

Міністерство освіти і науки України
Національний університет «Львівська політехніка»
Інститут комп'ютерних наук та інформаційних технологій
Кафедра Систем Штучного Інтелекту



Звіт
до лабораторної роботи № 1
з дисципліни
Операційні системи
на тему:
“Ознайомлення з процесами в ОС Windows”

Виконав: студент КН-217

Ратушняк Денис

Прийняв: доцент каф. СШІ

Кривенчук Ю. П.

Мета роботи: Ознайомитися з процесами та потоками в ОС Windows. Навчитися працювати із системними утилітами, що дають можливість отримувати інформацію про процеси, потоки, використовувану ними пам'ять, та іншу необхідну інформацію.

Завдання 1

Name	PID	User na...	Session...	CPU	CPU time	Workin...	Peak working set...	Working set...	Commit size	Page faults	Handl...	Threa...	User obj...
System id...	0	SYSTEM	0	99	3,29:51	8 K	12 K	0 K	60 K	9	-	4	0
Taskmgr.e...	7008	denys	1	01	0:01:01	66,592 K	73,116 K	0 K	32,372 K	506,634	781	18	483
svchost.e...	792	SYSTEM	0	00	0:00:03	30,880 K	32,384 K	0 K	12,236 K	134,968	1,485	24	0
System int...	-	SYSTEM	0	00	0:00:00	0 K	0 K	0 K	0 K	0	-	-	0
MsMpEng...	6476	SYSTEM	0	00	0:00:10	151,464 K	476,484 K	0 K	187,808 K	298,108	782	33	0
svchost.e...	2740	LOCAL...	0	00	0:01:33	25,544 K	31,256 K	-288 K	17,020 K	2,571,036	386	18	0
dwm.exe	380	DWM-1	1	00	0:00:24	66,868 K	75,880 K	4 K	37,920 K	211,219	1,053	19	2
csrss.exe	532	SYSTEM	1	00	0:00:14	5,116 K	8,032 K	0 K	1,960 K	4,749	459	14	82
procecp64...	9324	denys	1	00	0:00:17	44,952 K	56,284 K	0 K	24,792 K	282,013	560	8	74
explorer.e...	4440	denys	1	00	0:00:12	120,056 K	144,564 K	0 K	51,472 K	116,768	2,378	53	303
msedge.e...	8804	denys	1	00	0:01:15	198,036 K	208,988 K	0 K	96,488 K	3,623,457	1,598	35	67
ctfmon.e...	4476	denys	1	00	0:00:01	22,176 K	22,208 K	0 K	7,332 K	6,934	444	9	22
svchost.e...	7380	NETWO...	0	00	0:00:21	19,496 K	35,696 K	0 K	7,940 K	363,861	421	12	0
svchost.e...	2292	SYSTEM	0	00	0:00:06	22,332 K	94,024 K	-12 K	15,428 K	42,647	202	8	0
svchost.e...	6864	SYSTEM	0	00	0:00:00	9,648 K	9,664 K	0 K	2,096 K	2,575	166	8	0
svchost.e...	912	NETWO...	0	00	0:00:14	14,412 K	14,760 K	0 K	7,788 K	98,998	1,185	15	0
svchost.e...	1676	SYSTEM	0	00	0:00:00	5,624 K	5,884 K	0 K	1,284 K	1,751	183	3	0
svchost.e...	1872	LOCAL...	0	00	0:00:00	8,340 K	9,212 K	-12 K	2,572 K	2,967	392	6	0
lsass.exe	684	SYSTEM	0	00	0:00:02	18,888 K	22,532 K	0 K	8,228 K	11,998	1,309	9	0
System	4	SYSTEM	0	00	0:00:29	144 K	860 K	0 K	196 K	2,405	2,779	116	0
svchost.e...	1668	SYSTEM	0	00	0:00:12	44,288 K	65,132 K	0 K	37,580 K	136,571	238	5	0
svchost.e...	8788	SYSTEM	0	00	0:00:00	25,000 K	43,232 K	0 K	15,008 K	34,285	533	16	0
svchost.e...	1028	SYSTEM	0	00	0:00:01	14,536 K	15,060 K	0 K	6,140 K	7,067	397	14	0
perfmom.e...	8104	denys	1	00	0:00:02	42,260 K	44,588 K	0 K	23,792 K	21,260	420	17	170
sihost.e...	2708	denys	1	00	0:00:02	27,500 K	31,104 K	0 K	6,400 K	9,829	585	12	7
StartMenu...	5136	denys	1	00	0:00:01	53,368 K	68,488 K	4 K	19,952 K	26,337	610	8	12
Microsoft...	9400	denys	1	00	0:00:00	60,136 K	70,964 K	-180 K	31,560 K	18,430	651	15	10
svchost.e...	3920	SYSTEM	0	00	0:00:01	20,068 K	23,788 K	-12 K	4,264 K	19,080	303	7	0
svchost.e...	8568	denys	1	00	0:00:00	33,128 K	34,552 K	0 K	8,204 K	13,889	684	13	1
services.e...	660	SYSTEM	0	00	0:00:02	9,724 K	10,124 K	0 K	5,408 K	12,114	613	9	0

Завдання 2

Windows 10 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Process Explorer - Sysinternals.com sysinternals.com [DESKTOP-78NF8BL\denny]

File Options View Process Find Users Help

Process Explorer - Sysinternals.com sysinternals.com [DESKTOP-78NF8BL\denny]

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Завдання 3

The screenshot shows the Windows Task Manager interface. A context menu is open for the `msedge.exe` process (PID 6016). The 'Set priority' option is selected, and a sub-menu is displayed showing the priority levels. 'Realtime' is the selected priority.

Name	PID	User name	Session	CPU	CPU time	Working set	Peak working set	Working set...	Commit size	Page faults	Handle...
dllhost.exe	7752	denys	1	00	0:00:00	12,200 K			14,		
dwm.exe	412	DWM-1	1	00	0:00:02	61,732 K			64,		
explorer.exe	4428	denys	1	00	0:00:02	222,032 K			246,		
fontdrvho...	848	UMFD-0	0	00	0:00:00	3,240 K			3,		
lsass.exe	704	SYSTEM	0	00	0:00:00	20,852 K			22,		
msedge.exe	6016	denys	1	00	0:00:04	210,080 K			296,		
msedge.exe	6836	denys	1	00	0:00:01	136,464 K			140,		
msedge.exe	7088	denys	1	00	0:00:00	46,088 K			48,		
msedge.exe	7104	denys	1	00	0:00:00	36,056 K			37,		
msedge.exe	6132	denys	1	00	0:00:00	...			33,		
msedge.exe	6868	denys	1	00	0:00:00	...			7,		
MsMpEng...	2900	SYSTEM	0	00	0:00:10	...			18,		
NisSrv.ex...	4064	LOCAL ...	0	00	0:00:00	...			206,		
OneDrive...	6680	denys	1	00	0:00:00	...			Normal		
Registry	108	SYSTEM	0	00	0:00:00	...			Below normal		
RuntimeB...	4172	denys	1	00	0:00:00	...			Low		
RuntimeB...	5440	denys	1	00	0:00:00	...			...

The screenshot shows the Windows Task Manager interface with the 'Processes' tab selected. A confirmation dialog box is displayed, asking 'Do you want to end msedge.exe?'. The dialog box includes a warning: 'If an open program is associated with this process, it will close and you will lose any unsaved data. If you end a system process, it might result in system instability. Are you sure you want to continue?'. The 'End process' button is highlighted.

Name	PID	User name	Session	CPU	CPU time	Workin...	Peak working set...	Working set...	Commit size	Page faults	Handl...
Application...	4864	denys	1	00	0:00:00	26,820 K	27,680 K	0 K	8,476 K	7,650	342
audiodg.e...	2128	LOCAL ...	0	00	0:00:00	11,728 K	12,708 K	0 K	6,208 K	4,391	163
csrss.exe	556	SYSTEM	1	00	0:00:02	5,396 K	8,060 K	0 K	1,900 K	4,039	397
csrss.exe	460	SYSTEM	0	00	0:00:00	5,096 K	5,200 K	0 K	1,688 K	2,047	451
ctfmon.exe	4500	denys	1	00	0:00:00	20,108 K	20,152 K	0 K	5,235	5,235	419
dllhost.exe	7752	denys	1	00	0:00:00	12,200 K	14,472 K	0 K	3,600 K	4,649	232
dwm.exe	412	DWM-1	1	00	0:00:00	...	...	...	...	...	...
explorer.exe	4428	denys	1	00	0:00:00	...	...	...	...	...	...
fontdrvho...	848	UMFD-0	0	00	0:00:00	...	...	...	...	...	...
lsass.exe	704	SYSTEM	0	00	0:00:00	...	...	...	...	...	...
msedge.exe	6016	denys	1	00	0:00:00	...	...	...	...	...	...
msedge.exe	6836	denys	1	00	0:00:00	...	...	...	...	...	...
msedge.exe	7088	denys	1	00	0:00:00	...	...	...	...	...	...
msedge.exe	7104	denys	1	00	0:00:00	...	...	...	...	...	...
msedge.exe	6132	denys	1	00	0:00:00	...	...	...	...	...	...
msedge.exe	6868	denys	1	00	0:00:00	...	...	...	...	...	...
msedge.exe	7124	denys	1	00	0:00:00	...	...	...	...	...	...
MsMpEng...	2900	SYSTEM	0	00	0:00:10	170,996 K	206,820 K	0 K	213,476 K	141,763	823
NisSrv.ex...	4064	LOCAL ...	0	00	0:00:00	11,136 K	11,492 K	0 K	4,436 K	3,167	212
OneDrive...	6680	denys	1	00	0:00:00	56,356 K	65,264 K	0 K	16,524 K	51,151	755
Registry	108	SYSTEM	0	00	0:00:00	74,760 K	75,728 K	-16 K	3,560 K	22,409	-
RuntimeB...	4172	denys	1	00	0:00:00	24,384 K	28,612 K	0 K	4,144 K	7,752	327
RuntimeB...	5440	denys	1	00	0:00:00	40,936 K	45,320 K	0 K	13,864 K	20,641	670

File Options View Process Find Users Help

Process	CPU	Private...	Working Set	PID	CPU Time	Page Faults	Peak Working Set	Max Working Set	USER
explorer	0.37	52,764 K	128,800 K	4440	0:00:17.390	159,649	144,564 K	1,380 K	
process					0:00:16.781	285,998	59,672 K	1,380 K	
OneD					0:00:01.921	77,284	65,228 K	1,380 K	
csrss					0:00:17.703	6,381	8,032 K	1,380 K	
Search								1,380 K	
WW								1,380 K	
WW								1,380 K	
Shell								1,380 K	
msed								1,380 K	
Text								1,380 K	
ctfmo								1,380 K	
Appli								1,380 K	
WinS								1,380 K	
Start								1,380 K	
Runti								1,380 K	
Micro								1,380 K	
Skyp								1,380 K	
svch								1,380 K	
sihost.exe		6,236 K	27,408 K	2708	0:00:02.968	10,004	31,104 K	1,380 K	
Runtime		15,920 K	42,216 K	5620	0:00:02.942	24,468	60,572 K	1,380 K	

Window

Set Affinity...

Set Priority

Kill Process Del

Kill Process Tree Shift+Del

Restart

Suspend

Create Dump

Check VirusTotal

Properties...

Search Online... Ctrl+M

Realtime: 24

High: 13

Above Normal: 10

Normal: 8

Below Normal: 6

Background: 4 (Low I/O and Memory Priority)

Idle: 4

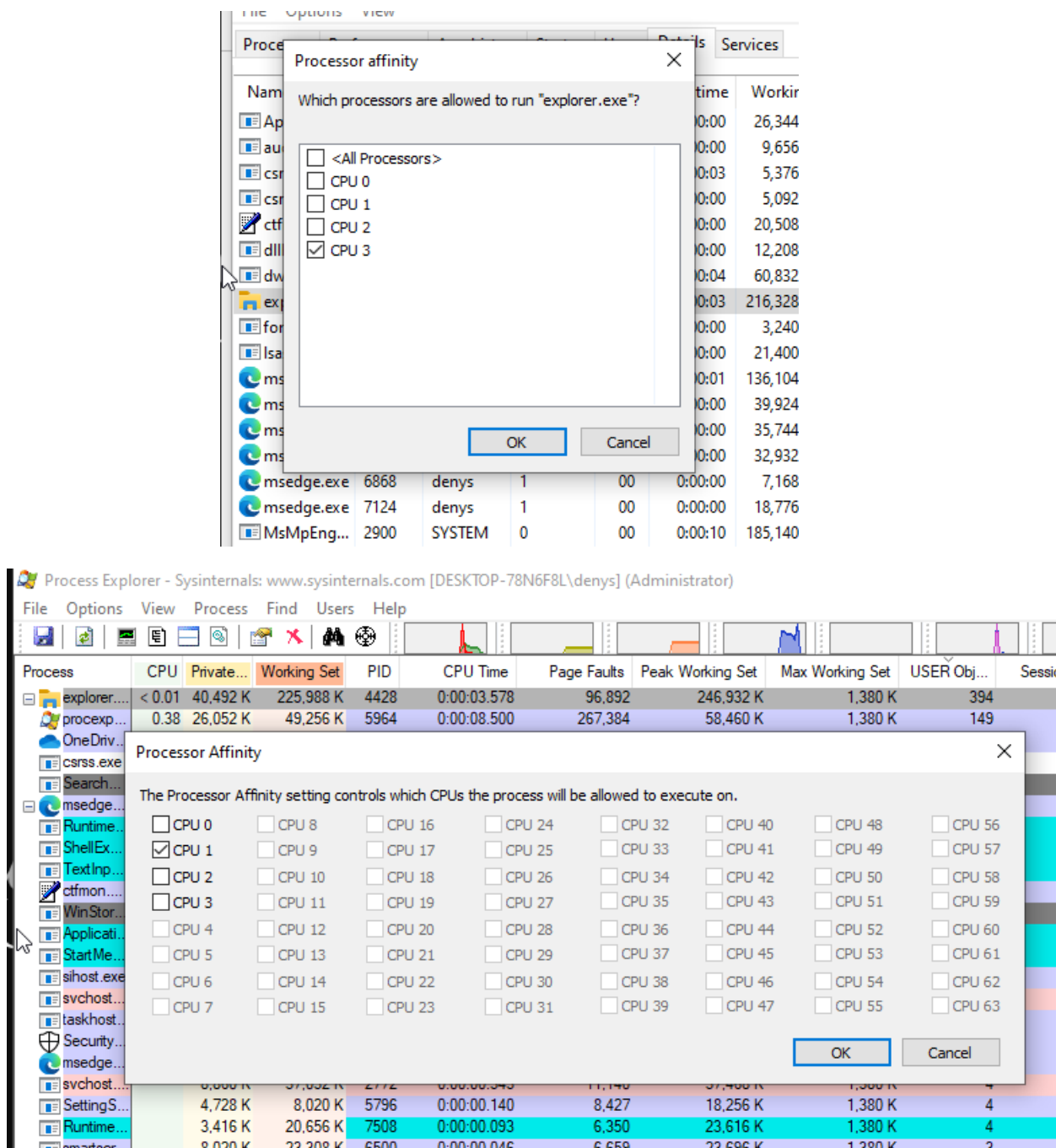
<	38,764 K	5904	0:00:00.171	10,509	39,348 K	1,380 K	24	1
<	19,816 K	4500	0:00:00.234	5,112	19,912 K	1,380 K	23	1
<	26,920 K	4864	0:00:00.031	7,645	27,680 K	1,380 K	20	1
<	26,172 K	3484	0:00:00.375	7,063	26,192 K	1,380 K	16	1
<	48,808 K	6444	0:00:00.234	14,401	54,224 K	1,380 K	14	1
<	25,256 K	4172	0:00:00.1				11	1
<	72,656 K	5600	0:00:01.4				10	1
<	9,060 K	6556	0:00:00.0				9	1
<	18,128 K	4728	0:00:00.0				8	1
<	15,636 K	4200	0:00:00.1				6	1
<	36,992 K	2772	0:00:00.3				6	1
<	23,076 K	7508	0:00:00.0				6	1
<	27,472 K	7088	0:00:00.0				5	1
<	27,724 K	2136	0:00:00.0				5	1
<	23,232 K	6500	0:00:00.0				4	1
<	7,252 K	5796	0:00:00.078	5,042	18,256 K	1,380 K	4	1
<	15,604 K	6412	0:00:00.156	5,495	19,352 K	1,380 K	3	1
<	7,164 K	6868	0:00:00.015	2,215	7,260 K	1,380 K	3	1
<	13,164 K	7752	0:00:00.093	4,614	14,472 K	1,380 K	3	1

Process Explorer

Are you sure you want to kill SkypeApp.exe?

OK Cancel

Завдання 4



Прочитанні статті по темі:

<http://nikolay.in.ua/navchaemos/windows-xp/dispecher-zadach/28-dispatcher-zadach>

<https://learn.ztu.edu.ua/mod/book/view.php?id=27881&chapterid=176>

<https://pediaa.com/what-is-the-difference-between-physical-and-virtual-memory/#:~:text=Physical%20memory%2C%20which%20is%20the,between%20physical%20and%20virtual%20memory.>

Висновок: Я закріпив вміння та навички ознайомчої роботи з процесами та потоками в ОС Windows. Навчився працювати із системними утилітами, що дають можливість отримувати інформацію про процеси, потоки, використовувану ними пам'ять, та іншу необхідну інформацію.