

LAB 2

Identify the current USB devices (hint. : `lsusb`)

```
tahoun@tahoun-VirtualBox:~$ lsusb
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
Bus 002 Device 002: ID 80ee:0021 VirtualBox USB Tablet
Bus 002 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
```

Count how many CPUs (cores) on your device.

```
tahoun@tahoun-VirtualBox:~$ cat /proc/cpuinfo
processor       : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 158
model name     : Intel(R) Core(TM) i7-8750H CPU @ 2.20GHz
stepping       : 10
cpu MHz        : 2208.000
cache size     : 9216 KB
physical id    : 0
siblings       : 1
core id        : 0
cpu cores      : 1
apicid         : 0
initial apicid : 0
fpu            : yes
fpu_exception  : yes
cpuid level    : 22
wp             : yes
flags          : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse
ni pclmulqdq monitor ssse3 cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx rdrand hypervisor lahf_lm abm
h_lid arch_capabilities
bugs           : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit srbds mmio_st
bogomips       : 4416.00
clflush size   : 64
cache_alignment : 64
address sizes   : 39 bits physical, 48 bits virtual
power management:
```

```
tahoun@tahoun-VirtualBox:~$ cat /proc/cpuinfo | grep cores
cpu cores      : 1
```

Take a snapshot of current disk statistics 5 times with 2 seconds interval.

```
tahoun@tahoun-VirtualBox:~$ iostat 2 5
Linux 5.19.0-38-generic (tahoun-VirtualBox) 01 2023 , أبريل 12 _x86_64_ (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           6.33    0.68   2.90    0.39    0.00   89.70

Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0              0.01         0.02         0.00         0.00         17         0         0
loop1              0.06         1.03         0.00         0.00        1081         0         0
loop10             0.07         1.04         0.00         0.00        1090         0         0
loop11             0.07         1.06         0.00         0.00        1109         0         0
loop12             1.39        13.05         0.00         0.00       13638         0         0
loop13             1.08        12.71         0.00         0.00       13283         0         0
loop14             2.48        10.47         0.00         0.00       10940         0         0
loop15             0.91         9.52         0.00         0.00       9952         0         0
loop16             0.04         0.33         0.00         0.00        349         0         0
loop17             0.04         0.33         0.00         0.00        348         0         0
loop18             0.68        23.84         0.00         0.00      24917         0         0
loop19             0.02         0.05         0.00         0.00         54         0         0
loop2              0.06         1.25         0.00         0.00       1302         0         0
loop20             0.03         0.25         0.00         0.00        259         0         0
loop21             0.02         0.04         0.00         0.00         41         0         0
loop22             0.06         1.25         0.00         0.00       1306         0         0
loop3              0.05         1.02         0.00         0.00       1068         0         0
loop4              0.04         0.33         0.00         0.00        348         0         0
loop5              0.54         5.60         0.00         0.00       5853         0         0
loop6              0.05         1.04         0.00         0.00       1083         0         0
loop7              0.34         4.12         0.00         0.00       4304         0         0
loop8              0.05         1.03         0.00         0.00       1074         0         0
loop9              0.06         1.07         0.00         0.00       1122         0         0
sda                33.40       1947.43      1812.38         0.00     2035101     1893969         0
sr0                0.05         0.17         0.00         0.00        180         0         0

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           2.08    0.00   1.04    0.00    0.00   96.88

Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0              0.00         0.00         0.00         0.00         0         0         0
loop1              0.00         0.00         0.00         0.00         0         0         0
loop10             0.00         0.00         0.00         0.00         0         0         0
```

measure the network activities using (hint: `nicstat`)

```
tahoun@tahoun-VirtualBox:~$ nicstat
Time      Int    rKB/s    wKB/s    rPk/s    wPk/s    rAvs    wAvs    %Util    Sat
11:46:07  lo      0.01     0.01     0.11     0.11     116.0   116.0   0.00     0.00
11:46:07  enp0s3  244.6    1.84    169.2    30.16   1479.9   62.50   0.20     0.00
```

List current PCI devices on your device

```
tahoun@tahoun-VirtualBox:~$ lspci
00:00.0 Host bridge: Intel Corporation 440FX - 82441FX PMC [Natoma] (rev 02)
00:01.0 ISA bridge: Intel Corporation 82371SB PIIX3 ISA [Natoma/Triton II]
00:01.1 IDE interface: Intel Corporation 82371AB/EB/MB PIIX4 IDE (rev 01)
00:02.0 VGA compatible controller: VMware SVGA II Adapter
00:03.0 Ethernet controller: Intel Corporation 82540EM Gigabit Ethernet Controller (rev 02)
00:04.0 System peripheral: InnoTek Systemberatung GmbH VirtualBox Guest Service
00:05.0 Multimedia audio controller: Intel Corporation 82801AA AC'97 Audio Controller (rev 01)
00:06.0 USB controller: Apple Inc. KeyLargo/Intrepid USB
00:07.0 Bridge: Intel Corporation 82371AB/EB/MB PIIX4 ACPI (rev 08)
00:0b.0 USB controller: Intel Corporation 82801FB/FBM/FR/FW/FRW (ICH6 Family) USB2 EHCI Controller
00:0d.0 SATA controller: Intel Corporation 82801HM/HEM (ICH8M/ICH8M-E) SATA Controller [AHCI mode] (rev 02)
```

List all files which are compressed by ZIP utilities

```
tahoun@tahoun-VirtualBox:~$ sudo find / -name "*.zip"
[sudo] password for tahoun:
/usr/share/libreoffice/share/config/images_yaru.zip
/usr/share/libreoffice/share/config/images_breeze.zip
/usr/share/libreoffice/share/config/images_colibre.zip
/usr/share/libreoffice/share/config/images_helpimg.zip
/usr/share/libreoffice/share/config/images_elementary.zip
/usr/share/libreoffice/share/config/images_elementary_svg.zip
/usr/share/libreoffice/share/config/images_yaru_mate_svg.zip
/usr/share/libreoffice/share/config/images_yaru_svg.zip
/usr/share/libreoffice/share/config/images_breeze_dark_svg.zip
/usr/share/libreoffice/share/config/images_breeze_dark.zip
/usr/share/libreoffice/share/config/images_breeze_svg.zip
/usr/share/libreoffice/share/config/images_yaru_mate.zip
/usr/lib/libreoffice/share/config/images_yaru.zip
/usr/lib/libreoffice/share/config/images_breeze.zip
/usr/lib/libreoffice/share/config/images_colibre.zip
/usr/lib/libreoffice/share/config/wizard/web/buttons/round-white.zip
/usr/lib/libreoffice/share/config/wizard/web/buttons/elementary.zip
/usr/lib/libreoffice/share/config/wizard/web/buttons/simple.zip
/usr/lib/libreoffice/share/config/wizard/web/buttons/sukapura.zip
/usr/lib/libreoffice/share/config/images_helpimg.zip
/usr/lib/libreoffice/share/config/images_elementary.zip
/usr/lib/libreoffice/share/config/images_elementary_svg.zip
/usr/lib/libreoffice/share/config/images_yaru_mate_svg.zip
/usr/lib/libreoffice/share/config/images_yaru_svg.zip
/usr/lib/libreoffice/share/config/images_breeze_dark_svg.zip
/usr/lib/libreoffice/share/config/images_breeze_dark.zip
/usr/lib/libreoffice/share/config/images_breeze_svg.zip
/usr/lib/libreoffice/share/config/images_yaru_mate.zip
find: '/run/user/1000/doc': Permission denied
find: '/run/user/1000/gvfs': Permission denied
```

Using grep and regex list all lines containing hex numbers on a /var/log/syslog

```
tahoun@tahoun-VirtualBox:~$ grep -e "0x" /var/log/syslog
Mar 28 13:28:05 tahoun-VirtualBox kernel: [ 9.589363] vboxsf: g_fHostFeatures=0x8000000f g_fSfFeatures=0x1 g_uSfLastFunction=29
Mar 28 13:28:05 tahoun-VirtualBox kernel: [ 9.589571] vboxsf: Successfully loaded version 7.0.6 r155176 on 5.19.0-32-generic (LINUX_VERSION_CODE=0x51311)
Mar 28 13:28:52 tahoun-VirtualBox kernel: [ 57.053882] audit: type=1326 audit(1680002932.855:58): auid=1000 uid=1000 gid=1000 ses=3 subj=snapsnapd-desktop-integration.snapsnapd-desktop-l" exe="/snap/snapd-desktop-integration/49/usr/bin/snapd-desktop-integration" sig=0 arch=c000003e syscall=314 compat=0 ip=0x7f8a2275973d code=0x50000
Mar 28 13:28:58 tahoun-VirtualBox kernel: [ 62.411538] audit: type=1326 audit(1680002938.214:59): auid=1000 uid=1000 gid=1000 ses=3 subj=snapsnap-store.snapsnap-store pid=2267 ore/638/usr/bin/snap-store" sig=0 arch=c000003e syscall=314 compat=0 ip=0x7f2f47ff973d code=0x50000
Mar 28 13:29:00 tahoun-VirtualBox kernel: [ 72.588571] audit: type=1326 audit(1680002948.399:60): auid=1000 uid=1000 gid=1000 ses=3 subj=snapsnap-store.snapsnap-store pid=2267 ore/638/usr/bin/snap-store" sig=0 arch=c000003e syscall=93 compat=0 ip=0x7f2f47ff039b code=0x50000
Mar 28 13:29:35 tahoun-VirtualBox kernel: [ 99.571759] audit: type=1326 audit(1680002975.392:67): auid=1000 uid=1000 gid=1000 ses=3 subj=snapsnap-store.snapsnap-store pid=2267 ap-store/638/usr/bin/snap-store" sig=0 arch=c000003e syscall=93 compat=0 ip=0x7f2f47ff039b code=0x50000
Mar 28 13:45:22 tahoun-VirtualBox kernel: [ 1045.525978] audit: type=1326 audit(1680003922.488:138): auid=1000 uid=1000 gid=1000 ses=3 subj=snapsnapd-desktop-integration.snapsnapd-desktop-l" exe="/snap/snapd-desktop-integration/57/usr/bin/snapd-desktop-integration" sig=0 arch=c000003e syscall=314 compat=0 ip=0x7f06fec42a3d code=0x50000
Mar 30 14:52:34 tahoun-VirtualBox NetworkManager[559]: <info> [1680180754.3320] manager[0x55fa46654040]: monitoring kernel firmware directory '/lib/firmware'.
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] x86/fpu: Supporting XSAVE feature 0x001: 'x87 Floating point registers'
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] x86/fpu: Supporting XSAVE feature 0x002: 'SSE registers'
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] x86/fpu: Supporting XSAVE feature 0x004: 'AVX registers'
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] x86/fpu: Enabled xstate features 0x7, context size is 832 bytes, using 'standard' format.
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] BIOS-e820: [mem 0x0000000000000000-0x00000000000009bfff] usable
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] BIOS-e820: [mem 0x00000000000009c000-0x00000000000009ffff] reserved
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] BIOS-e820: [mem 0x00000000000009ffff-0x0000000000000fffff] reserved
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] BIOS-e820: [mem 0x0000000000000000-0x00000000000000ffff] usable
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] BIOS-e820: [mem 0x0000000000000000-0x00000000000000ffff] ACPI data
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff] reserved
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff] reserved
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] BIOS-e820: [mem 0x00000000ffff0000-0x00000000ffffffffff] reserved
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000000] BIOS-e820: [mem 0x0000000100000000-0x000000012e000000] usable
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.000005] clocksource: kvm-clock: mask: 0xffffffffffffffff max_cycles: 0x1cd42e4dffb, max_idle_ns: 881590591483 ns
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.002423] e820: update [mem 0x00000000-0x00000000] usable ==> Reserved
Mar 30 14:52:34 tahoun-VirtualBox kernel: [ 0.002423] e820: update [mem 0x00000000-0x00000000] usable ==> Reserved
```