

## Лабораторная работа №3

### Задачи 1-3 фундаментальные

#### Задача 4:

Я решил выбрать вариант 5 (поиск jpg файлов в каталоге Windows) и сохранил полный текст в отдельный файл.

```
PS C:\Users\Aziz> cd C:\OCCCT\Lab3
PS C:\OCCCT\Lab3> Get-ChildItem C:\Windows -Recurse -File |
>> Where-Object {$_.Name -like "*.jpg"} |
>> Sort-Object Name |
>> ForEach-Object { $_.FullName } |
>> Tee-Object -FilePath 4.txt

C:\Windows\WinSxS\x86_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15805.0_none_7ab11546ceb3decdd\ASPdotNET_logo.jpg
C:\Windows\Microsoft.NET\Framework64\v4.0.30319\ASP.NETWebAdminFiles\Images\ASPdotNET_logo.jpg
C:\Windows\WinSxS\amd64_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15840.3_none_32fee21fba3c2fcd\ASPdotNET_logo.jpg
C:\Windows\WinSxS\x86_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15840.3_none_7aac18f6ceb858d3\ASPdotNET_logo.jpg
C:\Windows\WinSxS\amd64_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15805.0_none_3303de6fba37b5c7\ASPdotNET_logo.jpg
C:\Windows\Microsoft.NET\Framework\v4.0.30319\ASP.NETWebAdminFiles\Images\ASPdotNET_logo.jpg
C:\Windows\Microsoft.NET\Framework64\v4.0.30319\ASP.NETWebAdminFiles\Images\darkBlue_GRAD.jpg
C:\Windows\WinSxS\amd64_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15840.3_none_32fee21fba3c2fcd\darkBlue_GRAD.jpg
C:\Windows\WinSxS\x86_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15805.0_none_7ab11546ceb3decdd\darkBlue_GRAD.jpgC:\Windows\WinSxS\x86_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15840.3_none_7aac18f6ceb858d3\darkBlue_GRAD.jpgC:\Windows\WinSxS\amd64_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15805.0_none_3303de6fba37b5c7\darkBlue_GRAD.jpg
C:\Windows\Microsoft.NET\Framework\v4.0.30319\ASP.NETWebAdminFiles\Images\darkBlue_GRAD.jpg
C:\Windows\WinSxS\wow64_microsoft-windows-mediaplayer-core_31bf3856ad364e35_10.0.19041.6093_none_8a9d2f8338988abc\DMR_120.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-mediaplayer-core_31bf3856ad364e35_10.0.19041.6093_none_804885310437c8c1\DMR_120.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-mediaplayer-core_31bf3856ad364e35_10.0.19041.6093_none_804885310437c8c1\DMR_48.jpg
C:\Windows\WinSxS\wow64_microsoft-windows-mediaplayer-core_31bf3856ad364e35_10.0.19041.6093_none_8a9d2f8338988abc\DMR_48.jpg
C:\Windows\System32\DriverStore\FileRepository\nv_dispi.inf_amd64_d471cab2f241c3c2\NvCamera\GreenScreenBG01.jpg
C:\Windows\System32\DriverStore\FileRepository\nv_dispi.inf_amd64_d471cab2f241c3c2\NvCamera\GreenScreenBG02.jpg
C:\Windows\WinSxS\amd64_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15805.0_none_3303de6fba37b5c7\help.jpg
C:\Windows\WinSxS\x86_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15805.0_none_7ab11546ceb3decdd\help.jpg
C:\Windows\WinSxS\amd64_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15840.3_none_32fee21fba3c2fcd\help.jpg
C:\Windows\Microsoft.NET\Framework\v4.0.30319\ASP.NETWebAdminFiles\Images\help.jpg
C:\Windows\WinSxS\x86_netfx4-aspnet_webadmin_images_b03f5f7f11d50a3a_4.0.15840.3_none_7aac18f6ceb858d3\help.jpg
C:\Windows\Microsoft.NET\Framework\v4.0.30319\ASP.NETWebAdminFiles\Images\help.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-userexperience-desktop_31bf3856ad364e35_10.0.19041.6033_none_fb89e3cb7e6ac46c\CBS\DesktopSpotlight\Assets\Images\image_0.jpg
C:\Windows\SystemApps\MicrosoftWindows.Client.CBS_cw5n1h2txyewy\DesktopSpotlight\Assets\Images\image_0.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-userexperience-desktop_31bf3856ad364e35_10.0.19041.6033_none_fb89e3cb7e6ac46c\n\CBS\DesktopSpotlight\Assets\Images\image_0.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-userexperience-desktop_31bf3856ad364e35_10.0.19041.6033_none_fb89e3cb7e6ac46c\n\CBS\DesktopSpotlight\Assets\Images\image_1.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-userexperience-desktop_31bf3856ad364e35_10.0.19041.6033_none_fb89e3cb7e6ac46c\CBS\DesktopSpotlight\Assets\Images\image_1.jpg
C:\Windows\SystemApps\MicrosoftWindows.Client.CBS_cw5n1h2txyewy\DesktopSpotlight\Assets\Images\image_1.jpg
C:\Windows\SystemApps\MicrosoftWindows.Client.CBS_cw5n1h2txyewy\DesktopSpotlight\Assets\Images\image_2.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-userexperience-desktop_31bf3856ad364e35_10.0.19041.6033_none_fb89e3cb7e6ac46c\n\CBS\DesktopSpotlight\Assets\Images\image_2.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-userexperience-desktop_31bf3856ad364e35_10.0.19041.6033_none_fb89e3cb7e6ac46c\CBS\DesktopSpotlight\Assets\Images\image_2.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-userexperience-desktop_31bf3856ad364e35_10.0.19041.6033_none_fb89e3cb7e6ac46c\CBS\DesktopSpotlight\Assets\Images\image_3.jpg
C:\Windows\SystemApps\MicrosoftWindows.Client.CBS_cw5n1h2txyewy\DesktopSpotlight\Assets\Images\image_3.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-userexperience-desktop_31bf3856ad364e35_10.0.19041.6033_none_fb89e3cb7e6ac46c\n\CBS\DesktopSpotlight\Assets\Images\image_3.jpg
C:\Windows\Web\Wallpaper\Windows\img0.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-s..l-wallpaper-windows_31bf3856ad364e35_10.0.19041.1_none_910333b84fcf455a\img0.jpg
C:\Windows\Web\4K\Wallpaper\Windows\img0_1024x768.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-s..l-wallpaper-windows_31bf3856ad364e35_10.0.19041.1_none_910333b84fcf455a\img0_1024x768.jpg
C:\Windows\WinSxS\amd64_microsoft-windows-s..l-wallpaper-windows_31bf3856ad364e35_10.0.19041.1_none_910333b84fcf455a\img0_1200x1920.jpg
C:\Windows\Web\4K\Wallpaper\Windows\img0_1200x1920.jpg
```

## Задание 5:

Вывести на экран количество процессов, а в файл записать их данные.

```
PS C:\OCCT\Lab3> Get-Process | Tee-Object -FilePath 5.txt | Out-Null
PS C:\OCCT\Lab3> (Get-Process).Count
177
```

| Handles | NPM(K) | PM(K)  | WS(K)  | CPU(s) | Id    | SI | ProcessName          |
|---------|--------|--------|--------|--------|-------|----|----------------------|
| -----   | -----  | -----  | -----  | -----  | --    | -- | -----                |
| 161     | 9      | 8552   | 7740   | 163,72 | 4340  | 0  | AggregatorHost       |
| 316     | 14     | 22956  | 38452  | 0,47   | 2408  | 23 | ai                   |
| 129     | 8      | 2068   | 976    | 0,23   | 1684  | 0  | amdfendrsr           |
| 329     | 20     | 8892   | 5544   | 0,20   | 9012  | 23 | ApplicationFrameHost |
| 195     | 12     | 7200   | 13028  | 18,50  | 12520 | 0  | audiodg              |
| 289     | 21     | 27284  | 16272  | 0,52   | 1652  | 23 | chrome               |
| 324     | 24     | 70032  | 55460  | 32,19  | 3264  | 23 | chrome               |
| 558     | 24     | 65352  | 10116  | 0,77   | 3576  | 23 | chrome               |
| 239     | 10     | 6880   | 3208   | 0,03   | 4292  | 23 | chrome               |
| 277     | 20     | 18308  | 19436  | 0,42   | 6192  | 23 | chrome               |
| 231     | 18     | 13896  | 29904  | 0,19   | 7096  | 23 | chrome               |
| 1806    | 67     | 97212  | 140004 | 147,59 | 9120  | 23 | chrome               |
| 311     | 22     | 40472  | 73544  | 2,47   | 9296  | 23 | chrome               |
| 444     | 32     | 25920  | 35376  | 22,28  | 10500 | 23 | chrome               |
| 496     | 34     | 136212 | 136140 | 20,20  | 10968 | 23 | chrome               |
| 470     | 30     | 130944 | 162560 | 175,66 | 15932 | 23 | chrome               |
| 228     | 14     | 10024  | 8876   | 1,34   | 16616 | 23 | chrome               |
| 597     | 40     | 267700 | 113540 | 140,64 | 18176 | 23 | chrome               |
| 303     | 17     | 12952  | 5932   | 2,02   | 19260 | 23 | chrome               |

## Задание 6:

Список процессов, отфильтрованный по приоритету и сортированный по именам.

```
PS C:\OCCT\Lab3> Get-Process | Where-Object {$_.BasePriority -gt 7} | Sort-Object Name | Select-Object Name, BasePriority, Company | Out-File 6.txt
```

| Name                     | BasePriority | Company                      |
|--------------------------|--------------|------------------------------|
| -----                    | -----        | -----                        |
| AggregatorHost           | 8            |                              |
| ai                       | 8            | Microsoft Corporation        |
| amdfendrsr               | 8            | Advanced Micro Devices, Inc. |
| ApplicationFrameHost     | 8            | Microsoft Corporation        |
| audiodg                  | 8            | Microsoft Corporation        |
| chrome                   | 8            | Google LLC                   |
| chrome                   | 8            | Google LLC                   |
| chrome                   | 8            | Google LLC                   |
| chrome                   | 10           | Google LLC                   |
| chrome                   | 8            | Google LLC                   |
| chrome                   | 8            | Google LLC                   |
| chrome                   | 8            | Google LLC                   |
| chrome                   | 8            | Google LLC                   |
| CompPkgSrv               | 8            | Microsoft Corporation        |
| conhost                  | 8            | Microsoft Corporation        |
| csrss                    | 13           |                              |
| csrss                    | 13           |                              |
| ctfmon                   | 13           | Microsoft Corporation        |
| dllhost                  | 8            | Microsoft Corporation        |
| dllhost                  | 8            | Microsoft Corporation        |
| dllhost                  | 8            | Microsoft Corporation        |
| dwm                      | 13           | Microsoft Corporation        |
| explorer                 | 8            | Microsoft Corporation        |
| fontdrvhost              | 8            | Microsoft Corporation        |
| fontdrvhost              | 8            | Microsoft Corporation        |
| goodbyedpi               | 8            |                              |
| HPPrintScanDoctorService | 8            | HP Inc.                      |
| lsass                    | 9            | Microsoft Corporation        |

## Задание 7:

Создание HTML файла с сортировкой файлов из пятой таблицы.

```
PS C:\OCCT\Lab3> Get-ChildItem C:\Windows -File | Where-Object {$_.Length -gt 10000} |  
Sort-Object Length | Select-Object Name, Length | ConvertTo-Html | Out-File 7.html
```

| Name             | Length  |
|------------------|---------|
| Info.xml         | 10772   |
| unins000.dat     | 10830   |
| write.exe        | 11264   |
| winhlp32.exe     | 11776   |
| hh.exe           | 18432   |
| unins001.dat     | 21735   |
| Professional.xml | 30831   |
| DirectX.log      | 35934   |
| mib.bin          | 43131   |
| fidelity.exe     | 45568   |
| bootstat.dat     | 67584   |
| twain_32.dll     | 76800   |
| bfsvc.exe        | 93696   |
| PFR0.log         | 129440  |
| Windows.exe      | 140800  |
| splwow64.exe     | 164352  |
| notepad.exe      | 200704  |
| NSudo.exe        | 252928  |
| WMSysPr9.prx     | 316640  |
| regedit.exe      | 370176  |
| HelpPane.exe     | 1065984 |
| unins001.exe     | 1199175 |
| unins000.exe     | 1207319 |
| explorer.exe     | 6087496 |

## Задание 8:

Подсчитать сумму размера всех графических файлов каталога Windows в байтах.

```
PS C:\OCCT\Lab3> Get-ChildItem C:\Windows -Recurse -Include *.bmp,  
*.jpg | Measure-Object -Property Length -Sum | Select-Object Sum_
```

```
Sum  
---  
50921040
```

## Задание 9:

Вывести сведения о ЦП компьютера. Команда Get-ComputerInfo выведет вообще всю информацию.

```
WindowsBuildLabEx      : 19041.1.amd64fre.vb_release.191206-1406
WindowsCurrentVersion  : 6.3
WindowsEditionId       : Professional
WindowsInstallationType : Client
WindowsInstallDateFromRegistry : 18.07.2025 6:44:35
WindowsProductId       : 00330-50468-74635-AAOEM
WindowsProductName     : Windows 10 Pro
WindowsRegisteredOrganization :
WindowsRegisteredOwner : Пользователь Windows
WindowsSystemRoot      : C:\WINDOWS
WindowsVersion         : 2009
BiosCharacteristics     : {7, 11, 12, 15...}
BiosBIOSVersion         : {LENOVO - 11b0, LENOVO BIOS Rev:M0LKT27A 0.0}
BiosBuildNumber         :
BiosCaption             : LENOVO BIOS Rev:M0LKT27A 0.0
BiosCodeSet             :
BiosCurrentLanguage     : en|US|iso8859-1
BiosDescription         : LENOVO BIOS Rev:M0LKT27A 0.0
BiosEmbeddedControllerMajorVersion : 255
BiosEmbeddedControllerMinorVersion : 255
BiosFirmwareType        : Bios
BiosIdentificationCode  :
BiosInstallableLanguages : 3
BiosInstallDate         :
BiosLanguageEdition    :
BiosListOfLanguages     : {en|US|iso8859-1, fr|FR|iso8859-1, zh|CN|unicode}
BiosManufacturer        : LENOVO
BiosName                : LENOVO BIOS Rev:M0LKT27A 0.0
BiosOtherTargetOS       :
BiosPrimaryBIOS         : True
BiosReleaseDate         : 13.01.2020 3:00:00
BiosSerialNumber        : PC0L15U6
BiosSMBIOSBIOSVersion   : M0LKT27AUS
BiosSMBIOSMajorVersion  : 2
BiosSMBIOSMinorVersion  : 8
```

Если нужно только насчёт процессора, то

```
PS C:\OCCT\Lab3> Get-WmiObject Win32_Processor | Select-Object Name, MaxClockSpeed, NumberOfCores, NumberOfLogicalProcessors
Name                                     MaxClockSpeed NumberOfCores NumberOfLogicalProcessors
----
AMD PRO A8-8650B R7, 10 Compute Cores 4C+6G 3200                2                4
```

## Задание 10:

Измерение выполнения команд dir и ps. null используется чтобы подавить вывод команд.

```
PS C:\OCCT\Lab3> $times = @()
>> 1..10 | ForEach-Object {
>>     $start = Get-Date
>>     dir > $null
>>     ps > $null
>>     $end = Get-Date
>>     $times += ($end - $start).TotalMilliseconds
>> }
PS C:\OCCT\Lab3> "Max: $($($times | Measure-Object -Maximum).Maximum) ms"
>> "Min: $($($times | Measure-Object -Minimum).Minimum) ms"
>> "Avg: $($($times | Measure-Object -Average).Average) ms"
Max: 26.4322 ms
Min: 5.8941 ms
Avg: 10.24005 ms
```

## Задание 11:

Я выбрал 4-ый вариант. Вывод самого большого файла в каталоге

```
PS C:\OCCT\Lab3> Get-ChildItem | Sort-Object Length -Descending | Select-Object -First 1
```

Каталог: C:\OCCT\Lab3

| Mode   |            | LastWriteTime | Length | Name  |
|--------|------------|---------------|--------|-------|
| ----   |            | -----         | -----  | ----  |
| -a---- | 15.10.2025 | 15:09         | 49608  | 5.txt |

и 3-х самых маленьких.

```
PS C:\OCCT\Lab3> Get-ChildItem | Sort-Object Length | Select-Object -First 3
```

Каталог: C:\OCCT\Lab3

| Mode   |            | LastWriteTime | Length | Name   |
|--------|------------|---------------|--------|--------|
| ----   |            | -----         | -----  | ----   |
| -a---- | 15.10.2025 | 15:27         | 2816   | 7.html |
| -a---- | 15.10.2025 | 15:01         | 22512  | 4.txt  |
| -a---- | 15.10.2025 | 15:16         | 22862  | 6.txt  |