TECHMENTOR
IN-DEPTH TRAINING FOR IT PROS

The FUTURE of TECH is HERE

From Cmdlet to Function – Your PowerShell Beginnings

Mike Nelson

Level: Beginner

Mike Nelson

Solutions Technologist @ Rubrik

Microsoft MVP, Azure Advisor, VMware vExpert, Citrix CTA

@nelmedia

mike@mikenelson.io

Microsoft® Most Valuable Professional

Get-Content

- PowerShell Basics
- Functions & More
- The Demo
  - Creating a script
  - Your first Function
  - Morphing into a Module

rubrik

build

TECHMENTOR
IN-DEPTH TRAINING FOR IT PROS

HOW IT STARTED

Jeffrey Snover, Bruce Payette, & James Truher

Project Monad in 2002

rubrik

build

TECHMENTOR
IN-DEPTH TRAINING FOR IT PROS

Snover Quotes

"This is rock science, not rocket science."

"I took a demotion to create PowerShell."

"PowerShell is a such a great product because I am a deeply flawed human being."

"Not updating from WS2003 is like the guy who jumps off a building and on the way down says, "so far, so good!"

"When in trouble, fear, or doubt - run in circles, scream, and shout."

rubrik

build

TECHMENTOR
IN-DEPTH TRAINING FOR IT PROS

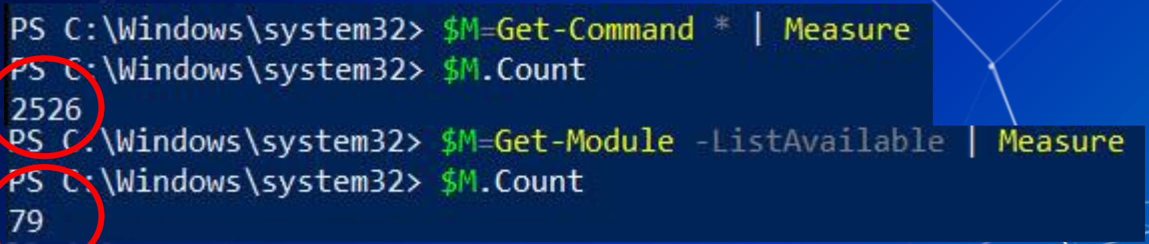
VERSIONS

5.1

~~Core~~

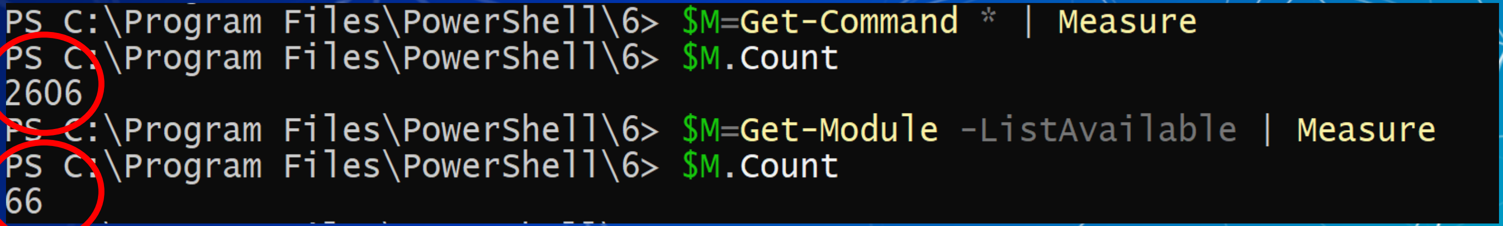
PowerShell 7

5.1



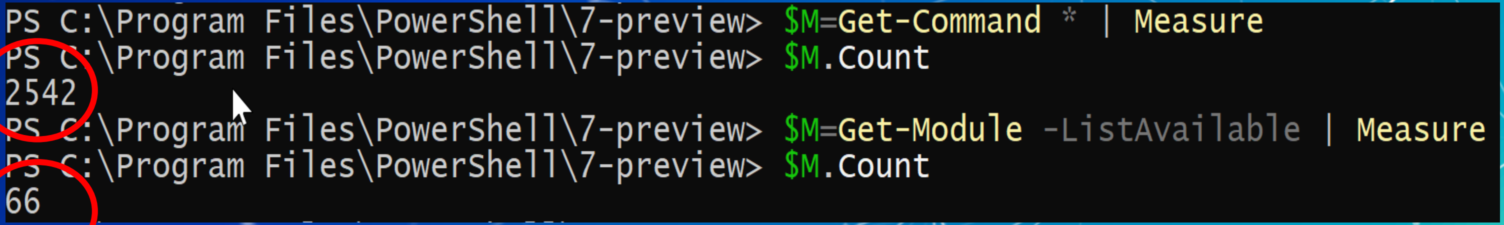
```
PS C:\Windows\system32> $M=Get-Command * | Measure
PS C:\Windows\system32> $M.Count
2526
PS C:\Windows\system32> $M=Get-Module -ListAvailable | Measure
PS C:\Windows\system32> $M.Count
79
```

6.2.2

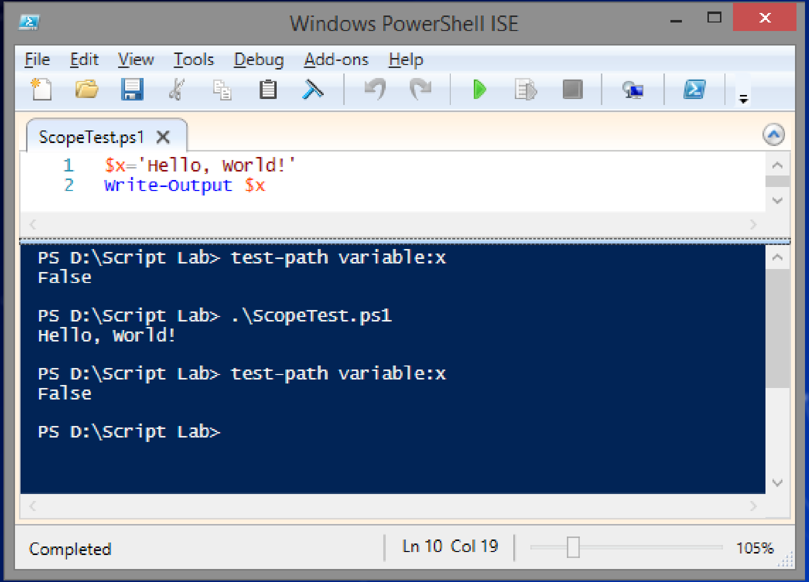


```
PS C:\Program Files\PowerShell\6> $M=Get-Command * | Measure
PS C:\Program Files\PowerShell\6> $M.Count
2606

PS C:\Program Files\PowerShell\6> $M=Get-Module -ListAvailable | Measure
PS C:\Program Files\PowerShell\6> $M.Count
66
```

7.0p2



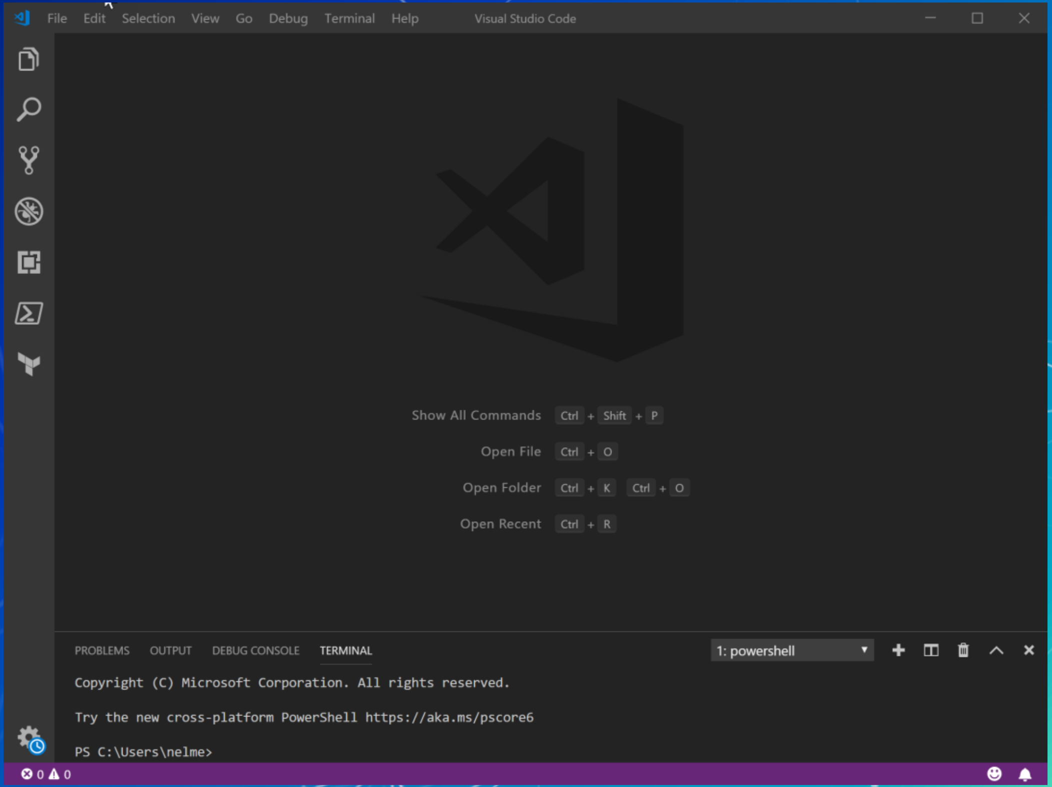
```
PS C:\Program Files\PowerShell\7-preview> $M=Get-Command * | Measure
PS C:\Program Files\PowerShell\7-preview> $M.Count
2542

PS C:\Program Files\PowerShell\7-preview> $M=Get-Module -ListAvailable | Measure
PS C:\Program Files\PowerShell\7-preview> $M.Count
66
```



```
$x='Hello, World!'
Write-Output $x
```

```
PS D:\Script Lab> test-path variable:x
False

PS D:\Script Lab> .\ScopeTest.ps1
Hello, World!

PS D:\Script Lab> test-path variable:x
False

PS D:\Script Lab>
```

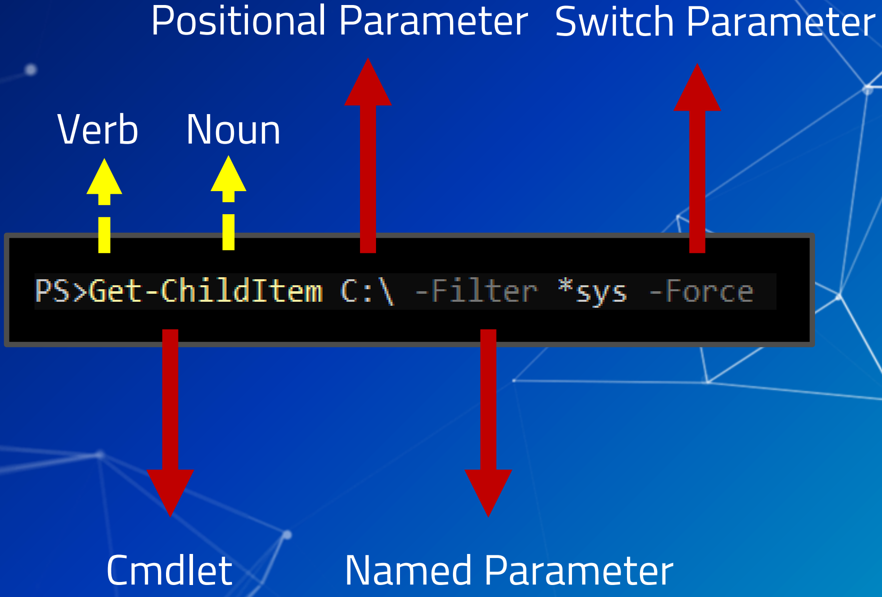
ISE


File Edit Selection View Go Debug Terminal Help Visual Studio Code
Show All Commands Ctrl + Shift + P
Open File Ctrl + O
Open Folder Ctrl + K Ctrl + O
Open Recent Ctrl + R
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: powershell

```
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\nelme>
```

VSCode

SYNTAX



```
PS>Get-ChildItem C:\ -Filter *sys -Force
```

CORE COMMANDS TO HELP LEARN

Get-Command

Get-Help

Update-Help

Get-Member

Show-Command

LET'S MAKE IT EASY

PowerShell Gallery

    Easy find, install, & update of Modules

Chocolatey

    Easy updating of Core (and more)

Github search

    Always give credit

"

"Create documented and reusable code, you will."

- PowerShell Yoda

rubrik

build

TECHMENTOR
IN-DEPTH TRAINING FOR IT PROS

FUNCTIONS A list of statements you define

-
  ```
  function helloworld {
           Write-Host ‘Hello World!’
  }
  ```
- You then simply call the function
- Statements then just run like you typed them

Functions can be in scripts, modules, profiles, and “called” from scripts

MODULES

A package of commands in a .psm1 file

- *PS>New-Module* is one way
- 3 kinds
  - Script – **psm1** files that contain any valid PowerShell code
  - Binary – compiled DLL's
  - Dynamic – only available in memory
- Manifest (optional) – **.psd1** file that describes a module, syntax & requirements, & how it is to be processed

  PS>New-ModuleManifest

  PS>Test-ModuleManifest

When would you / should you create a module?

rubrik build

TECHMENTOR IN-DEPTH TRAINING FOR IT PROS

PIPELINES Connecting commands together

- `PS>Get-Process | Out-Host -Verbose`
- Reduce the effort of writing long, complex commands
- Can utilize pipeline variables (`$_ or $PSItem`)
- Commonly used in "one-liners"

Let's Create a Module!

What are we going to do?

- Start by seeing some basics
- Create a script that runs an alarm clock
- Turn that script into a function
- Take that function & create a module

THANKS!

Any questions?

You can find me at

- @nelmedia
- mike@mikenelson.io