

# **Operációs rendszerek BSc**

2. Gyak.  
2022. 02. 15.

**Készítette:**  
Zavarkó Máté  
Gazdasági Informatikus  
IN3BLK

**Miskolc, 2022**

# 1. feladat

a) Mappa szerkezet

```
Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215 (Feladat)
$ mkdir IN3BLK

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215 (Feladat)
$ cd IN3BLK

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK (Feladat)
$ mkdir bokor

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK (Feladat)
$ cd bokor

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/bokor (Feladat)
$ mkdir banan

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/bokor (Feladat)
$ mkdir mogyoro

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/bokor (Feladat)
$ mkdir barack

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/bokor (Feladat)
$ cd ..

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK (Feladat)
$ mkdir fa

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK (Feladat)
$ cd fa

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/fa (Feladat)
$ mkdir korte

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/fa (Feladat)
$ cd ..

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK (Feladat)
$ mkdir land

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK (Feladat)
$ cd land

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/land (Feladat)
$ mkdir szeder

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/land (Feladat)
$ mkdir kokusz
```

b) Másolat készítés

```
Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/land (Feladat)
$ cp -r ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/land/szeder ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/fa

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/land (Feladat)
$ cp -r ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/bokor/banan ~/IN3BLKOsGyak/IN3BLK_0215/IN3BLK/fa
```

c) Áthelyezések

```
Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/land (Feladat)
$ mv ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/bokor/barack ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/fa

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/land (Feladat)
$ mv ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/land/kokusz ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/fa
```

d) Katalógus törlése és szöveges állományok létrehozása

```
Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/land (Feladat)
$ rmdir ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/land/szeder

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/land (Feladat)
$ rmdir ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/land
```

```
Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/bokor/banan (Feladat)
$ cat > leiras.txt
```

```
Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/fa (Feladat)
$ cat > felsorolas.txt
```

e) Szöveges állományokba írás

```
Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/bokor/banan (Feladat)
$ echo -e "A barack egy gyümölcs \nA barack nyáron terem \nA barack fán terem" > leiras.txt

Thuun@DESKTOP-63RTLVP MINGW64 ~/IN3BLK0sGyak/IN3BLK_0215/IN3BLK/fa (Feladat)
$ echo -e "Dávid \nMárk \nMilán \nKinga \nGitta" > felsorolas.txt
```

f) Mappa listázása

```
C:\Users\Thuun>TREE C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215
Folder PATH listing
Volume serial number is 00000055 AC37:9685
C:\USERS\THUUN\IN3BLK0SGYAK\IN3BLK_0215
├── IN3BLK
│   ├── bokor
│   │   ├── banan
│   │   └── mogyoro
│   └── fa
│       ├── banan
│       ├── barack
│       ├── kokusz
│       ├── korte
│       └── szeder
```

g) Olyan file-ok, amelyek nevének második betűje e

```
C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215>dir /s "?e*"
Volume in drive C has no label.
Volume Serial Number is AC37-9685

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\bokor\banan

2022. 02. 22.  18:47                69 leiras.txt
                1 File(s)                69 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa

2022. 02. 22.  18:50                36 felsorolas.txt
                1 File(s)                36 bytes

Total Files Listed:
                2 File(s)                105 bytes
                0 Dir(s)  149 419 343 872 bytes free
```

h) Olvashatóság

```
C:\Windows\System32>icacls C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa\felsorolas.txt /grant :r
processed file: C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa\felsorolas.txt
Successfully processed 1 files; Failed processing 0 files
```

i) Mappa helyfoglalása

```
C:\Windows\System32>dir /s C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\
Volume in drive C has no label.
Volume Serial Number is AC37-9685

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215

2022. 02. 22.  18:18    <DIR>          .
2022. 02. 22.  18:18    <DIR>          ..
2022. 02. 22.  18:33    <DIR>          IN3BLK
                0 File(s)                0 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK

2022. 02. 22.  18:33    <DIR>          .
2022. 02. 22.  18:33    <DIR>          ..
2022. 02. 22.  18:30    <DIR>          bokor
2022. 02. 22.  18:38    <DIR>          fa
                0 File(s)                0 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\bokor

2022. 02. 22.  18:30    <DIR>          .
2022. 02. 22.  18:30    <DIR>          ..
2022. 02. 22.  18:37    <DIR>          banan
2022. 02. 22.  18:19    <DIR>          mogyoro
                0 File(s)                0 bytes
```

```

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\bokor\banan
2022. 02. 22. 18:37 <DIR>      .
2022. 02. 22. 18:37 <DIR>      ..
2022. 02. 22. 18:47          69 leiras.txt
                        1 File(s)          69 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\bokor\mogoro
2022. 02. 22. 18:19 <DIR>      .
2022. 02. 22. 18:19 <DIR>      ..
                        0 File(s)          0 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa
2022. 02. 22. 18:38 <DIR>      .
2022. 02. 22. 18:38 <DIR>      ..
2022. 02. 22. 18:28 <DIR>      banan
2022. 02. 22. 18:20 <DIR>      barack
2022. 02. 22. 18:50          36 felsorolas.txt
2022. 02. 22. 18:21 <DIR>      kokusz
2022. 02. 22. 18:20 <DIR>      korte
2022. 02. 22. 18:27 <DIR>      szeder
                        1 File(s)          36 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa\banan
2022. 02. 22. 18:28 <DIR>      .
2022. 02. 22. 18:28 <DIR>      ..
                        0 File(s)          0 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa\barack
2022. 02. 22. 18:20 <DIR>      .
2022. 02. 22. 18:20 <DIR>      ..
                        0 File(s)          0 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa\kokusz
2022. 02. 22. 18:21 <DIR>      .
2022. 02. 22. 18:21 <DIR>      ..
                        0 File(s)          0 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa\korte
2022. 02. 22. 18:20 <DIR>      .
2022. 02. 22. 18:20 <DIR>      ..
                        0 File(s)          0 bytes

Directory of C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa\szeder
2022. 02. 22. 18:27 <DIR>      .
2022. 02. 22. 18:27 <DIR>      ..
                        0 File(s)          0 bytes

Total Files Listed:
      2 File(s)          105 bytes
     32 Dir(s)  149 418 450 944 bytes free

```

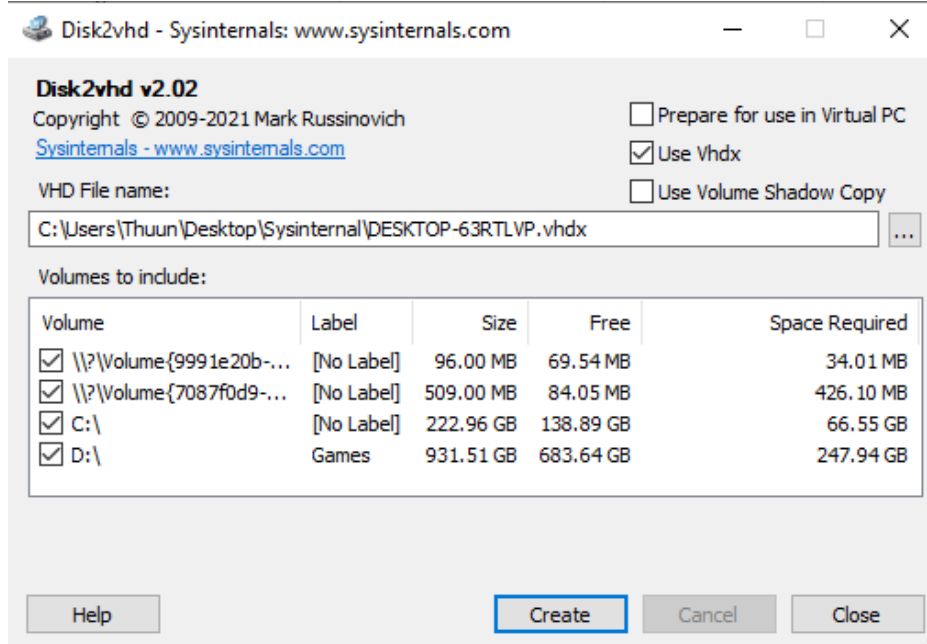
j) ABC-szerinti rendezés

```
C:\Windows\System32>sort C:\Users\Thuun\IN3BLK0sGyak\IN3BLK_0215\IN3BLK\fa\felsorolas.txt
David
Gitta
Kinga
Mark
Milan
```

## 2. feladat

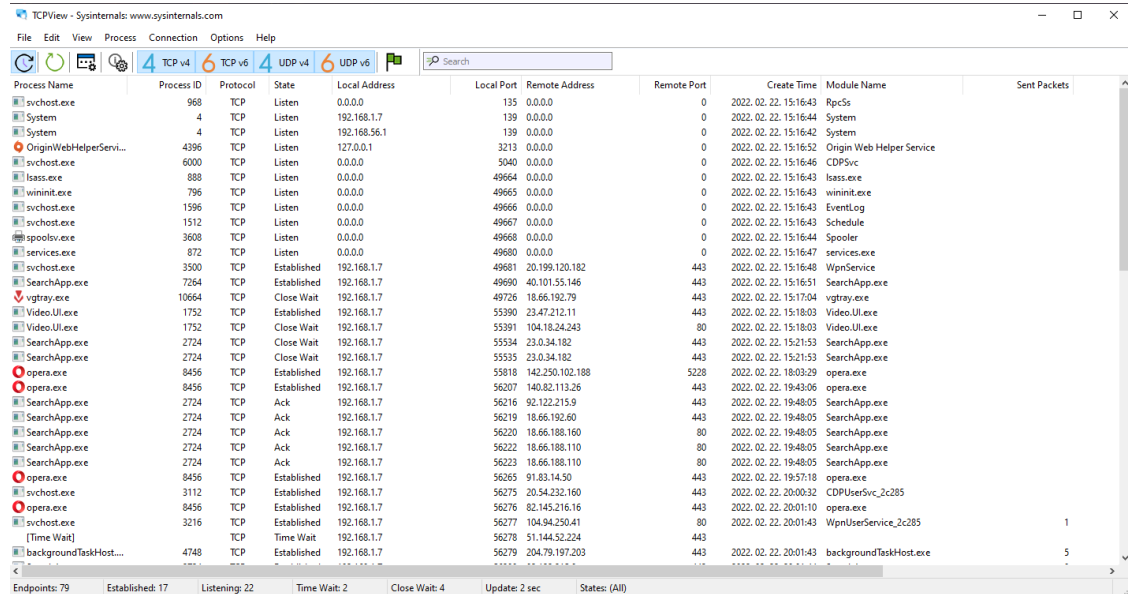
a) File and Disk Utilities (Disk2vhd)

A Disk2vhd egy olyan segédprogram, amely létrehozza a fizikai lemezek VHD-verzióit (Virtuális merevlemez – A Microsoft virtuálisgép-lemezformátuma) a Microsoft Virtual PC-n vagy Microsoft Hyper-V virtuális gépeken való használatra.



## b) Networking Utilities (TCPView)

A TCPView részletes listában mutatja be a rendszer összes TCP- és UDP-végpontját, beleértve a helyi és távoli címeket, valamint a TCP-kapcsolatok állapotát.

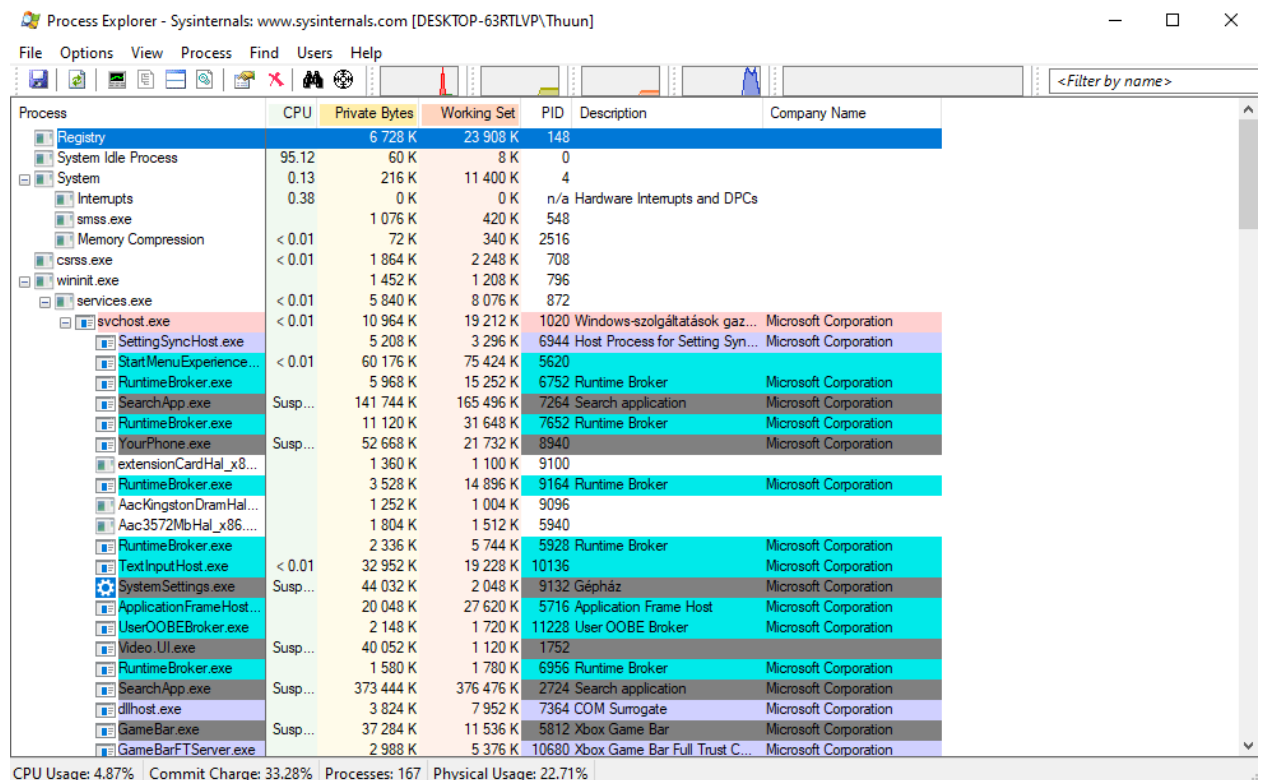


The screenshot shows the TCPView utility window with a list of network connections. The columns include Process Name, Process ID, Protocol, State, Local Address, Local Port, Remote Address, Remote Port, Create Time, Module Name, and Sent Packets. The list shows various system processes and user applications, including svchost.exe, System, OriginWebHelperService.exe, lsass.exe, wininit.exe, EventLog, Schedule, Spooler, services.exe, WpnService, SearchApp.exe, vgttray.exe, Video.UI.exe, and backgroundTaskHost.exe. The status bar at the bottom indicates 79 endpoints, 17 established, 22 listening, 2 time wait, 4 close wait, 2 updates, and all states.

Process Name	Process ID	Protocol	State	Local Address	Local Port	Remote Address	Remote Port	Create Time	Module Name	Sent Packets
svchost.exe	968	TCP	Listen	0.0.0.0	135	0.0.0.0	0	2022.02.22.15:16:43	RpcSs	
System	4	TCP	Listen	192.168.1.7	139	0.0.0.0	0	2022.02.22.15:16:44	System	
System	4	TCP	Listen	192.168.56.1	139	0.0.0.0	0	2022.02.22.15:16:42	System	
OriginWebHelperService.exe	4396	TCP	Listen	127.0.0.1	3213	0.0.0.0	0	2022.02.22.15:16:52	Origin Web Helper Service	
svchost.exe	6000	TCP	Listen	0.0.0.0	5040	0.0.0.0	0	2022.02.22.15:16:46	CDPSvc	
lsass.exe	888	TCP	Listen	0.0.0.0	49664	0.0.0.0	0	2022.02.22.15:16:43	lsass.exe	
wininit.exe	796	TCP	Listen	0.0.0.0	49665	0.0.0.0	0	2022.02.22.15:16:43	wininit.exe	
svchost.exe	1596	TCP	Listen	0.0.0.0	49666	0.0.0.0	0	2022.02.22.15:16:43	EventLog	
svchost.exe	1512	TCP	Listen	0.0.0.0	49667	0.0.0.0	0	2022.02.22.15:16:43	Schedule	
spoolsv.exe	3608	TCP	Listen	0.0.0.0	49668	0.0.0.0	0	2022.02.22.15:16:44	Spooler	
services.exe	872	TCP	Listen	0.0.0.0	49680	0.0.0.0	0	2022.02.22.15:16:47	services.exe	
svchost.exe	3500	TCP	Established	192.168.1.7	49681	20.199.120.182	443	2022.02.22.15:16:48	WpnService	
SearchApp.exe	7264	TCP	Established	192.168.1.7	49690	40.101.55.146	443	2022.02.22.15:16:51	SearchApp.exe	
vgttray.exe	10664	TCP	Close Wait	192.168.1.7	49726	18.66.192.79	443	2022.02.22.15:17:04	vgttray.exe	
Video.UI.exe	1752	TCP	Established	192.168.1.7	55390	23.47.212.11	443	2022.02.22.15:18:03	Video.UI.exe	
Video.UI.exe	1752	TCP	Close Wait	192.168.1.7	55391	104.18.24.243	80	2022.02.22.15:18:03	Video.UI.exe	
SearchApp.exe	2724	TCP	Close Wait	192.168.1.7	55534	23.0.34.182	443	2022.02.22.15:21:53	SearchApp.exe	
SearchApp.exe	2724	TCP	Close Wait	192.168.1.7	55535	23.0.34.182	443	2022.02.22.15:21:53	SearchApp.exe	
opera.exe	8456	TCP	Established	192.168.1.7	55818	142.250.102.188	5228	2022.02.22.18:03:29	opera.exe	
opera.exe	8456	TCP	Established	192.168.1.7	56207	140.82.113.26	443	2022.02.22.19:43:06	opera.exe	
SearchApp.exe	2724	TCP	Ack	192.168.1.7	56216	92.122.215.9	443	2022.02.22.19:48:05	SearchApp.exe	
SearchApp.exe	2724	TCP	Ack	192.168.1.7	56219	18.66.192.60	443	2022.02.22.19:48:05	SearchApp.exe	
SearchApp.exe	2724	TCP	Ack	192.168.1.7	56220	18.66.188.160	80	2022.02.22.19:48:05	SearchApp.exe	
SearchApp.exe	2724	TCP	Ack	192.168.1.7	56222	18.66.188.110	80	2022.02.22.19:48:05	SearchApp.exe	
SearchApp.exe	2724	TCP	Ack	192.168.1.7	56223	18.66.188.110	80	2022.02.22.19:48:05	SearchApp.exe	
opera.exe	8456	TCP	Established	192.168.1.7	56265	91.83.14.50	443	2022.02.22.19:57:18	opera.exe	
svchost.exe	3112	TCP	Established	192.168.1.7	56275	20.54.232.160	443	2022.02.22.20:00:32	CDPUserService_2c285	
opera.exe	8456	TCP	Established	192.168.1.7	56276	82.145.216.16	443	2022.02.22.20:01:10	opera.exe	
svchost.exe	3216	TCP	Established	192.168.1.7	56277	104.94.250.41	80	2022.02.22.20:01:43	WpnUserService_2c285	1
(Time Wait)		TCP	Time Wait	192.168.1.7	56278	51.144.52.224	443			
backgroundTaskHost.exe	4748	TCP	Established	192.168.1.7	56279	204.79.197.203	443	2022.02.22.20:01:43	backgroundTaskHost.exe	5

## c) Process Utilities (Process Explorer, Process Monitor, AutoRuns)

A Folyamatkezelő megmutatja, hogy mely leírókat és DLL-folyamatokat nyitották meg vagy töltötték be.



The screenshot shows the Process Explorer utility window with a list of running processes. The columns include Process, CPU, Private Bytes, Working Set, PID, Description, and Company Name. The list shows various system processes and user applications, including Registry, System Idle Process, System, Interrupts, smss.exe, Memory Compression, csrss.exe, wininit.exe, services.exe, svchost.exe, SettingSyncHost.exe, StartMenuExperience.exe, RuntimeBroker.exe, YourPhone.exe, extensionCardHal\_x86.exe, RuntimeBroker.exe, AacKingstonDramHal.exe, Aac3572MbHal\_x86.exe, RuntimeBroker.exe, TextInputHost.exe, SystemSettings.exe, ApplicationFrameHost.exe, UserOOBEBroker.exe, Video.UI.exe, RuntimeBroker.exe, SearchApp.exe, dlhost.exe, GameBar.exe, and GameBarFTServer.exe. The status bar at the bottom indicates CPU Usage: 4.87%, Commit Charge: 33.28%, Processes: 167, and Physical Usage: 22.71%.

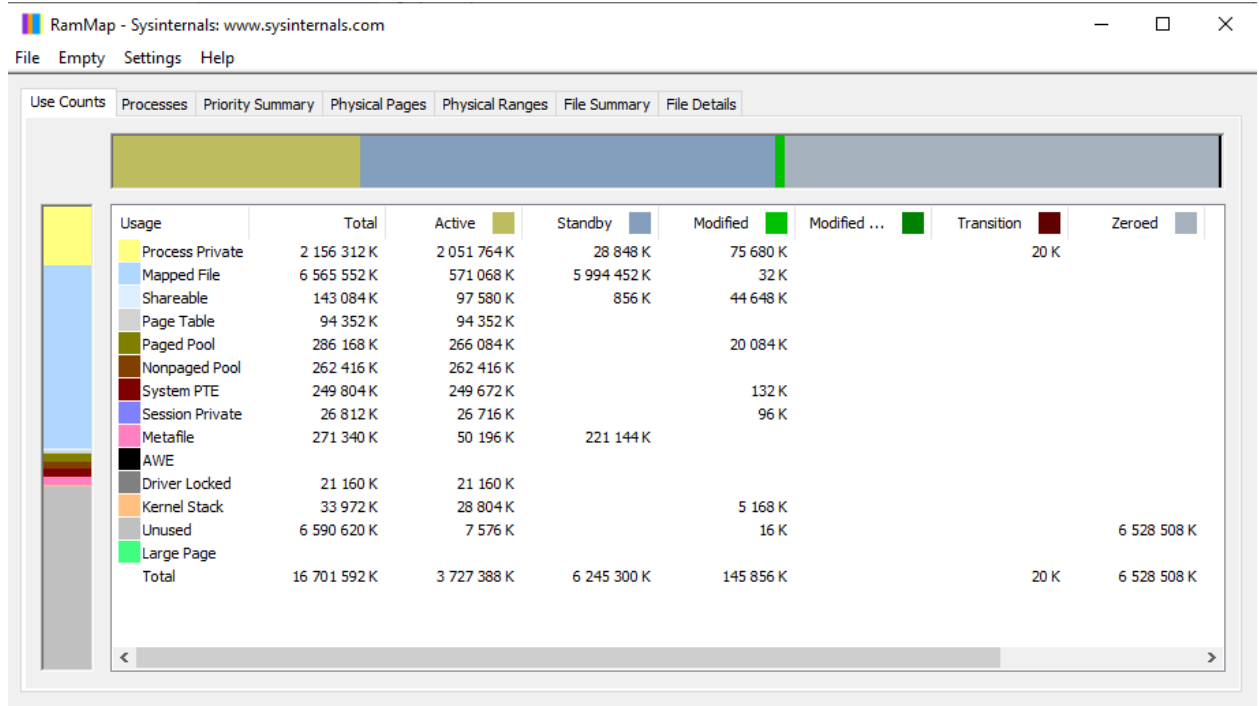
Process	CPU	Private Bytes	Working Set	PID	Description	Company Name
Registry		6 728 K	23 908 K	148		
System Idle Process	95.12	60 K	8 K	0		
System	0.13	216 K	11 400 K	4		
Interrupts	0.38	0 K	0 K	n/a	Hardware Interrupts and DPCs	
smss.exe		1 076 K	420 K	548		
Memory Compression	< 0.01	72 K	340 K	2516		
csrss.exe	< 0.01	1 864 K	2 248 K	708		
wininit.exe		1 452 K	1 208 K	796		
services.exe	< 0.01	5 840 K	8 076 K	872		
svchost.exe	< 0.01	10 964 K	19 212 K	1020	Windows-szolgáltatások gaz...	Microsoft Corporation
SettingSyncHost.exe		5 208 K	3 296 K	6944	Host Process for Setting Syn...	Microsoft Corporation
StartMenuExperience.exe	< 0.01	60 176 K	75 424 K	5620		
RuntimeBroker.exe		5 968 K	15 252 K	6752	Runtime Broker	Microsoft Corporation
SearchApp.exe	Susp...	141 744 K	165 496 K	7264	Search application	Microsoft Corporation
RuntimeBroker.exe		11 120 K	31 648 K	7652	Runtime Broker	Microsoft Corporation
YourPhone.exe	Susp...	52 668 K	21 732 K	8940		Microsoft Corporation
extensionCardHal_x86.exe		1 360 K	1 100 K	9100		
RuntimeBroker.exe		3 528 K	14 896 K	9164	Runtime Broker	Microsoft Corporation
AacKingstonDramHal.exe		1 252 K	1 004 K	9096		
Aac3572MbHal_x86.exe		1 804 K	1 512 K	5940		
RuntimeBroker.exe		2 336 K	5 744 K	5928	Runtime Broker	Microsoft Corporation
TextInputHost.exe	< 0.01	32 952 K	19 228 K	10136		Microsoft Corporation
SystemSettings.exe	Susp...	44 032 K	2 048 K	9132	Gépház	Microsoft Corporation
ApplicationFrameHost.exe		20 048 K	27 620 K	5716	Application Frame Host	Microsoft Corporation
UserOOBEBroker.exe		2 148 K	1 720 K	11228	User OOBEBroker	Microsoft Corporation
Video.UI.exe	Susp...	40 052 K	1 120 K	1752		
RuntimeBroker.exe		1 580 K	1 780 K	6956	Runtime Broker	Microsoft Corporation
SearchApp.exe	Susp...	373 444 K	376 476 K	2724	Search application	Microsoft Corporation
dlhost.exe		3 824 K	7 952 K	7364	COM Surrogate	Microsoft Corporation
GameBar.exe	Susp...	37 284 K	11 536 K	5812	Xbox Game Bar	Microsoft Corporation
GameBarFTServer.exe		2 988 K	5 376 K	10680	Xbox Game Bar Full Trust C...	Microsoft Corporation

d) Security Utilities (LogonSession)

Felsorolja a jelenleg aktív bejelentkezési munkameneteket

e) Information Utilities (RAMMap)

A RAMMap egy speciális fizikai memóriahasználat-elemzési segédprogram. Különböző módokon mutatja be a használati adatokat a különböző lapjain.



### 3. feladat

a)