Operációs rendszerek BSc

4.Gyak.

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Készítette:

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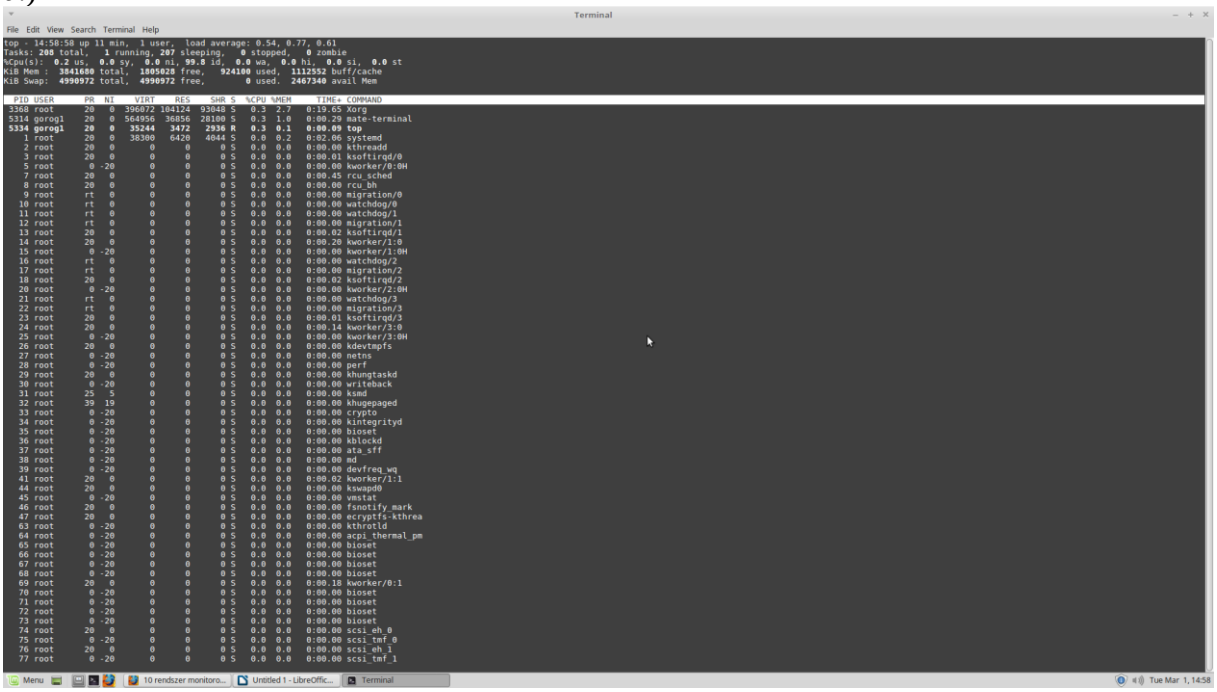
Programtervező informatikus

MPW46D

Miskolc, 2022

1. feladat

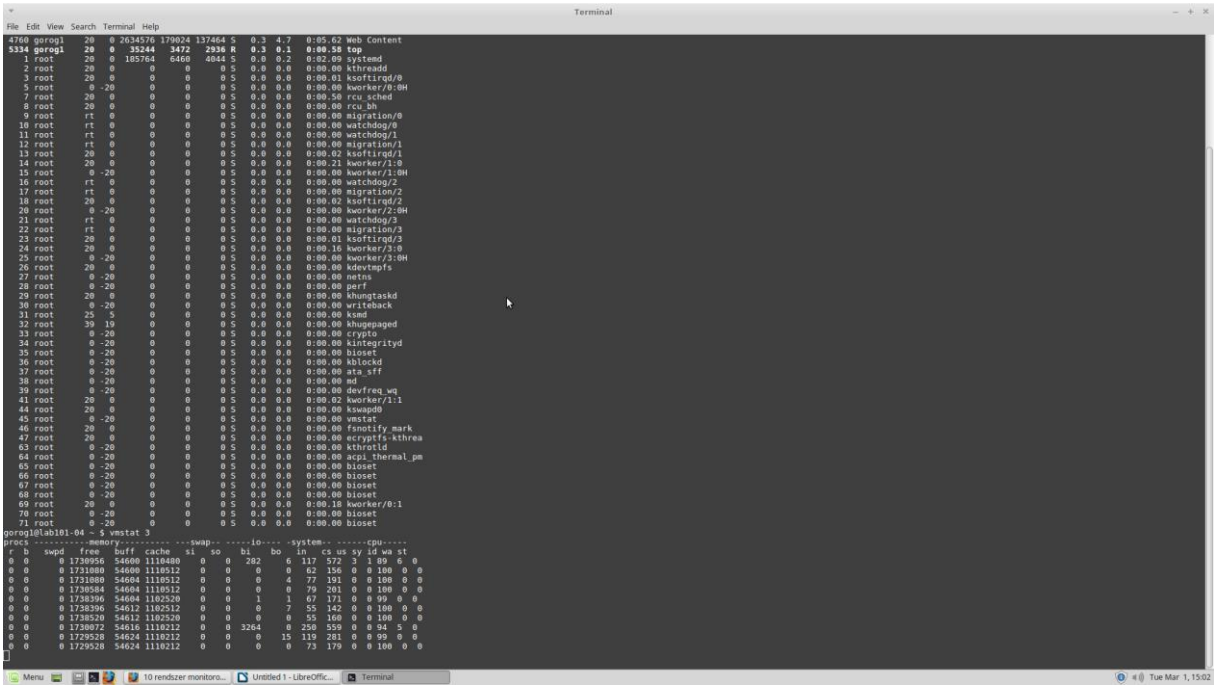
a.)



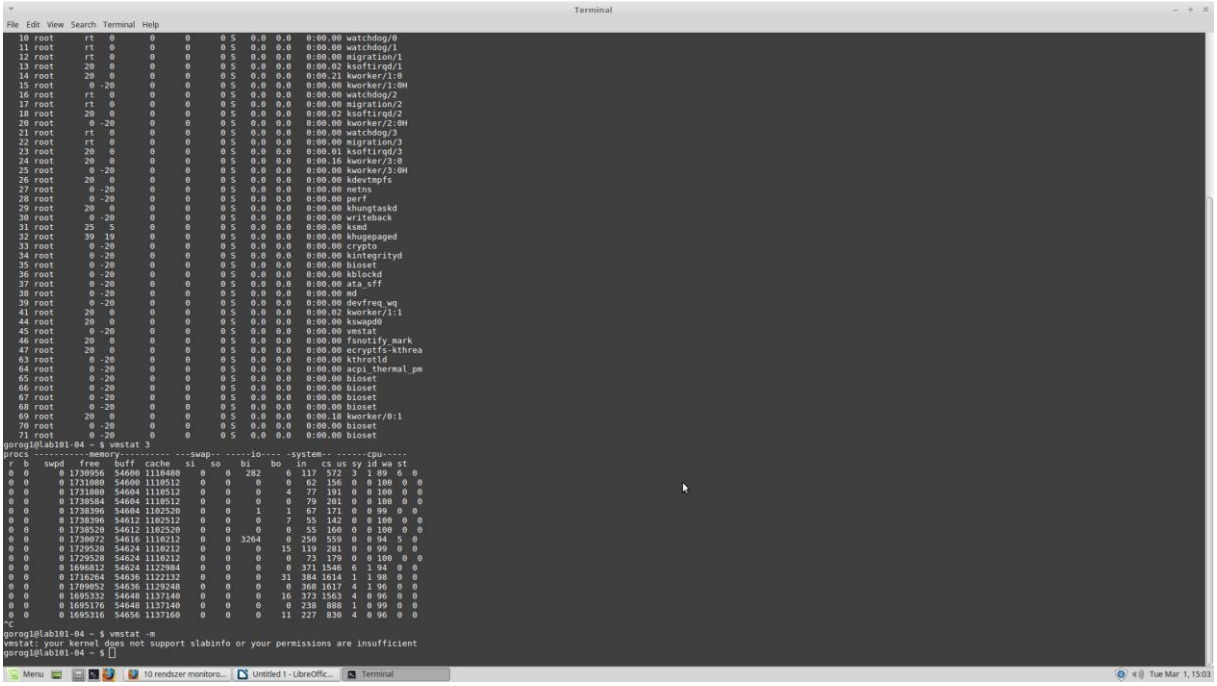
Ez az a processz aktivitást mutató parancs, ami dinamikusan, valós idejű módban készít jelentést a futó rendszerről. Ez azt jelenti, hogy mutatja a tényleges aktivitást is.

b.)

Ez a parancs a rendszer aktivitásról, a hardverről és rendszerről nyújt információkat. A jelentések a folyamatokra, memóriára, blokk input/outputra, CPU tevékenységre és csapdákra vonatkoznak.

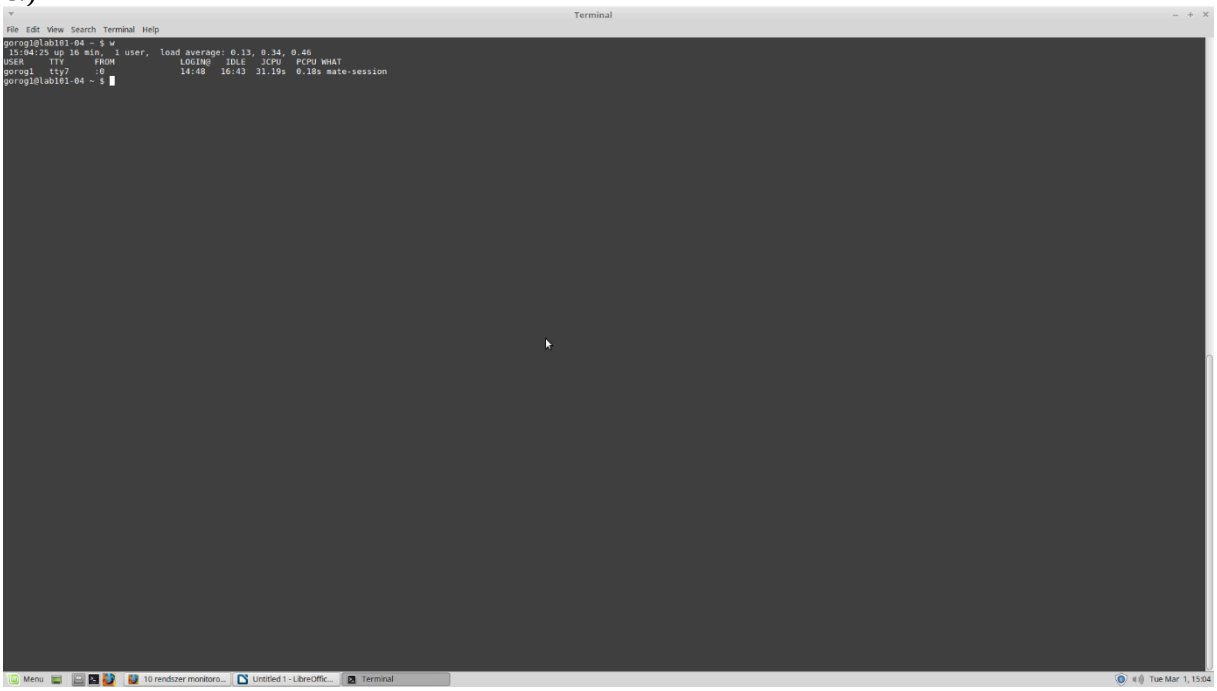


Memória kihasználtságot és a lemez információkatmutatja.



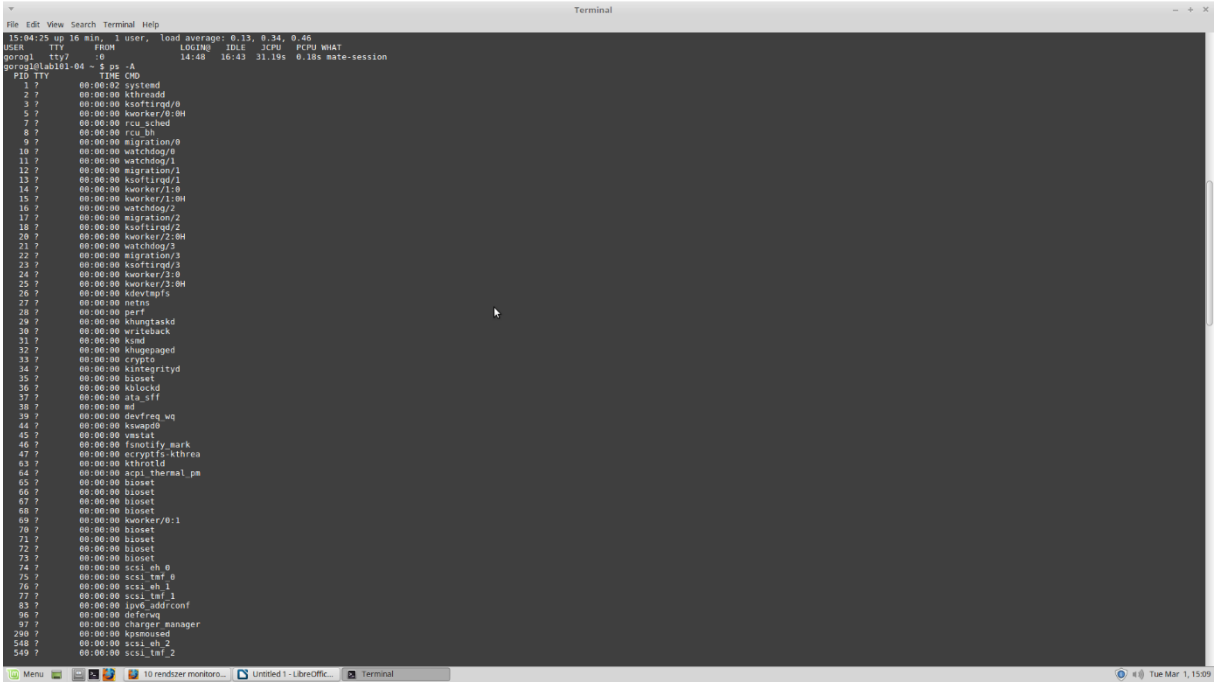
Aktív és inaktív memórialapokat mutatná, de nem működik.

c.)

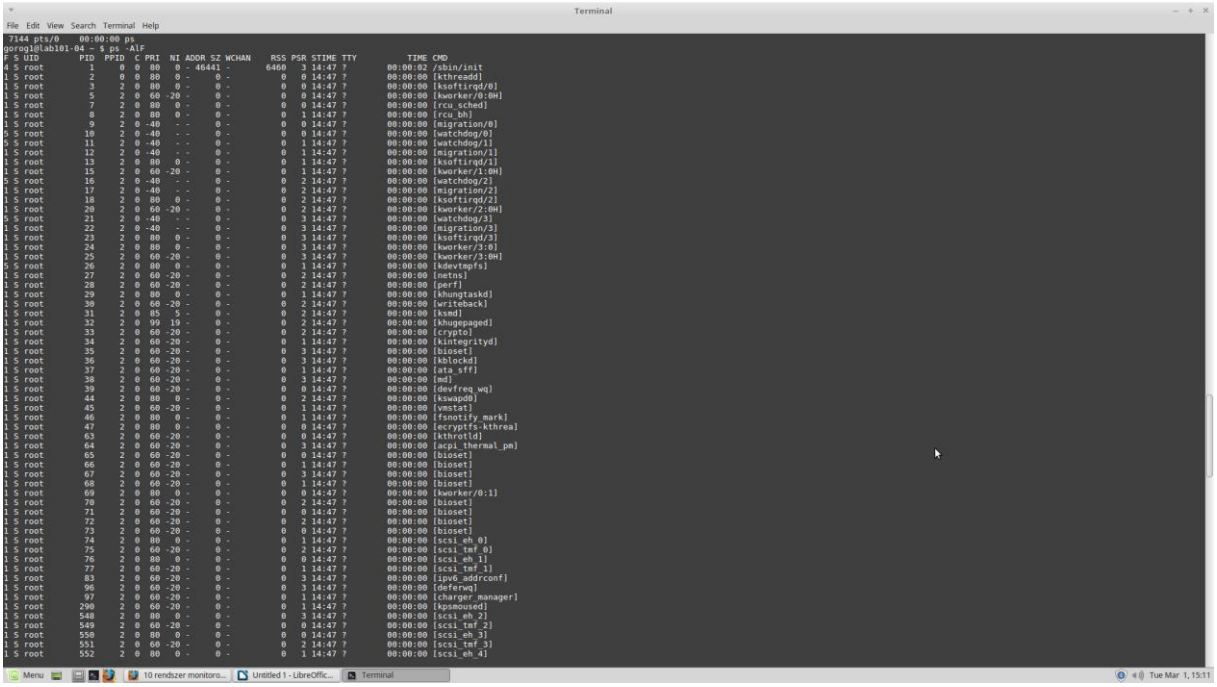


Ez a parancs megmutatja, ki van bejelentkezve a rendszerbe, és éppen mit csinál.

d.)



Az összes processzről készít jelentést.



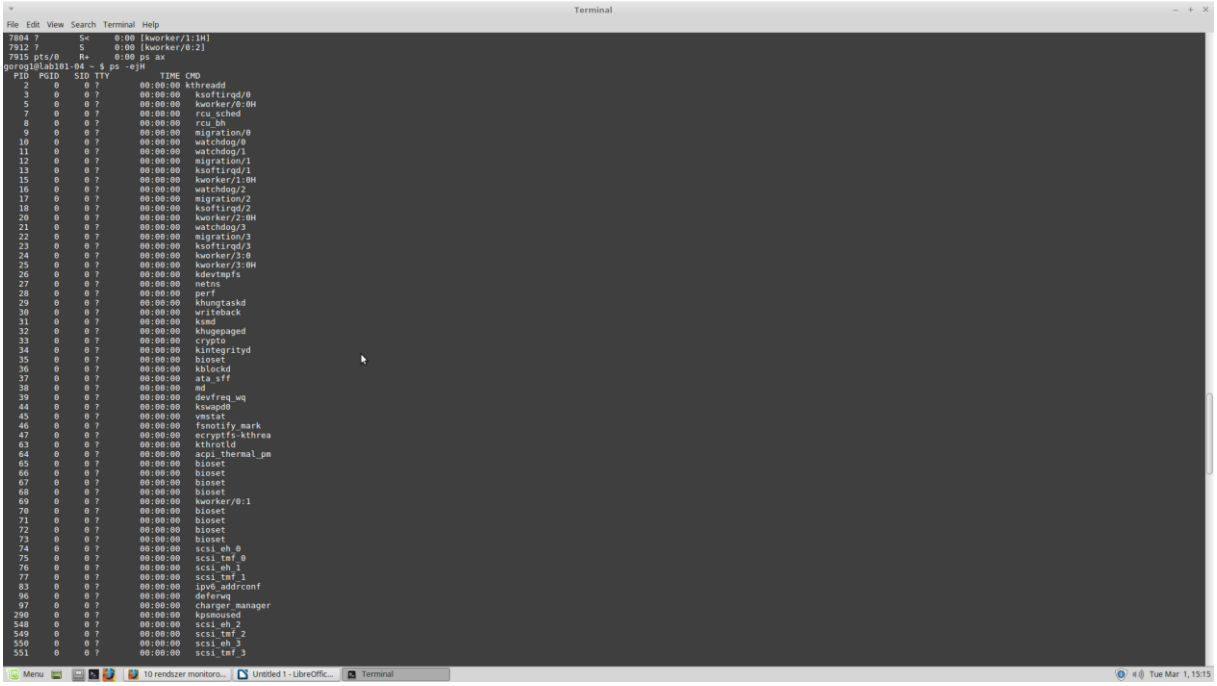
Mutatja az egyes processzek paramétereit is.

```
Terminal
File  Edit  View  Search  Terminal  Help
1 S root       6262     2  0  60 -20 -    0 -         0   1 15:05 ?        00:00:00 [kworker/1:2H]
1 S root       6263     2  0  60 -20 -    0 -         0   2 15:05 ?        00:00:00 [kworker/2:1H]
1 S root       6965     2  0  80   0 -    0 -         0   0 15:07 ?        00:00:00 [kworker/u16:1]
1 S root       7208     2  0  80   0 -    0 -         0   2 15:09 ?        00:00:00 [kworker/2:1]
4 R gorogl     7388  5321  0  80   0 -  7668 -      1536   3 15:18 pts/0    00:00:00 ps -AlF
gorogl@lab101-04 ~ $ ps -AlFH
F S UID        PID  PPID  C PRI  NI ADDR SZ WCHAN    RSS PSR STIME TTY          TIME CMD
1 S root         2     0  0  80   0 -    0 -         0   1 14:47 ?        00:00:00 [kthreadd]
1 S root         3     2  0  80   0 -    0 -         0   0 14:47 ?        00:00:00   [ksoftirqd/0]
1 S root         5     2  0  60 -20 -    0 -         0   0 14:47 ?        00:00:00   [kworker/0:0H]
1 S root         7     2  0  80   0 -    0 -         0   3 14:47 ?        00:00:00   [rcu_sched]
1 S root         8     2  0  80   0 -    0 -         0   1 14:47 ?        00:00:00   [rcu_bh]
1 S root         9     2  0 -40   - -    0 -         0   0 14:47 ?        00:00:00   [migration/0]
5 S root        10     2  0 -40   - -    0 -         0   0 14:47 ?        00:00:00   [watchdog/0]
5 S root        11     2  0 -40   - -    0 -         0   1 14:47 ?        00:00:00   [watchdog/1]
1 S root        12     2  0 -40   - -    0 -         0   1 14:47 ?        00:00:00   [migration/1]
1 S root        13     2  0  80   0 -    0 -         0   1 14:47 ?        00:00:00   [ksoftirqd/1]
1 S root        15     2  0  60 -20 -    0 -         0   1 14:47 ?        00:00:00   [kworker/1:0H]
5 S root        16     2  0 -40   - -    0 -         0   2 14:47 ?        00:00:00   [watchdog/2]
1 S root        17     2  0 -40   - -    0 -         0   2 14:47 ?        00:00:00   [migration/2]
1 S root        18     2  0  80   0 -    0 -         0   2 14:47 ?        00:00:00   [ksoftirqd/2]
1 S root        20     2  0  60 -20 -    0 -         0   2 14:47 ?        00:00:00   [kworker/2:0H]
5 S root        21     2  0 -40   - -    0 -         0   3 14:47 ?        00:00:00   [watchdog/3]
1 S root        22     2  0 -40   - -    0 -         0   3 14:47 ?        00:00:00   [migration/3]
1 S root        23     2  0  80   0 -    0 -         0   3 14:47 ?        00:00:00   [ksoftirqd/3]
1 S root        24     2  0  80   0 -    0 -         0   3 14:47 ?        00:00:00   [kworker/3:0]
1 S root        25     2  0  60 -20 -    0 -         0   3 14:47 ?        00:00:00   [kworker/3:0H]
5 S root        26     2  0  80   0 -    0 -         0   1 14:47 ?        00:00:00   [kdevtmpfs]
1 S root        27     2  0  60 -20 -    0 -         0   2 14:47 ?        00:00:00   [netns]
1 S root        28     2  0  60 -20 -    0 -         0   2 14:47 ?        00:00:00   [perf]
1 S root        29     2  0  80   0 -    0 -         0   0 14:47 ?        00:00:00   [khungtaskd]
1 S root        30     2  0  60 -20 -    0 -         0   2 14:47 ?        00:00:00   [writeback]
5 S root        31     2  0  85   5 -    0 -         0   2 14:47 ?        00:00:00   [ksmd]
1 S root        32     2  0  99  19 -    0 -         0   2 14:47 ?        00:00:00   [khugepaged]
1 S root        33     2  0  60 -20 -    0 -         0   2 14:47 ?        00:00:00   [crypto]
1 S root        34     2  0  60 -20 -    0 -         0   1 14:47 ?        00:00:00   [kintegrityd]
1 S root        35     2  0  60 -20 -    0 -         0   3 14:47 ?        00:00:00   [bioset]
1 S root        36     2  0  60 -20 -    0 -         0   3 14:47 ?        00:00:00   [kblockd]
1 S root        37     2  0  60 -20 -    0 -         0   1 14:47 ?        00:00:00   [ata_sff]
1 S root        38     2  0  60 -20 -    0 -         0   3 14:47 ?        00:00:00   [md]
1 S root        39     2  0  60 -20 -    0 -         0   0 14:47 ?        00:00:00   [devfreq_wq]
1 S root        44     2  0  80   0 -    0 -         0   2 14:47 ?        00:00:00   [kswapd0]
1 S root        45     2  0  60 -20 -    0 -         0   1 14:47 ?        00:00:00   [vmstat]
1 S root        46     2  0  80   0 -    0 -         0   1 14:47 ?        00:00:00   [fsnotify_mark]
1 S root        47     2  0  80   0 -    0 -         0   0 14:47 ?        00:00:00   [ecryptfs-kthrea]
1 S root        63     2  0  60 -20 -    0 -         0   0 14:47 ?        00:00:00   [kthrotld]
1 S root        64     2  0  60 -20 -    0 -         0   3 14:47 ?        00:00:00   [acpi_thermal_pm]
1 S root        65     2  0  60 -20 -    0 -         0   0 14:47 ?        00:00:00   [bioset]
1 S root        66     2  0  60 -20 -    0 -         0   1 14:47 ?        00:00:00   [bioset]
1 S root        67     2  0  60 -20 -    0 -         0   3 14:47 ?        00:00:00   [bioset]
1 S root        68     2  0  60 -20 -    0 -         0   1 14:47 ?        00:00:00   [bioset]
1 S root        69     2  0  80   0 -    0 -         0   0 14:47 ?        00:00:00   [kworker/0:1]
1 S root        70     2  0  60 -20 -    0 -         0   2 14:47 ?        00:00:00   [bioset]
1 S root        71     2  0  60 -20 -    0 -         0   0 14:47 ?        00:00:00   [bioset]
1 S root        72     2  0  60 -20 -    0 -         0   2 14:47 ?        00:00:00   [bioset]
1 S root        73     2  0  60 -20 -    0 -         0   0 14:47 ?        00:00:00   [bioset]
1 S root        74     2  0  80   0 -    0 -         0   1 14:47 ?        00:00:00   [scsi_eh_0]
1 S root        75     2  0  60 -20 -    0 -         0   2 14:47 ?        00:00:00   [scsi_tmf_0]
1 S root        76     2  0  80   0 -    0 -         0   0 14:47 ?        00:00:00   [scsi_eh_1]
1 S root        77     2  0  60 -20 -    0 -         0   1 14:47 ?        00:00:00   [scsi_tmf_1]
1 S root        83     2  0  60 -20 -    0 -         0   3 14:47 ?        00:00:00   [ipv6_addrconf]
1 S root        96     2  0  60 -20 -    0 -         0   3 14:47 ?        00:00:00   [deferwq]
1 S root        97     2  0  60 -20 -    0 -         0   1 14:47 ?        00:00:00   [charger_manager]
1 S root       290     2  0  60 -20 -    0 -         0   1 14:47 ?        00:00:00   [kpsmoused]
1 S root       548     2  0  80   0 -    0 -         0   3 14:47 ?        00:00:00   [scsi_eh_2]
1 S root       549     2  0  60 -20 -    0 -         0   0 14:47 ?        00:00:00   [scsi_tmf_2]
Menu   10 rendszer monitoro...   Untitled 1 - LibreOffic...   Terminal   Tue Mar 1, 15:12
```

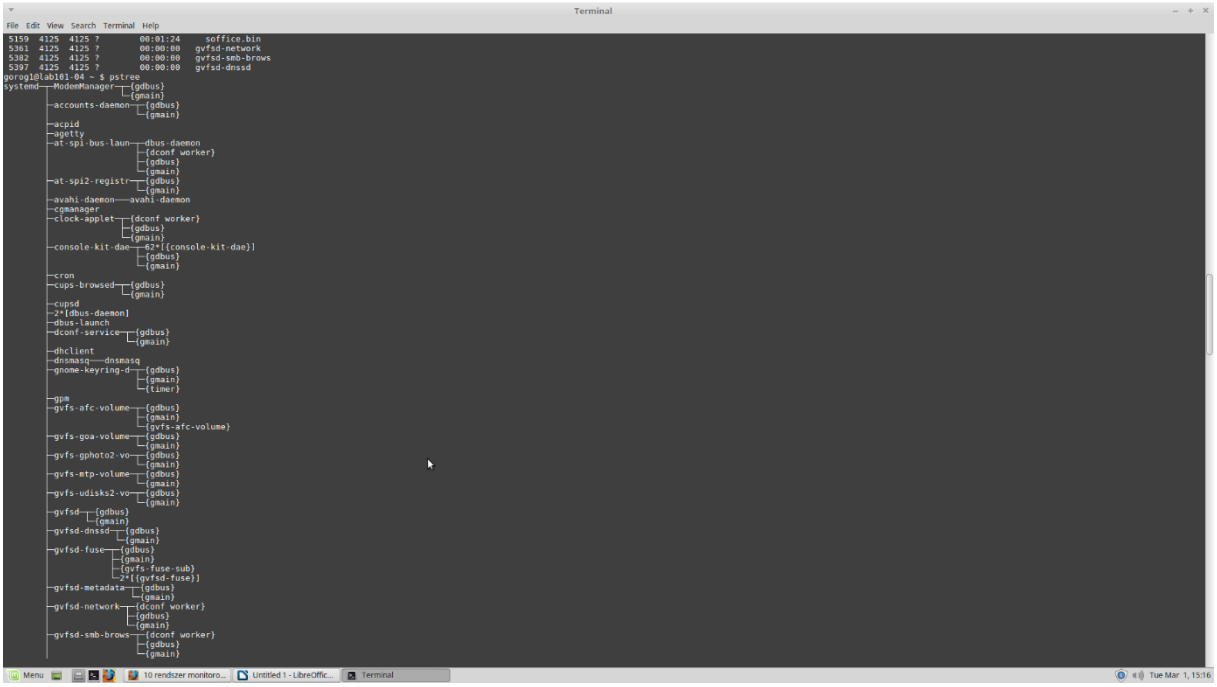
Mutatja a szálakat is.

```
Terminal
File  Edit  View  Search  Terminal  Help
0 S gorogl     5159  5089  6  80   0 - 450205 poll_s 211436 0 14:53 ?        08:01:08   /usr/lib/libreoffice/program/soffice.bin --writer --splash-pipe=5
0 S gorogl     5361     1  0  80   0 - 107065 poll_s 6808   1 14:59 ?        00:00:00   /usr/lib/gvfs/gvfsd-network --spawner :1.12 /org/gtk/gvfs/exec_spaw/1
0 S gorogl     5382     1  0  80   0 - 183526 poll_s 16252  3 14:59 ?        00:00:00   /usr/lib/gvfs/gvfsd-smb-browse --spawner :1.12 /org/gtk/gvfs/exec_spaw/4
0 S gorogl     5397     1  0  80   0 - 99814 poll_s  6616   2 14:59 ?        00:00:00   /usr/lib/gvfs/gvfsd-dnssd --spawner :1.12 /org/gtk/gvfs/exec_spaw/6
gorogl@lab101-04 ~ $ ps ax
  PID TTY      STAT   TIME COMMAND
    1 ?        Ss     0:02 /sbin/init
    2 ?        S      0:00 [kthreadd]
    3 ?        S      0:00 [ksoftirqd/0]
    5 ?        S<     0:00 [kworker/0:0H]
    7 ?        S      0:00 [rcu_sched]
    8 ?        S      0:00 [rcu_bh]
    9 ?        S      0:00 [migration/0]
   10 ?        S      0:00 [watchdog/0]
   11 ?        S      0:00 [watchdog/1]
   12 ?        S      0:00 [migration/1]
   13 ?        S      0:00 [ksoftirqd/1]
   15 ?        S<     0:00 [kworker/1:0H]
   16 ?        S      0:00 [watchdog/2]
   17 ?        S      0:00 [migration/2]
   18 ?        S      0:00 [ksoftirqd/2]
   20 ?        S<     0:00 [kworker/2:0H]
   21 ?        S      0:00 [watchdog/3]
   22 ?        S      0:00 [migration/3]
   23 ?        S      0:00 [ksoftirqd/3]
   24 ?        S      0:00 [kworker/3:0]
   25 ?        S<     0:00 [kworker/3:0H]
   26 ?        S      0:00 [kdevtmpfs]
   27 ?        S<     0:00 [netns]
   28 ?        S<     0:00 [perf]
   29 ?        S      0:00 [khungtaskd]
   30 ?        S<     0:00 [writeback]
   31 ?        SN     0:00 [ksmd]
   32 ?        SN     0:00 [khugepaged]
   33 ?        S<     0:00 [crypto]
   34 ?        S<     0:00 [kintegrityd]
   35 ?        S<     0:00 [bioset]
   36 ?        S<     0:00 [kblockd]
   37 ?        S<     0:00 [ata_sff]
   38 ?        S<     0:00 [md]
   39 ?        S<     0:00 [devfreq_wq]
   44 ?        S      0:00 [kswapd0]
   45 ?        S<     0:00 [vmstat]
   46 ?        S      0:00 [fsnotify_mark]
   47 ?        S      0:00 [ecryptfs-kthrea]
   63 ?        S<     0:00 [kthrotld]
   64 ?        S<     0:00 [acpi_thermal_pm]
   65 ?        S<     0:00 [bioset]
   66 ?        S<     0:00 [bioset]
   67 ?        S<     0:00 [bioset]
   68 ?        S<     0:00 [bioset]
   69 ?        S      0:00 [kworker/0:1]
   70 ?        S<     0:00 [bioset]
   71 ?        S<     0:00 [bioset]
   72 ?        S<     0:00 [bioset]
   73 ?        S<     0:00 [bioset]
   74 ?        S      0:00 [scsi_eh_0]
   75 ?        S<     0:00 [scsi_tmf_0]
   76 ?        S      0:00 [scsi_eh_1]
   77 ?        S<     0:00 [scsi_tmf_1]
   83 ?        S<     0:00 [ipv6_addrconf]
   96 ?        S<     0:00 [deferwq]
   97 ?        S<     0:00 [charger_manager]
  290 ?        S<     0:00 [kpsmoused]
  548 ?        S      0:00 [scsi_eh_2]
  549 ?        S<     0:00 [scsi_tmf_2]
Menu   10 rendszer monitoro...   Untitled 1 - LibreOffic...   Terminal   Tue Mar 1, 15:13
```

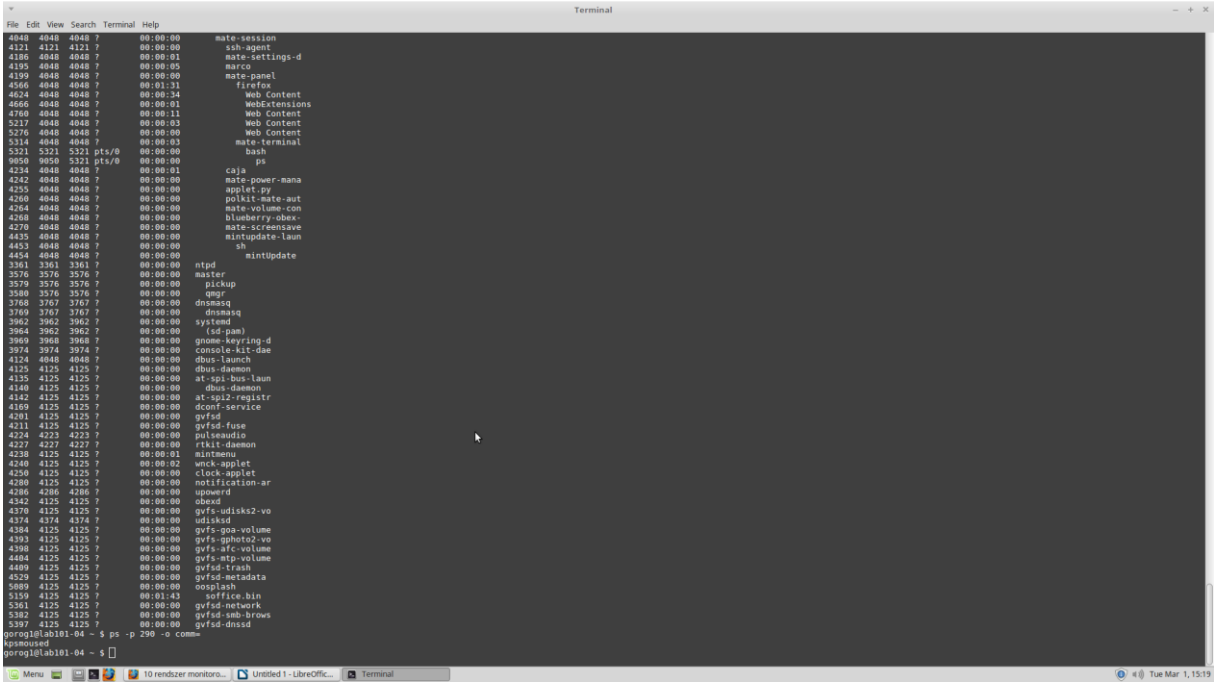
A szerver összes processzét jeleníti meg.



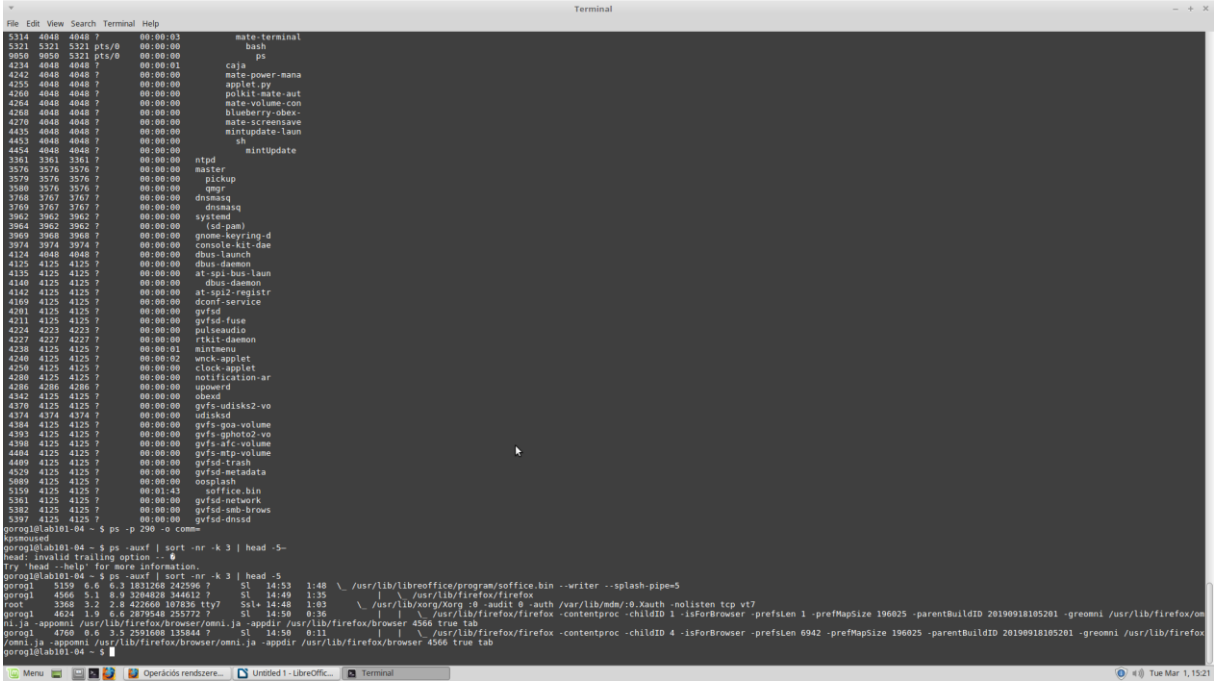
Megmutatja, milyen processzek futnak a rendszerben.



Fa elrendezésben mutatja a futó processzeket.

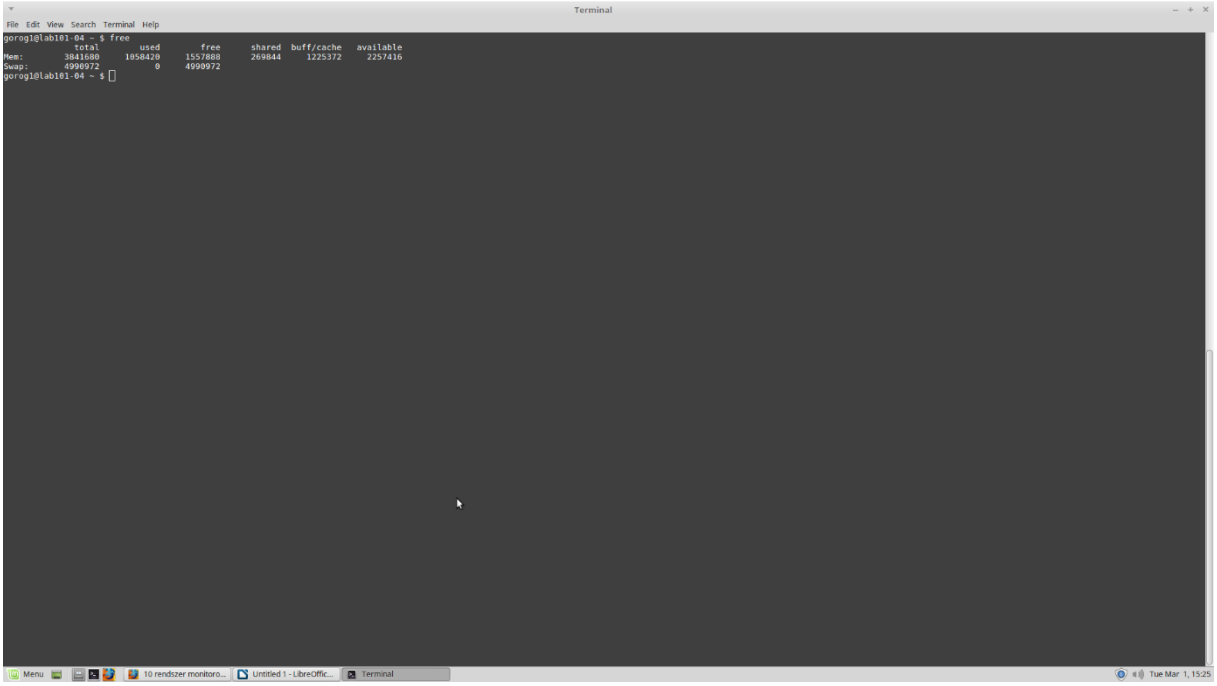


Kiírja egy adott PID nevét.

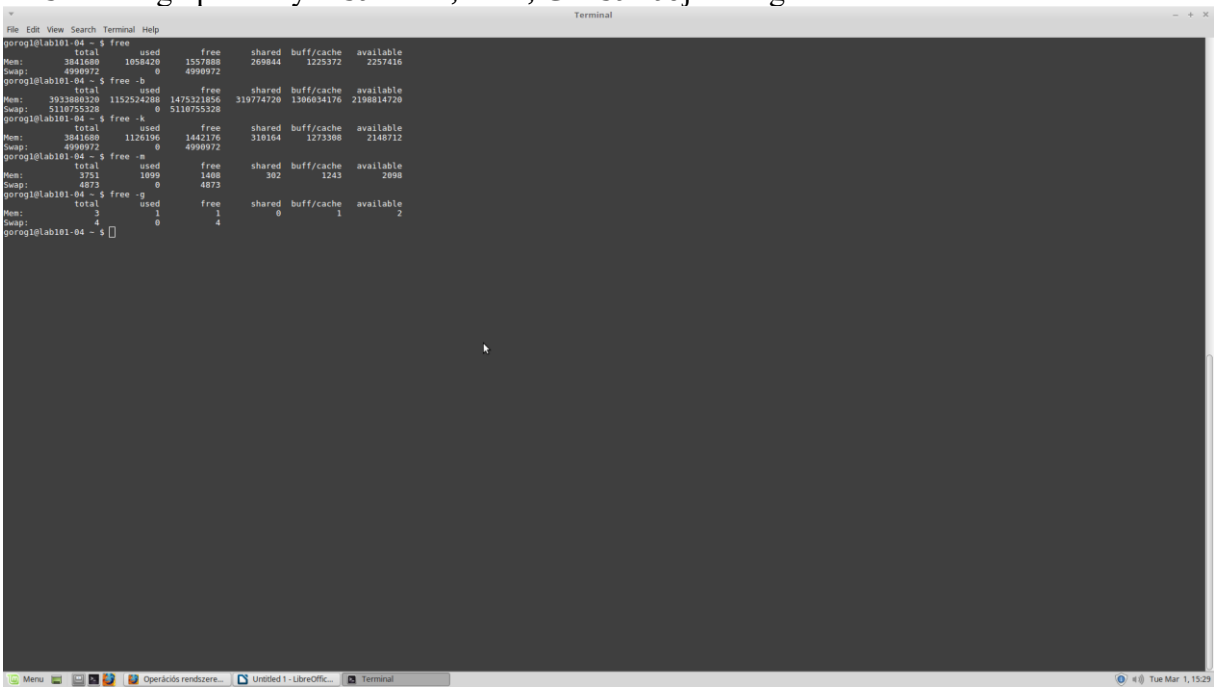


Kiírja az öt legtöbb CPU memóriát fogyasztó PID-et.

f.)
Ez a parancs megmutatja a fizikai memória és a cserehely (swap) használt és szabad területét, ezek összegét. Szintén megmutatja a kernel által használt puffereket, megjelenteti a szabad pufferek számát is.



A -b -k -m -g opciók byte-ban KB-, MB-, GB-ban adják meg a memória méretét.



A t kiírja az összeset (total), az -o kapcsolóra azt írja a rendszerem, hogy nincs ilyen.

```
Terminal
File  Edit  View  Search  Terminal  Help
gorogl@lab101-04 ~ $ free
              total        used        free      shared  buff/cache   available
Mem:        3841680     1058420     1557888      269844     1225372     2257416
Swap:       4990972           0     4990972
gorogl@lab101-04 ~ $ free -b
              total        used        free      shared  buff/cache   available
Mem:     3933880320  1152524288  1475321056   319774720  1306034176  2198814720
Swap:    5110755328           0  5110755328
gorogl@lab101-04 ~ $ free -k
              total        used        free      shared  buff/cache   available
Mem:        3841680     1126196     1442176      310164     1273308     2148712
Swap:       4990972           0     4990972
gorogl@lab101-04 ~ $ free -m
              total        used        free      shared  buff/cache   available
Mem:           3751        1099        1408         302        1243        2098
Swap:          4873           0        4873
gorogl@lab101-04 ~ $ free -g
              total        used        free      shared  buff/cache   available
Mem:               3           1           1           0           1           2
Swap:              4           0           4
gorogl@lab101-04 ~ $ free -t
              total        used        free      shared  buff/cache   available
Mem:        3841680     1138164     1481684      258680     1221912     2188132
Swap:       4990972           0     4990972
Total:      8832652     1138164     6472576
gorogl@lab101-04 ~ $ free -o
free: invalid option -- 'o'

Usage:
 free [options]

Options:
 -b, --bytes         show output in bytes
 -k, --kilo          show output in kilobytes
 -m, --mega          show output in megabytes
 -g, --giga          show output in gigabytes
     --tera          show output in terabytes
 -h, --human         show human-readable output
     --si            use powers of 1000 not 1024
 -l, --lohi          show detailed low and high memory statistics
 -t, --total         show total for RAM + swap
 -s N, --seconds N   repeat printing every N seconds
 -c N, --count N     repeat printing N times, then exit
 -w, --wide          wide output

     --help     display this help and exit
 -V, --version  output version information and exit

For more details see free(1).
gorogl@lab101-04 ~ $
Menu   5 UNIX / Linux free C...   Untitled 1 - LibreOffic...   Terminal   Tue Mar 1, 15:30
```

Az -s (szám) másodpercenként mutatná, a szám a másodperc, de nekem nem működik.
A -V a verziót írja ki.

```
Terminal
File  Edit  View  Search  Terminal  Help
gorogl@lab101-04 ~ $ free -t
              total        used        free      shared  buff/cache   available
Mem:        3841680     1138164     1481684      258680     1221912     2188132
Swap:       4990972           0     4990972
Total:      8832652     1138164     6472576
gorogl@lab101-04 ~ $ free -o
free: invalid option -- 'o'

Usage:
 free [options]

Options:
 -b, --bytes         show output in bytes
 -k, --kilo          show output in kilobytes
 -m, --mega          show output in megabytes
 -g, --giga          show output in gigabytes
     --tera          show output in terabytes
 -h, --human         show human-readable output
     --si            use powers of 1000 not 1024
 -l, --lohi          show detailed low and high memory statistics
 -t, --total         show total for RAM + swap
 -s N, --seconds N   repeat printing every N seconds
 -c N, --count N     repeat printing N times, then exit
 -w, --wide          wide output

     --help     display this help and exit
 -V, --version  output version information and exit

For more details see free(1).
gorogl@lab101-04 ~ $ free -s 3
free: seconds argument `3' failed
gorogl@lab101-04 ~ $ free -s 2
free: seconds argument `2' failed
gorogl@lab101-04 ~ $ free -s 1
free: seconds argument `1' failed
gorogl@lab101-04 ~ $ free -s
free: option requires an argument -- 's'

Usage:
 free [options]

Options:
 -b, --bytes         show output in bytes
 -k, --kilo          show output in kilobytes
 -m, --mega          show output in megabytes
 -g, --giga          show output in gigabytes
     --tera          show output in terabytes
 -h, --human         show human-readable output
     --si            use powers of 1000 not 1024
 -l, --lohi          show detailed low and high memory statistics
 -t, --total         show total for RAM + swap
 -s N, --seconds N   repeat printing every N seconds
 -c N, --count N     repeat printing N times, then exit
 -w, --wide          wide output

     --help     display this help and exit
 -V, --version  output version information and exit

For more details see free(1).
gorogl@lab101-04 ~ $ free -s 4
free: seconds argument `4' failed
gorogl@lab101-04 ~ $ free -s 10
free: seconds argument `10' failed
gorogl@lab101-04 ~ $ free -V
free from procps-ng 3.3.10
gorogl@lab101-04 ~ $
Menu   5 UNIX / Linux free C...   Untitled 1 - LibreOffic...   Terminal   Tue Mar 1, 15:34
```

g.) Az átlagos CPU terhelést vagy lemez aktivitást mutatja. Kijelzi a CPU statisztikát és a számítógép I/O eszközeit, a hálózati fájlrendszereket és a partíciókat.

Opciók: -c CPU statisztika, -d eszköz statisztika, -t időintervallumot társít a jelentésekhez, -k/-m KB-, MB-ban írja ki az adatokat, -V kiírja a verziót, -x bővített statisztika, -N kiírja a regisztrált device mapper neveket, -h a méreteket emberek számára olvasható formában jeleníti meg, -z kihagyja azokat az eszközöket, amelyek nem mutattak aktivitást a vizsgált intervallumban. Ezen kívül meg lehet adni, mely eszközöket szeretnénk megjeleníteni, valamint az időintervallumot.

LinuxMint [Fut] - Oracle VM VirtualBox

Fájl Gép Nézet Bevitel Eszközök Súgó

mint@mint: ~

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```
Reading state information... Done
Suggested packages:
  isag
The following NEW packages will be installed:
  sysstat
0 upgraded, 1 newly installed, 0 to remove and 37 not upgraded.
Need to get 448 kB of archives.
After this operation, 1511 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 sysstat amd64 12.2.0-2ubuntu0.1 [448 kB]
Fetched 448 kB in 1s (518 kB/s)
Preconfiguring packages ...
Selecting previously unselected package sysstat.
(Reading database ... 277624 files and directories currently installed.)
Preparing to unpack .../sysstat_12.2.0-2ubuntu0.1_amd64.deb ...
Unpacking sysstat (12.2.0-2ubuntu0.1) ...
Setting up sysstat (12.2.0-2ubuntu0.1) ...

Creating config file /etc/default/sysstat with new version
update-alternatives: using /usr/bin/sar.sysstat to provide /usr/bin/sar (sar) in
 auto mode
Created symlink /etc/systemd/system/multi-user.target.wants/sysstat.service → /l
ib/systemd/system/sysstat.service.
Processing triggers for systemd (245.4-4ubuntu3.13) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for doc-base (0.10.9) ...
Processing 44 changed doc-base files, 1 added doc-base file...
mint@mint:~$ iostat
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          42.53    0.00   28.78    0.84    0.00   27.86

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0          2297.08      2320.83         0.00         0.00     206113          0          0
sda               2.27        49.14         0.00         0.00       4364          0          0
scd0             76.80      3326.18         0.00         0.00     295398          0          0

mint@mint:~$
```

Volume: 45%

16:48

Right Control

Írjon ide a kereséshez

6°C 17:47 2022. 03. 05.

LinuxMint [Fut] - Oracle VM VirtualBox

Fájl Gép Nézet Bevitel Eszközök Súgó

mint@mint: ~

File Edit View Search Terminal Help

```
avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          42.53    0.00   28.78    0.84    0.00   27.86

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0          2297.08      2320.83         0.00         0.00     206113          0          0
sda               2.27        49.14         0.00         0.00       4364          0          0
scd0             76.80      3326.18         0.00         0.00     295398          0          0

mint@mint:~$ iostat -d
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0          674.90       681.88         0.00         0.00     206126          0          0
sda              0.67        14.44         0.00         0.00       4364          0          0
scd0            22.56       977.20         0.00         0.00     295398          0          0

mint@mint:~$ iostat -c
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.25    0.00    8.00    0.23    0.00   77.51

mint@mint:~$ iostat -N
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          15.01    0.00    7.53    0.22    0.00   77.25

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0          589.99       598.08         0.00         0.00     206126          0          0
sda              0.58        12.62         0.00         0.00       4364          0          0
scd0            19.73       854.25         0.00         0.00     295398          0          0

mint@mint:~$
```

16:52

Right Control

Írjon ide a kereséshez

6°C 17:51 2022. 03. 05.

LinuxMint [Fut] - Oracle VM VirtualBox

Fájl Gép Nézet Bevitel Eszközök Súgó

mint@mint: ~

File Edit View Search Terminal Help

```
[ [ -H ] -g <group_name> ] [ -p [ <device> [,...] | ALL ] ]
[ <device> [,...] | ALL ]
mint@mint:~$ iostat -m
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.29    0.00    6.53    0.19    0.00   79.00

Device             tps    MB_read/s    MB_wrtn/s    MB_dscd/s    MB_read    MB_wrtn    MB_dscd
loop0            502.83         0.50         0.00         0.00        201          0          0
sda                0.50         0.01         0.00         0.00          4          0          0
scd0              17.01         0.72         0.00         0.00        288          0          0


mint@mint:~$ iostat -h
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.4%    0.0%    6.5%    0.2%    0.0%   79.3%

      tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd Device
   502.83       508.0k         0.0k         0.0k     201.3M       0.0k       0.0k loop0
     0.50        10.6k         0.0k         0.0k       4.3M       0.0k       0.0k sda
    16.01       728.0k         0.0k         0.0k     288.5M       0.0k       0.0k scd0


mint@mint:~$ iostat -k
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.57    0.00    6.34    0.18    0.00   78.90

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0            493.68       498.78         0.00         0.00     206126          0          0
sda                0.49        10.56         0.00         0.00       4364          0          0
scd0              16.51       714.80         0.00         0.00     295398          0          0


mint@mint:~$
```

Right Control

Írjon ide a kereséshez 6°C 17:53 2022. 03. 05.

LinuxMint [Fut] - Oracle VM VirtualBox

Fájl Gép Nézet Bevitel Eszközök Súgó

mint@mint: ~

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```
mint@mint:~$ iostat -V
sysstat version 12.2.0
(C) Sebastien Godard (sysstat <at> orange.fr)
mint@mint:~$ iostat -t
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

03/05/22 16:54:55
avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          13.38    0.00    5.16    0.15    0.00   81.31

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0            397.63       401.74         0.00         0.00     206126          0          0
sda                0.39         8.51         0.00         0.00       4364          0          0
scd0              13.29       575.73         0.00         0.00     295398          0          0


mint@mint:~$ iostat -x
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.66    0.00    4.51    0.13    0.00   80.70

Device            r/s     rkB/s   rrqm/s  %rrqm r_await rareq-sz     w/s     wkB/s   wrqm/s  %wrqm w_await wareq-sz     d/s
   dkB/s    drqm/s  %drqm d_await dareq-sz  aqu-sz  %util
loop0           341.62    345.15     0.00    0.00    0.70     1.01    0.00      0.00     0.00    0.00    0.00     0.00    0.00
     0.00      0.00    0.00    0.00     0.00    0.09   3.32
sda               0.34      7.31     0.00    0.00    0.14    21.60    0.00      0.00     0.00    0.00    0.00     0.00    0.00
     0.00      0.00    0.00    0.00     0.00    0.00   0.02
scd0             11.42    494.63     0.07    0.57    0.76    43.31    0.00      0.00     0.00    0.00    0.00     0.00    0.00
     0.00      0.00    0.00    0.00     0.00    0.00   2.18


mint@mint:~$ iostat -t
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

03/05/22 16:56:27
avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.84    0.00    4.45    0.12    0.00   80.58
```

Right Control

Írjon ide a kereséshez 6°C 17:56 2022. 03. 05.

LinuxMint [Fut] - Oracle VM VirtualBox

Fájl Gép Nézet Bevitel Eszközök Súgó

mint@mint: ~

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```
avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.66    0.00    4.51    0.13    0.00   80.70

Device            r/s     rkB/s   rrqm/s  %rrqm r_await rareq-sz     w/s     wkB/s   wrqm/s  %wrqm w_await wareq-sz     d/s     dkB/s   drqm/s  %drqm d_await dareq-sz  aqu-sz  %util
loop0          341.62    345.15     0.00   0.00    0.70     1.01    0.00      0.00    0.00   0.00    0.00    0.00    0.00      0.00    0.00   0.00    0.00    0.00    0.00    0.00
sda              0.34      7.31     0.00   0.00    0.09    21.60    0.00      0.00    0.00   0.00    0.00    0.00    0.00      0.00    0.00   0.00    0.00    0.00    0.00    0.00
sr0              0.00      0.00     0.00   0.00    0.00     0.02    0.00      0.00    0.00   0.00    0.00    0.00    0.00      0.00    0.00   0.00    0.00    0.00    0.00    0.00
scd0            11.42    494.63     0.07   0.57    0.76    43.31    0.00      0.00    0.00   0.00    0.00    0.00    0.00      0.00    0.00   0.00    0.00    0.00    0.00    0.00

mint@mint:~$ iostat -t
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

03/05/22 16:56:27
avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.84    0.00    4.45    0.12    0.00   80.58

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0           337.39       340.87         0.00         0.00     206126          0          0
sda               0.33         7.22         0.00         0.00       4364          0          0
scd0             11.28       488.50         0.00         0.00     295398          0          0

mint@mint:~$ iostat -z
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.99    0.00    4.39    0.12    0.00   80.50

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0           331.31       334.74         0.00         0.00     206126          0          0
sda               0.33         7.09         0.00         0.00       4364          0          0
scd0             11.88       479.71         0.00         0.00     295398          0          0

mint@mint:~$
```

Right Control

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LinuxMint [Fut] - Oracle VM VirtualBox

Fájl Gép Nézet Bevitel Eszközök Súgó

mint@mint: ~

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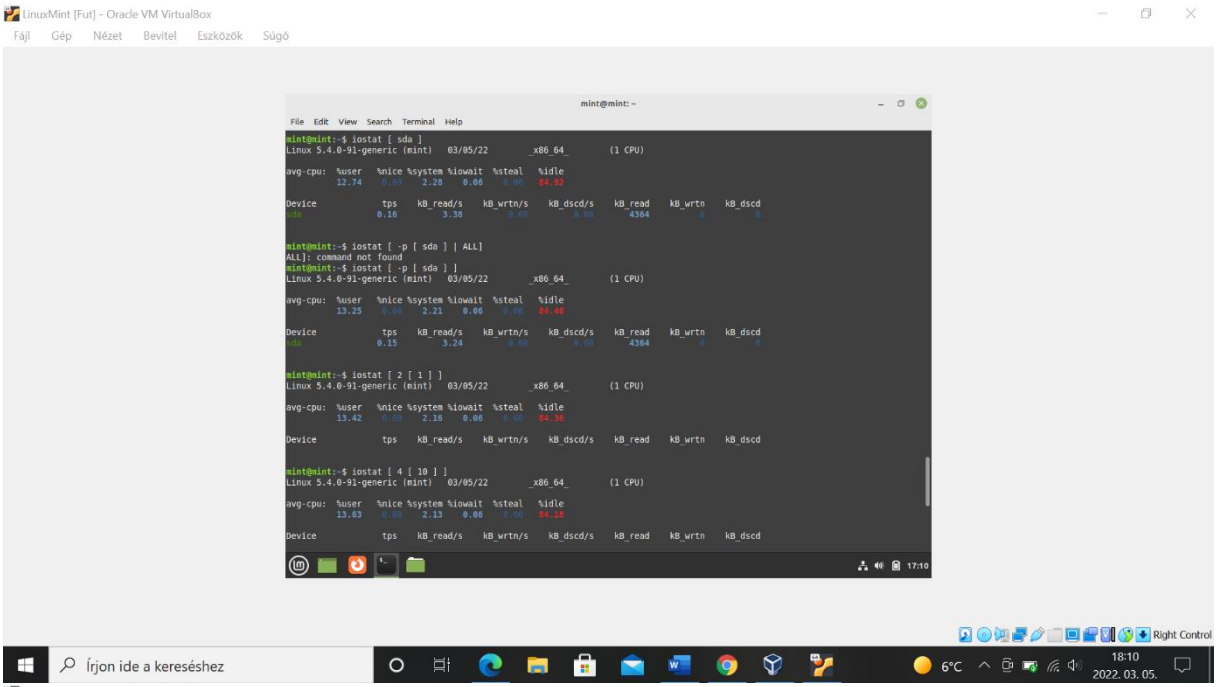
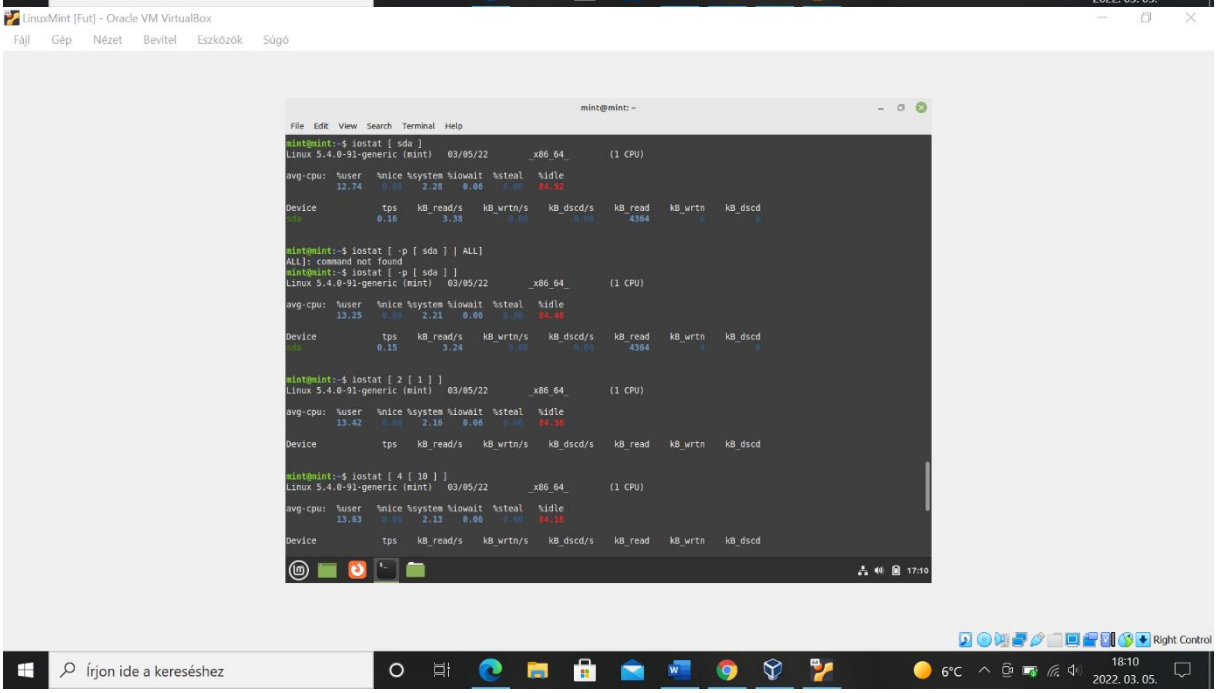
```
[ [ -H ] -g <group_name> ] [ -p [ <device> [,...] | ALL ] ]
[ <device> [...] | ALL ]
mint@mint:~$ iostat -m
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.29    0.00    6.53    0.19    0.00   79.00

Device             tps    MB_read/s    MB_wrtn/s    MB_dscd/s    MB_read    MB_wrtn    MB_dscd
loop0           508.83         0.50         0.00         0.00        201          0          0
sda               0.50         0.01         0.00         0.00          4          0          0
scd0             17.01         0.72         0.00         0.00        288          0          0

mint@mint:~$ iostat -h
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.4%    0.0%    6.5%    0.2%    0.0%   78.9%

     tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd Device
  502.83       508.0k         0.0k         0.0k     201.3M      76.0k      76.0k loop0
    0.50        10.8k         0.0k         0.0k       4.3M       0.0k       0.0k sda
   16.81       728.0k         0.0k         0.0k     288.5M       0.0k       0.0k scd0

mint@mint:~$ iostat -k
Linux 5.4.0-91-generic (mint)   03/05/22        _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          14.57    0.00    6.34    0.18    0.00   78.90

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0           493.68       498.78         0.00         0.00     206126          0          0
sda               0.49        10.56         0.00         0.00       4364          0          0
scd0             16.51       714.80         0.00         0.00     295398          0          0

mint@mint:~$
```

Right Control

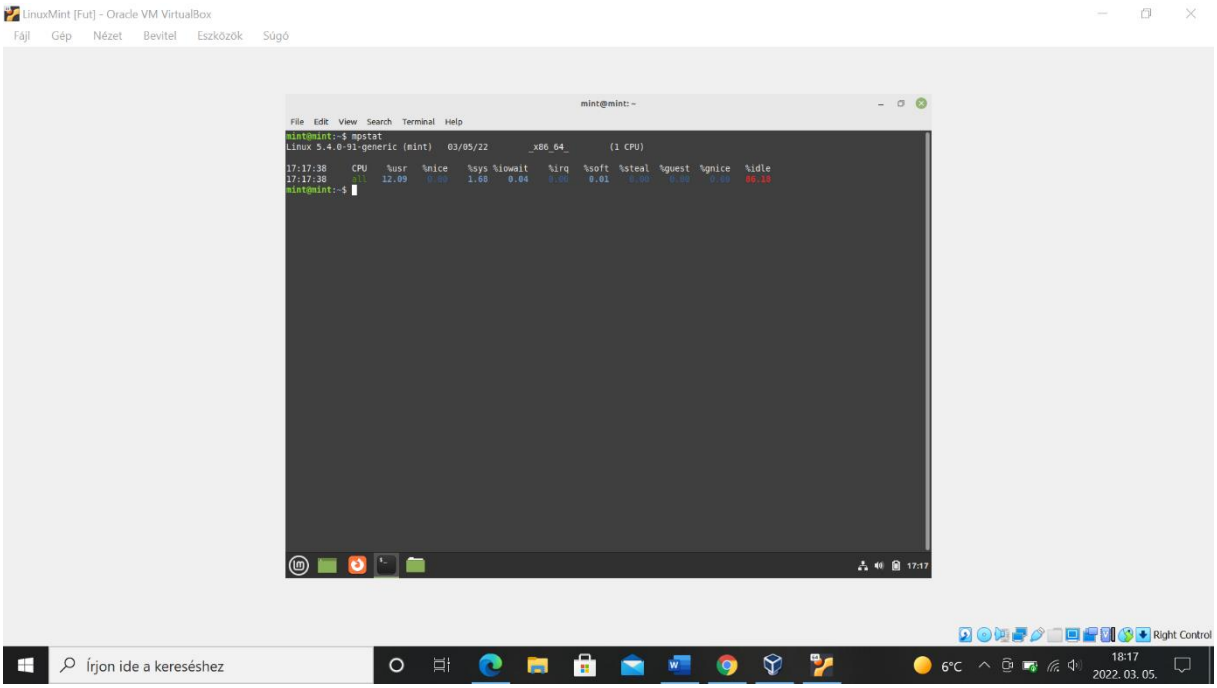
Írjon ide a kereséshez 6°C 17:53 2022. 03. 05.



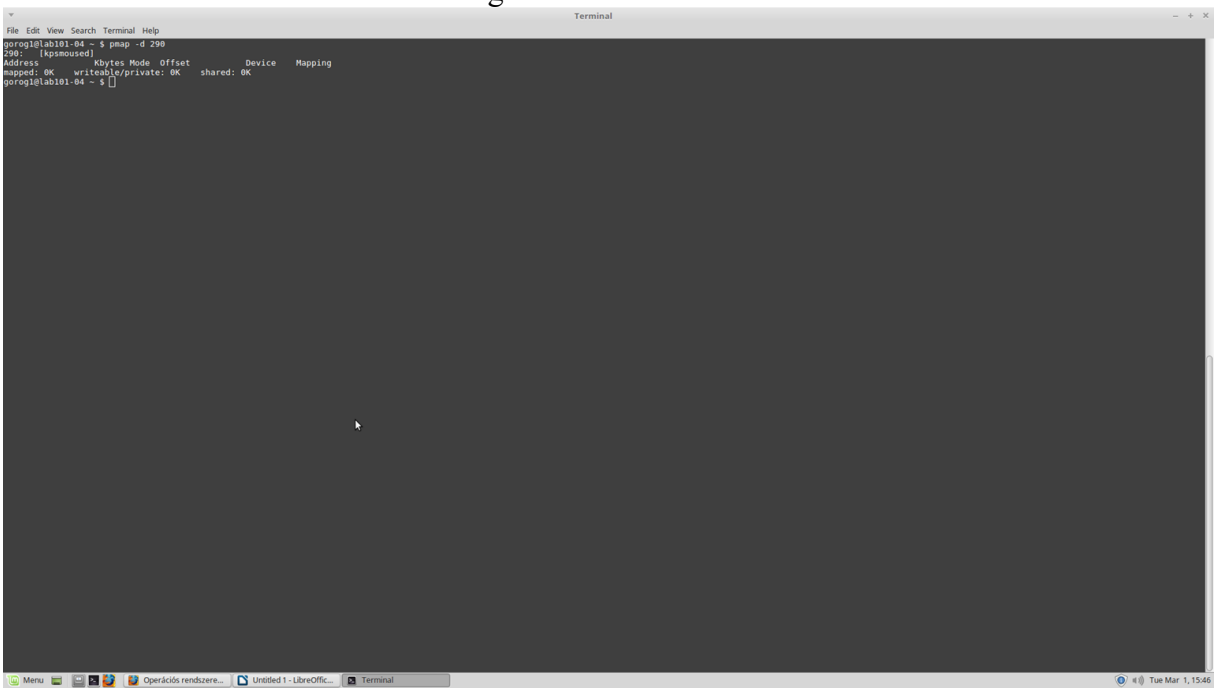


h.) A sar parancs szolgál a rendszer aktivitási adatok jelzésére és összegyűjtésére és egyben ezeket menti is.
Ez nekem nem működik.

i.) Ezt a programot a több processzoros használat kimutatására használják. Az „mpstat” megjeleníti mindegyik elérhető processzor aktivitását, kezdve a 0 jelű processzortól, ami az első.

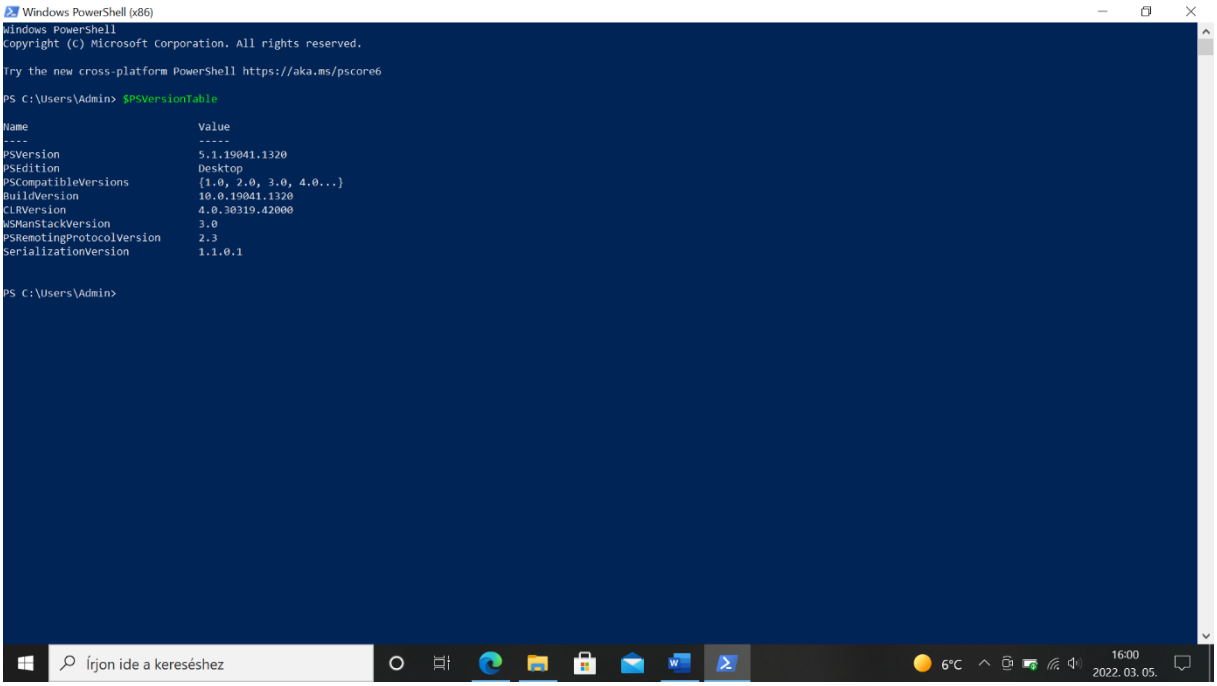


j.) A „pmap” parancs jelzi a processz memória használatát. Ez a parancs használható a memória szűk keresztmetszetének megkereséséhez.

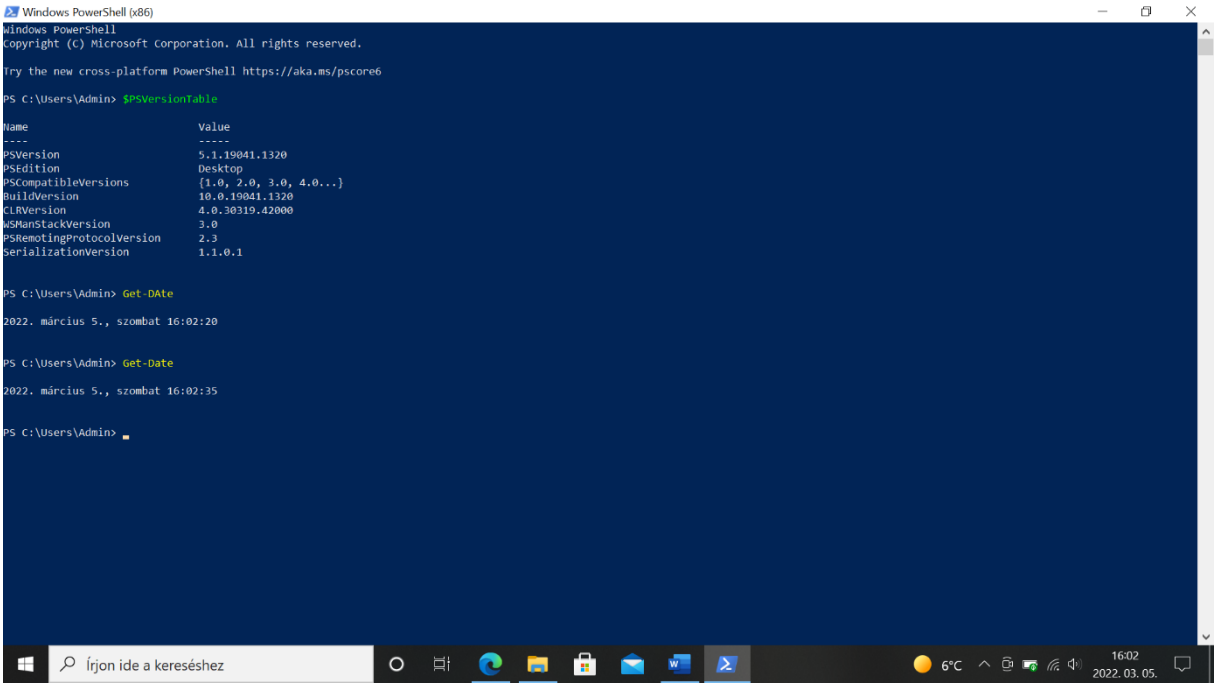


2.feladatok

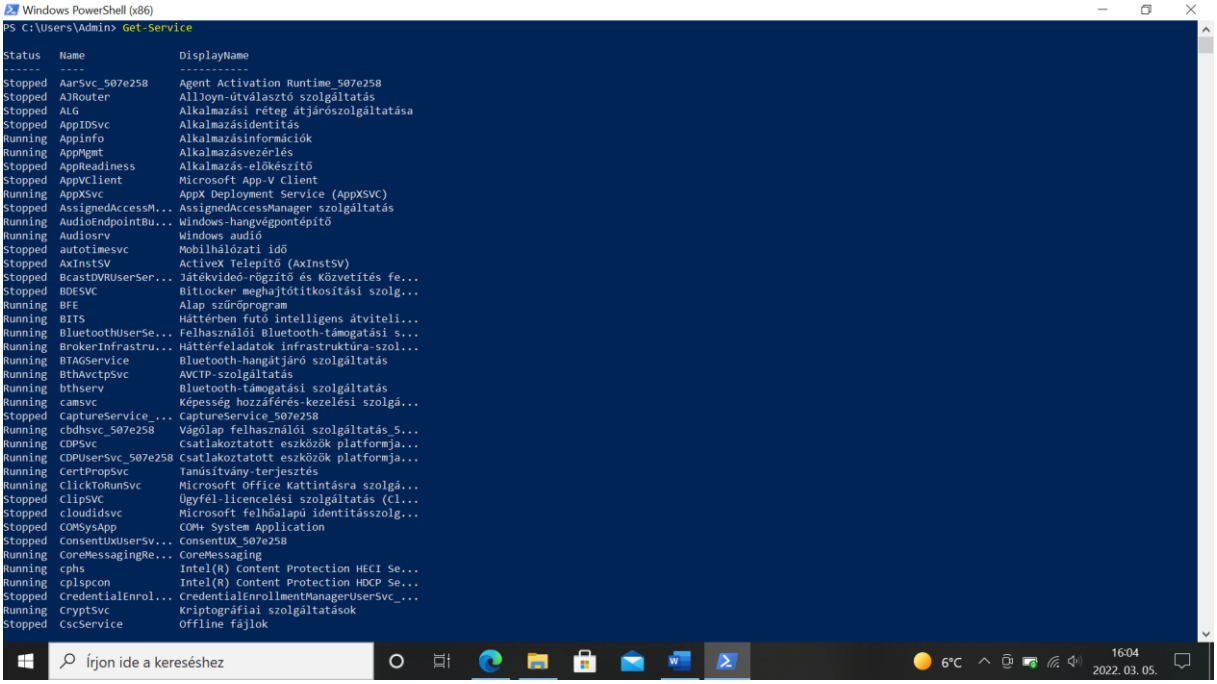
1.) Kiírja a PowerShell verzióját.



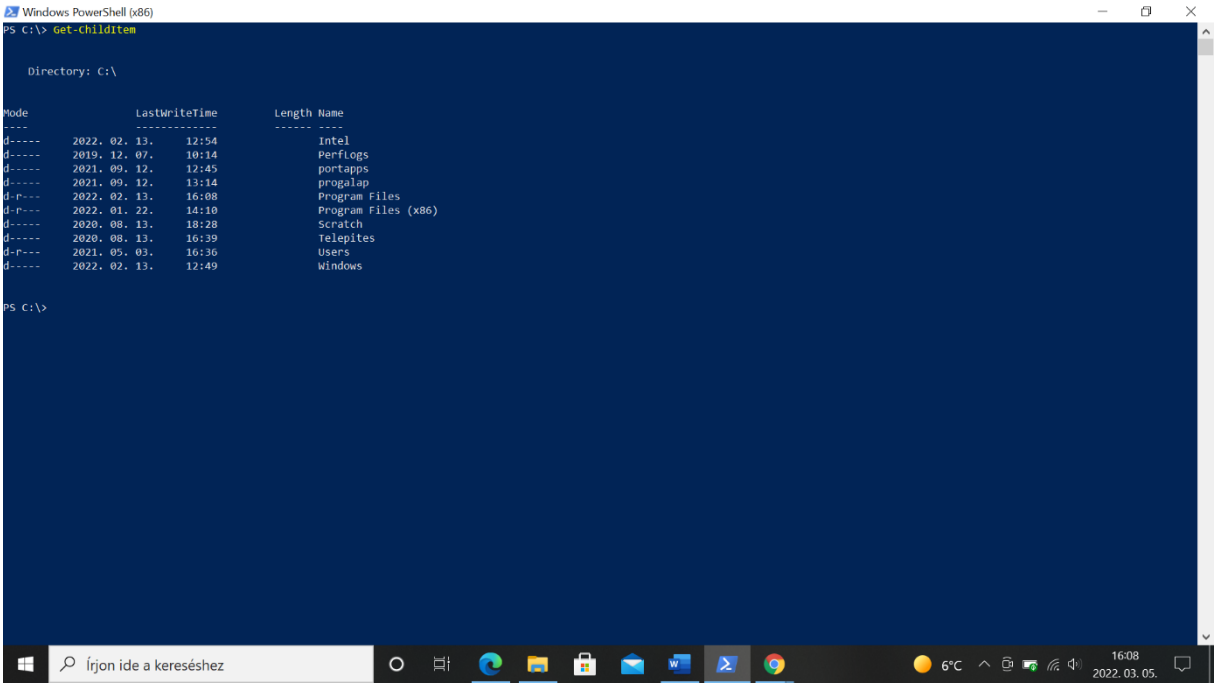
2.) Kiírja a mai dátumot.



3.) Kiírja a szolgáltatásokat.



4.) Kiírja a C meghajtón lévő könyvtárakat és fájlokat.

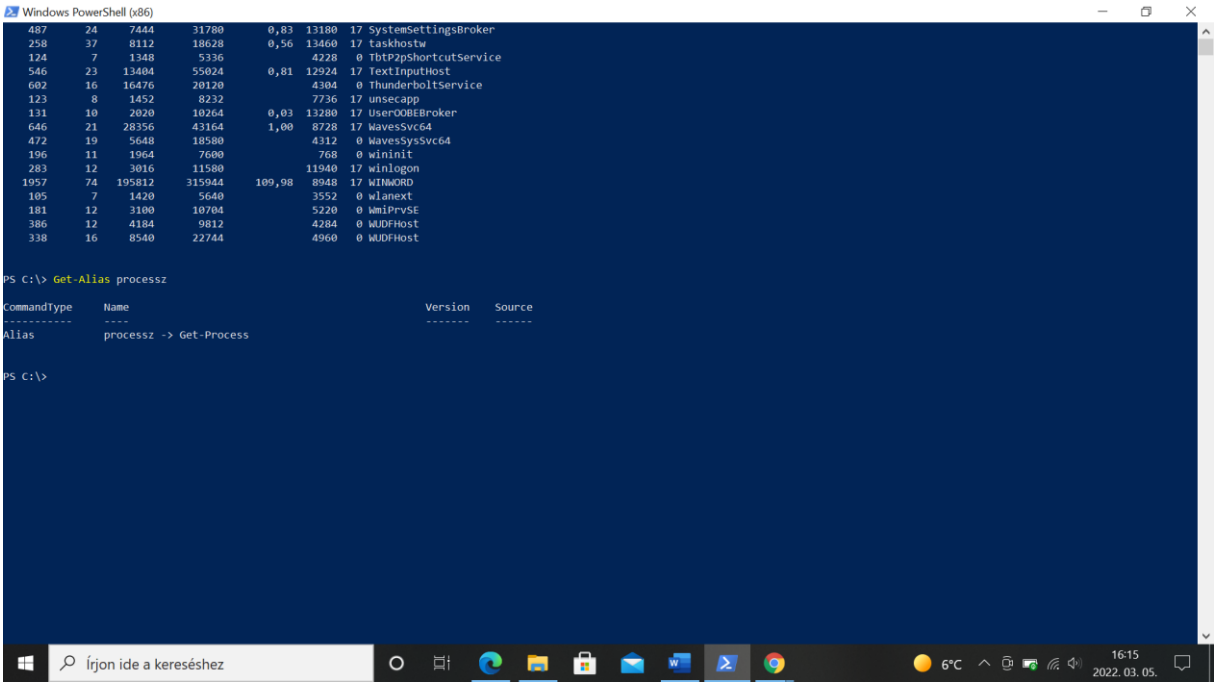


5.) A parancsok rövidített neveit írja ki(alias).

```
Windows PowerShell (x86)
PS C:\> Get-Alias

CommandType     Name                                               Version    Source
-----------     ----                                               -------    ------
Alias           % -> ForEach-Object
Alias           ? -> Where-Object
Alias           ac -> Add-Content
Alias           asnp -> Add-PSSnapin
Alias           cat -> Get-Content
Alias           cd -> Set-Location
Alias           CFS -> ConvertFrom-String                          3.1.0.0    Microsoft.PowerShell.Utility
Alias           chdir -> Set-Location
Alias           clc -> Clear-Content
Alias           clear -> Clear-Host
Alias           clhy -> Clear-History
Alias           cli -> Clear-Item
Alias           clp -> Clear-ItemProperty
Alias           cls -> Clear-Host
Alias           clv -> Clear-Variable
Alias           cnsn -> Connect-PSSession
Alias           compare -> Compare-Object
Alias           copy -> Copy-Item
Alias           cp -> Copy-Item
Alias           cpi -> Copy-Item
Alias           cpp -> Copy-ItemProperty
Alias           curl -> Invoke-WebRequest
Alias           cvpa -> Convert-Path
Alias           dbp -> Disable-PSBreakpoint
Alias           del -> Remove-Item
Alias           diff -> Compare-Object
Alias           dir -> Get-ChildItem
Alias           dnsn -> Disconnect-PSSession
Alias           ebp -> Enable-PSBreakpoint
Alias           echo -> Write-Output
Alias           epal -> Export-Alias
Alias           epcsv -> Export-Csv
Alias           epsn -> Export-PSSession
Alias           erase -> Remove-Item
Alias           etsn -> Enter-PSSession
Alias           exsn -> Exit-PSSession
Alias           fc -> Format-Custom
Alias           fhx -> Format-Hex                                  3.1.0.0    Microsoft.PowerShell.Utility
Alias           fl -> Format-List
Alias           foreach -> ForEach-Object
Írjon ide a kereséshez                                   6°C   16:11
                                                                 2022. 03. 05.
```

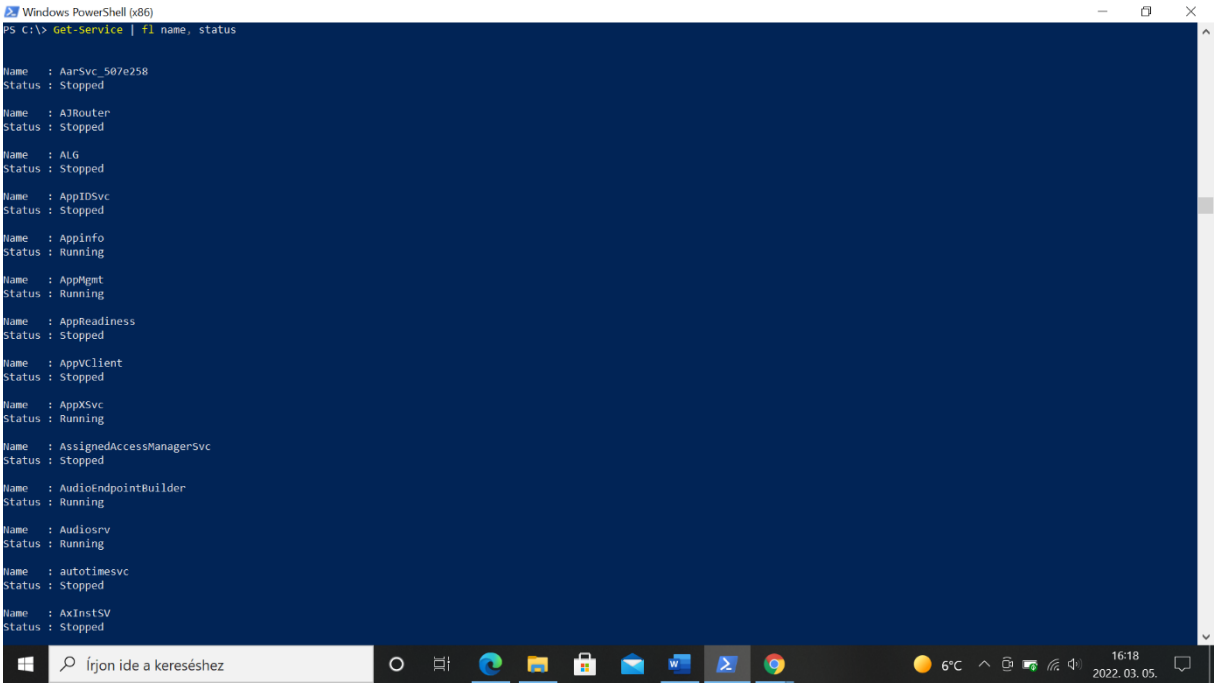
6.) Egy „processz” nevű Alias készítése, majd futtatása és lekérdezése.

```
Windows PowerShell (x86)
PS C:\> New-Alias "processz" Get-Process
PS C:\> processz

Handles  NPM(K)    PM(K)      WS(K)     CPU(s)     Id  SI ProcessName
-------  ------    -----      -----     ------     --  -- -----------
    318      19    10832      29100       0,06   9044  17 ApplicationFrameHost
    151      10     2512       7536              3696   0 bcmHostControlService
    193      10     2580       7740              3688   0 bcmHostStorageService
    214      11    26140       9204              2528   0 bcmUshUpgradeService
    247      15    55244      89388       2,95    568  17 chrome
    350      16    28428      66012       0,83    888  17 chrome
   1283      46    68364     139096      12,88    924  17 chrome
    279      15    19452      51868       0,50   1740  17 chrome
    222      14    12284      27304       0,17   8676  17 chrome
    291      18    14052      35092       1,34   9980  17 chrome
    355      17    60164     102708       5,02  11192  17 chrome
    170       9     1884       7828       0,03  13792  17 chrome
    203      13     8104      18948       0,11  14252  17 chrome
    630      25   100512     127584       5,00  14320  17 chrome
    191      12     1696       9624       0,50  13964  17 CNMNSST
    626      56    69840      31792       2,66  12552  17 CNQMMAIN
    285      21    19976      31912       0,19  13444  17 CNQMUPDT
    102       7     6220       4696             3560   0 conhost
    271      14     6400      18412       7,28  10224  17 conhost
    485      17     4444      22812       4,88   2448  17 ctfmon
    739      25     2144       6028               684   0 csrss
    560      20     2448       7304              8440  17 csrss
    237      14    13504      15956              3952   0 DellFFDPWmiService
    208      18     3824      11456              9732   0 dllhost
    233      23     5264      14124       0,16  11428  17 dllhost
   1235      44   528976     568628              2688  17 dwm
    106       7     1564       5252              4024   0 esif_uf
   2673     122    69480     159048      49,53     88  17 explorer
     37       6     1736       3012               688   0 fontdrvhost
     37       8     3032      10132              1320  17 fontdrvhost
      0       0       60          8                 0   0 Idle
    186      10     2192       9224              2056   0 igfxCUIService
    306      15     3768      15168       0,17  12324  17 igfxEM
    162       9     1640       7164              3960   0 ijplmsvc
    531      25    25476      20376              3996   0 IntelAudioService
    155       8     1468       7088              1856   0 IntelCpHDCPSvc
    140       8     1608       6948              1552   0 IntelCpHeciSvc
    137       8     1280       5688              5112   0 jhi_service
    398      18     3300      17356       0,42   4812  17 jucheck
Írjon ide a kereséshez                                   6°C   16:15
                                                                 2022. 03. 05.
```

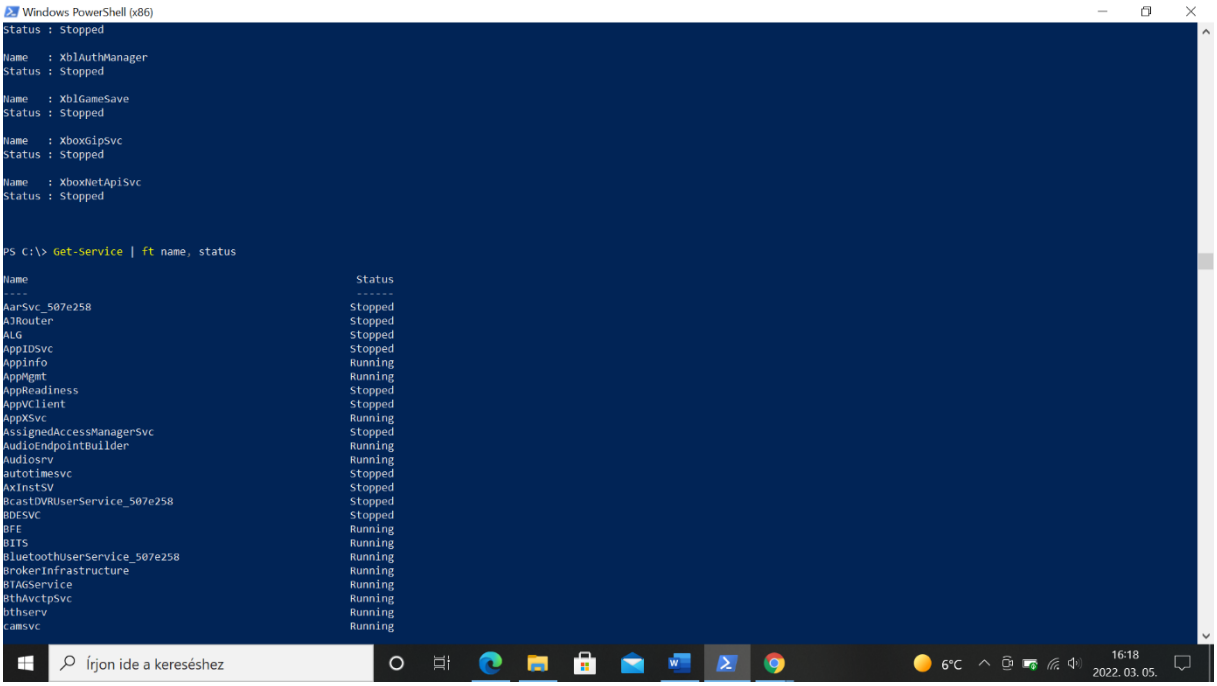


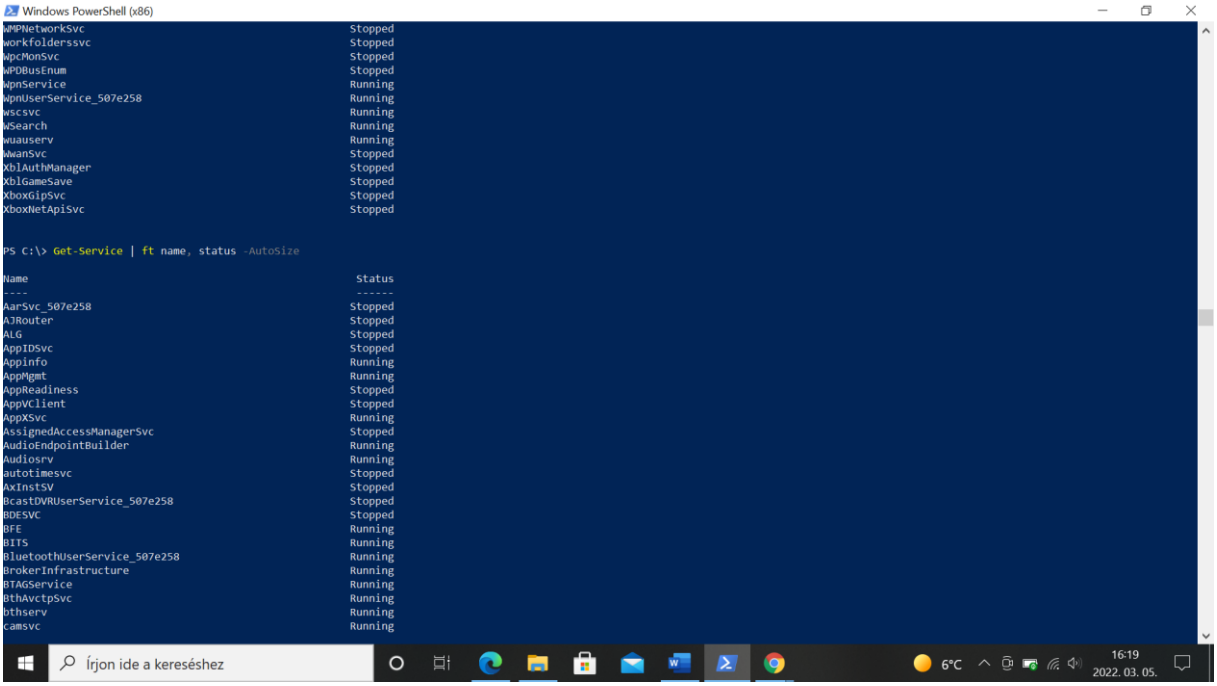
```
Windows PowerSHell (x86)
    487      24     7444      31780       0,83  13180  17 SystemSettingsBroker
    258      37     8112      18628       0,56  13460  17 taskhostw
    124       7     1348       5336             4228   0 TbtP2pShortcutService
    546      23    13404      55024       0,81  12924  17 TextInputHost
    602      16    16476      20120             4304   0 ThunderboltService
    123       8     1452       8232             7736  17 unsecapp
    131      10     2020      10264       0,03  13280  17 UserOOBEBroker
    646      21    28356      43164       1,00   8728  17 WavesSvc64
    472      19     5648      18580             4312   0 WavesSysSvc64
    196      11     1964       7600              768   0 wininit
    283      12     3016      11580            11940  17 winlogon
   1957      74   195812     315944     109,98   8948  17 WINWORD
    105       7     1420       5640             3552   0 wlanext
    181      12     3100      10704             5220   0 WmiPrvSE
    386      12     4184       9812             4284   0 WUDFHost
    338      16     8540      22744             4960   0 WUDFHost

PS C:\> Get-Alias processz

CommandType     Name                                               Version    Source
-----------     ----                                               -------    ------
Alias           processz -> Get-Process

PS C:\>
```

7.) Az adott meghajtón lévő szolgáltatások lekérdezése.



```
Windows PowerSHell (x86)
PS C:\> Get-Service | fl name, status


Name   : AarSvc_507e258
Status : Stopped

Name   : AJRouter
Status : Stopped

Name   : ALG
Status : Stopped

Name   : AppIDSvc
Status : Stopped

Name   : Appinfo
Status : Running

Name   : AppMgmt
Status : Running

Name   : AppReadiness
Status : Stopped

Name   : AppVClient
Status : Stopped

Name   : AppXSvc
Status : Running

Name   : AssignedAccessManagerSvc
Status : Stopped

Name   : AudioEndpointBuilder
Status : Running

Name   : Audiosrv
Status : Running

Name   : autotimesvc
Status : Stopped

Name   : AxInstSV
Status : Stopped
```





8.) Az objektumok név szerinti növekvő, majd csökkenő rendezése.

Windows PowerShell (x86)

```
PS C:\> Get-Process | Sort-Object name

Handles  NPM(K)    PM(K)      WS(K)     CPU(s)     Id  SI ProcessName
-------  ------    -----      -----     ------     --  -- -----------
    318      19    10832      29100       0,06   9044  17 ApplicationFrameHost
    155      10     2564       7560              3696   0 bcmHostControlService
    197      10     2636       7772              3688   0 bcmHostStorageService
    218      11    26200       9236              2528   0 bcmUshUpgradeService
    156       9     2048       7940       0,05  13792  17 chrome
    355      17    59380     101448       5,81  11192  17 chrome
    640      25   114112     141108      14,72  14320  17 chrome
    203      13     8208      19060       0,13  14252  17 chrome
   1210      45    72036     147476      29,06    924  17 chrome
    247      15    51948      88672       3,72    568  17 chrome
    300      20    14300      35876       2,94   9980  17 chrome
    216      14    12168      27224       0,22   6500  17 chrome
    193      12     1764       9648       0,69  13964  17 CNMNSST
    626      56    69840      31792       2,66  12552  17 CNQMMAIN
    285      21    19976      31912       0,22  13444  17 CNQMUPDT
    271      14     6400      18432      14,86  10224  17 conhost
    102       7     6220       4696              3560   0 conhost
    485      17     4620      22972       6,70   2448  17 ctfmon
    549      20     2448       7296              8440  17 csrss
    735      25     2148       6032               684   0 csrss
    237      14    13504      15956              3952   0 DellFFDPWmiService
    233      23     5264      14124       0,16  11428  17 dllhost
    208      18     3824      11456              9732   0 dllhost
   1146      46   685680     721872              2688  17 dwm
    106       7     1564       5252              4024   0 esif_uf
   2523     120    68616     157828      63,03     88  17 explorer
     37       8     3032      10132              1320  17 fontdrvhost
     37       6     1736       3012               688   0 fontdrvhost
      0       0       60          8                 0   0 Idle
    186      10     2192       9224              2056   0 igfxCUIService
    306      15     3768      15168       0,17  12324  17 igfxEM
    162       9     1640       7164              3960   0 ijplmsvc
    531      25    25476      20376              3996   0 IntelAudioService
    155       8     1468       7088              1856   0 IntelCpHDCPSvc
    140       8     1608       6948              1552   0 IntelCpHeciSvc
    137       8     1280       5688              5112   0 jhi_service
    410      20     3600      17524       0,44   4812  17 jucheck
    270      15     2276      17152       0,22  12060  17 jusched
    240      11     3300       9568              3564   0 LMS
   1585      29     9528      23132               868   0 lsass
```

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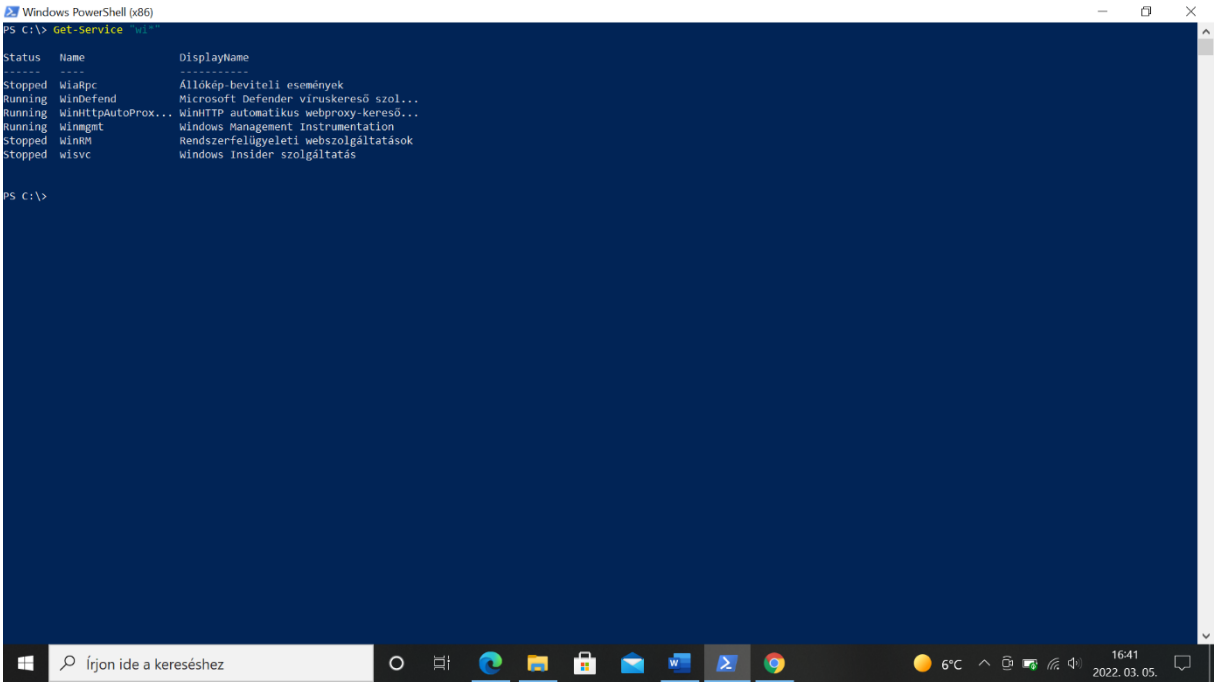
Windows PowerShell (x86)

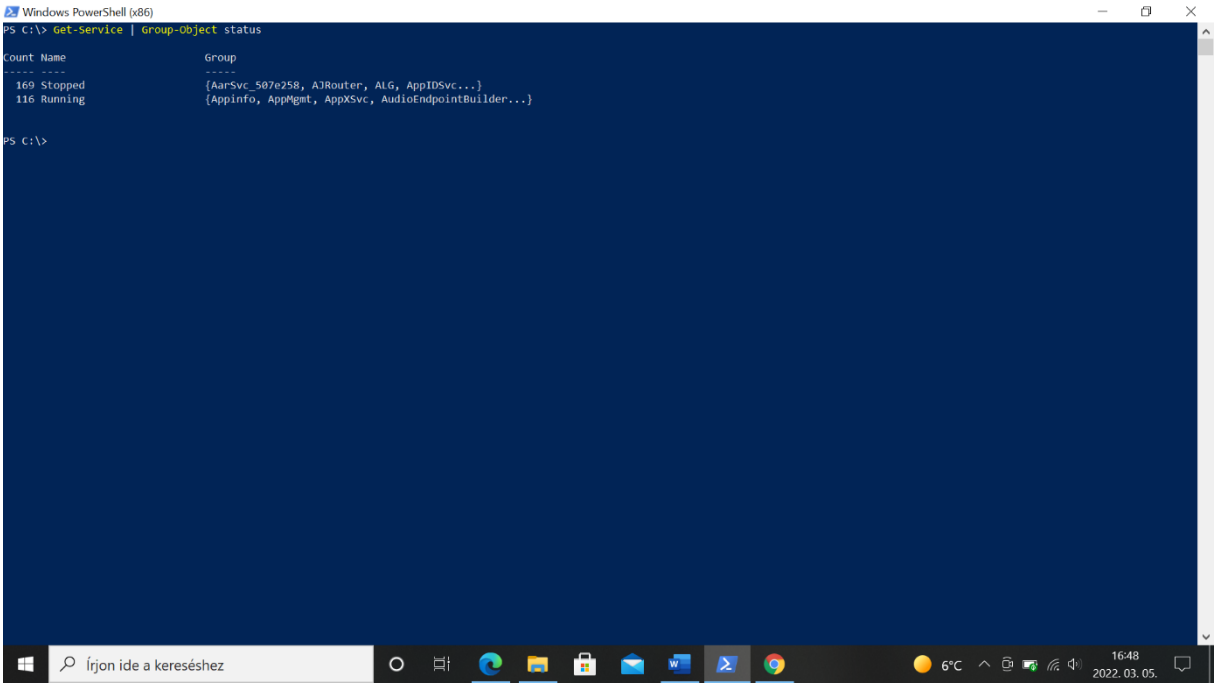
```
    408      16     5396      12952              2148   0 svchost
    398      17     6528      15796              2232   0 svchost
    354      12     2848       8824              1928   0 svchost
    137       9     1648       6112              1960   0 svchost
    191       9     1856       6892              2280   0 svchost
    542      24     8976      39024       1,36   2472  17 svchost
    464      13     3520      10012              2548   0 svchost
    237      12     2452      11352              2288   0 svchost
    304      15     3828       9364              2456   0 svchost
   3835       0      200       3964                 4   0 System
    851      40    24568       3528       0,64   9500  17 SystemSettings
    504      25     7588      32020       0,94  13180  17 SystemSettingsBroker
    256      37     8456      18724       0,58  13460  17 taskhostw
    124       7     1348       5336              4228   0 TbtP2pShortcutService
    546      23    13424      55048       1,06  12924  17 TextInputHost
    602      16    16476      20120              4304   0 ThunderboltService
    123       8     1428       8236              7736  17 unsecapp
    140      11     2144      10344       0,05  13280  17 UserOOBEBroker
    646      21    28356      43164       1,19   8728  17 WavesSvc64
    472      19     5648      18580              4312   0 WavesSysSvc64
    196      11     1964       7600               768   0 wininit
    283      12     3016      11580             11940  17 winlogon
   1892      72   218580     339248     140,73   8948  17 WINWORD
    105       7     1420       5640              3552   0 wlanext
    181      12     3100      10704              5220   0 WmiPrvSE
    338      16     8540      22744              4960   0 WUDFHost
    386      12     4184       9812              4284   0 WUDFHost


PS C:\> Get-Process | Sort-Object name -Descending

Handles  NPM(K)    PM(K)      WS(K)     CPU(s)     Id  SI ProcessName
-------  ------    -----      -----     ------     --  -- -----------
    386      12     4184       9812              4284   0 WUDFHost
    338      16     8540      22744              4960   0 WUDFHost
    181      12     3100      10704              5220   0 WmiPrvSE
    105       7     1420       5640              3552   0 wlanext
   1894      72   218608     339264     140,75   8948  17 WINWORD
    283      12     3016      11580             11940  17 winlogon
    196      11     1964       7600               768   0 wininit
    472      19     5648      18580              4312   0 WavesSysSvc64
    646      21    28356      43164       1,20   8728  17 WavesSvc64
    137      10     2072      10296       0,05  13280  17 UserOOBEBroker
    123       8     1428       8236              7736  17 unsecapp
```

Írjon ide a kereséshez 6°C 16:29 2022. 03. 05.

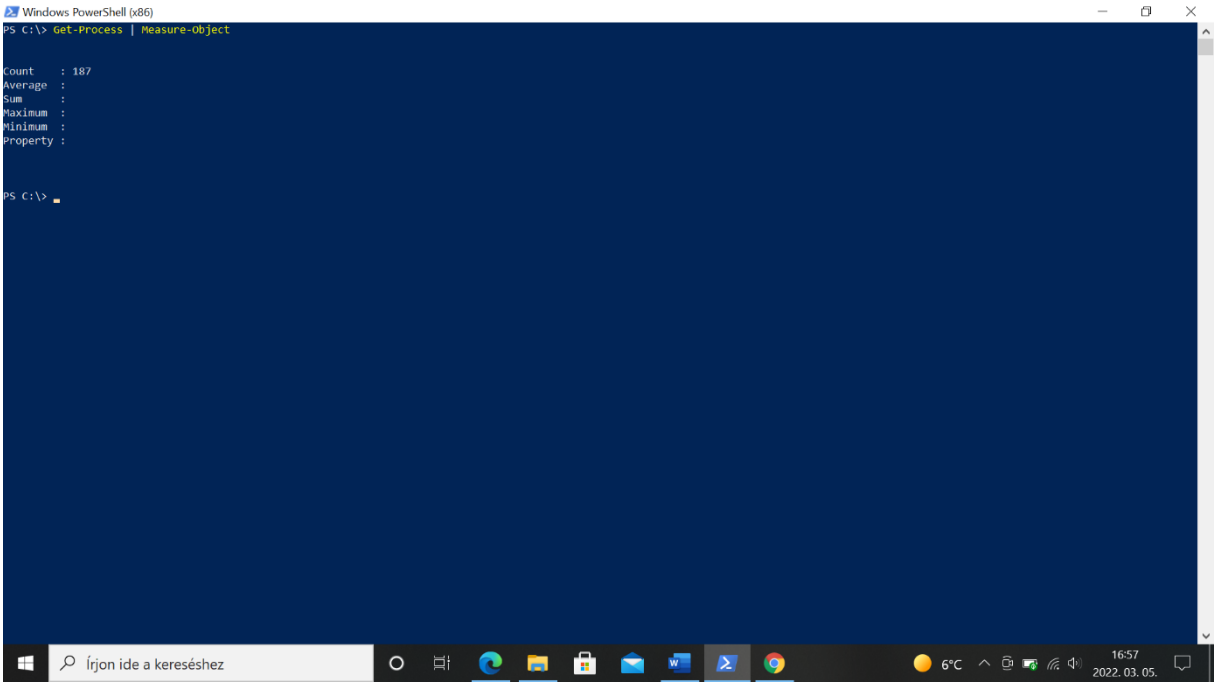
9.) wi kezdetű nevek lekérdezése.



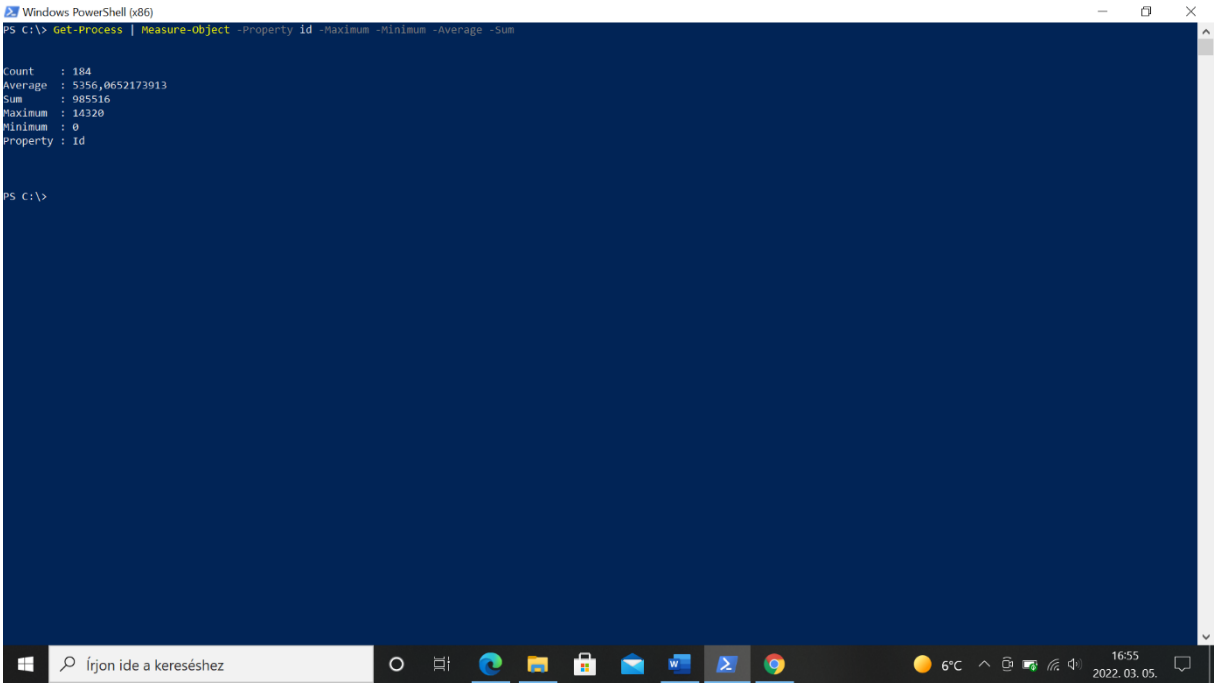
10.) Az objektumok állapot szerinti csoportosítása.



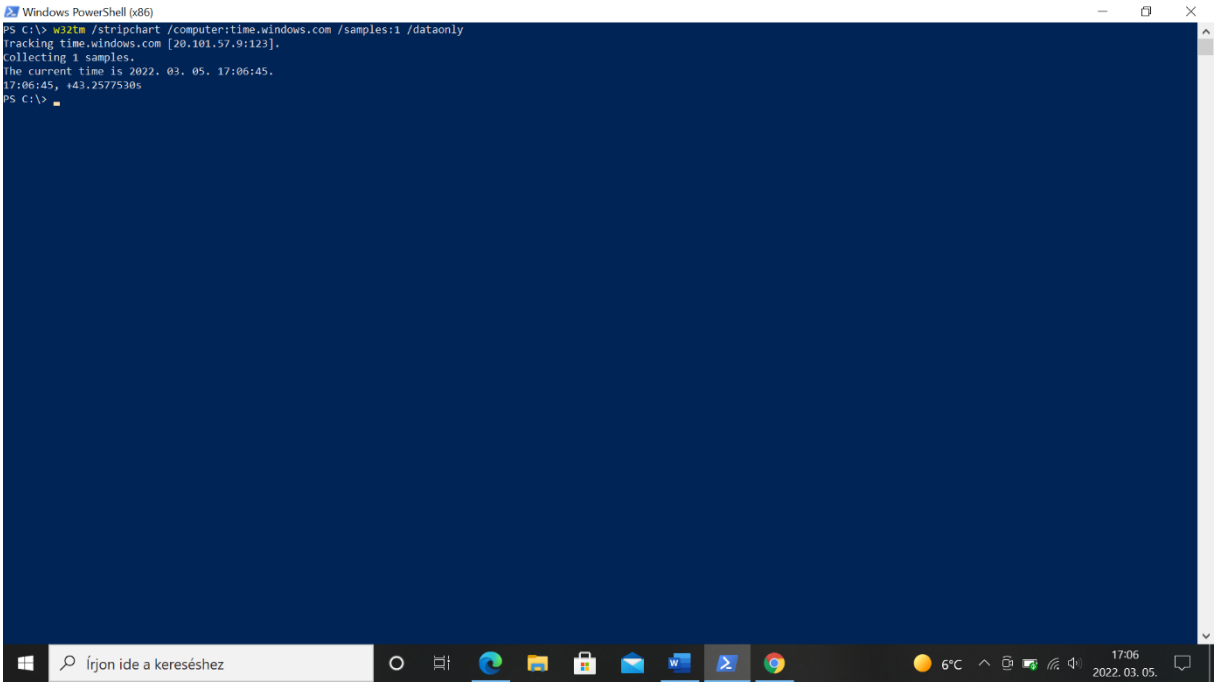
11.) Megszámolja az objektumokat.



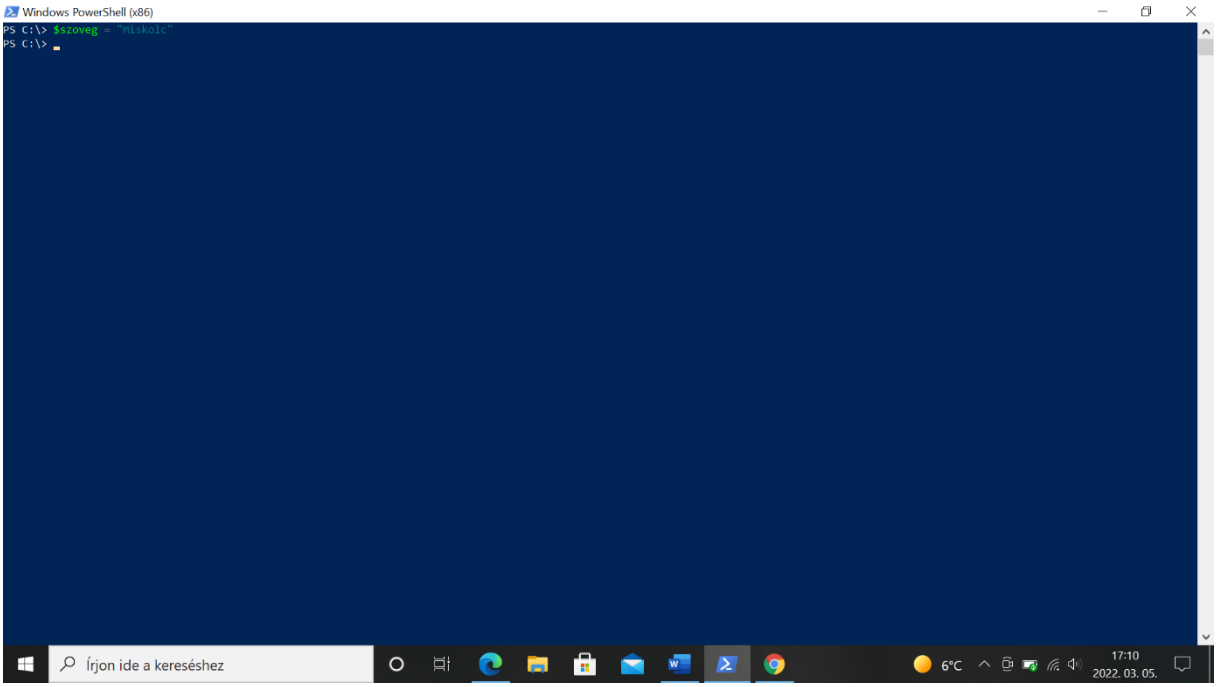
12.) Megszámolja az objektumokat: max, min, avg, sum szerint.



13.) Windows idő lekérdezése.

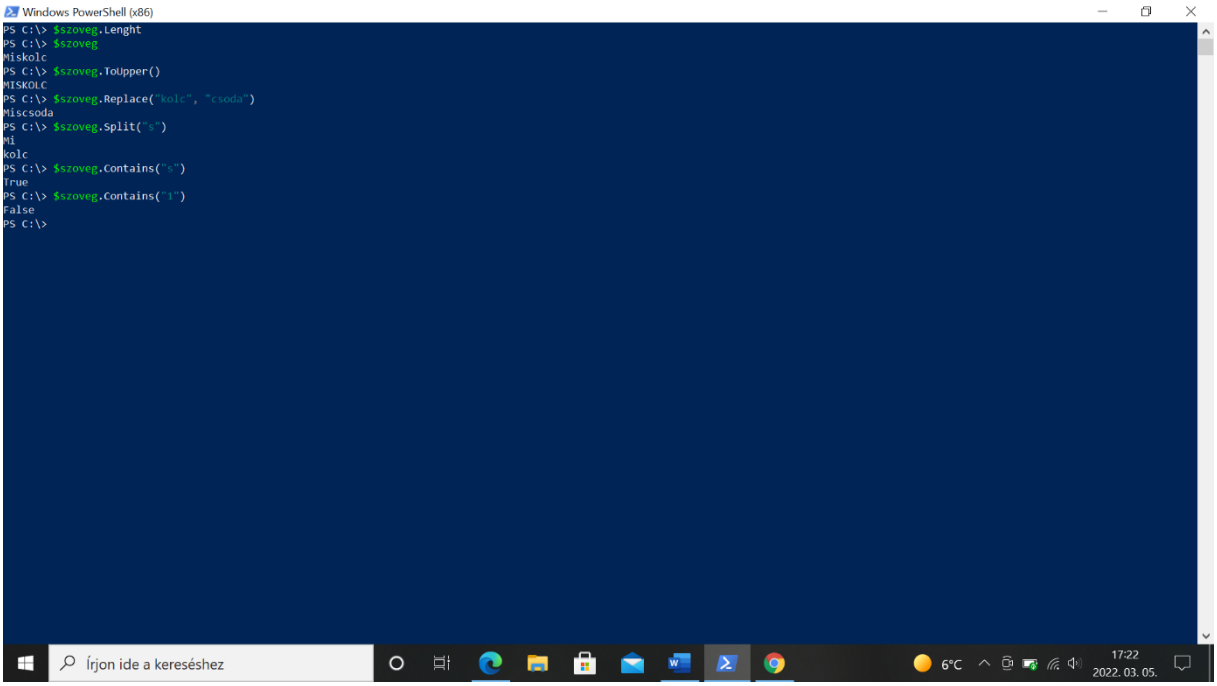


14.) Létre hozok egy szoveg nevű változót, melynek értéke: Miskolc.



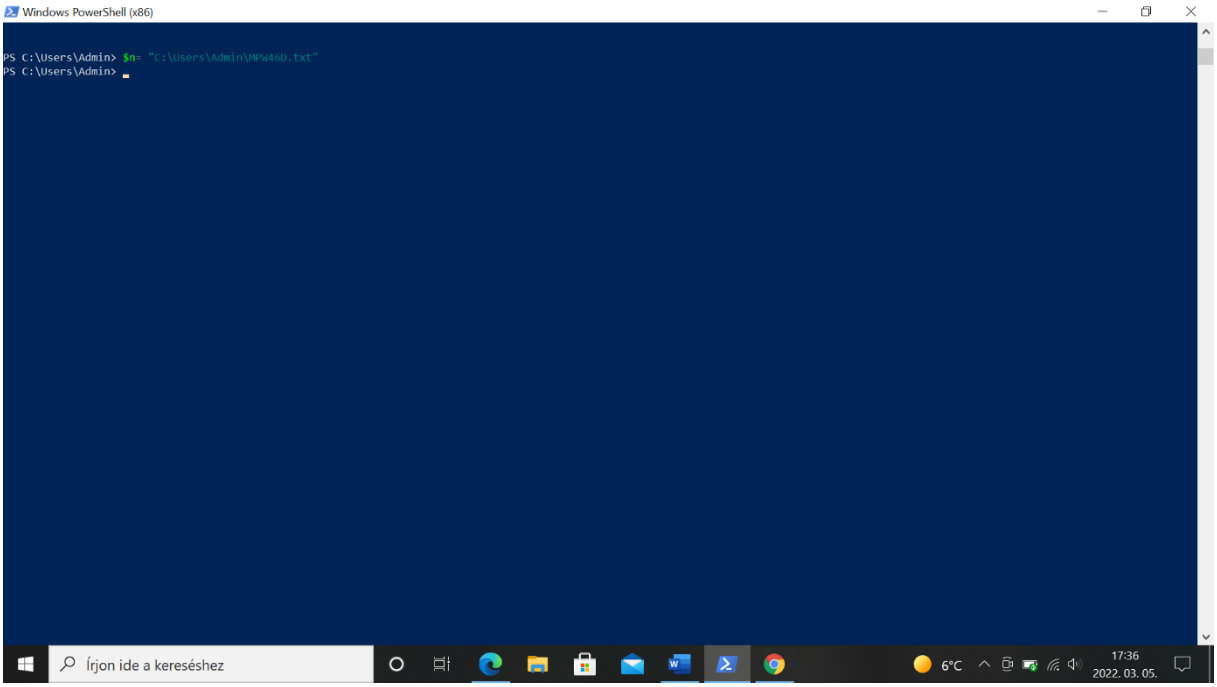
15.) Végezze el a következő műveleteket ((length, ToUpper, Replace, Contains, Split) a $szoveg változó értékeivel.

Lenght: megadja a változó hosszát, ToUpper: nagy betűssé konvertálja a stringet, Replace: a string egy részét ki lehet cserélni vele, vagy akár az egészet, Contains: megnézi, hogy a paraméterként megadott érték benne van-e a stringben, egy true vagy false a visszatérési értéke, Split: a megadott résznél szétdarabolja a stringet.

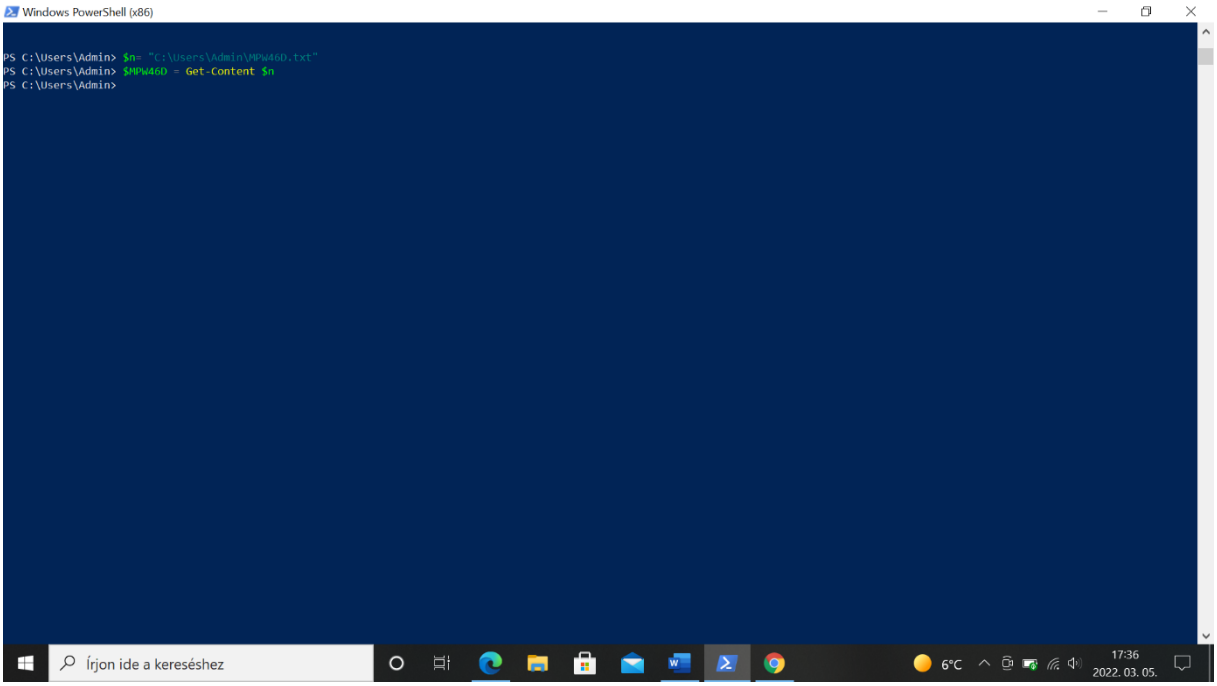


16.) Készítek a C:\ meghajtóra egy neptunkod.txt fájlt, melynek tartalma a teljes nevem.

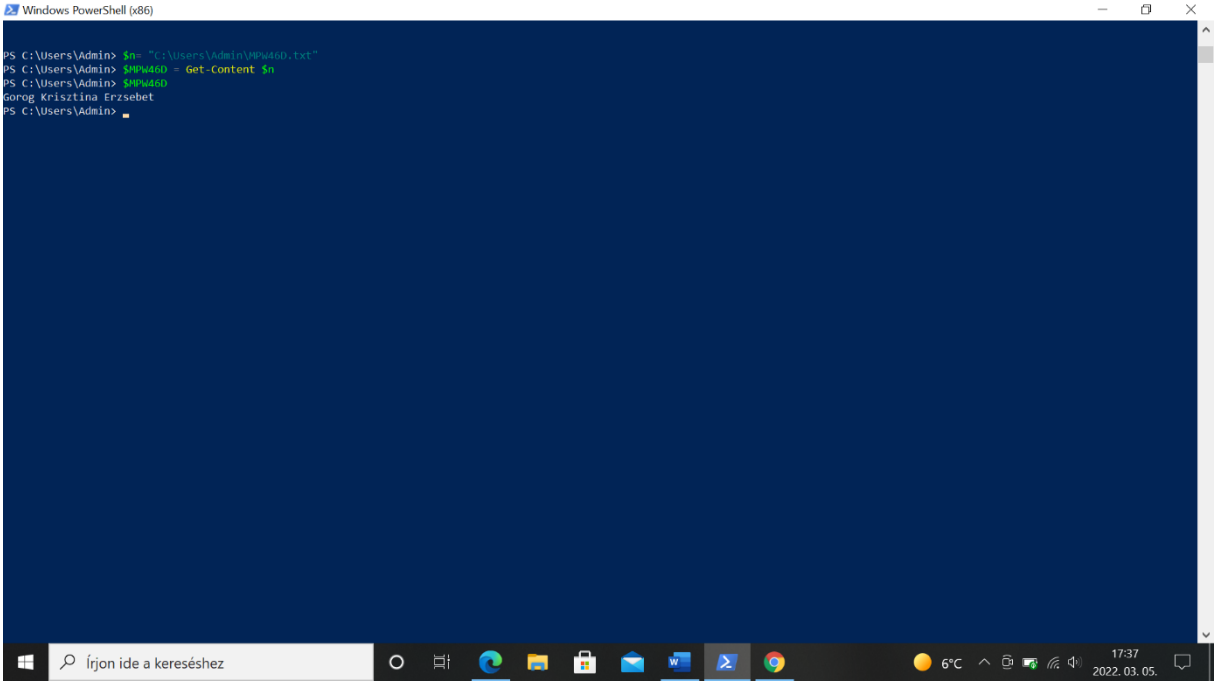
a) Definiálás:



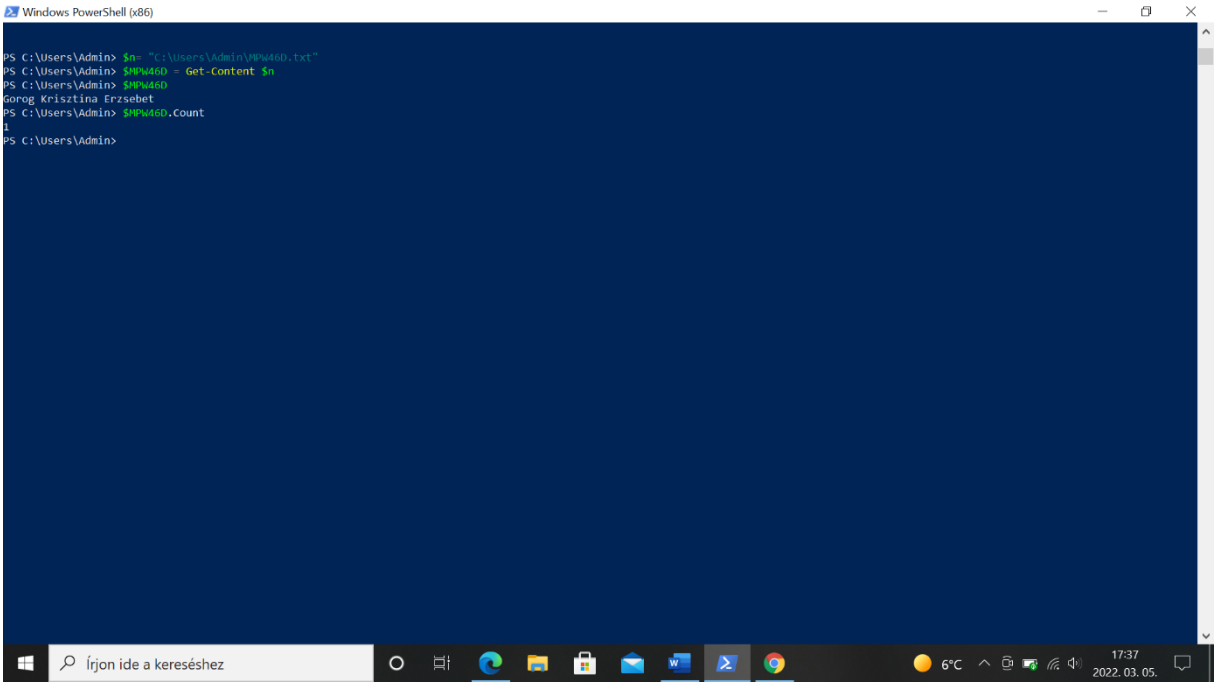
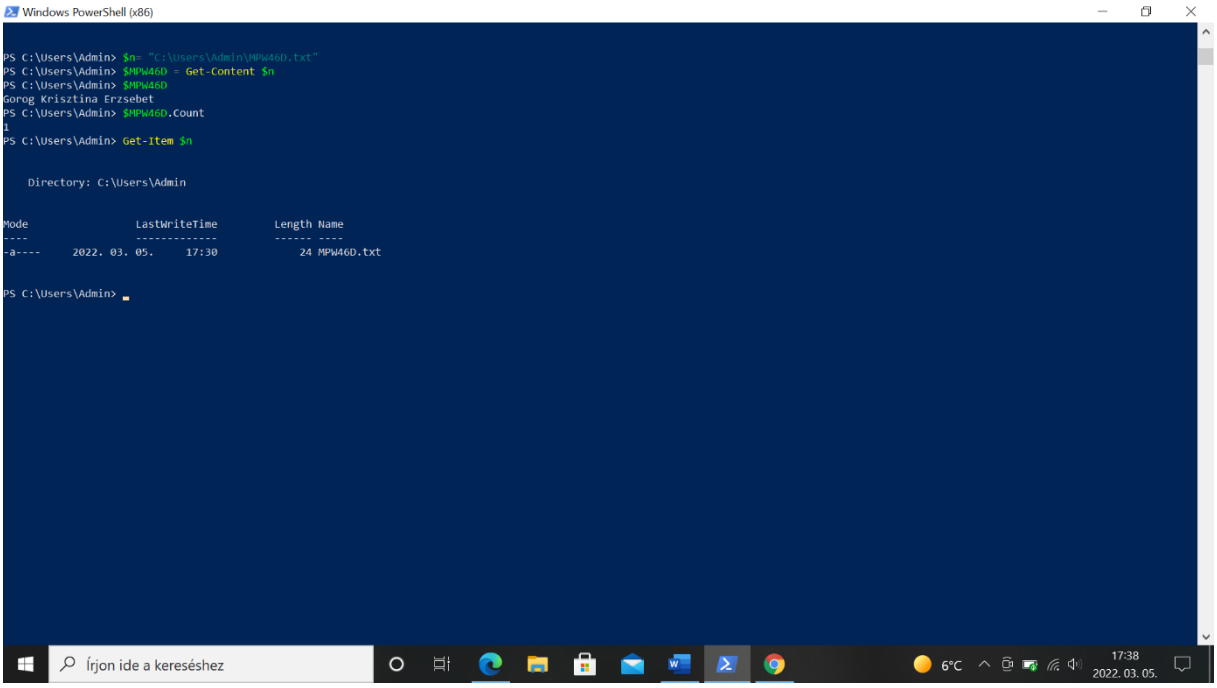
b) Beolvasás:



c) Tartalom megjelenítés:



d) Sorok száma:



e) Fájl adatok: