
│   │   ├── merge.c
│   │   ├── mergesort.c
│   │   ├── quicksort.c
│   │   ├── search2.c
│   │   ├── search.c
│   │   └── sort.c
│   ├── product.c
│   ├── Public
│   ├── q2.c
│   ├── q.c
│   ├── roots_func.c
│   ├── s1.c
│   ├── s2.c
│   ├── s3.c
│   ├── s4.c
│   ├── s5.c
│   ├── sankhyika
│   │   ├── a.out
│   │   ├── heapsort.c
│   │   ├── knapsackfractional.c
│   │   ├── quicksort.c
│   │   └── towersofhanoi.c
│   ├── sankhyika.c
│   ├── s.c
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-10.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-14.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-20\ -\ 1.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-20\ -\ 2.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-20\ -\ 3.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-20.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-21\ -\ 1.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-21\ -\ 2.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-21\ -\ 3.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-21.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-22\ -\ 1.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-22\ -\ 2.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-22.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-55-58.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-56-07.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-56-10.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-56-11.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-56-48.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-57-57.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-58-28.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-58-45.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-59-00.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-59-15.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-59-35.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-59-36\ -\ 1.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-59-36\ -\ 2.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-59-36\ -\ 3.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-59-36.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-59-37\ -\ 1.png
│   ├── Screenshot\ from\ 2023-04-26\ 15-59-37\ -\ 2.png
```

```
├── Screenshot\ from\ 2023-04-26\ 15-59-37\ -\ 3.png
├── Screenshot\ from\ 2023-04-26\ 15-59-37.png
├── Screenshot\ from\ 2023-04-26\ 15-59-58.png
├── Screenshot\ from\ 2023-04-26\ 16-00-35.png
├── Screenshot\ from\ 2023-04-26\ 16-02-31\ -\ 1.png
├── Screenshot\ from\ 2023-04-26\ 16-02-31\ -\ 2.png
├── Screenshot\ from\ 2023-04-26\ 16-02-31\ -\ 3.png
├── Screenshot\ from\ 2023-04-26\ 16-02-31.png
├── Screenshot\ from\ 2023-04-26\ 16-02-32\ -\ 1.png
├── Screenshot\ from\ 2023-04-26\ 16-02-32\ -\ 2.png
├── Screenshot\ from\ 2023-04-26\ 16-02-32\ -\ 3.png
├── Screenshot\ from\ 2023-04-26\ 16-02-32\ -\ 4.png
├── Screenshot\ from\ 2023-04-26\ 16-02-32\ -\ 5.png
├── Screenshot\ from\ 2023-04-26\ 16-02-32.png
├── Screenshot\ from\ 2023-04-26\ 16-02-33\ -\ 1.png
├── Screenshot\ from\ 2023-04-26\ 16-02-33\ -\ 2.png
├── Screenshot\ from\ 2023-04-26\ 16-02-33\ -\ 3.png
├── Screenshot\ from\ 2023-04-26\ 16-02-33\ -\ 4.png
├── Screenshot\ from\ 2023-04-26\ 16-02-33.png
├── Screenshot\ from\ 2023-04-26\ 16-02-34\ -\ 1.png
├── Screenshot\ from\ 2023-04-26\ 16-02-34\ -\ 2.png
├── Screenshot\ from\ 2023-04-26\ 16-02-34\ -\ 3.png
├── Screenshot\ from\ 2023-04-26\ 16-02-34.png
├── Screenshot\ from\ 2023-04-26\ 16-02-35\ -\ 1.png
├── Screenshot\ from\ 2023-04-26\ 16-02-35\ -\ 2.png
├── Screenshot\ from\ 2023-04-26\ 16-02-35\ -\ 3.png
├── Screenshot\ from\ 2023-04-26\ 16-02-35\ -\ 4.png
├── Screenshot\ from\ 2023-04-26\ 16-02-35.png
├── Screenshot\ from\ 2023-04-26\ 16-02-36\ -\ 1.png
├── Screenshot\ from\ 2023-04-26\ 16-02-36\ -\ 2.png
├── Screenshot\ from\ 2023-04-26\ 16-02-36.png
├── Screenshot\ from\ 2023-04-26\ 16-02-37.png
├── Screenshot\ from\ 2023-04-26\ 16-03-44.png
├── Screenshot\ from\ 2023-04-26\ 16-04-00.png
├── Screenshot\ from\ 2023-04-26\ 16-04-01\ -\ 1.png
├── Screenshot\ from\ 2023-04-26\ 16-04-01\ -\ 2.png
├── Screenshot\ from\ 2023-04-26\ 16-04-01.png
├── Screenshot\ from\ 2023-04-26\ 16-04-10.png
├── Screenshot\ from\ 2023-04-26\ 16-04-11.png
├── Screenshot\ from\ 2023-04-26\ 16-04-12.png
├── Screenshot\ from\ 2023-04-26\ 16-04-13\ -\ 1.png
├── Screenshot\ from\ 2023-04-26\ 16-04-13\ -\ 2.png
├── Screenshot\ from\ 2023-04-26\ 16-04-13.png
├── Screenshot\ from\ 2023-04-26\ 16-05-45.png
├── Screenshot\ from\ 2023-04-26\ 16-06-19.png
├── Screenshot\ from\ 2023-04-26\ 16-06-49.png
├── Screenshot\ from\ 2023-04-26\ 16-07-06.png
├── Screenshot\ from\ 2023-04-26\ 16-07-25.png
├── Screenshot\ from\ 2023-04-26\ 16-08-03.png
├── Screenshot\ from\ 2023-04-26\ 16-08-48.png
├── Screenshot\ from\ 2023-04-26\ 16-09-46.png
├── searchstring.c
├── Shir_14
│   ├── a.out
│   └── knap.c
├── soumya
│   ├── a.out
│   └── soumya.c
```

```
├── SpandanSen_58
│   ├── a.out
│   ├── calc.c
│   ├── Poushali_34
│   ├── sum.c
│   └── test.c
├── sqncu.c
├── sum.c
├── table.c
├── t.c
├── Templates
├── test.c
├── to_lower_upper.c
└── Videos

24 directories, 219 files

Other Utilities
[student@localhost ~]$ clear

[student@localhost ~]$ more file1
I study in STCET.
I am in CSE.
Our Teacher is TBB Mam.
[student@localhost ~]$ less file1
I study in STCET.
I am in CSE.
Our Teacher is TBB Mam.
(END)
[student@localhost ~]$ grep file1

~By ARANYA ADHIKARY
```