TOPICS - 2

Utilities of UNIX :

These libraries implement most of the functionalities of the operating system and do not require kernel module's code access rights.

System Utility − System Utility programs are responsible to do specialized, individual level tasks.

Command name: cal

cal displays a simple calendar. If no arguments are specified, the current month is displayed.

SYNOPSIS/Syntax:

cal [options] [[[day] month] year]
cal [options] [timestamp|monthname]

The month may be specified as a number (1-12), as a month name or as an abbreviated month name according to the current locales.
Two different calendar systems are used, Gregorian and Julian.

$ cal –h OR $ cal –help (display this help)

Output:

```
Usage:
 cal [options] [[[day] month] year]
 cal [options] <timestamp|monthname>

Display a calendar, or some part of it.
Without any arguments, display the current month.

Options:
 -1, --one            show only a single month (default)
 -3, --three          show three months spanning the date
 -n, --months <num>    show num months starting with date's month

 -s, --sunday          Sunday as first day of week
 -m, --monday          Monday as first day of week
 -j, --julian         use day-of-year for all calendars

 -y, --year           show the whole year
 -Y, --twelve         show the next twelve months
 -w, --week[=<num>]    show US or ISO-8601 week numbers

 -h, --help           display this help
 -V, --version         display version
```

Example:

#To display current month's calendar:

$ **cal**

Output:

```
     August 2020
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
```

$ **cal 2020 # (Display the calendar of the year 2020)**

```
                              2020

      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                      1    1  2  3  4  5  6  7
 5  6  7  8  9 10 11    2  3  4  5  6  7  8    8  9 10 11 12 13 14
12 13 14 15 16 17 18    9 10 11 12 13 14 15   15 16 17 18 19 20 21
19 20 21 22 23 24 25   16 17 18 19 20 21 22   22 23 24 25 26 27 28
26 27 28 29 30 31      23 24 25 26 27 28 29   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  2  3  4                   1  2       1  2  3  4  5  6
 5  6  7  8  9 10 11    3  4  5  6  7  8  9    7  8  9 10 11 12 13
12 13 14 15 16 17 18   10 11 12 13 14 15 16   14 15 16 17 18 19 20
19 20 21 22 23 24 25   17 18 19 20 21 22 23   21 22 23 24 25 26 27
26 27 28 29 30         24 25 26 27 28 29 30   28 29 30
                       31
        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  2  3  4                      1          1  2  3  4  5
 5  6  7  8  9 10 11    2  3  4  5  6  7  8    6  7  8  9 10 11 12
12 13 14 15 16 17 18    9 10 11 12 13 14 15   13 14 15 16 17 18 19
19 20 21 22 23 24 25   16 17 18 19 20 21 22   20 21 22 23 24 25 26
26 27 28 29 30 31      23 24 25 26 27 28 29   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    1  2  3  4  5  6  7          1  2  3  4  5
 4  5  6  7  8  9 10    8  9 10 11 12 13 14    6  7  8  9 10 11 12
11 12 13 14 15 16 17   15 16 17 18 19 20 21   13 14 15 16 17 18 19
18 19 20 21 22 23 24   22 23 24 25 26 27 28   20 21 22 23 24 25 26
25 26 27 28 29 30 31   29 30                  27 28 29 30 31
```

```
$ cal -3  #(shows the previous, current and next month)
```

```
   Output:
     July 2020           August 2020         September 2020
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                     1         1  2  3  4  5
 5  6  7  8  9 10 11   2  3  4  5  6  7  8   6  7  8  9 10 11 12
12 13 14 15 16 17 18   9 10 11 12 13 14 15  13 14 15 16 17 18 19
19 20 21 22 23 24 25  16 17 18 19 20 21 22  20 21 22 23 24 25 26
26 27 28 29 30 31     23 24 25 26 27 28 29  27 28 29 30
                      30 31
```

#To display Dec 2020 calendar:

```
$ cal 12 2020
```

output:

```
   December 2020
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
```

#To display Dec 2020 calendar:

```
$ cal dec 2020
```

Output:

```
   December 2020
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
```

#To display Dec 2020 calendar:

```
$ cal december 2020
```

Output:

```
   December 2020
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
```

```
$ cal December 2020
      December 2020
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
```

To display complete year calendar.:

```
$ cal -y
                            2020

      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                      1    1  2  3  4  5  6  7
 5  6  7  8  9 10 11    2  3  4  5  6  7  8    8  9 10 11 12 13 14
12 13 14 15 16 17 18    9 10 11 12 13 14 15   15 16 17 18 19 20 21
19 20 21 22 23 24 25   16 17 18 19 20 21 22   22 23 24 25 26 27 28
26 27 28 29 30 31      23 24 25 26 27 28 29   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  2  3  4                   1  2       1  2  3  4  5  6
 5  6  7  8  9 10 11    3  4  5  6  7  8  9    7  8  9 10 11 12 13
12 13 14 15 16 17 18   10 11 12 13 14 15 16   14 15 16 17 18 19 20
19 20 21 22 23 24 25   17 18 19 20 21 22 23   21 22 23 24 25 26 27
26 27 28 29 30         24 25 26 27 28 29 30   28 29 30
                       31
        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  2  3  4                      1          1  2  3  4  5
 5  6  7  8  9 10 11    2  3  4  5  6  7  8    6  7  8  9 10 11 12
12 13 14 15 16 17 18    9 10 11 12 13 14 15   13 14 15 16 17 18 19
19 20 21 22 23 24 25   16 17 18 19 20 21 22   20 21 22 23 24 25 26
26 27 28 29 30 31      23 24 25 26 27 28 29   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    1  2  3  4  5  6  7          1  2  3  4  5
 4  5  6  7  8  9 10    8  9 10 11 12 13 14    6  7  8  9 10 11 12
11 12 13 14 15 16 17   15 16 17 18 19 20 21   13 14 15 16 17 18 19
18 19 20 21 22 23 24   22 23 24 25 26 27 28   20 21 22 23 24 25 26
25 26 27 28 29 30 31   29 30                  27 28 29 30 31
```

$ cal –Y (show the next twelve months)

```
    August 2020          September 2020         October 2020
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  3
 2  3  4  5  6  7  8    6  7  8  9 10 11 12    4  5  6  7  8  9 10
 9 10 11 12 13 14 15   13 14 15 16 17 18 19   11 12 13 14 15 16 17
16 17 18 19 20 21 22   20 21 22 23 24 25 26   18 19 20 21 22 23 24
23 24 25 26 27 28 29   27 28 29 30            25 26 27 28 29 30 31
30 31
   November 2020          December 2020          January 2021
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  5                   1  2
 8  9 10 11 12 13 14    6  7  8  9 10 11 12    3  4  5  6  7  8  9
15 16 17 18 19 20 21   13 14 15 16 17 18 19   10 11 12 13 14 15 16
```

```
22 23 24 25 26 27 28  20 21 22 23 24 25 26  17 18 19 20 21 22 23
29 30                 27 28 29 30 31        24 25 26 27 28 29 30
                                            31
   February 2021          March 2021            April 2021
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  5  6               1  2  3
 7  8  9 10 11 12 13   7  8  9 10 11 12 13   4  5  6  7  8  9 10
14 15 16 17 18 19 20  14 15 16 17 18 19 20  11 12 13 14 15 16 17
21 22 23 24 25 26 27  21 22 23 24 25 26 27  18 19 20 21 22 23 24
28                    28 29 30 31           25 26 27 28 29 30

      May 2021              June 2021             July 2021
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  3
 2  3  4  5  6  7  8   6  7  8  9 10 11 12   4  5  6  7  8  9 10
 9 10 11 12 13 14 15  13 14 15 16 17 18 19  11 12 13 14 15 16 17
16 17 18 19 20 21 22  20 21 22 23 24 25 26  18 19 20 21 22 23 24
23 24 25 26 27 28 29  27 28 29 30           25 26 27 28 29 30 31
30 31
```

$ **cal -n 6** OR $ **cal --months 6 #(show next six months starting with current date's month)**

```
$ cal -n 6

     August 2020         September 2020         October 2020
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  3
 2  3  4  5  6  7  8   6  7  8  9 10 11 12   4  5  6  7  8  9 10
 9 10 11 12 13 14 15  13 14 15 16 17 18 19  11 12 13 14 15 16 17
16 17 18 19 20 21 22  20 21 22 23 24 25 26  18 19 20 21 22 23 24
23 24 25 26 27 28 29  27 28 29 30           25 26 27 28 29 30 31
30 31
    November 2020         December 2020          January 2021
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  5                  1  2
 8  9 10 11 12 13 14   6  7  8  9 10 11 12   3  4  5  6  7  8  9
15 16 17 18 19 20 21  13 14 15 16 17 18 19  10 11 12 13 14 15 16
22 23 24 25 26 27 28  20 21 22 23 24 25 26  17 18 19 20 21 22 23
29 30                 27 28 29 30 31        24 25 26 27 28 29 30
                                            31
```

$ cal --months 6 #(show num months starting with date's month)

```
     August 2020         September 2020         October 2020
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  3
 2  3  4  5  6  7  8   6  7  8  9 10 11 12   4  5  6  7  8  9 10
 9 10 11 12 13 14 15  13 14 15 16 17 18 19  11 12 13 14 15 16 17
16 17 18 19 20 21 22  20 21 22 23 24 25 26  18 19 20 21 22 23 24
23 24 25 26 27 28 29  27 28 29 30           25 26 27 28 29 30 31
30 31
    November 2020         December 2020          January 2021
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  5                  1  2
 8  9 10 11 12 13 14   6  7  8  9 10 11 12   3  4  5  6  7  8  9
15 16 17 18 19 20 21  13 14 15 16 17 18 19  10 11 12 13 14 15 16
22 23 24 25 26 27 28  20 21 22 23 24 25 26  17 18 19 20 21 22 23
29 30                 27 28 29 30 31        24 25 26 27 28 29 30
                                            31
```

$ cal -s 12 2020   #(Sunday as first day of week)

```
   December 2020
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
```

```
$ cal -m 12 2020  # (  Monday as first day of week )

   December 2020
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
```

```
$ cal –w   # (show current month’s week numbers )
     August 2020
   Su Mo Tu We Th Fr Sa
31                    1
32  2  3  4  5  6  7  8
33  9 10 11 12 13 14 15
34 16 17 18 19 20 21 22
35 23 24 25 26 27 28 29
36 30 31
```

```
$ cal -w 2020  #(show  week numbers of the year 2020 )

                               2020

       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           1  2  3  4    5                    1    10  1  2  3  4  5  6  7
 2  5  6  7  8  9 10 11    6  2  3  4  5  6  7  8    11  8  9 10 11 12 13 14
 3 12 13 14 15 16 17 18    7  9 10 11 12 13 14 15    12 15 16 17 18 19 20 21
 4 19 20 21 22 23 24 25    8 16 17 18 19 20 21 22    13 22 23 24 25 26 27 28
 5 26 27 28 29 30 31       9 23 24 25 26 27 28 29    14 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
14           1  2  3  4   18                 1  2    23     1  2  3  4  5  6
15  5  6  7  8  9 10 11   19  3  4  5  6  7  8  9    24  7  8  9 10 11 12 13
16 12 13 14 15 16 17 18   20 10 11 12 13 14 15 16    25 14 15 16 17 18 19 20
17 19 20 21 22 23 24 25   21 17 18 19 20 21 22 23    26 21 22 23 24 25 26 27
18 26 27 28 29 30         22 24 25 26 27 28 29 30    27 28 29 30
                          23 31
         July                  August                 September
   Su Mo Tu We Th Fr Sa      Su Mo Tu We Th Fr Sa      Su Mo Tu We Th Fr Sa
27           1  2  3  4   31                       1 36        1  2  3  4  5
28  5  6  7  8  9 10 11   32  2  3  4  5  6  7  8    37  6  7  8  9 10 11 12
29 12 13 14 15 16 17 18   33  9 10 11 12 13 14 15    38 13 14 15 16 17 18 19
30 19 20 21 22 23 24 25   34 16 17 18 19 20 21 22    39 20 21 22 23 24 25 26
31 26 27 28 29 30 31      35 23 24 25 26 27 28 29    40 27 28 29 30
                          36 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
40              1  2  3   45  1  2  3  4  5  6  7    49        1  2  3  4  5
41  4  5  6  7  8  9 10   46  8  9 10 11 12 13 14    50  6  7  8  9 10 11 12
42 11 12 13 14 15 16 17   47 15 16 17 18 19 20 21    51 13 14 15 16 17 18 19
43 18 19 20 21 22 23 24   48 22 23 24 25 26 27 28    52 20 21 22 23 24 25 26
```

```
44 25 26 27 28 29 30 31   49 29 30                  53 27 28 29 30 31
```

$ cal --week 2020 (show week numbers of the year 2020)

```
                              2020

       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          1  2  3  4    5                   1   10  1  2  3  4  5  6  7
 2  5  6  7  8  9 10 11    6  2  3  4  5  6  7  8    11  8  9 10 11 12 13 14
 3 12 13 14 15 16 17 18    7  9 10 11 12 13 14 15    12 15 16 17 18 19 20 21
 4 19 20 21 22 23 24 25    8 16 17 18 19 20 21 22    13 22 23 24 25 26 27 28
 5 26 27 28 29 30 31       9 23 24 25 26 27 28 29    14 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
14          1  2  3  4   18                1  2   23     1  2  3  4  5  6
15  5  6  7  8  9 10 11   19  3  4  5  6  7  8  9    24  7  8  9 10 11 12 13
16 12 13 14 15 16 17 18   20 10 11 12 13 14 15 16    25 14 15 16 17 18 19 20
17 19 20 21 22 23 24 25   21 17 18 19 20 21 22 23    26 21 22 23 24 25 26 27
18 26 27 28 29 30         22 24 25 26 27 28 29 30    27 28 29 30
                      23 31
         July                 August                September
   Su Mo Tu We Th Fr Sa      Su Mo Tu We Th Fr Sa       Su Mo Tu We Th Fr Sa
27          1  2  3  4   31                   1   36       1  2  3  4  5
28  5  6  7  8  9 10 11   32  2  3  4  5  6  7  8    37  6  7  8  9 10 11 12
29 12 13 14 15 16 17 18   33  9 10 11 12 13 14 15    38 13 14 15 16 17 18 19
30 19 20 21 22 23 24 25   34 16 17 18 19 20 21 22    39 20 21 22 23 24 25 26
31 26 27 28 29 30 31      35 23 24 25 26 27 28 29    40 27 28 29 30
                      36 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
40             1  2  3   45  1  2  3  4  5  6  7    49       1  2  3  4  5
41  4  5  6  7  8  9 10   46  8  9 10 11 12 13 14    50  6  7  8  9 10 11 12
42 11 12 13 14 15 16 17   47 15 16 17 18 19 20 21    51 13 14 15 16 17 18 19
43 18 19 20 21 22 23 24   48 22 23 24 25 26 27 28    52 20 21 22 23 24 25 26
44 25 26 27 28 29 30 31   49 29 30                   53 27 28 29 30 31
```

$ cal -w 2021 # (show week numbers of the year 2021)

```
                                2021

       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                1  2    6    1  2  3  4  5  6   10    1  2  3  4  5  6
 2  3  4  5  6  7  8  9    7  7  8  9 10 11 12 13    11  7  8  9 10 11 12 13
 3 10 11 12 13 14 15 16    8 14 15 16 17 18 19 20    12 14 15 16 17 18 19 20
 4 17 18 19 20 21 22 23    9 21 22 23 24 25 26 27    13 21 22 23 24 25 26 27
 5 24 25 26 27 28 29 30   10 28                      14 28 29 30 31
 6 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
14             1  2  3   18                   1   23       1  2  3  4  5
15  4  5  6  7  8  9 10   19  2  3  4  5  6  7  8    24  6  7  8  9 10 11 12
16 11 12 13 14 15 16 17   20  9 10 11 12 13 14 15    25 13 14 15 16 17 18 19
17 18 19 20 21 22 23 24   21 16 17 18 19 20 21 22    26 20 21 22 23 24 25 26
18 25 26 27 28 29 30      22 23 24 25 26 27 28 29    27 27 28 29 30
                      23 30 31
         July                 August                September
   Su Mo Tu We Th Fr Sa      Su Mo Tu We Th Fr Sa       Su Mo Tu We Th Fr Sa
27             1  2  3   32  1  2  3  4  5  6  7    36          1  2  3  4
28  4  5  6  7  8  9 10   33  8  9 10 11 12 13 14    37  5  6  7  8  9 10 11
29 11 12 13 14 15 16 17   34 15 16 17 18 19 20 21    38 12 13 14 15 16 17 18
30 18 19 20 21 22 23 24   35 22 23 24 25 26 27 28    39 19 20 21 22 23 24 25
31 25 26 27 28 29 30 31   36 29 30 31                40 26 27 28 29 30
```

```
      October              November             December
  Su Mo Tu We Th Fr Sa     Su Mo Tu We Th Fr Sa     Su Mo Tu We Th Fr Sa
40              1  2   45    1  2  3  4  5  6   49          1  2  3  4
41  3  4  5  6  7  8  9   46  7  8  9 10 11 12 13   50  5  6  7  8  9 10 11
42 10 11 12 13 14 15 16   47 14 15 16 17 18 19 20   51 12 13 14 15 16 17 18
43 17 18 19 20 21 22 23   48 21 22 23 24 25 26 27   52 19 20 21 22 23 24 25
44 24 25 26 27 28 29 30   49 28 29 30               53 26 27 28 29 30 31
45 31
```

$ cal –j #(use day-of-year for all calendars, default current month)

```
       August 2020
Sun Mon Tue Wed Thu Fri Sat
                    214
215 216 217 218 219 220 221
222 223 224 225 226 227 228
229 230 231 232 233 234 235
236 237 238 239 240 241 242
243 244
```

$ cal -j 2020   # (use day-of-year for all calendars)

```
                        2020

        January                   February                   March
Sun Mon Tue Wed Thu Fri Sat   Sun Mon Tue Wed Thu Fri Sat   Sun Mon Tue Wed Thu Fri Sat
           1   2   3   4                       32    61  62  63  64  65  66  67
  5   6   7   8   9  10  11    33  34  35  36  37  38  39    68  69  70  71  72  73  74
 12  13  14  15  16  17  18    40  41  42  43  44  45  46     75  76  77  78  79  80  81
 19  20  21  22  23  24  25    47  48  49  50  51  52  53     82  83  84  85  86  87  88
 26  27  28  29  30  31        54  55  56  57  58  59  60     89  90  91

         April                    May                    June
Sun Mon Tue Wed Thu Fri Sat   Sun Mon Tue Wed Thu Fri Sat   Sun Mon Tue Wed Thu Fri Sat
          92  93  94  95                    122 123       153 154 155 156 157 158
 96  97  98  99 100 101 102   124 125 126 127 128 129 130   159 160 161 162 163 164 165
103 104 105 106 107 108 109   131 132 133 134 135 136 137   166 167 168 169 170 171 172
110 111 112 113 114 115 116   138 139 140 141 142 143 144   173 174 175 176 177 178 179
117 118 119 120 121         145 146 147 148 149 150 151   180 181 182
                        152
          July                    August                   September
Sun Mon Tue Wed Thu Fri Sat   Sun Mon Tue Wed Thu Fri Sat   Sun Mon Tue Wed Thu Fri Sat
         183 184 185 186                      214        245 246 247 248 249
187 188 189 190 191 192 193   215 216 217 218 219 220 221   250 251 252 253 254 255 256
194 195 196 197 198 199 200   222 223 224 225 226 227 228   257 258 259 260 261 262 263
201 202 203 204 205 206 207   229 230 231 232 233 234 235   264 265 266 267 268 269 270
208 209 210 211 212 213       236 237 238 239 240 241 242   271 272 273 274
                        243 244
        October                  November                 December
Sun Mon Tue Wed Thu Fri Sat   Sun Mon Tue Wed Thu Fri Sat   Sun Mon Tue Wed Thu Fri Sat
             275 276 277   306 307 308 309 310 311 312          336 337 338 339 340
278 279 280 281 282 283 284   313 314 315 316 317 318 319   341 342 343 344 345 346 347
285 286 287 288 289 290 291   320 321 322 323 324 325 326   348 349 350 351 352 353 354
292 293 294 295 296 297 298   327 328 329 330 331 332 333   355 356 357 358 359 360 361
299 300 301 302 303 304 305   334 335                  362 363 364 365 366
```

===

COMMAND: Display system date (date):

date - print or set the system date and time

To display the current system time and date using the default formatting, invoke the command without any options and arguments:

```
$ date
Mon, Aug 31, 2020 12:00:31 PM
```

#Using the Linux date Command

The syntax for the date command is as follows:

```
date [OPTION]... [+FORMAT]
```

Various Date Command Formats

You can use formatting option to display date command in various formats using the following syntax:

```
$ date ‘+%<format-option>’
```

The following table displays various date command formatting options.

Format options	Purpose of Option	Output
$ date '+%a'	Displays Weekday name in short (like Mon, Tue, Wed)	mon
$ date '+%A'	Displays Weekday name in full short (like Monday, Tuesday)	Monday
$ date "+%b"	Displays Month name in short (like Jan, Feb, Mar)	Aug
$ date '+%B'	Displays Month name in full short (like January, February)	August

$ date '+%d'	Displays Day of month (e.g., 01)	31
$ date '+%D'	Displays Current Date; shown in MM/DD/YY	08/31/20
$ date '+%F'	Displays Date; shown in YYYY-MM-DD	2020-08-31
$ date '+%H'	Displays hour in (00..23) format	15
$ date '+%I'	Displays hour (01..12) format	03
$ date '+%j'	Displays day of year (001..366)	244
$ date '+%m'	Displays month (01..12)	08
$ date '+%M'	Displays minute (00..59)	07
$ date '+%S'	Displays second (00..60)	16
$ date '+%N'	Displays nanoseconds (000000000..999999999)	124352300
$ date '+%T'	Displays time; shown as HH:MM:SS Note: Hours in 24 Format	15:09:46
$ date '+%u'	Displays day of week (1..7); 1 is Monday	1
$ date '+%U'	Displays week number of year, with Sunday as first day of week (00..53)	35
$ date '+%Y'	Displays full year i.e. YYYY	2020
$ date '+%Z'	alphabetic time zone abbreviation (e.g., EDT)	IST

Example:

```
$ date '+%d-%m-%Y'
31-08-2020


$ date '+%d-%b-%Y'
31-Aug-2020

$ date  '+%A %d %B %Y'
Monday 31 August 2020
```

The following examples illustrate how you can use the **date** command to find the date and time at various points in time:

```
$ date -d now
Mon, Aug 31, 2020  3:14:00 PM

$ date -d today
Mon, Aug 31, 2020  3:14:33 PM


$ date -d yesterday
Sun, Aug 30, 2020  3:14:58 PM

$ date -d tomorrow
Tue, Sep  1, 2020  3:15:29 PM


$ date -d sunday
Sun, Sep  6, 2020 12:00:00 AM

$ date -d last-sunday
Sun, Aug 30, 2020 12:00:00 AM

$ date -d last-week
Mon, Aug 24, 2020  3:17:18 PM

$ date -d next-week
Mon, Sep  7, 2020  3:17:45 PM

$ date -d last-month
Fri, Jul 31, 2020  3:18:40 PM


$ date -d next-month
Thu, Oct  1, 2020  3:19:04 PM

$ date -d last-year
Sat, Aug 31, 2019  3:19:28 PM


$ date -d next-year
Tue, Aug 31, 2021  3:19:50 PM
```

==

Command Name: echo

Command NAME

echo - display a line of text or messages.

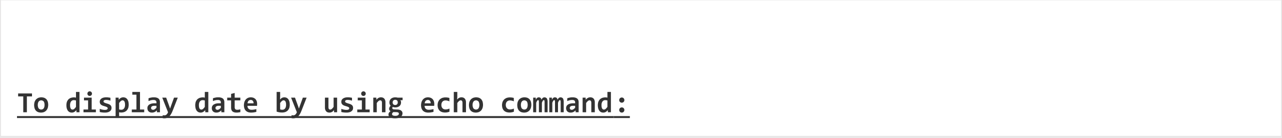
SYNOPSIS

echo [SHORT-OPTION]... [STRING]...
echo LONG-OPTION

DESCRIPTION

Echo the STRING(s) to standard output.

Options	Functions
-n	**Do not output the trailing newline(print at the same line)**
-e	**enable interpretation of escapes sequences**
\b	**backspace**
\f	**line feed(moving one line forward)** $ echo -e "Meghnad Saha \f Institute of Technology" Meghnad Saha Institute of Technology
\r	**Carriage retur** i.e. any word(s) **before the \r are omitted** in the output) $ echo -e "Meghnad Saha \r Institute of Technology" Output: Institute of Technology
\t	**Horizontal tab**
\v	**vertical tab** $ echo -e "Meghnad Saha \v Institute of \v Technology" Meghnad Saha Institute of Technology
man echo	display this **help(manual page)** of echo command.



To display date by using echo command:

```
$ echo `date  '+%A %d %B %Y'`
Monday 31 August 2020
```

The echo can be used with redirect operator to output to a file and not standard output.

```
$ echo "Today is Monday">file.txt
```

Check the Contents:

```
$ cat file.txt
```

Output: Today is Monday

Print all the files/folder using echo command (ls command alternative):

```
$ echo *
```

Output: aa.txt file.txt

Print files of a specific kind. For example, let's assume use the following command:

$ **echo *.txt**

Output: aa.txt file.txt

Example Using echo command:

```
$ echo {1..10}
1 2 3 4 5 6 7 8 9 10
```

```
$ echo {10..1}
10 9 8 7 6 5 4 3 2 1
```

```
$ echo {1..10..2}
1 3 5 7 9
```

```
$ echo {0..10..2}
0 2 4 6 8 10
```

```
$ echo {10..1..-2}
10 8 6 4 2
```

```
$ echo {10..1}.txt
10.txt 9.txt 8.txt 7.txt 6.txt 5.txt 4.txt 3.txt 2.txt 1.txt
```

```
$ echo {a..z}.txt
a.txt b.txt c.txt d.txt e.txt f.txt g.txt h.txt i.txt j.txt k.txt l.txt m.txt n.txt o.txt p.txt q.txt r.txt
s.txt t.txt u.txt v.txt w.txt x.txt y.txt z.txt
```

To create a empty file using touch command:

```
$ touch {a..z}.txt


$ ls
a.txt  c.txt  e.txt  g.txt  i.txt  k.txt  m.txt  o.txt  q.txt  s.txt  Test  v.txt  x.txt  z.txt
b.txt  d.txt  f.txt  h.txt  j.txt  l.txt  n.txt  p.txt  r.txt  t.txt  u.txt  w.txt  y.txt
```

```
$ x=5


$ echo $x
5
```

Q: How to find out what shell I am using?

The following echo command should work:

```
$ echo $SHELL
/bin/bash


$ echo " I am working in $SHELL shell"
I am working in /bin/bash shell
```

NOTE: /bin/bash is a LINUX shell.

Q: How to determine the exit status of Linux and UNIX command?

Every execution has an Exit status. In general, zero means OK and non-zero is an error. That value is not shown naturally in the standard output. You can see that value typing `echo $?` after every executed command.

Example:

```
$ date
Wed, Sep  2, 2020 12:30:21 PM


$ echo $?
0


$ dat
```

```
-bash: dat: command not found
```

```
$ echo $?
127
```

Note:

Explaination:. if a command is not found, the child process created to execute it returns a status of 127. If a command is found but is not executable, the return status is 126.

If a command fails because of an error during expansion or redirection, the exit status is greater than zero.

==

Calculator (bc):

bc is a command line **basic calculator**. bc is typically used as either a mathematical scripting language or as an interactive mathematical shell. You can use these commands in bash or shell script also for evaluating arithmetic expressions.

Doing arithmetic calculation (use with **expr**) use **bc** as below.

bc can be used with **echo** command.

```
$ echo "34.7 + 345.655" | bc
```

```
$ echo "34.7 - 345.655" | bc
```

==

Password changing (passwd)

Changing User Passwords: passwd

Allows you or the administrator to change passwords..

COMMAND NAME: passwd

```
  -S, --status           display password status for USER (locked, expired,
                      etc.) plus global system password settings.

  -h, --help            output usage information and exit.
```

To change a password on behalf of a user, first **sign on** or **"su"** (superuser or switch user) to the "root" account. Then type, "**passwd user"** (where user is the username for the password you are changing). The system will prompt you to enter a password. Passwords do not echo to the screen when you enter them.

You can also change your own password, by typing “passwd" (without specifying a username). You will be prompted to enter your old password for verification, and then a new password.

Example: Linux Set User Password

Type following passwd command to change your own(e.g., Username-student) password:

Sample Outputs:

```
Changing password for student

(current) UNIX password:

Enter new UNIX password:

Retype new UNIX password:

passwd: password updated successfully
```

Note: Passwords do not display to the screen when you enter them.

Q: What is sudo ?

Ans : sudo is a program for Unix-like computer operating systems that allows users to run programs with the security privileges of another user, by default the super user. It originally stood for "super user do" as the older versions of **sudo** were designed to run commands only as the superuser.

Both **su** and **sudo** elevate privileges assigned to the current user.
The main difference between the two is that **su** requires the password of the target account, while **sudo** requires the password of the current user.

==

Command name: Whoami

whoami - Displays who you are currently logged on as. (e.g. 'root', a user etc.)

SYNOPSIS
whoami

--help display this help and exit

--version
output version information and exit

Example:

```
$ whoami
```

Output: student

===

logname:

NAME
logname - print user´s login name

SYNOPSIS
logname

DESCRIPTION
Print the name of the current user.

--help display this help and exit

--version
output version information and exit

Example:

```
$ logname

Student20
```

==

Knowing who are logged in (who):

NAME
who - show who is logged on
Print information about users who are currently logged in.

SYNOPSI
who [OPTION]

DESCRIPTION

-a, **--all**

-b, **--boot**
time of last system boot

-d, **--dead**
print dead processes

-H, **--heading**
print line of column headings

-l, **--login**
print system login processes

--lookup
attempt to canonicalize hostnames via DNS

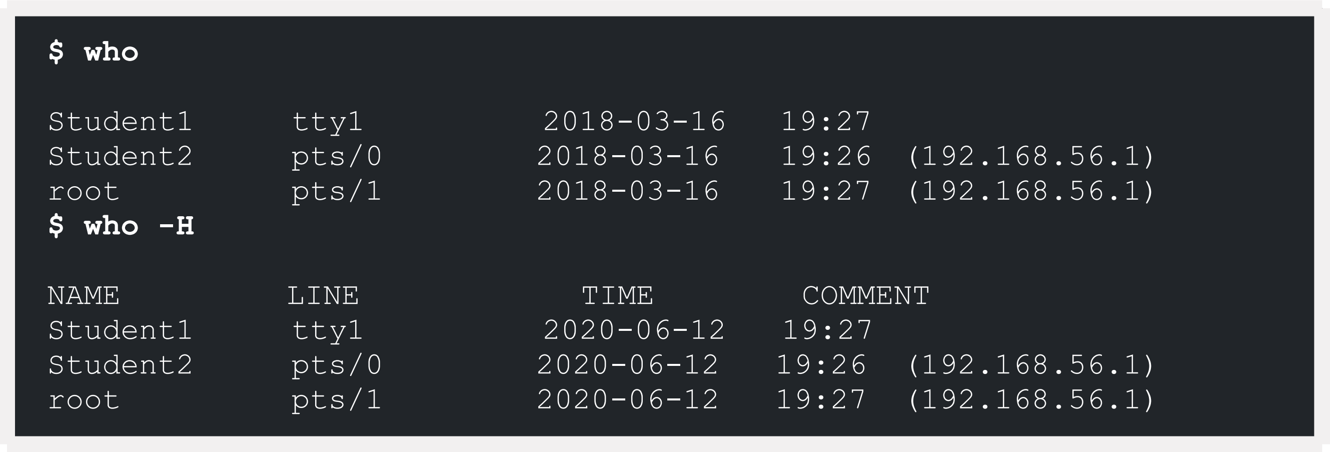
-p, **--process**
print active processes spawned by init

-q, **--count**
all login names and number of users logged on

-r, **--runlevel**
print current runlevel

-s, **--short**
print only name, line, and time (default)

Example: who- This displays the users currently logged on the system.



```
$ who

Student1      tty1          2018-03-16   19:27
Student2      pts/0         2018-03-16   19:26  (192.168.56.1)
root          pts/1         2018-03-16   19:27  (192.168.56.1)
$ who -H

NAME          LINE             TIME         COMMENT
Student1      tty1          2020-06-12   19:27
Student2      pts/0         2020-06-12   19:26  (192.168.56.1)
root          pts/1         2020-06-12   19:27  (192.168.56.1)
```

==

System information using uname:

Get name and information about current kernel **(Get Kernel version, release, hostname, etc).**

Command NAME
uname - print system information

SYNOPSIS

uname [OPTION]...

DESCRIPTION

Print certain system information.

-a, **--all**
print all information

-s, **--kernel-name**
print the kernel name

-n, **--nodename**
print the network node hostname

-r, **--kernel-release**
print the kernel release

-v, **--kernel-version**
print the kernel version

-m, **--machine**
print the machine hardware name

-i, **--hardware-platform**
print the hardware platform (non-portable)

-o, **--operating-system**
print the operating system

--help display this help and exit

--version
output version information and exit

Example:

uname without any option

When the ‘uname’ command is run without any option then it prints just the kernel name. So the output below shows that its the ‘Linux’ kernel that is used by this system.

```
$ uname

Linux
```

You can also use uname -s, which also displays the kernel name.

```
$ uname –s
```

```
Linux
```

Get the network node host name using -n option

Use uname -n option to fetch the network node host name of your Linux box.

```
$ uname –n
```

```
www.msit.edu.in
```

Get kernel release using -r option:

uname command can also be used to fetch the kernel release information. The option -r can be used for this purpose.

```
$ uname -r
```

```
2.6.32-100.28.5.el6.x86_64
```

Get the operating system name using the -o option

uname command can also be used to fetch the operating system name. The option -o can be used for this purpose.

For example :

```
$ uname –o
```

```
Output: GNU/Linux
```

```
================================================================================
```

<u>File name of terminal connected to the standard input (tty):</u>

In essence, tty is short for **teletype**, but it's more popularly known as terminal. It's basically a device (implemented in software nowadays) that allows you to interact with the system by passing on the data (you input) to the system, and displaying the output produced by the system.

Command NAME:

tty - print the file name of the terminal connected to standard input

SYNOPSIS

tty [OPTION]...

-s, **--silent**, **--quiet**
print nothing, only return an exit status

--help display this help and exit

--version
output version information and exit

For example, on my system, the following output was produced:

```
$ tty
/dev/pty50
```

To check the the exit status of the last command:

```
$ echo $?
0 (success)
```