

CST8202 - Windows Desktop Support

Lab 4 - PowerShell

Lab Report

Student Name: Redji Jean Baptiste

Student Number: 041269022

October 4, 2025

Exercise 1

Question: Provide a command that will show all the aliases for the cmdlet "Copy-Item". The result should be at least 3 aliases. This command should consist of 1 cmdlet, 1 parameter and 1 argument.

Answer:

```
Get-Alias -Definition Copy-Item
```

Exercise 2

Question: Create a new alias for the Copy-Item cmdlet called "Dupe". Copy the command you used into your lab report.

Answer:

```
New-Alias -Name Dupe -Value Copy-Item
```

Exercise 3

Question: Re-run the command you used in #1 and copy the output into your lab

report. The output should now be 4 aliases.

Answer:

```
Get-Alias -Definition Copy-Item
```

Output:

CommandType	Name	Version	Source
-----	----	-----	-----
Alias	copy -> Copy-Item		
Alias	cp -> Copy-Item		
Alias	cpi -> Copy-Item		
Alias	Dupe -> Copy-Item		

Exercise 4

Question: Add a new 2 GB disk to your virtual machine. Use a PowerShell command to find the disk number of the newly added VM. Provide the command you used in your lab report.

Answer:

```
Get-Disk
```

Note: The disk number of the new 2GB disk is: 4

Exercise 5

Question: Using PowerShell format this new disk. This volume should be formatted NTFS, have a volume label "PSDisk" and be assigned the letter P. Your command should be 1 cmdlet, 4 parameters and 4 arguments.

Answer:

```
Format-Volume -DriveLetter P -FileSystem NTFS -NewFileSystemLabel "PSDisk"  
-Confirm:$false
```

Exercise 6

Question: Use a PowerShell cmdlet to verify the volume was created correctly; exclude the CDROM drive from the output.

Answer:

```
Get-Volume | Where-Object DriveType -ne CD-ROM
```

Exercise 7

Question: Create a new directory called "Lab4" in your "Documents" directory on your VM.

Answer:

```
New-Item -Path "$env:USERPROFILE\Documents\Lab4" -ItemType Directory
```

Exercise 8

Question: Have PowerShell return its current version. When you have the correct command re-run this command but redirect your output to your personal document's directory into a file called PowerShell.txt.

Answer:

```
$PSVersionTable > "$env:USERPROFILE\Documents\PowerShell.txt"
```

Exercise 9

Question: Move the file that you created in #8 into your Lab4 directory you created in #7. Your command should be 1 cmdlet and 2 arguments. Both arguments should be absolute paths.

Answer:

```
Move-Item "$env:USERPROFILE\Documents\PowerShell.txt" "$env:USERPROFILE\Documents\Lab4"
```

Exercise 10

Question: Write a PowerShell command to report the contents of your Documents directory including the subfolder(s).

Answer:

```
Get-ChildItem -Path "$env:USERPROFILE\Documents" -Recurse
```

Exercise 11

Question: Change your working directory to the documents directory. Copy the PowerShell.txt file from the Lab4 directory to the parent directory of Lab4. Use relative paths for this command. This command should be 1 cmdlet, 2 arguments. Each argument should be a relative path.

Answer:

```
Copy-Item .\Lab4\PowerShell.txt .\PowerShell.txt
```

Exercise 12

Question: Write a command that returns the MAC address for the Ethernet adapter of your VM. Filter the output so that only the name of the adapter and the MAC are shown. When you have the correct command redirect and append the output to the file PowerShell.txt in the Lab4 directory.

Answer:

```
Get-NetAdapter | Select-Object Name, MacAddress >> "$env:USERPROFILE\Documents\Lab4\PowerShell.txt"
```

Exercise 13

Question: Write a PowerShell command pipeline that returns only the IPv4 Address for your ethernet adapter. The final output should contain only the interface name and IPv4 address. When you have the correct command redirect and append the output to the file PowerShell.txt in the Documents directory.

Answer:

```
Get-NetIPAddress -AddressFamily IPv4 | Where-Object {$_.InterfaceAlias -notlike "*Loopback*"} | Select-Object InterfaceAlias, IPv4Address >> "$env:USERPROFILE\Documents\PowerShell.txt"
```

Exercise 14

Question: Compare the two different version of PowerShell.txt that you have created.

Answer:

```
Compare-Object (Get-Content "$env:USERPROFILE\Documents\PowerShell.txt") (Get-Content "$env:USERPROFILE\Documents\Lab4\PowerShell.txt")
```

Output:

InputObject	SideIndicator
-----	-----
Name MacAddress	=>
----	-----
Ethernet0 00-0C-29-CE-71-F8	=>
	=>
Name MacAddress	=>
----	-----
Ethernet0 00-0C-29-CE-71-F8	=>
	=>
	=>
InterfaceAlias IPv4Address	<=
-----	-----
Ethernet0 192.168.137.130	<=

Exercise 15

Question: Write a PowerShell Pipeline that returns the last time your system booted up.

Answer:

```
Get-CimInstance Win32_OperatingSystem | Select-Object LastBootUpTime
```

Output:

```
LastBootUpTime
-----
2025-10-03 10:58:29 PM
```

Bonus Challenge

Question: Provide a command pipeline to provision two 5GB drives into a mirrored storage pool.

Answer:

```
New-StoragePool -FriendlyName "MirrorPool" -StorageSubsystemFriendlyName "Windows
Storage*" -PhysicalDisks (Get-PhysicalDisk -CanPool $true) | New-VirtualDisk
-FriendlyName "MirroredDisk" -ResiliencySettingName "Mirror" -Size 5GB | Get-Disk
| Initialize-Disk -PartitionStyle GPT -PassThru | New-Partition -DriveLetter
M -UseMaximumSize | Format-Volume -FileSystem NTFS -NewFileSystemLabel "MirroredVolum
-Confirm:$false
```