MODERN OPERATING SYSTEMS

LECTURE 4

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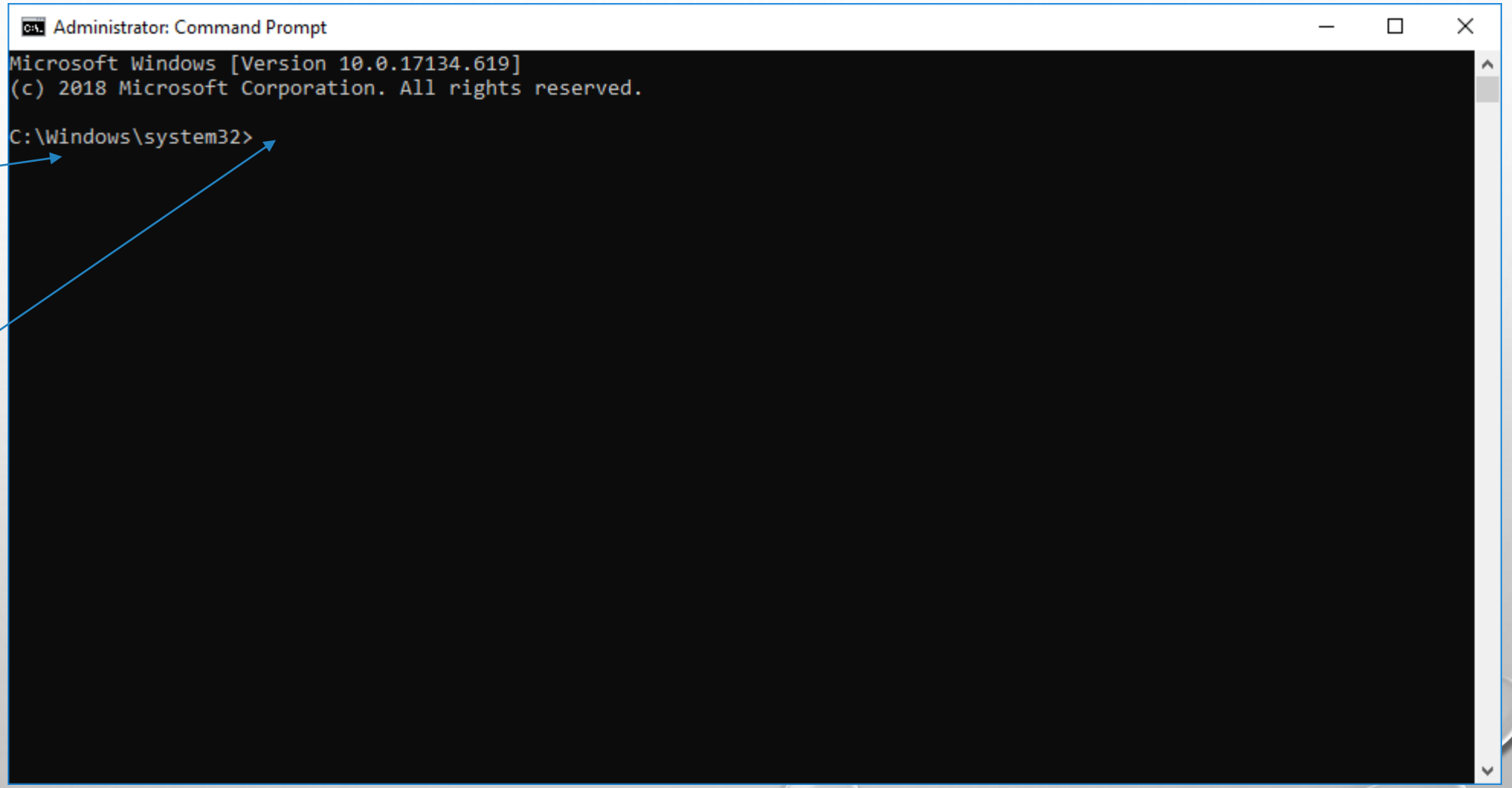
AGENDA

- COMMANDS
  - ✓ COMMANDS WITH DIRECTORIES
  - ✓ COMMANDS WITH FILES
  - ✓ OTHER USEFUL COMMANDS
- BATCH FILES
  - ✓ DEFINITION AND STRUCTURE
  - ✓ SPECIFIC COMMANDS
  - ✓ PARAMETERS
  - ✓ VARIABLES

COMMAND PROMPT WINDOW



Current directory as a prompt (invitation to input a command)

It is necessary to type a command here

COMMAND GENERAL SYNTAX

COMMAND_NAME PARAMETER1 PARAMETER2 … /KEY1 /KEY2 …

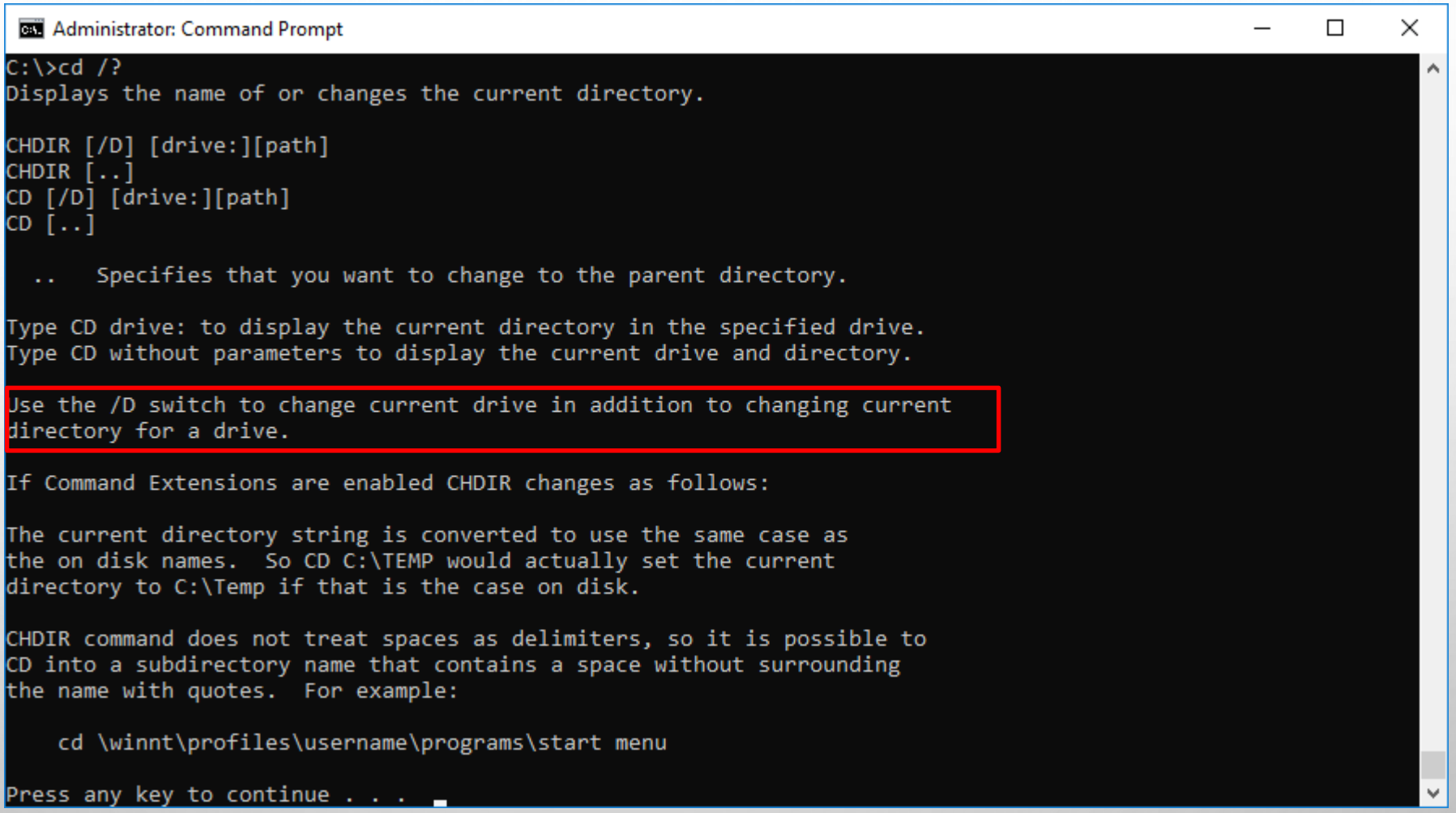
WHERE:

- COMMAND_NAME – DETERMINE THE ACTION TO BE DONE (COPY, TYPE, MOVE, DELETE, AND ETC.)
- PARAMETER – THE OBJECT TO BE PROCESSED
- KEY – DETAILS HOW IT WILL BE DONE

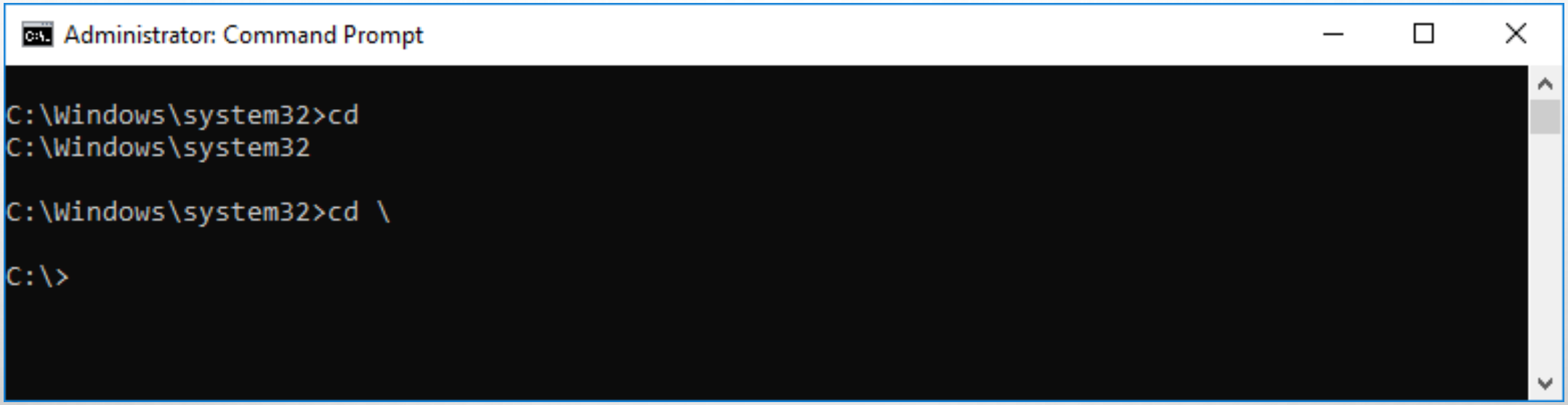
WORKING WITH DIRECTORIES

DIRECTORY ==FOLDER

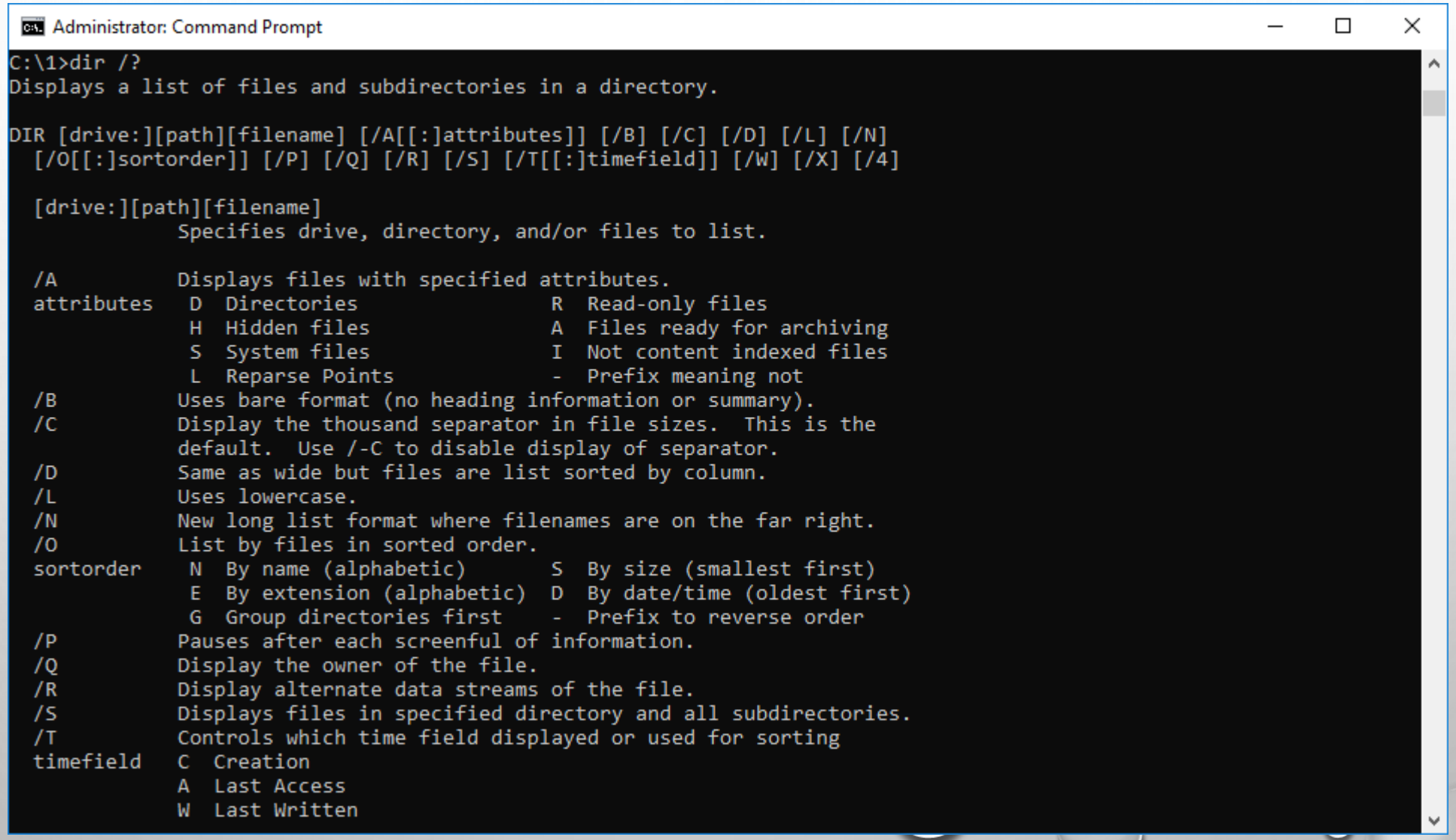
TO CHANGE CURRENT DIRECTORY



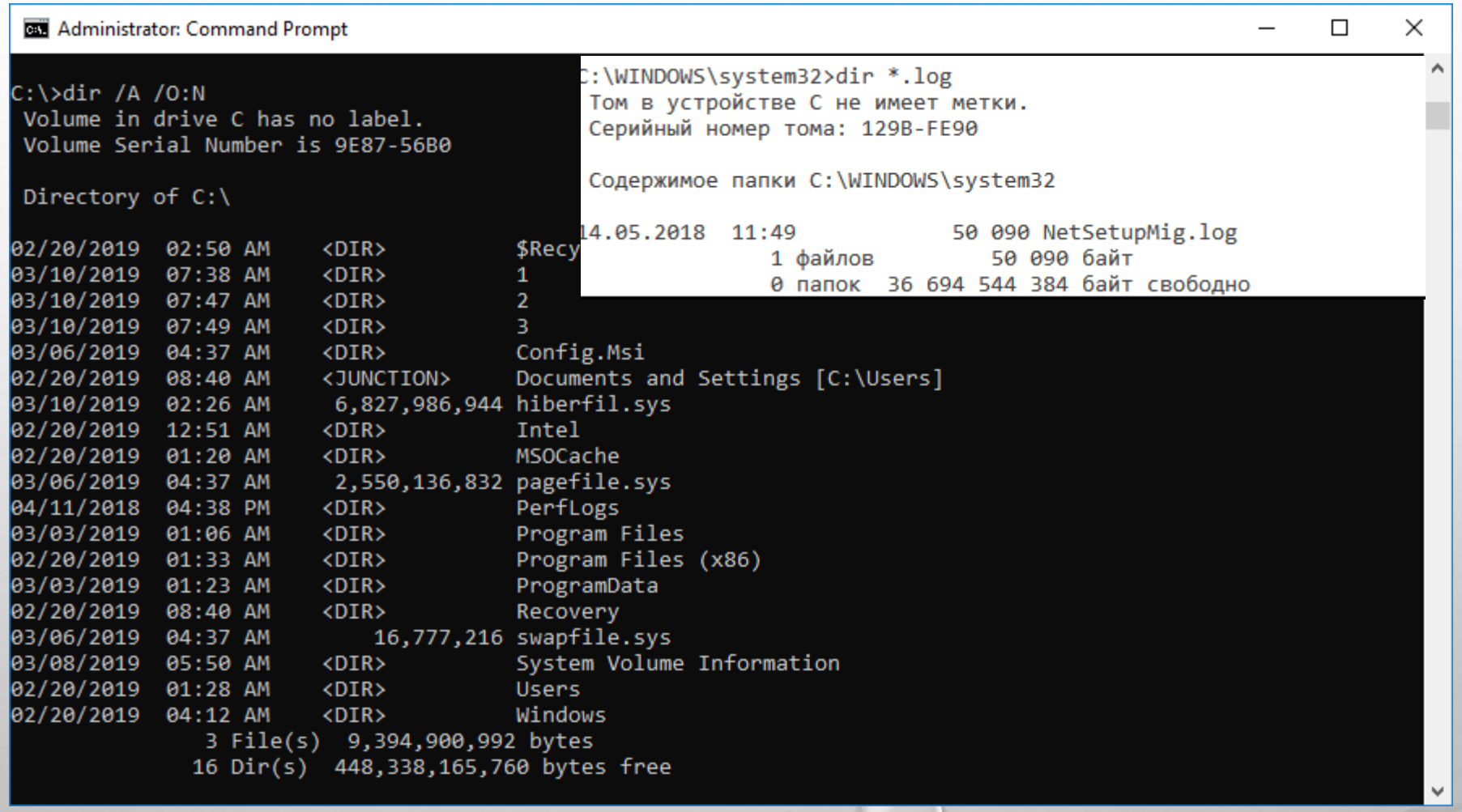
EXAMPLE 1


Administrator: Command Prompt
C:\Windows\system32>cd
C:\Windows\system32
C:\Windows\system32>cd \
C:\>

COMMAND “DIR”


Administrator: Command Prompt
C:\1>dir /?
Displays a list of files and subdirectories in a directory.
DIR [drive:][path][filename] [/A[[:]attributes]] [/B] [/C] [/D] [/L] [/N]
[/O[[:]sortorder]] [/P] [/Q] [/R] [/S] [/T[[:]timefield]] [/W] [/X] [/4]
[drive:][path][filename]
Specifies drive, directory, and/or files to list.
/A Displays files with specified attributes.
attributes D Directories R Read-only files
H Hidden files A Files ready for archiving
S System files I Not content indexed files
L Reparse Points - Prefix meaning not
/B Uses bare format (no heading information or summary).
/C Display the thousand separator in file sizes. This is the
default. Use /-C to disable display of separator.
/D Same as wide but files are list sorted by column.
/L Uses lowercase.
/N New long list format where filenames are on the far right.
/O List by files in sorted order.
sortorder N By name (alphabetic) S By size (smallest first)
E By extension (alphabetic) D By date/time (oldest first)
G Group directories first - Prefix to reverse order
/P Pauses after each screenful of information.
/Q Display the owner of the file.
/R Display alternate data streams of the file.
/S Displays files in specified directory and all subdirectories.
/T Controls which time field displayed or used for sorting
timefield C Creation
A Last Access
W Last Written

EXAMPLE 2

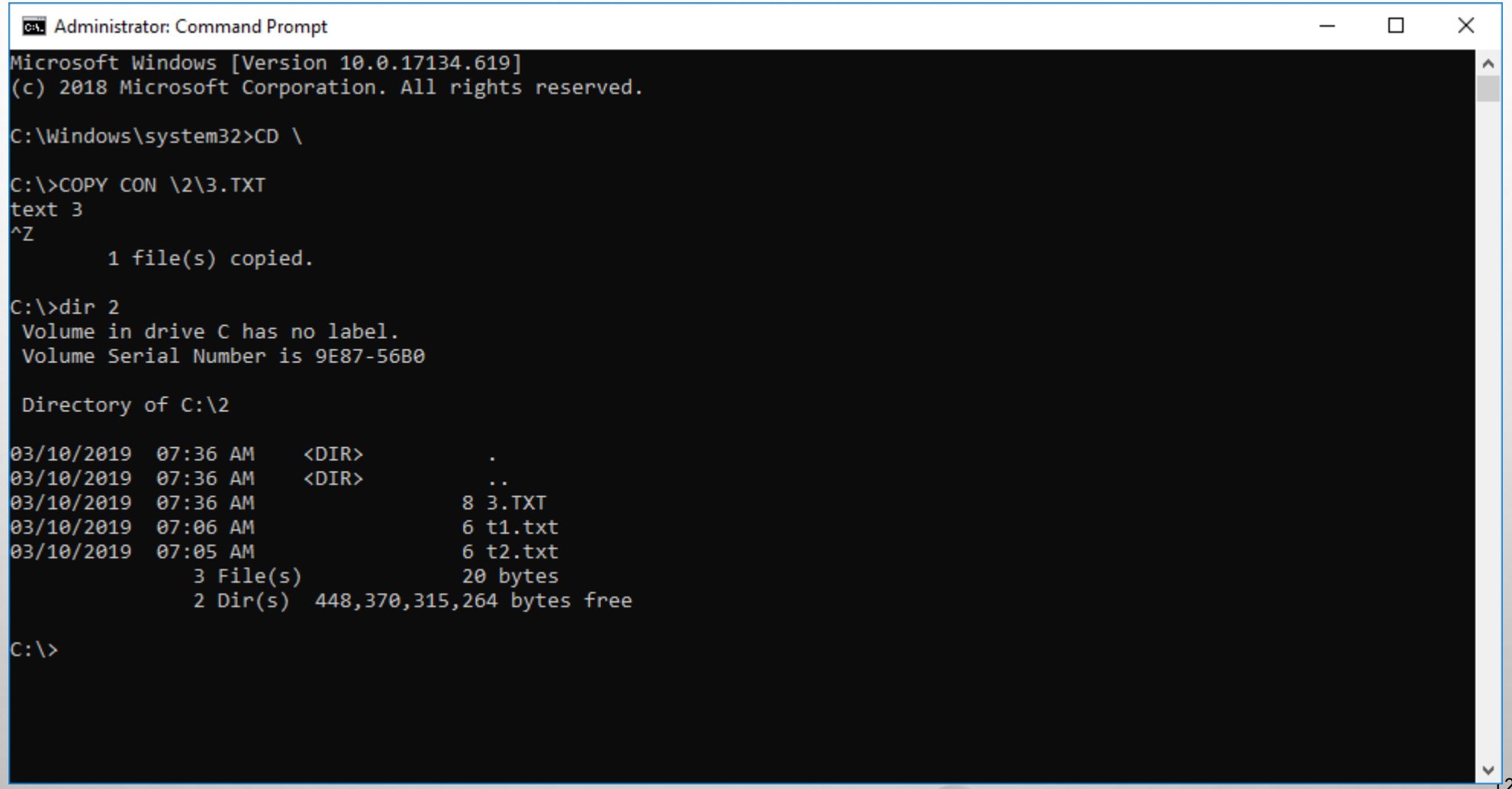

Administrator: Command Prompt
C:\>dir /A /O:N
Volume in drive C has no label.
Volume Serial Number is 9E87-56B0
Directory of C:\
02/20/2019 02:50 AM <DIR> $Recy
03/10/2019 07:38 AM <DIR> 1
03/10/2019 07:47 AM <DIR> 2
03/10/2019 07:49 AM <DIR> 3
03/06/2019 04:37 AM <DIR> Config.Msi
02/20/2019 08:40 AM <JUNCTION> Documents and Settings [C:\Users]
03/10/2019 02:26 AM 6,827,986,944 hiberfil.sys
02/20/2019 12:51 AM <DIR> Intel
02/20/2019 01:20 AM <DIR> MSOCache
03/06/2019 04:37 AM 2,550,136,832 pagefile.sys
04/11/2018 04:38 PM <DIR> PerfLogs
03/03/2019 01:06 AM <DIR> Program Files
02/20/2019 01:33 AM <DIR> Program Files (x86)
03/03/2019 01:23 AM <DIR> ProgramData
02/20/2019 08:40 AM <DIR> Recovery
03/06/2019 04:37 AM 16,777,216 swapfile.sys
03/08/2019 05:50 AM <DIR> System Volume Information
02/20/2019 01:28 AM <DIR> Users
02/20/2019 04:12 AM <DIR> Windows
3 File(s) 9,394,900,992 bytes
16 Dir(s) 448,338,165,760 bytes free
C:\WINDOWS\system32>dir *.log
Том в устройстве C не имеет метки.
Серийный номер тома: 129B-FE90
Содержимое папки C:\WINDOWS\system32
14.05.2018 11:49 50 090 NetSetupMig.log
1 файлов 50 090 байт
0 папок 36 694 544 384 байт свободно

OTHER DIRECTORY COMMANDS

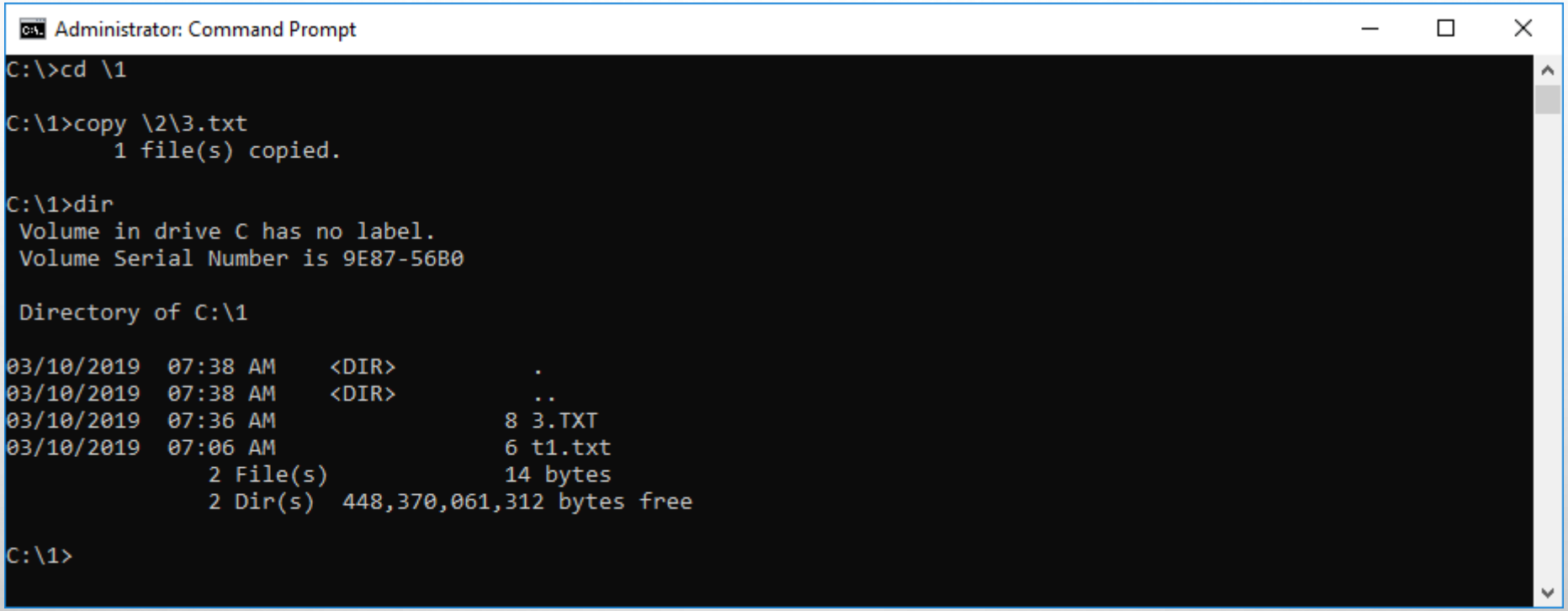
- TREE - GRAPHICALLY DISPLAYS THE DIRECTORY STRUCTURE OF A DRIVE OR PATH
- XCOPY - COPIES FILES AND DIRECTORY TREES
- MKDIR (MD) – CREATE NEW DIRECTORY
- RMDIR – DELETE DIRECTORY

WORKING WITH FILES

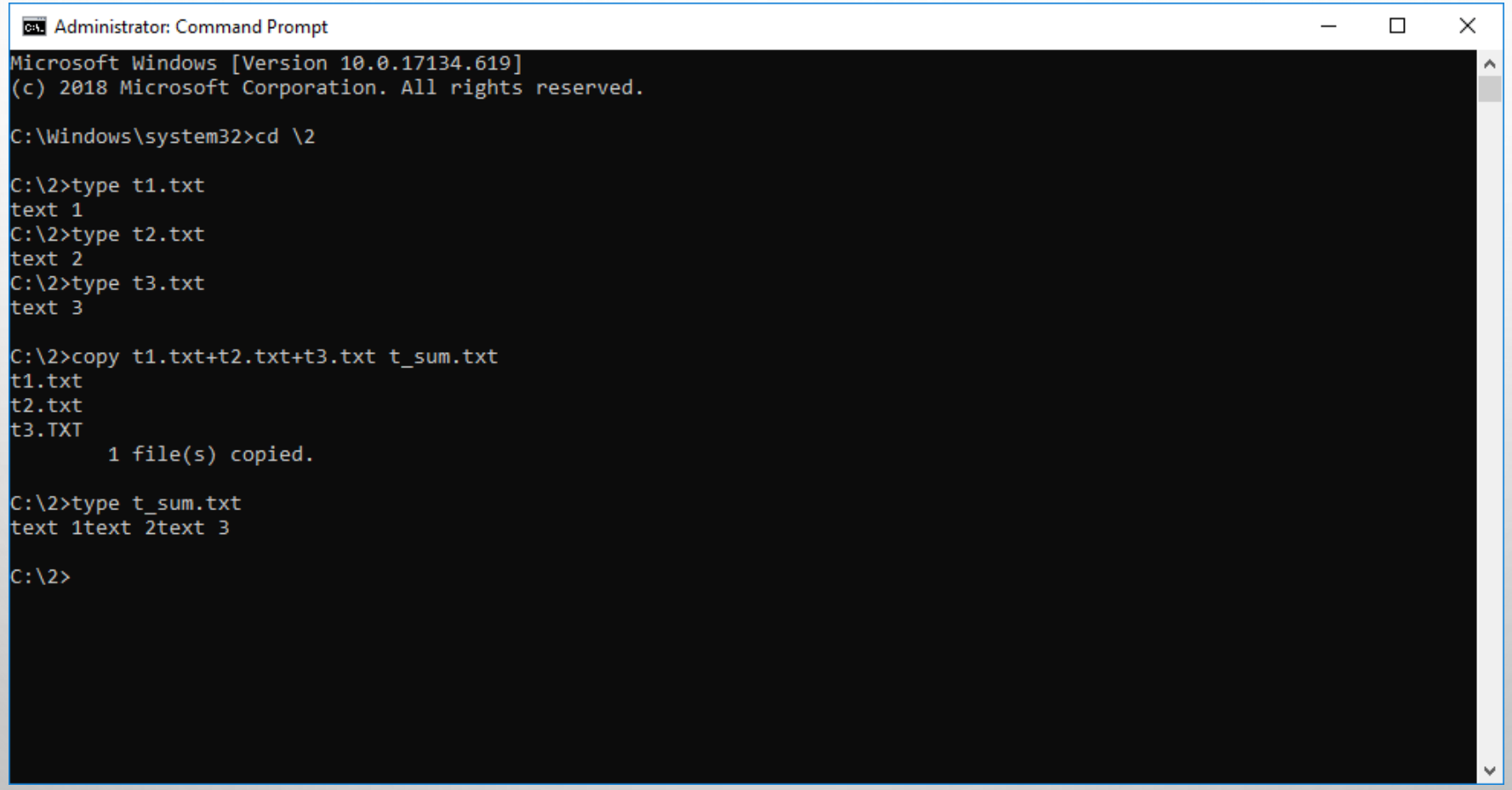
EXAMPLE 2


Administrator: Command Prompt
Microsoft Windows [Version 10.0.17134.619]
(c) 2018 Microsoft Corporation. All rights reserved.
C:\Windows\system32>CD \
C:\>COPY CON \2\3.TXT
text 3
^Z
1 file(s) copied.
C:\>dir 2
Volume in drive C has no label.
Volume Serial Number is 9E87-56B0
Directory of C:\2
03/10/2019 07:36 AM <DIR> .
03/10/2019 07:36 AM <DIR> ..
03/10/2019 07:36 AM 8 3.TXT
03/10/2019 07:06 AM 6 t1.txt
03/10/2019 07:05 AM 6 t2.txt
3 File(s) 20 bytes
2 Dir(s) 448,370,315,264 bytes free
C:\>

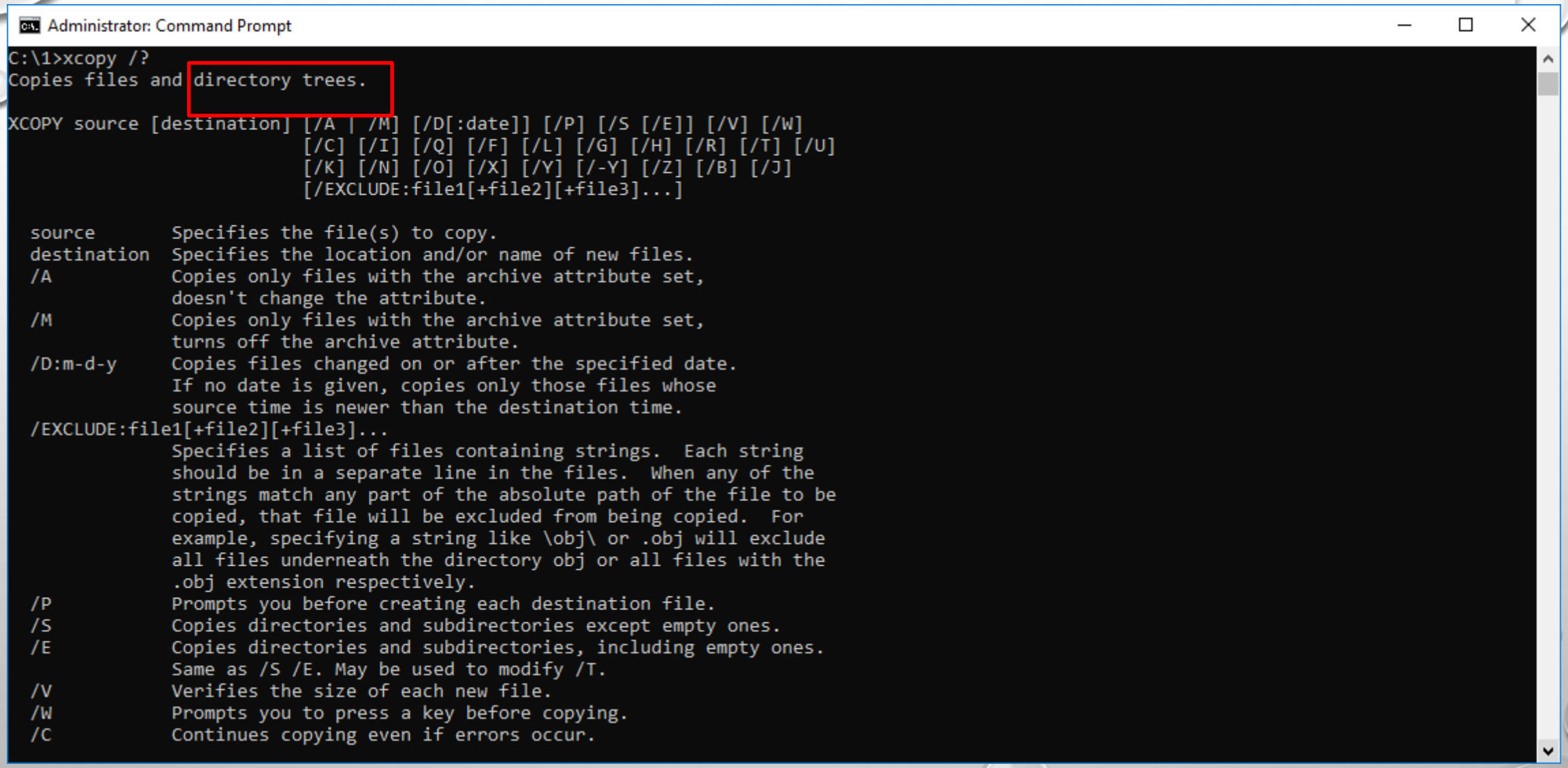
EXAMPLE 3


Administrator: Command Prompt
C:\>cd \1
C:\1>copy \2\3.txt
1 file(s) copied.
C:\1>dir
Volume in drive C has no label.
Volume Serial Number is 9E87-56B0
Directory of C:\1
03/10/2019 07:38 AM <DIR> .
03/10/2019 07:38 AM <DIR> ..
03/10/2019 07:36 AM 8 3.TXT
03/10/2019 07:06 AM 6 t1.txt
2 File(s) 14 bytes
2 Dir(s) 448,370,061,312 bytes free
C:\1>

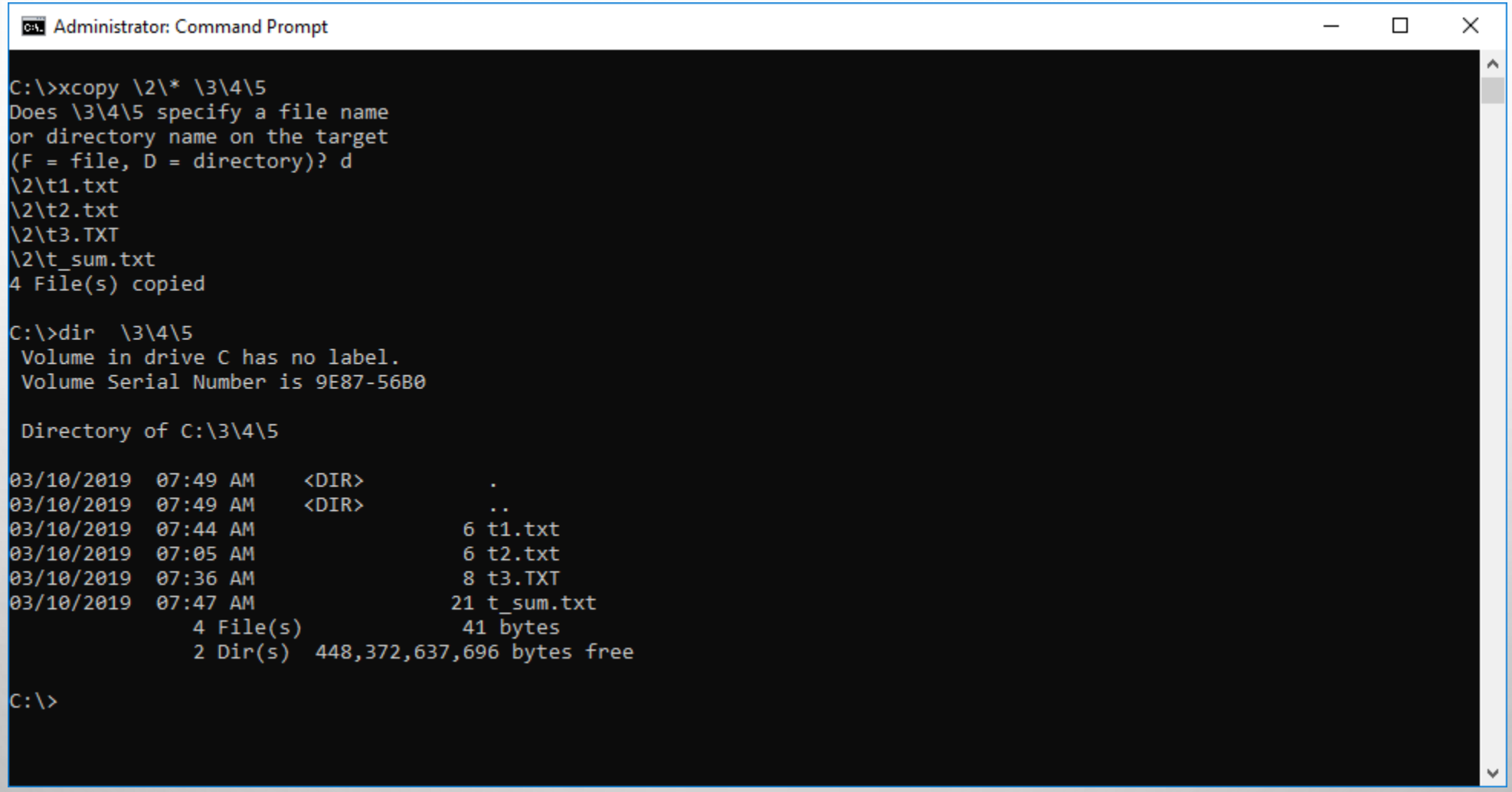
EXAMPLE 4


Administrator: Command Prompt
Microsoft Windows [Version 10.0.17134.619]
(c) 2018 Microsoft Corporation. All rights reserved.
C:\Windows\system32>cd \2
C:\2>type t1.txt
text 1
C:\2>type t2.txt
text 2
C:\2>type t3.txt
text 3
C:\2>copy t1.txt+t2.txt+t3.txt t_sum.txt
t1.txt
t2.txt
t3.TXT
1 file(s) copied.
C:\2>type t_sum.txt
text 1text 2text 3
C:\2>

XCOPY


Administrator: Command Prompt
C:\1>xcopy /?
Copies files and directory trees.
XCOPY source [destination] [/A | /M] [/D[:date]] [/P] [/S [/E]] [/V] [/W]
[/C] [/I] [/Q] [/F] [/L] [/G] [/H] [/R] [/T] [/U]
[/K] [/N] [/O] [/X] [/Y] [/-Y] [/Z] [/B] [/J]
[/EXCLUDE:file1[+file2][+file3]...]
source Specifies the file(s) to copy.
destination Specifies the location and/or name of new files.
/A Copies only files with the archive attribute set,
doesn't change the attribute.
/M Copies only files with the archive attribute set,
turns off the archive attribute.
/D:m-d-y Copies files changed on or after the specified date.
If no date is given, copies only those files whose
source time is newer than the destination time.
/EXCLUDE:file1[+file2][+file3]...
Specifies a list of files containing strings. Each string
should be in a separate line in the files. When any of the
strings match any part of the absolute path of the file to be
copied, that file will be excluded from being copied. For
example, specifying a string like \obj\ or .obj will exclude
all files underneath the directory obj or all files with the
.obj extension respectively.
/P Prompts you before creating each destination file.
/S Copies directories and subdirectories except empty ones.
/E Copies directories and subdirectories, including empty ones.
Same as /S /E. May be used to modify /T.
/V Verifies the size of each new file.
/W Prompts you to press a key before copying.
/C Continues copying even if errors occur.

XCOPY

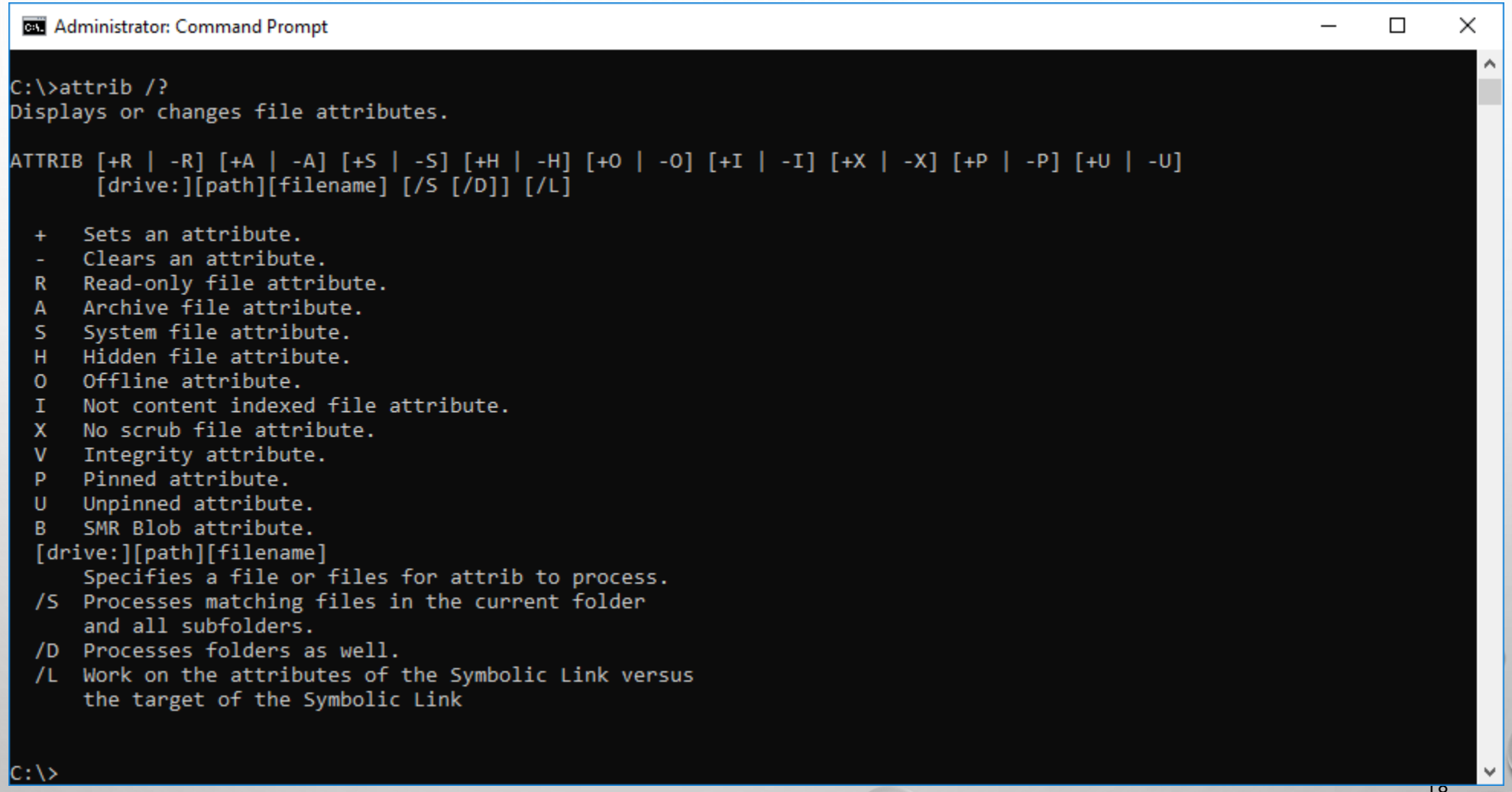

Administrator: Command Prompt
C:\>xcopy \2* \3\4\5
Does \3\4\5 specify a file name
or directory name on the target
(F = file, D = directory)? d
\2\t1.txt
\2\t2.txt
\2\t3.TXT
\2\t_sum.txt
4 File(s) copied
C:\>dir \3\4\5
Volume in drive C has no label.
Volume Serial Number is 9E87-56B0
Directory of C:\3\4\5
03/10/2019 07:49 AM <DIR> .
03/10/2019 07:49 AM <DIR> ..
03/10/2019 07:44 AM 6 t1.txt
03/10/2019 07:05 AM 6 t2.txt
03/10/2019 07:36 AM 8 t3.TXT
03/10/2019 07:47 AM 21 t_sum.txt
4 File(s) 41 bytes
2 Dir(s) 448,372,637,696 bytes free
C:\>

TO SHOW AND CHANGE FILE ATTRIBUTES

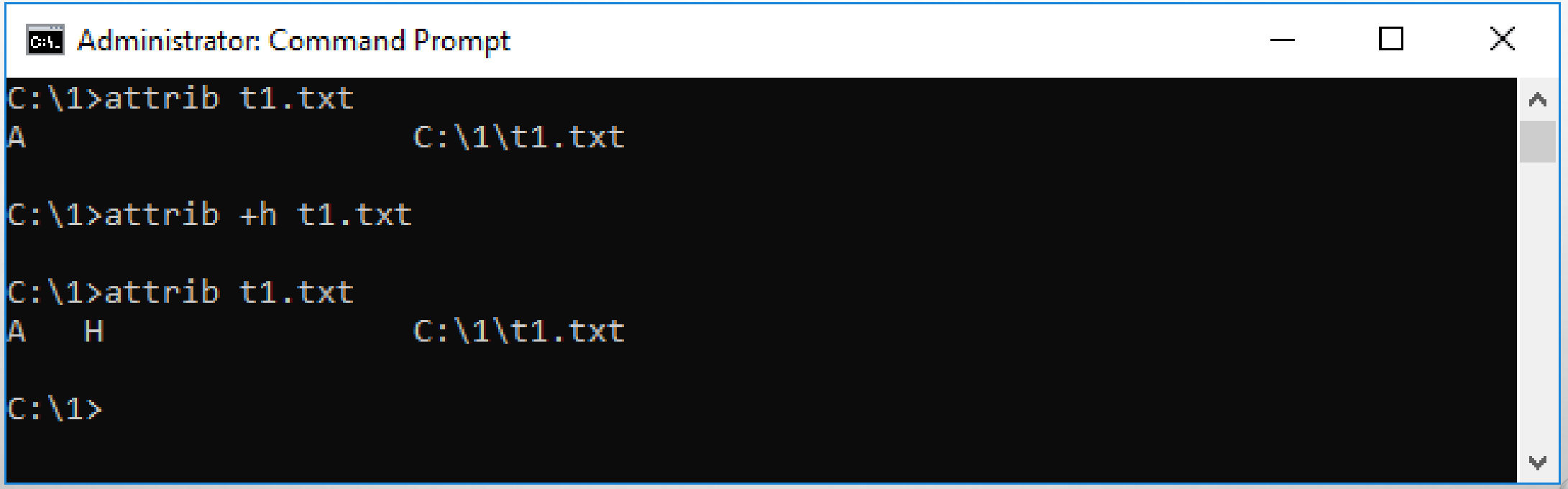
THERE ARE 4 STANDARD FILE ATTRIBUTES:

- H – “HIDDEN” (IT IS NOT INCLUDED IN AN ORDINARY DIRECTORY LISTING)
- R - “READ ONLY” (COULDN’T BE CHANGED OR DELETED)
- A – “ARCHIVE” (HAS TO BE ARCHIVED BY BUILT-IN ARCHIVING PROGRAM)
- S –”SYSTEM” (A FILE OR DIRECTORY THAT THE OPERATING SYSTEM USES A PART OF, OR USES EXCLUSIVELY)

“ATTRIB” COMMAND



“ATTRIB” COMMAND

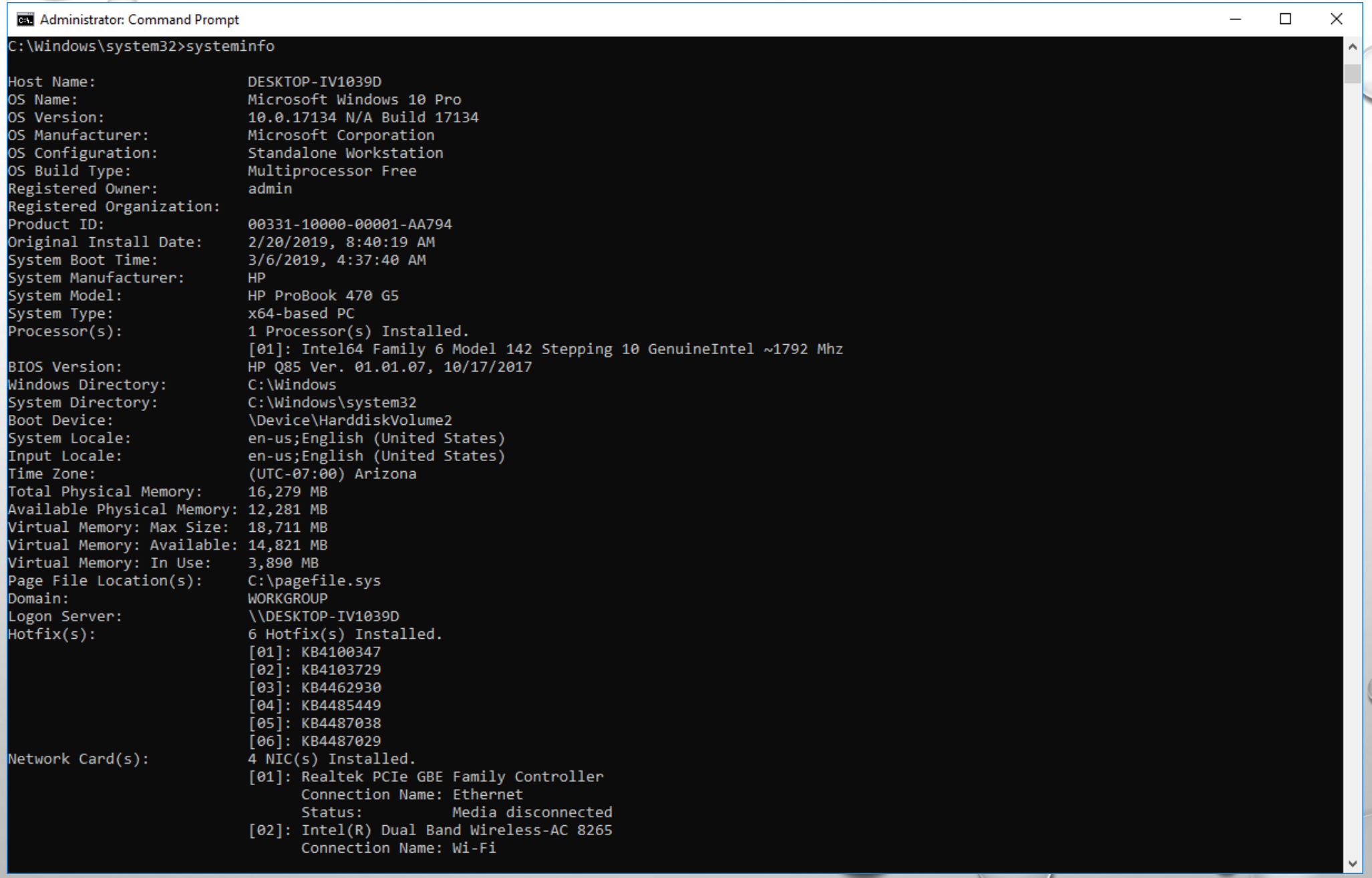


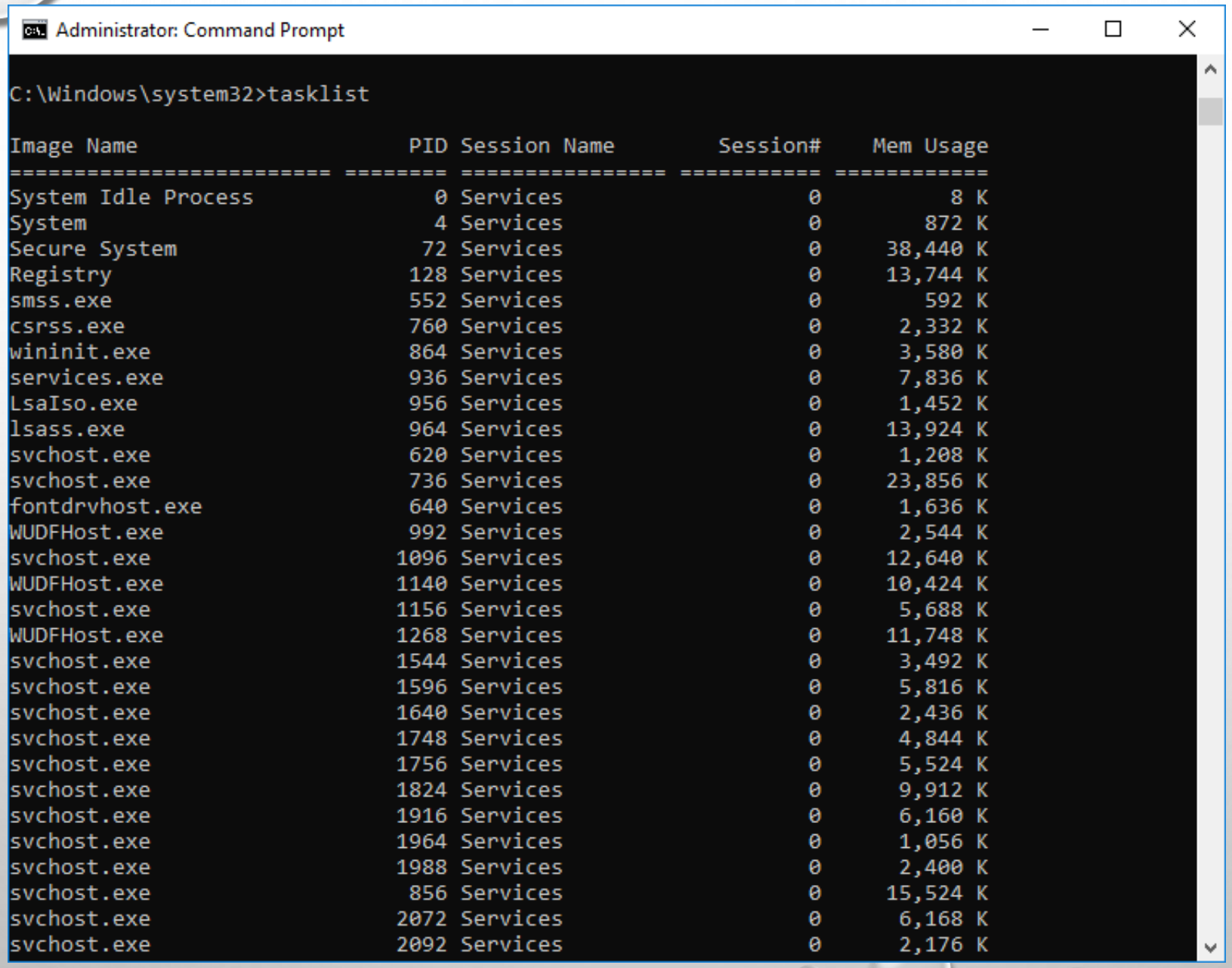
OTHER FILE COMMANDS

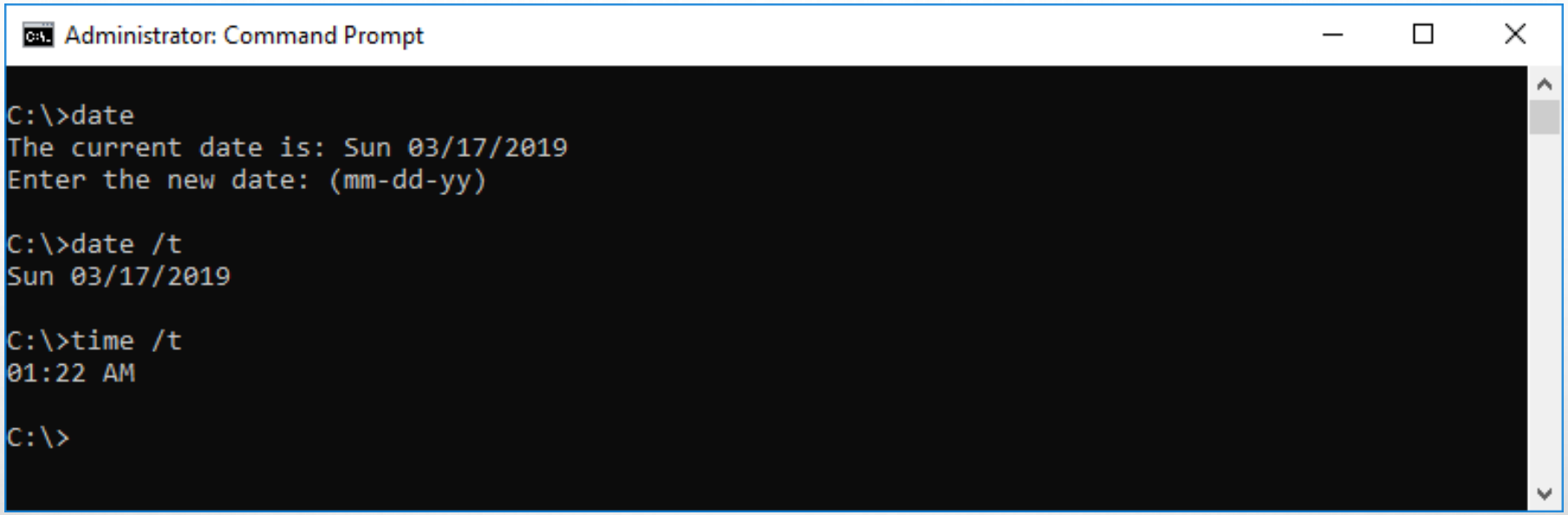
- DEL – DELETES FILE OR FILES
- FC – COMPARES TWO FILES OR SETS OF FILES, AND DISPLAYS THE DIFFERENCES BETWEEN THEM
- FIND – SEARCHES FOR A TEXT STRING IN A FILE OR FILES
- MOVE – MOVES FILE(S) FROM ONE DIRECTORY INTO ANOTHER (REGISTER FILE IN ANOTHER DIRECTORY)
- MORE - DISPLAYS OUTPUT ONE SCREEN AT A TIME
- RENAME - RENAMES A FILE OR FILES
- TYPE –DISPLAYS THE CONTENTS OF A TEXT FILE

SOME OTHER USEFUL COMMANDS

- DATE - DISPLAYS OR SETS THE DATE
- ECHO – DISPLAYS MESSAGES, OR TURNS COMMAND ECHOING ON OR OFF
- FOR - RUNS A SPECIFIED COMMAND FOR EACH FILE IN A SET OF FILES (CYCLE)
- PATH - DISPLAYS OR SETS A SEARCH PATH FOR EXECUTABLE FILES.
- PROMPT - CHANGES THE WINDOWS COMMAND PROMPT
- SET - DISPLAYS, SETS, OR REMOVES WINDOWS ENVIRONMENT VARIABLES
- SHUTDOWN - ALLOWS PROPER LOCAL OR REMOTE SHUTDOWN OF MACHINE
- START - STARTS A SEPARATE WINDOW TO RUN A SPECIFIED PROGRAM OR COMMAND
- SYSTEMINFO - DISPLAYS MACHINE SPECIFIC PROPERTIES AND CONFIGURATION
- TASKLIST - DISPLAYS ALL CURRENTLY RUNNING TASKS INCLUDING SERVICES


Administrator: Command Prompt
C:\Windows\system32>systeminfo
Host Name: DESKTOP-IV1039D
OS Name: Microsoft Windows 10 Pro
OS Version: 10.0.17134 N/A Build 17134
OS Manufacturer: Microsoft Corporation
OS Configuration: Standalone Workstation
OS Build Type: Multiprocessor Free
Registered Owner: admin
Registered Organization:
Product ID: 00331-10000-00001-AA794
Original Install Date: 2/20/2019, 8:40:19 AM
System Boot Time: 3/6/2019, 4:37:40 AM
System Manufacturer: HP
System Model: HP ProBook 470 G5
System Type: x64-based PC
Processor(s): 1 Processor(s) Installed.
[01]: Intel64 Family 6 Model 142 Stepping 10 GenuineIntel ~1792 Mhz
BIOS Version: HP Q85 Ver. 01.01.07, 10/17/2017
Windows Directory: C:\Windows
System Directory: C:\Windows\system32
Boot Device: \Device\HarddiskVolume2
System Locale: en-us;English (United States)
Input Locale: en-us;English (United States)
Time Zone: (UTC-07:00) Arizona
Total Physical Memory: 16,279 MB
Available Physical Memory: 12,281 MB
Virtual Memory: Max Size: 18,711 MB
Virtual Memory: Available: 14,821 MB
Virtual Memory: In Use: 3,890 MB
Page File Location(s): C:\pagefile.sys
Domain: WORKGROUP
Logon Server: \\DESKTOP-IV1039D
Hotfix(s): 6 Hotfix(s) Installed.
[01]: KB4100347
[02]: KB4103729
[03]: KB4462930
[04]: KB4485449
[05]: KB4487038
[06]: KB4487029
Network Card(s): 4 NIC(s) Installed.
[01]: Realtek PCIe GBE Family Controller
Connection Name: Ethernet
Status: Media disconnected
[02]: Intel(R) Dual Band Wireless-AC 8265
Connection Name: Wi-Fi


Administrator: Command Prompt
C:\Windows\system32>tasklist
Image Name PID Session Name Session# Mem Usage
System Idle Process 0 Services 0 8 K
System 4 Services 0 872 K
Secure System 72 Services 0 38,440 K
Registry 128 Services 0 13,744 K
smss.exe 552 Services 0 592 K
csrss.exe 760 Services 0 2,332 K
wininit.exe 864 Services 0 3,580 K
services.exe 936 Services 0 7,836 K
LsaIso.exe 956 Services 0 1,452 K
lsass.exe 964 Services 0 13,924 K
svchost.exe 620 Services 0 1,208 K
svchost.exe 736 Services 0 23,856 K
fontdrvhost.exe 640 Services 0 1,636 K
WUDFHost.exe 992 Services 0 2,544 K
svchost.exe 1096 Services 0 12,640 K
WUDFHost.exe 1140 Services 0 10,424 K
svchost.exe 1156 Services 0 5,688 K
WUDFHost.exe 1268 Services 0 11,748 K
svchost.exe 1544 Services 0 3,492 K
svchost.exe 1596 Services 0 5,816 K
svchost.exe 1640 Services 0 2,436 K
svchost.exe 1748 Services 0 4,844 K
svchost.exe 1756 Services 0 5,524 K
svchost.exe 1824 Services 0 9,912 K
svchost.exe 1916 Services 0 6,160 K
svchost.exe 1964 Services 0 1,056 K
svchost.exe 1988 Services 0 2,400 K
svchost.exe 856 Services 0 15,524 K
svchost.exe 2072 Services 0 6,168 K
svchost.exe 2092 Services 0 2,176 K


Administrator: Command Prompt
C:\>date
The current date is: Sun 03/17/2019
Enter the new date: (mm-dd-yy)
C:\>date /t
Sun 03/17/2019
C:\>time /t
01:22 AM
C:\>

TASK

1. CREATE 2 DIRECTORIES IN THE ROOT DIRECTORY WITH NAMES: DIR1 AND DIR2
2. BY MEANS OF INPUT FROM THE KEYBOARD, CREATE A NEW FILE WITH THE NAME OF “VERY USEFUL FILE” IN THE DIR1 DIRECTORY
3. COPY THIS FILE TO THE DIR2 DIRECTORY WITH THE NAME OF “CORRECTED FILE.TXT”. OPEN IT IN A TEXT EDITOR (I.E. NOTEPAD) AND SLIGHTLY CHANGE ITS CONTENT.
4. COMPARE THESE TWO EARLIER CREATED FILES. HOW THEIR DIFFERENCES ARE PRESENTED IN THE WINDOW?
5. SET TO THE “CORRECTED FILE.TXT” THE ATTRIBUTE “READ ONLY”.
6. CHECK WHAT IS THE WHOLE SET OF ATTRIBUTES FOR THIS FILE
7. TRY TO DELETE THIS FILE. IS THERE ANY PROBLEM?
8. DELETE ALL THE OBJECTS (DIR1, DIR2, AND BOTH FILES) HAVING BEEN CREATED FOR THIS TASK
9. DISPLAY THE CURRENT DATE AND CURRENT TIME. WRITE CURRENT DATE AND TIME INTO THE “FILE-DATE.DAT” FILE IN THE ROOT DIRECTORY.
10. MAKE SURE THAT THE “FILE-DATE.DAT” FILE CONTAINS THE NECESSARY DATA