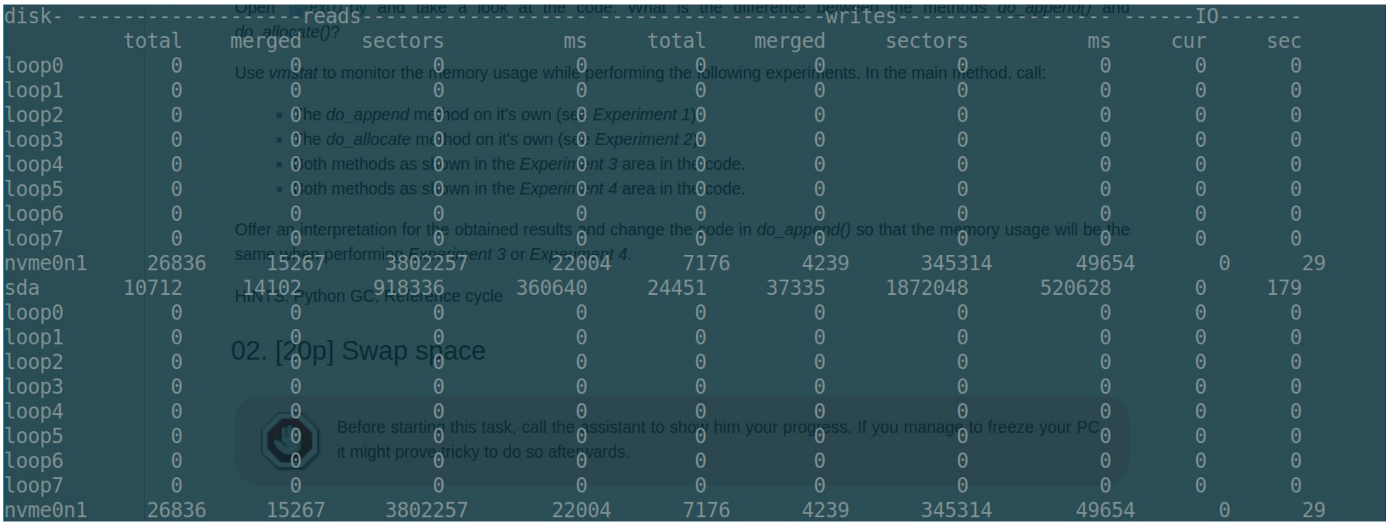
EP-Lab02-2021

Olaru Gabriel Iulian, 342C2

EX1.

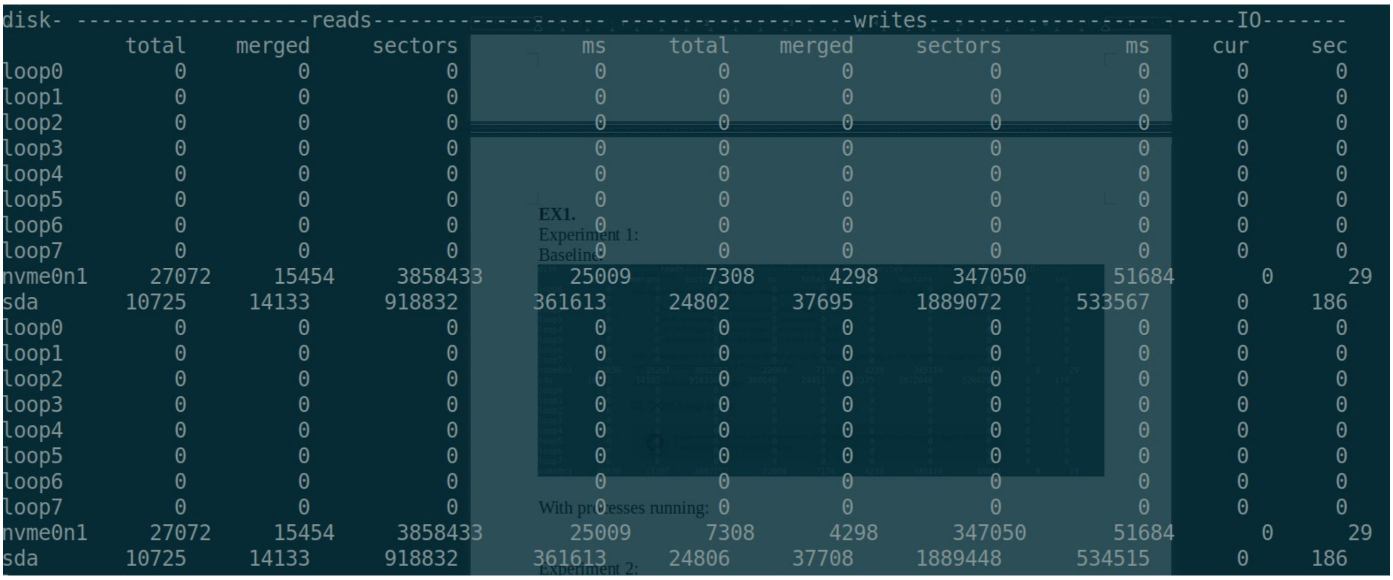
Experiment 1:

Baseline:



```
disk- ------------reads------------ ------------writes----------- -----IO------
       total merged sectors      ms  total merged sectors      ms    cur    sec
loop0      0      0       0       0      0      0       0       0      0      0
loop1      0      0       0       0      0      0       0       0      0      0
loop2      0      0       0       0      0      0       0       0      0      0
loop3      0      0       0       0      0      0       0       0      0      0
loop4      0      0       0       0      0      0       0       0      0      0
loop5      0      0       0       0      0      0       0       0      0      0
loop6      0      0       0       0      0      0       0       0      0      0
loop7      0      0       0       0      0      0       0       0      0      0
nvme0n1  26836  15267 3802257   22004   7176   4239  345314   49654      0     29
sda    10712  14102  918336  360640  24451  37335 1872048  520628      0    179
loop0      0      0       0       0      0      0       0       0      0      0
loop1      0      0       0       0      0      0       0       0      0      0
loop2      0      0       0       0      0      0       0       0      0      0
loop3      0      0       0       0      0      0       0       0      0      0
loop4      0      0       0       0      0      0       0       0      0      0
loop5      0      0       0       0      0      0       0       0      0      0
loop6      0      0       0       0      0      0       0       0      0      0
loop7      0      0       0       0      0      0       0       0      0      0
nvme0n1  26836  15267 3802257   22004   7176   4239  345314   49654      0     29
```

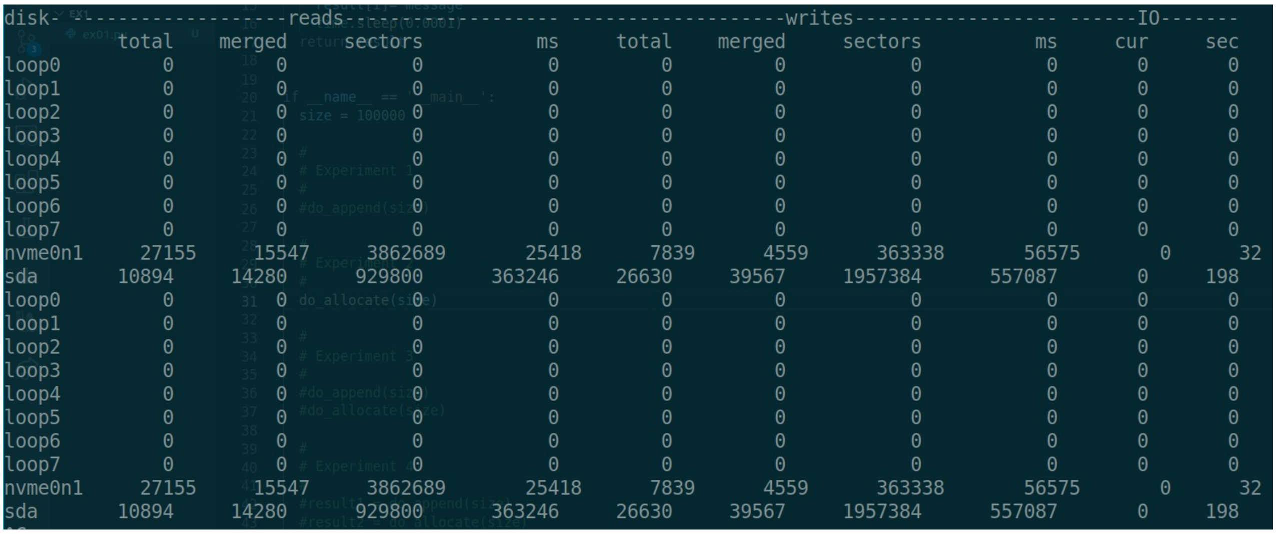
With processes running:



```
disk- ------------reads------------ ------------writes----------- -----IO------
       total merged sectors      ms  total merged sectors      ms    cur    sec
loop0      0      0       0       0      0      0       0       0      0      0
loop1      0      0       0       0      0      0       0       0      0      0
loop2      0      0       0       0      0      0       0       0      0      0
loop3      0      0       0       0      0      0       0       0      0      0
loop4      0      0       0       0      0      0       0       0      0      0
loop5      0      0       0       0      0      0       0       0      0      0
loop6      0      0       0       0      0      0       0       0      0      0
loop7      0      0       0       0      0      0       0       0      0      0
nvme0n1  27072  15454 3858433   25009   7308   4298  347050   51684      0     29
sda    10725  14133  918832  361613  24802  37695 1889072  533567      0    186
loop0      0      0       0       0      0      0       0       0      0      0
loop1      0      0       0       0      0      0       0       0      0      0
loop2      0      0       0       0      0      0       0       0      0      0
loop3      0      0       0       0      0      0       0       0      0      0
loop4      0      0       0       0      0      0       0       0      0      0
loop5      0      0       0       0      0      0       0       0      0      0
loop6      0      0       0       0      0      0       0       0      0      0
loop7      0      0       0       0      0      0       0       0      0      0
nvme0n1  27072  15454 3858433   25009   7308   4298  347050   51684      0     29
sda    10725  14133  918832  361613  24806  37708 1889448  534515      0    186
```

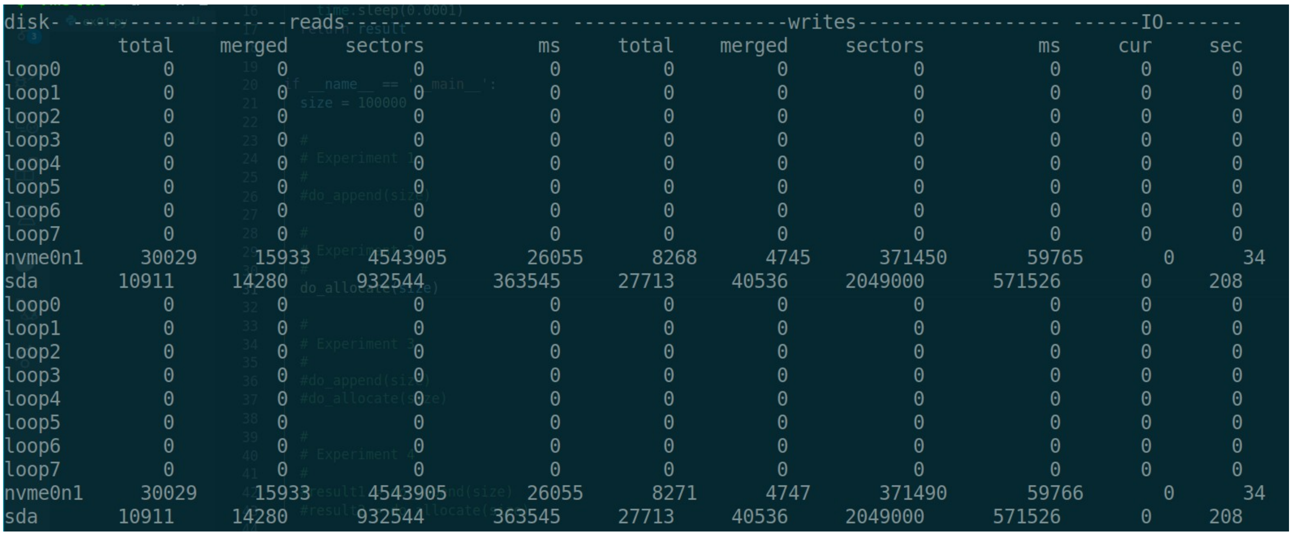
Experiment 2:

Baseline:



```
disk- ------------------reads------------------ ------------------writes------------------ ------IO-------
       total  merged  sectors      ms   total  merged  sectors      ms    cur    sec
loop0      0       0        0       0       0       0        0       0      0      0
loop1      0       0        0       0       0       0        0       0      0      0
loop2      0       0        0       0       0       0        0       0      0      0
loop3      0       0        0       0       0       0        0       0      0      0
loop4      0       0        0       0       0       0        0       0      0      0
loop5      0       0        0       0       0       0        0       0      0      0
loop6      0       0        0       0       0       0        0       0      0      0
loop7      0       0        0       0       0       0        0       0      0      0
nvme0n1  27155   15547  3862689   25418    7839    4559   363338   56575      0     32
sda      10894   14280   929800  363246   26630   39567  1957384  557087      0    198
loop0      0       0        0       0       0       0        0       0      0      0
loop1      0       0        0       0       0       0        0       0      0      0
loop2      0       0        0       0       0       0        0       0      0      0
loop3      0       0        0       0       0       0        0       0      0      0
loop4      0       0        0       0       0       0        0       0      0      0
loop5      0       0        0       0       0       0        0       0      0      0
loop6      0       0        0       0       0       0        0       0      0      0
loop7      0       0        0       0       0       0        0       0      0      0
nvme0n1  27155   15547  3862689   25418    7839    4559   363338   56575      0     32
sda      10894   14280   929800  363246   26630   39567  1957384  557087      0    198
```

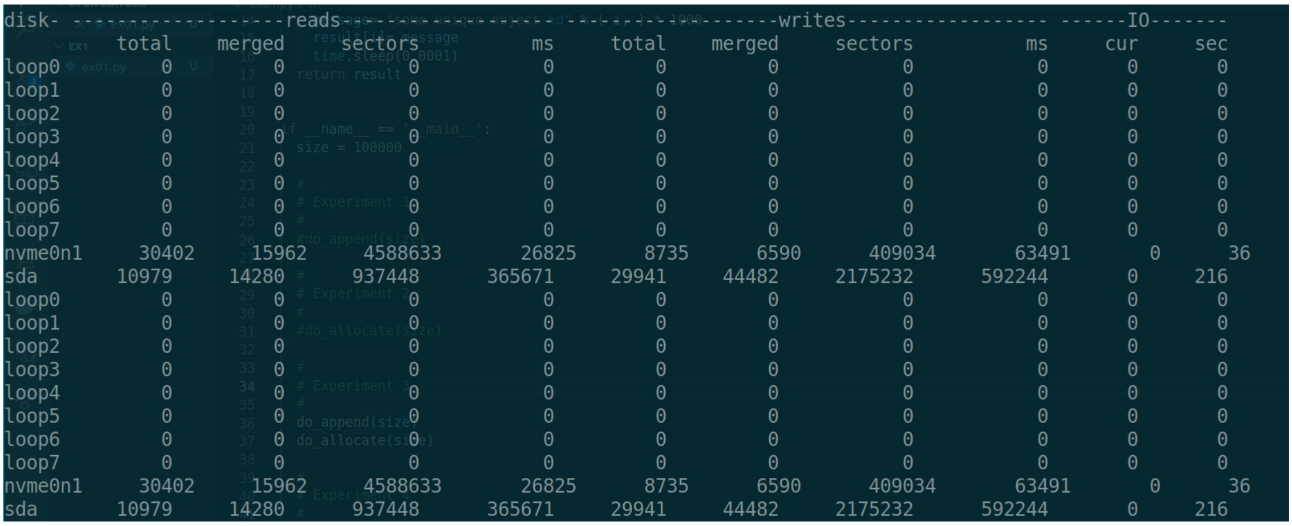
With processes running:



```
disk- ------------------reads------------------ ------------------writes------------------ ------IO-------
       total  merged  sectors      ms   total  merged  sectors      ms    cur    sec
loop0      0       0        0       0       0       0        0       0      0      0
loop1      0       0        0       0       0       0        0       0      0      0
loop2      0       0        0       0       0       0        0       0      0      0
loop3      0       0        0       0       0       0        0       0      0      0
loop4      0       0        0       0       0       0        0       0      0      0
loop5      0       0        0       0       0       0        0       0      0      0
loop6      0       0        0       0       0       0        0       0      0      0
loop7      0       0        0       0       0       0        0       0      0      0
nvme0n1  30029   15933  4543905   26055    8268    4745   371450   59765      0     34
sda      10911   14280   932544  363545   27713   40536  2049000  571526      0    208
loop0      0       0        0       0       0       0        0       0      0      0
loop1      0       0        0       0       0       0        0       0      0      0
loop2      0       0        0       0       0       0        0       0      0      0
loop3      0       0        0       0       0       0        0       0      0      0
loop4      0       0        0       0       0       0        0       0      0      0
loop5      0       0        0       0       0       0        0       0      0      0
loop6      0       0        0       0       0       0        0       0      0      0
loop7      0       0        0       0       0       0        0       0      0      0
nvme0n1  30029   15933  4543905   26055    8271    4747   371490   59766      0     34
sda      10911   14280   932544  363545   27713   40536  2049000  571526      0    208
```

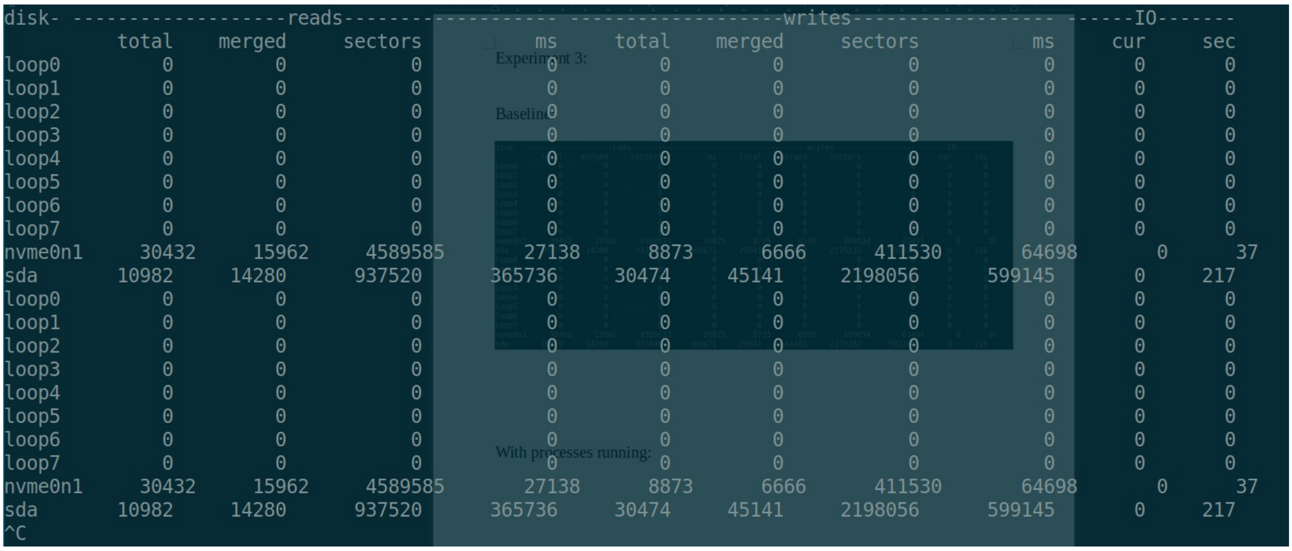
Experiment 3:

Baseline:



```
disk- -------------------reads------------------- -------------------writes------------------ ------IO-------
       total    merged    sectors        ms     total    merged     sectors         ms     cur     sec
loop0      0         0          0         0         0         0           0          0       0       0
loop1      0         0          0         0         0         0           0          0       0       0
loop2      0         0          0         0         0         0           0          0       0       0
loop3      0         0          0         0         0         0           0          0       0       0
loop4      0         0          0         0         0         0           0          0       0       0
loop5      0         0          0         0         0         0           0          0       0       0
loop6      0         0          0         0         0         0           0          0       0       0
loop7      0         0          0         0         0         0           0          0       0       0
nvme0n1    30402     15962    4588633     26825      8735      6590      409034      63491       0      36
sda        10979     14280     937448    365671     29941     44482     2175232     592244       0     216
loop0      0         0          0         0         0         0           0          0       0       0
loop1      0         0          0         0         0         0           0          0       0       0
loop2      0         0          0         0         0         0           0          0       0       0
loop3      0         0          0         0         0         0           0          0       0       0
loop4      0         0          0         0         0         0           0          0       0       0
loop5      0         0          0         0         0         0           0          0       0       0
loop6      0         0          0         0         0         0           0          0       0       0
loop7      0         0          0         0         0         0           0          0       0       0
nvme0n1    30402     15962    4588633     26825      8735      6590      409034      63491       0      36
sda        10979     14280     937448    365671     29941     44482     2175232     592244       0     216
```

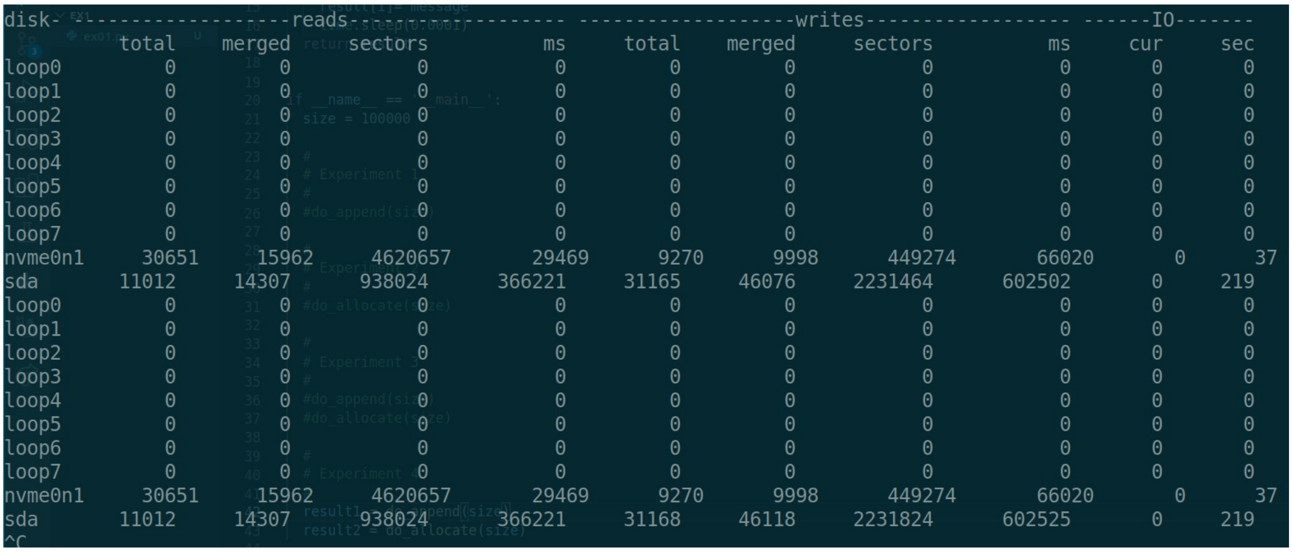
With processes running:



```
disk- -------------------reads------------------- -------------------writes------------------ ------IO-------
       total    merged    sectors        ms     total    merged     sectors         ms     cur     sec
loop0      0         0          0         0         0         0           0          0       0       0
loop1      0         0          0         0         0         0           0          0       0       0
loop2      0         0          0         0         0         0           0          0       0       0
loop3      0         0          0         0         0         0           0          0       0       0
loop4      0         0          0         0         0         0           0          0       0       0
loop5      0         0          0         0         0         0           0          0       0       0
loop6      0         0          0         0         0         0           0          0       0       0
loop7      0         0          0         0         0         0           0          0       0       0
nvme0n1    30432     15962    4589585     27138      8873      6666      411530      64698       0      37
sda        10982     14280     937520    365736     30474     45141     2198056     599145       0     217
loop0      0         0          0         0         0         0           0          0       0       0
loop1      0         0          0         0         0         0           0          0       0       0
loop2      0         0          0         0         0         0           0          0       0       0
loop3      0         0          0         0         0         0           0          0       0       0
loop4      0         0          0         0         0         0           0          0       0       0
loop5      0         0          0         0         0         0           0          0       0       0
loop6      0         0          0         0         0         0           0          0       0       0
loop7      0         0          0         0         0         0           0          0       0       0
nvme0n1    30432     15962    4589585     27138      8873      6666      411530      64698       0      37
sda        10982     14280     937520    365736     30474     45141     2198056     599145       0     217
^C
```

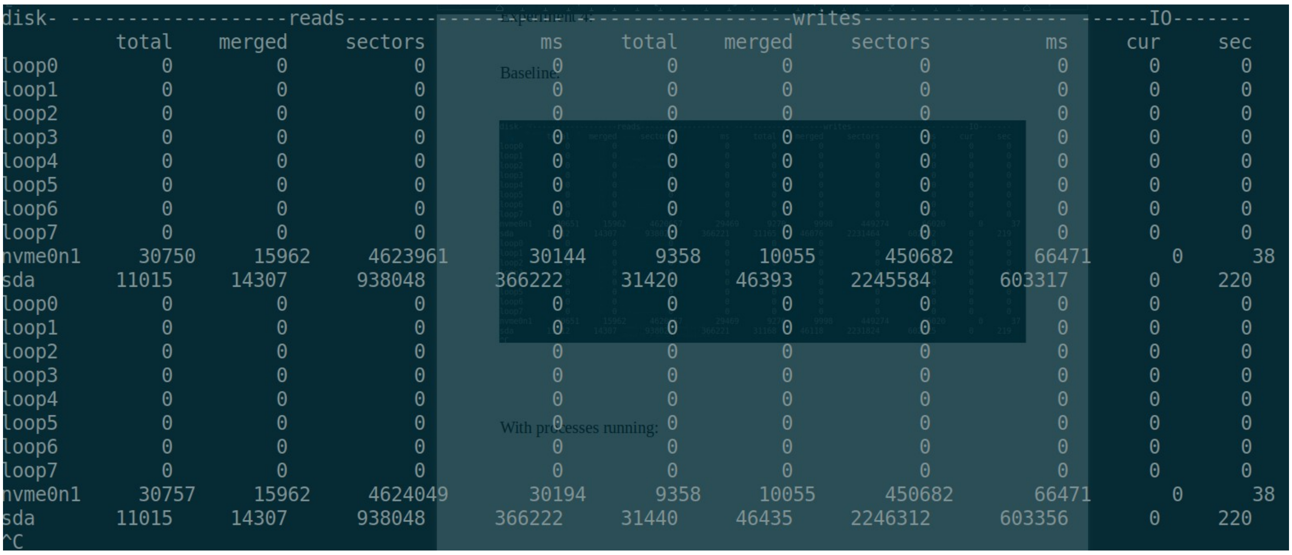
Experiment 4:

Baseline:



```
disk- ------------------reads------------------- -------------------writes------------------ ------IO-------
       total    merged   sectors        ms     total    merged    sectors        ms     cur     sec
loop0      0         0         0         0         0         0          0         0       0       0
loop1      0         0         0         0         0         0          0         0       0       0
loop2      0         0         0         0         0         0          0         0       0       0
loop3      0         0         0         0         0         0          0         0       0       0
loop4      0         0         0         0         0         0          0         0       0       0
loop5      0         0         0         0         0         0          0         0       0       0
loop6      0         0         0         0         0         0          0         0       0       0
loop7      0         0         0         0         0         0          0         0       0       0
nvme0n1    30651     15962   4620657     29469      9270      9998     449274     66020       0      37
sda        11012     14307    938024    366221     31165     46076    2231464    602502       0     219
loop0      0         0         0         0         0         0          0         0       0       0
loop1      0         0         0         0         0         0          0         0       0       0
loop2      0         0         0         0         0         0          0         0       0       0
loop3      0         0         0         0         0         0          0         0       0       0
loop4      0         0         0         0         0         0          0         0       0       0
loop5      0         0         0         0         0         0          0         0       0       0
loop6      0         0         0         0         0         0          0         0       0       0
loop7      0         0         0         0         0         0          0         0       0       0
nvme0n1    30651     15962   4620657     29469      9270      9998     449274     66020       0      37
sda        11012     14307    938024    366221     31168     46118    2231824    602525       0     219
^C
```

With processes running:

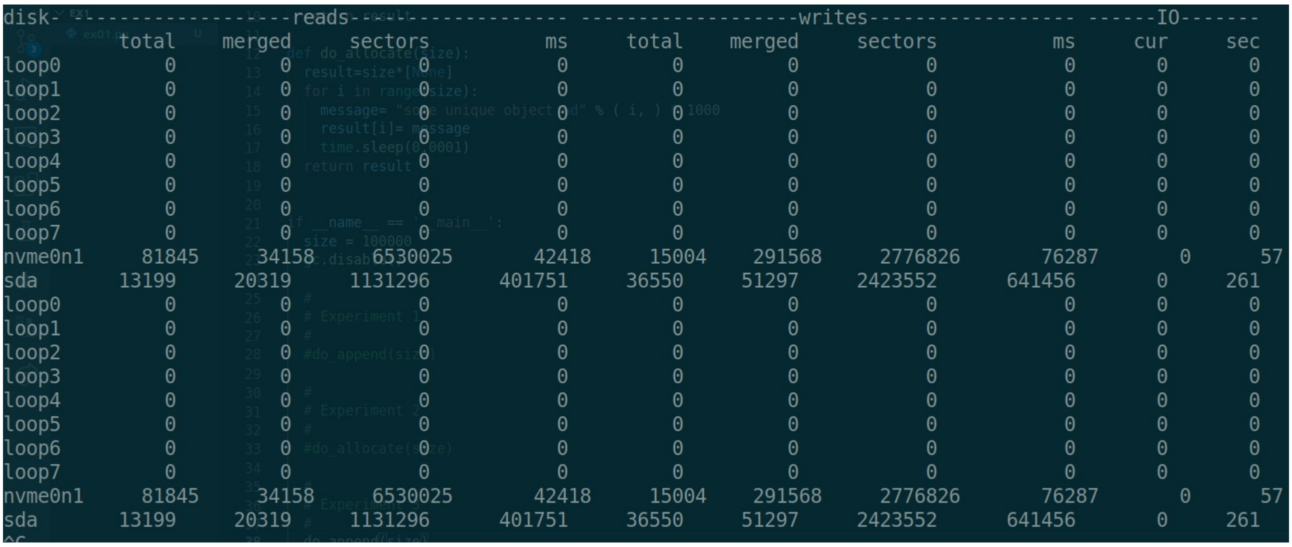


```
disk- ------------------reads------------------- -------------------writes------------------ ------IO-------
       total    merged   sectors        ms     total    merged    sectors        ms     cur     sec
loop0      0         0         0         0         0         0          0         0       0       0
loop1      0         0         0         0         0         0          0         0       0       0
loop2      0         0         0         0         0         0          0         0       0       0
loop3      0         0         0         0         0         0          0         0       0       0
loop4      0         0         0         0         0         0          0         0       0       0
loop5      0         0         0         0         0         0          0         0       0       0
loop6      0         0         0         0         0         0          0         0       0       0
loop7      0         0         0         0         0         0          0         0       0       0
nvme0n1    30750     15962   4623961     30144      9358     10055     450682     66471       0      38
sda        11015     14307    938048    366222     31420     46393    2245584    603317       0     220
loop0      0         0         0         0         0         0          0         0       0       0
loop1      0         0         0         0         0         0          0         0       0       0
loop2      0         0         0         0         0         0          0         0       0       0
loop3      0         0         0         0         0         0          0         0       0       0
loop4      0         0         0         0         0         0          0         0       0       0
loop5      0         0         0         0         0         0          0         0       0       0
loop6      0         0         0         0         0         0          0         0       0       0
loop7      0         0         0         0         0         0          0         0       0       0
nvme0n1    30757     15962   4624049     30194      9358     10055     450682     66471       0      38
sda        11015     14307    938048    366222     31440     46435    2246312    603356       0     220
^C
```

Task:

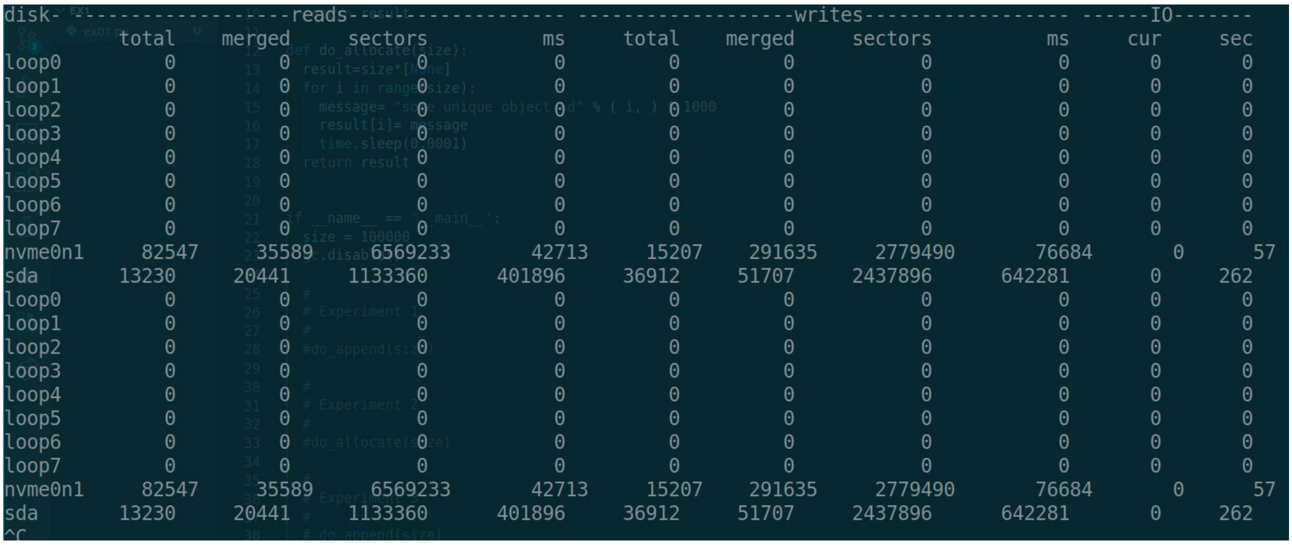
A reference cycle means one or more objects referencing each other. This, combined with the way the python garbage collector handles them(https://rushter.com/blog/python-garbage-collector/), is what causes the discrepancy in memory accesses between the two experiments. To prevent this, we can simply disable the python garbage collector with gc.disable() .

Experiment 3:



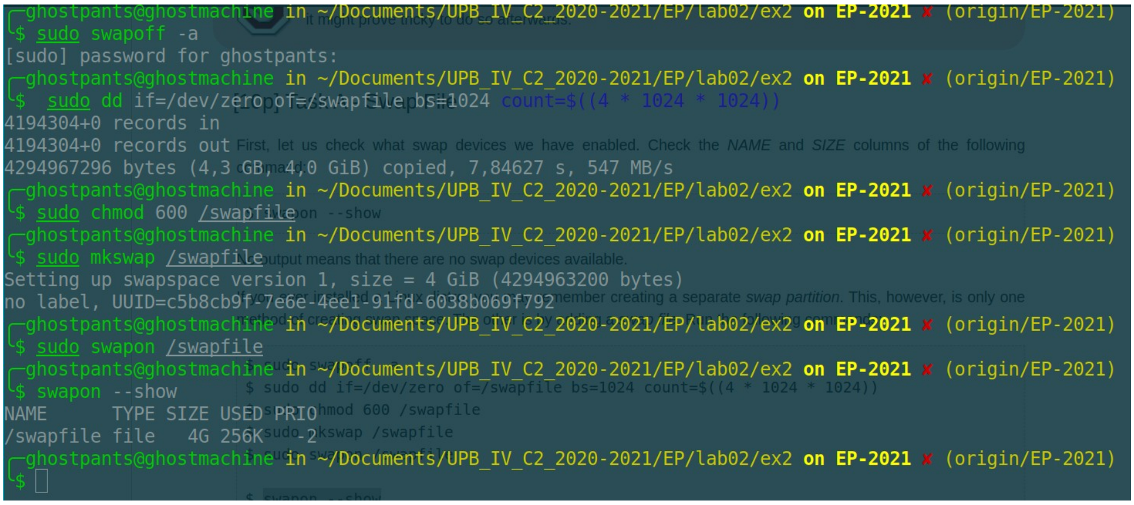
```
disk- ------------------reads------------------ ------------------writes------------------ ------IO-------
       total  merged   sectors      ms    total   merged    sectors       ms    cur    sec
loop0      0       0         0       0        0        0          0        0      0      0
loop1      0       0         0       0        0        0          0        0      0      0
loop2      0       0         0       0        0        0          0        0      0      0
loop3      0       0         0       0        0        0          0        0      0      0
loop4      0       0         0       0        0        0          0        0      0      0
loop5      0       0         0       0        0        0          0        0      0      0
loop6      0       0         0       0        0        0          0        0      0      0
loop7      0       0         0       0        0        0          0        0      0      0
nvme0n1  81845   34158   6530025   42418    15004   291568    2776826    76287      0     57
sda      13199   20319   1131296  401751    36550    51297    2423552   641456      0    261
loop0      0       0         0       0        0        0          0        0      0      0
loop1      0       0         0       0        0        0          0        0      0      0
loop2      0       0         0       0        0        0          0        0      0      0
loop3      0       0         0       0        0        0          0        0      0      0
loop4      0       0         0       0        0        0          0        0      0      0
loop5      0       0         0       0        0        0          0        0      0      0
loop6      0       0         0       0        0        0          0        0      0      0
loop7      0       0         0       0        0        0          0        0      0      0
nvme0n1  81845   34158   6530025   42418    15004   291568    2776826    76287      0     57
sda      13199   20319   1131296  401751    36550    51297    2423552   641456      0    261
^C
```

Experiment 4:



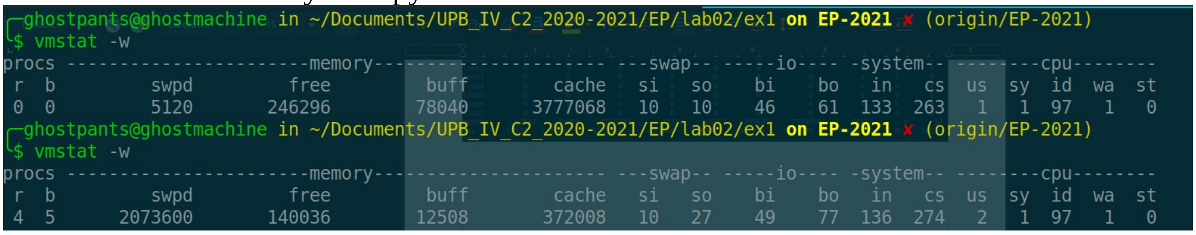
```
disk- ------------------reads------------------ ------------------writes------------------ ------IO-------
       total  merged   sectors      ms    total   merged    sectors       ms    cur    sec
loop0      0       0         0       0        0        0          0        0      0      0
loop1      0       0         0       0        0        0          0        0      0      0
loop2      0       0         0       0        0        0          0        0      0      0
loop3      0       0         0       0        0        0          0        0      0      0
loop4      0       0         0       0        0        0          0        0      0      0
loop5      0       0         0       0        0        0          0        0      0      0
loop6      0       0         0       0        0        0          0        0      0      0
loop7      0       0         0       0        0        0          0        0      0      0
nvme0n1  82547   35589   6569233   42713    15207   291635    2779490    76684      0     57
sda      13230   20441   1133360  401896    36912    51707    2437896   642281      0    262
loop0      0       0         0       0        0        0          0        0      0      0
loop1      0       0         0       0        0        0          0        0      0      0
loop2      0       0         0       0        0        0          0        0      0      0
loop3      0       0         0       0        0        0          0        0      0      0
loop4      0       0         0       0        0        0          0        0      0      0
loop5      0       0         0       0        0        0          0        0      0      0
loop6      0       0         0       0        0        0          0        0      0      0
loop7      0       0         0       0        0        0          0        0      0      0
nvme0n1  82547   35589   6569233   42713    15207   291635    2779490    76684      0     57
sda      13230   20441   1133360  401896    36912    51707    2437896   642281      0    262
^C
```

EX2:



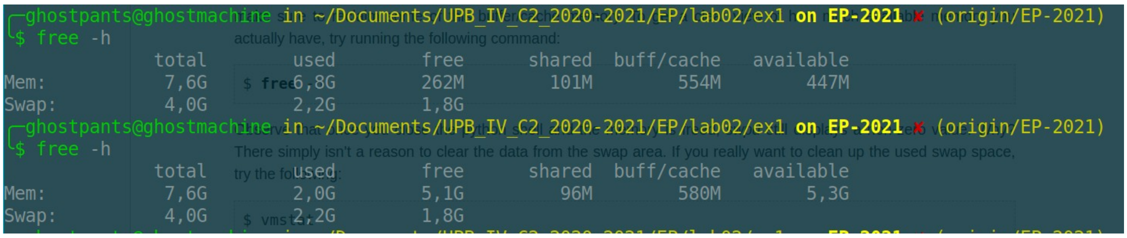
```
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex2 on EP-2021 ✘ (origin/EP-2021)
└$ sudo swapoff -a
[sudo] password for ghostpants:
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex2 on EP-2021 ✘ (origin/EP-2021)
└$  sudo dd if=/dev/zero of=/swapfile bs=1024 count=$((4 * 1024 * 1024))
4194304+0 records in
4194304+0 records out
4294967296 bytes (4,3 GB, 4,0 GiB) copied, 7,84627 s, 547 MB/s
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex2 on EP-2021 ✘ (origin/EP-2021)
└$ sudo chmod 600 /swapfile
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex2 on EP-2021 ✘ (origin/EP-2021)
└$ sudo mkswap /swapfile
Setting up swapspace version 1, size = 4 GiB (4294963200 bytes)
no label, UUID=c5b8cb9f-7e6e-4ee1-91fd-6038b069f792
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex2 on EP-2021 ✘ (origin/EP-2021)
└$ sudo swapon /swapfile
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex2 on EP-2021 ✘ (origin/EP-2021)
└$ swapon --show
NAME      TYPE SIZE USED PRIO
/swapfile file   4G 256K   -2
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex2 on EP-2021 ✘ (origin/EP-2021)
└$ ▯
```

Decrease in free memory alter python allocation:



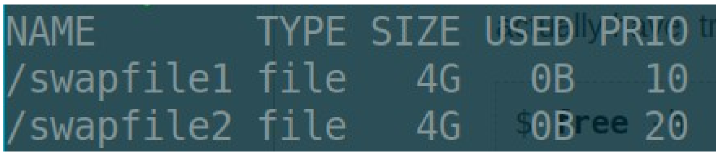
```
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex1 on EP-2021 ✘ (origin/EP-2021)
└$ vmstat -w
procs -----------------------memory---------------------- ---swap-- -----io---- -system-- --------cpu--------
 r  b         swpd         free         buff        cache   si   so    bi    bo   in   cs  us  sy  id  wa  st
 0  0         5120       246296        78040      3777068   10   10    46    61  133  263   1   1  97   1   0
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex1 on EP-2021 ✘ (origin/EP-2021)
└$ vmstat -w
procs -----------------------memory---------------------- ---swap-- -----io---- -system-- --------cpu--------
 r  b         swpd         free         buff        cache   si   so    bi    bo   in   cs  us  sy  id  wa  st
 4  5      2073600       140036        12508       372008   10   27    49    77  136  274   2   1  97   1   0
```

Before and after closing python shell:



```
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex1 on EP-2021 ✘ (origin/EP-2021)
└$ free -h
              total        used        free      shared  buff/cache   available
Mem:           7,6G        6,8G        262M        101M        554M        447M
Swap:          4,0G        2,2G        1,8G
┌ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex1 on EP-2021 ✘ (origin/EP-2021)
└$ free -h
              total        used        free      shared  buff/cache   available
Mem:           7,6G        2,0G        5,1G         96M        580M        5,3G
Swap:          4,0G        2,2G        1,8G
```

Task:



```
NAME       TYPE SIZE USED PRIO
/swapfile1 file   4G   0B   10
/swapfile2 file   4G   0B   20
```

sudo swapoff -a

```
sudo dd if=/dev/zero of=/swapfile bs=1024 count=$((4 * 1024 * 1024))
sudo chmod 600 /swapfile
sudo mkswap /swapfile
sudo swapon /swapfile
```

swapon -p <priority> /path/to/swap

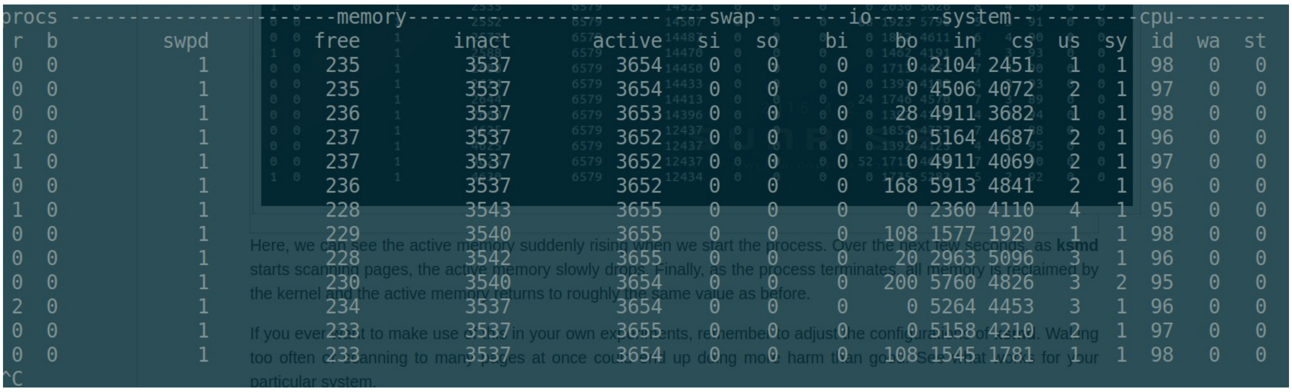
Advantages:

- It is very easy to change the swap file size
- There is a slight performance benefit, because the swap area is in the middle of the normal file area, so head movements will be smaller

Disatvantages:

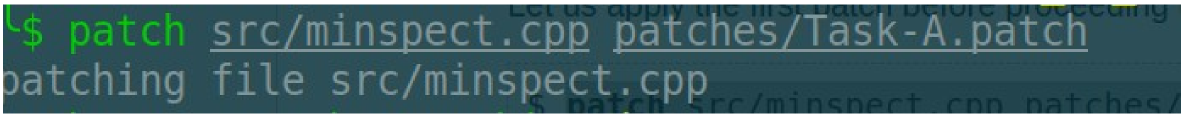
- With the speed of SSDs fragmentation that can happen to the swapfile could be a thing of the pas
- requires configuration

EX3:

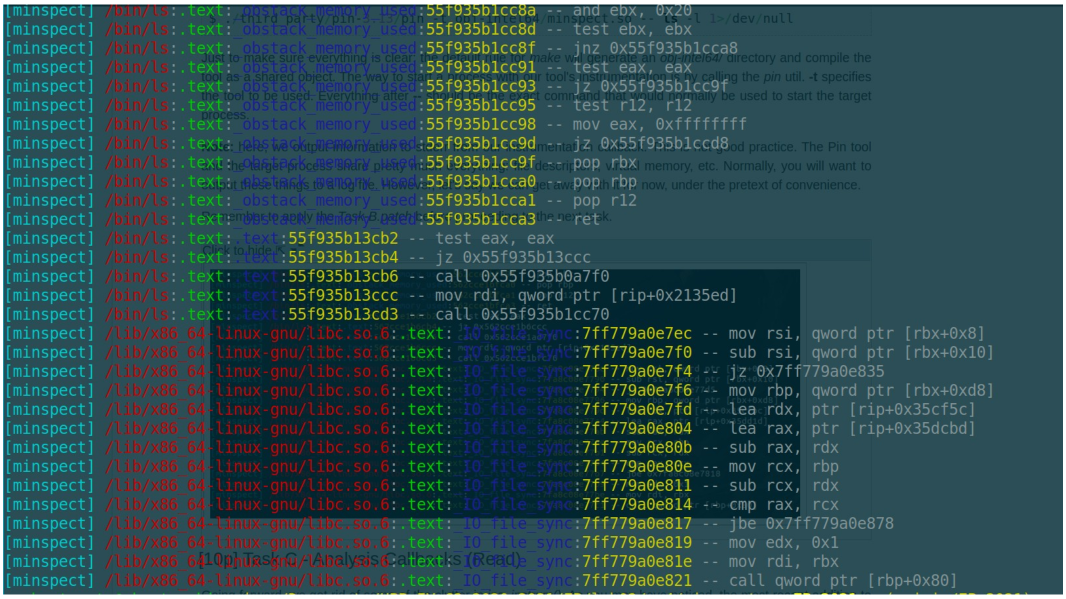


```
procs -----------------------memory---------------------- ---swap-- -----io---- -system-- --------cpu--------
 r  b         swpd        free      inact     active   si   so    bi    bo   in   cs us sy  id  wa  st
 0  0            1         235       3537       3654    0    0     0     0 2104 2451  1  1  98   0   0
 0  0            1         235       3537       3654    0    0     0     0 4506 4072  2  1  97   0   0
 0  0            1         236       3537       3653    0    0     0    28 4911 3682  1  1  98   0   0
 2  0            1         237       3537       3652    0    0     0     0 5164 4687  2  1  96   0   0
 1  0            1         237       3537       3652    0    0     0     0 4911 4069  2  1  97   0   0
 0  0            1         236       3537       3652    0    0     0   168 5913 4841  2  1  96   0   0
 1  0            1         228       3543       3655    0    0     0     0 2360 4110  4  1  95   0   0
 0  0            1         229       3540       3655    0    0     0   108 1577 1920  1  1  98   0   0
 0  0            1         228       3542       3655    0    0     0    20 2963 5096  3  1  96   0   0
 0  0            1         230       3540       3654    0    0     0   200 5760 4826  3  2  95   0   0
 2  0            1         234       3537       3654    0    0     0     0 5264 4453  3  1  96   0   0
 0  0            1         233       3537       3655    0    0     0     0 5158 4210  2  1  97   0   0
 0  0            1         233       3537       3654    0    0     0   108 1545 1781  1  1  98   0   0
^C
```

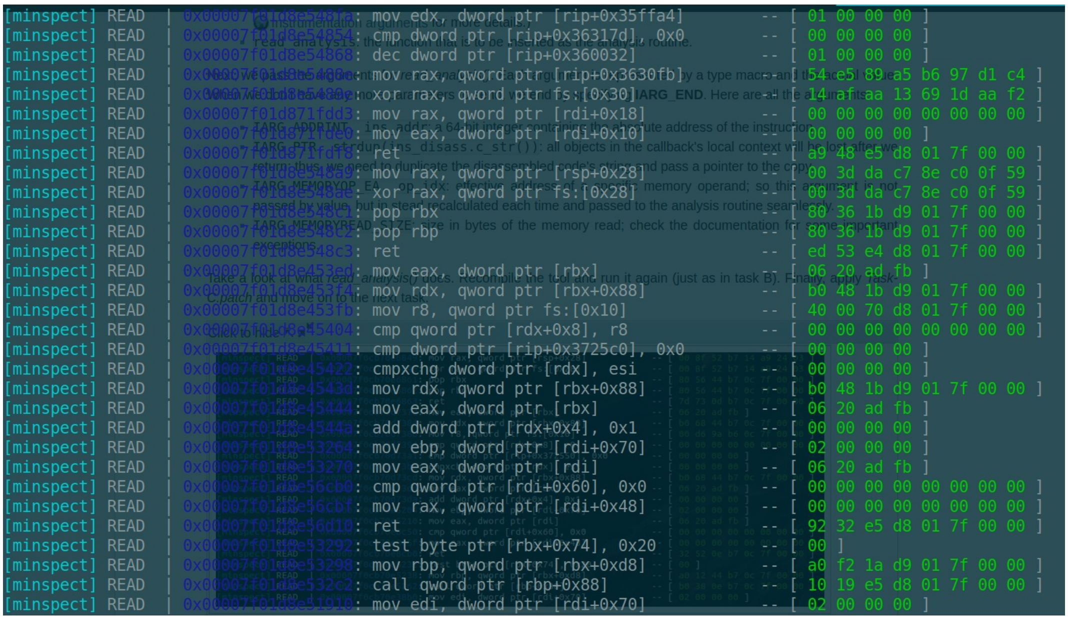
EX4:



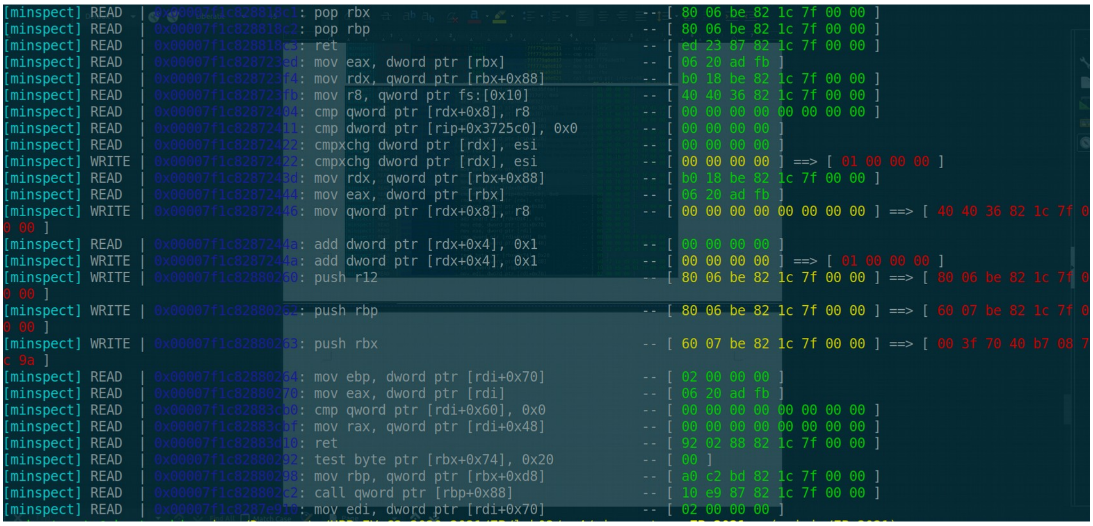
```
└$ patch src/minspect.cpp patches/Task-A.patch
patching file src/minspect.cpp
```



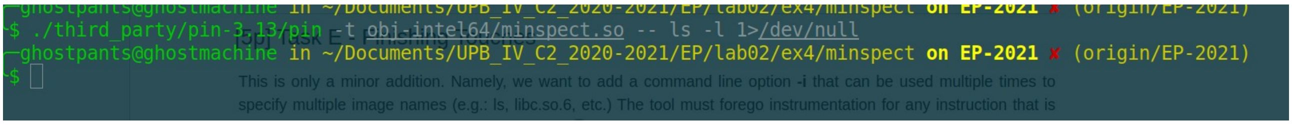
```
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cc8a -- and ebx, 0x20
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cc8d -- test ebx, ebx
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cc8f -- jnz 0x55f935b1cca8
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cc91 -- test eax, eax
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cc93 -- jz 0x55f935b1cc9f
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cc95 -- test r12, r12
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cc98 -- mov eax, 0xffffffff
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cc9d -- jz 0x55f935b1ccd8
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cc9f -- pop rbx
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cca0 -- pop rbp
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cca1 -- pop r12
[minspect] /bin/ls:.text:_obstack_memory_used:55f935b1cca3 -- ret
[minspect] /bin/ls:.text:.text:55f935b13cb2 -- test eax, eax
[minspect] /bin/ls:.text:.text:55f935b13cb4 -- jz 0x55f935b13ccc
[minspect] /bin/ls:.text:.text:55f935b13cb6 -- call 0x55f935b0a7f0
[minspect] /bin/ls:.text:.text:55f935b13ccc -- mov rdi, qword ptr [rip+0x2135ed]
[minspect] /bin/ls:.text:.text:55f935b13cd3 -- call 0x55f935b1cc70
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e7ec -- mov rsi, qword ptr [rbx+0x8]
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e7f0 -- sub rsi, qword ptr [rbx+0x10]
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e7f4 -- jz 0x7ff779a0e835
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e7f6 -- mov rbp, qword ptr [rbx+0xd8]
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e7fd -- lea rdx, ptr [rip+0x35cf5c]
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e804 -- lea rax, ptr [rip+0x35dcbd]
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e80b -- sub rax, rdx
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e80e -- mov rcx, rbp
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e811 -- sub rcx, rdx
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e814 -- cmp rax, rcx
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e817 -- jbe 0x7ff779a0e878
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e819 -- mov edx, 0x1
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e81e -- mov rdi, rbx
[minspect] /lib/x86_64-linux-gnu/libc.so.6:.text:_IO_file_sync:7ff779a0e821 -- call qword ptr [rbp+0x80]
```



```
[minspect] READ  | 0x00007f01d8e548fa: mov edx, dword ptr [rip+0x35ffa4]        -- [ 01 00 00 00 ]
[minspect] READ  | 0x00007f01d8e54854: cmp dword ptr [rip+0x36317d], 0x0       -- [ 00 00 00 00 ]
[minspect] READ  | 0x00007f01d8e54868: dec dword ptr [rip+0x360032]            -- [ 01 00 00 00 ]
[minspect] READ  | 0x00007f01d8e5488e: mov rax, qword ptr [rip+0x3630fb]       -- [ 54 e5 89 a5 b6 97 d1 c4 ]
[minspect] READ  | 0x00007f01d8e5489c: xor rax, qword ptr fs:[0x30]            -- [ 14 af aa 13 69 1d aa f2 ]
[minspect] READ  | 0x00007f01d871fdd3: mov rax, qword ptr [rdi+0x18]           -- [ 00 00 00 00 00 00 00 00 ]
[minspect] READ  | 0x00007f01d871fde0: mov eax, dword ptr [rdi+0x10]           -- [ 00 00 00 00 ]
[minspect] READ  | 0x00007f01d871fdf8: ret                                     -- [ a9 48 e5 d8 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e548a9: mov rax, qword ptr [rsp+0x28]           -- [ 00 3d da c7 8e c0 0f 59 ]
[minspect] READ  | 0x00007f01d8e548ae: xor rax, qword ptr fs:[0x28]            -- [ 00 3d da c7 8e c0 0f 59 ]
[minspect] READ  | 0x00007f01d8e548c1: pop rbx                                 -- [ 80 36 1b d9 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e548c2: pop rbp                                 -- [ 80 36 1b d9 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e548c3: ret                                     -- [ ed 53 e4 d8 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e453ed: mov eax, dword ptr [rbx]                -- [ 06 20 ad fb ]
[minspect] READ  | 0x00007f01d8e453f4: mov rdx, qword ptr [rbx+0x88]           -- [ b0 48 1b d9 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e453fb: mov r8, qword ptr fs:[0x10]             -- [ 40 00 70 d8 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e45404: cmp qword ptr [rdx+0x8], r8             -- [ 00 00 00 00 00 00 00 00 ]
[minspect] READ  | 0x00007f01d8e45411: cmp dword ptr [rip+0x3725c0], 0x0       -- [ 00 00 00 00 ]
[minspect] READ  | 0x00007f01d8e45422: cmpxchg dword ptr [rdx], esi            -- [ 00 00 00 00 ]
[minspect] READ  | 0x00007f01d8e4543d: mov rdx, qword ptr [rbx+0x88]           -- [ b0 48 1b d9 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e45444: mov eax, dword ptr [rbx]                -- [ 06 20 ad fb ]
[minspect] READ  | 0x00007f01d8e4544a: add dword ptr [rdx+0x4], 0x1            -- [ 00 00 00 00 ]
[minspect] READ  | 0x00007f01d8e53264: mov ebp, dword ptr [rdi+0x70]           -- [ 02 00 00 00 ]
[minspect] READ  | 0x00007f01d8e53270: mov eax, dword ptr [rdi]                -- [ 06 20 ad fb ]
[minspect] READ  | 0x00007f01d8e56cb0: cmp qword ptr [rdi+0x60], 0x0           -- [ 00 00 00 00 00 00 00 00 ]
[minspect] READ  | 0x00007f01d8e56cbf: mov rax, qword ptr [rdi+0x48]           -- [ 00 00 00 00 00 00 00 00 ]
[minspect] READ  | 0x00007f01d8e56d10: ret                                     -- [ 92 32 e5 d8 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e53292: test byte ptr [rbx+0x74], 0x20          -- [ 00 ]
[minspect] READ  | 0x00007f01d8e53298: mov rbp, qword ptr [rbx+0xd8]           -- [ a0 f2 1a d9 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e532c2: call qword ptr [rbp+0x88]               -- [ 10 19 e5 d8 01 7f 00 00 ]
[minspect] READ  | 0x00007f01d8e51910: mov edi, dword ptr [rdi+0x70]           -- [ 02 00 00 00 ]
```

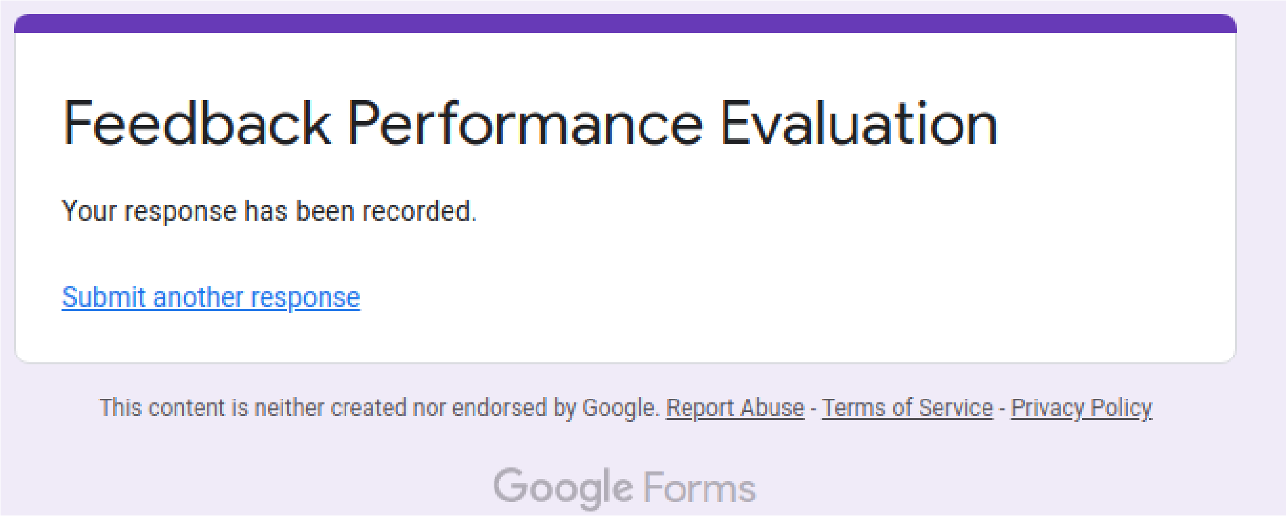


```
[minspect] READ  | 0x00007f1c828818c1: pop rbx                              -- [ 80 06 be 82 1c 7f 00 00 ]
[minspect] READ  | 0x00007f1c828818c2: pop rbp                              -- [ 80 06 be 82 1c 7f 00 00 ]
[minspect] READ  | 0x00007f1c828818c3: ret                                  -- [ ed 23 87 82 1c 7f 00 00 ]
[minspect] READ  | 0x00007f1c828723ed: mov eax, dword ptr [rbx]             -- [ 06 20 ad fb ]
[minspect] READ  | 0x00007f1c828723f4: mov rdx, qword ptr [rbx+0x88]        -- [ b0 18 be 82 1c 7f 00 00 ]
[minspect] READ  | 0x00007f1c828723fb: mov r8, qword ptr fs:[0x10]          -- [ 40 40 36 82 1c 7f 00 00 ]
[minspect] READ  | 0x00007f1c82872404: cmp qword ptr [rdx+0x8], r8          -- [ 00 00 00 00 00 00 00 00 ]
[minspect] READ  | 0x00007f1c82872411: cmp dword ptr [rip+0x3725c0], 0x0    -- [ 00 00 00 00 ]
[minspect] READ  | 0x00007f1c82872422: cmpxchg dword ptr [rdx], esi         -- [ 00 00 00 00 ]
[minspect] WRITE | 0x00007f1c82872422: cmpxchg dword ptr [rdx], esi         -- [ 00 00 00 00 ] ==> [ 01 00 00 00 ]
[minspect] READ  | 0x00007f1c8287243d: mov rdx, qword ptr [rbx+0x88]        -- [ b0 18 be 82 1c 7f 00 00 ]
[minspect] READ  | 0x00007f1c82872444: mov eax, dword ptr [rbx]             -- [ 06 20 ad fb ]
[minspect] WRITE | 0x00007f1c82872446: mov qword ptr [rdx+0x8], r8          -- [ 00 00 00 00 00 00 00 00 ] ==> [ 40 40 36 82 1c 7f 0
0 00 ]
[minspect] READ  | 0x00007f1c8287244a: add dword ptr [rdx+0x4], 0x1         -- [ 00 00 00 00 ]
[minspect] WRITE | 0x00007f1c8287244a: add dword ptr [rdx+0x4], 0x1         -- [ 00 00 00 00 ] ==> [ 01 00 00 00 ]
[minspect] WRITE | 0x00007f1c82880260: push r12                             -- [ 80 06 be 82 1c 7f 00 00 ] ==> [ 80 06 be 82 1c 7f 0
0 00 ]
[minspect] WRITE | 0x00007f1c82880262: push rbp                             -- [ 80 06 be 82 1c 7f 00 00 ] ==> [ 60 07 be 82 1c 7f 0
0 00 ]
[minspect] WRITE | 0x00007f1c82880263: push rbx                             -- [ 60 07 be 82 1c 7f 00 00 ] ==> [ 00 3f 70 40 b7 08 7
c 9a ]
[minspect] READ  | 0x00007f1c82880264: mov ebp, dword ptr [rdi+0x70]        -- [ 02 00 00 00 ]
[minspect] READ  | 0x00007f1c82880270: mov eax, dword ptr [rdi]             -- [ 06 20 ad fb ]
[minspect] READ  | 0x00007f1c82883cb0: cmp qword ptr [rdi+0x60], 0x0        -- [ 00 00 00 00 00 00 00 00 ]
[minspect] READ  | 0x00007f1c82883cbf: mov rax, qword ptr [rdi+0x48]        -- [ 00 00 00 00 00 00 00 00 ]
[minspect] READ  | 0x00007f1c82883d10: ret                                  -- [ 92 02 88 82 1c 7f 00 00 ]
[minspect] READ  | 0x00007f1c82880292: test byte ptr [rbx+0x74], 0x20       -- [ 00 ]
[minspect] READ  | 0x00007f1c82880298: mov rbp, qword ptr [rbx+0xd8]        -- [ a0 c2 bd 82 1c 7f 00 00 ]
[minspect] READ  | 0x00007f1c828802c2: call qword ptr [rbp+0x88]            -- [ 10 e9 87 82 1c 7f 00 00 ]
[minspect] READ  | 0x00007f1c8287e910: mov edi, dword ptr [rdi+0x70]        -- [ 02 00 00 00 ]
```



```
┌─ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex4/minspect on EP-2021 ✘ (origin/EP-2021)
└$ ./third_party/pin-3.13/pin -t obj-intel64/minspect.so -- ls -l 1>/dev/null
┌─ghostpants@ghostmachine in ~/Documents/UPB_IV_C2_2020-2021/EP/lab02/ex4/minspect on EP-2021 ✘ (origin/EP-2021)
└$ 
```

EX5:



Feedback Performance Evaluation

Your response has been recorded.

Submit another response

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service - Privacy Policy