

PowerShell

It is probably more useful than you think 😊





Before we begin...

How to Assess a Language



People

| *How well is the language supported?*



Platforms

| *Where can the language be used?*



Paradigms

| *What programming paradigms does the language support?*

What is PowerShell?

...a cross-platform (Windows, Linux, and macOS) automation and configuration tool/framework that works well with your existing tools and is optimized for dealing with structured data (e.g. JSON, CSV, XML, etc.), REST APIs, and object models. It includes a command-line shell, an associated scripting language and a framework for processing cmdlets. [PowerShell GitHub Page](#)

What is PowerShell?

...a cross-platform (Windows, Linux, and macOS) automation and configuration tool/framework that works well with your existing tools and is optimized for dealing with structured data (e.g. JSON, CSV, XML, etc.), REST APIs, and object models. It includes a command-line shell, an associated scripting language and a framework for processing cmdlets. [PowerShell GitHub Page](#)

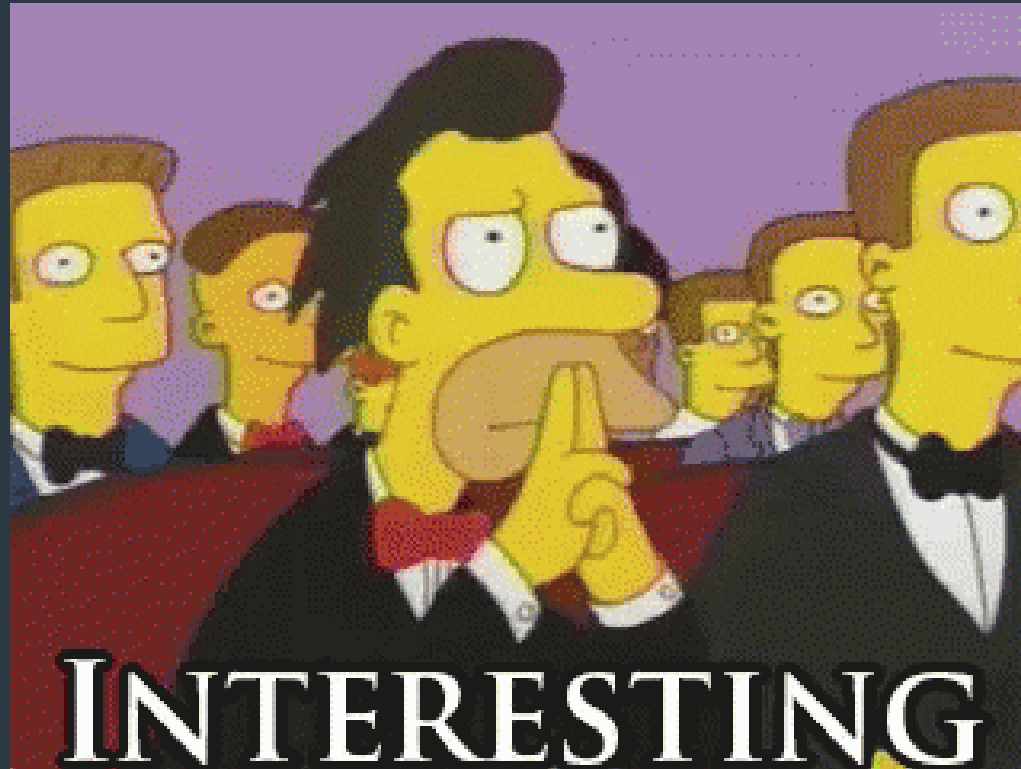
In other words, PowerShell is...

What is PowerShell?

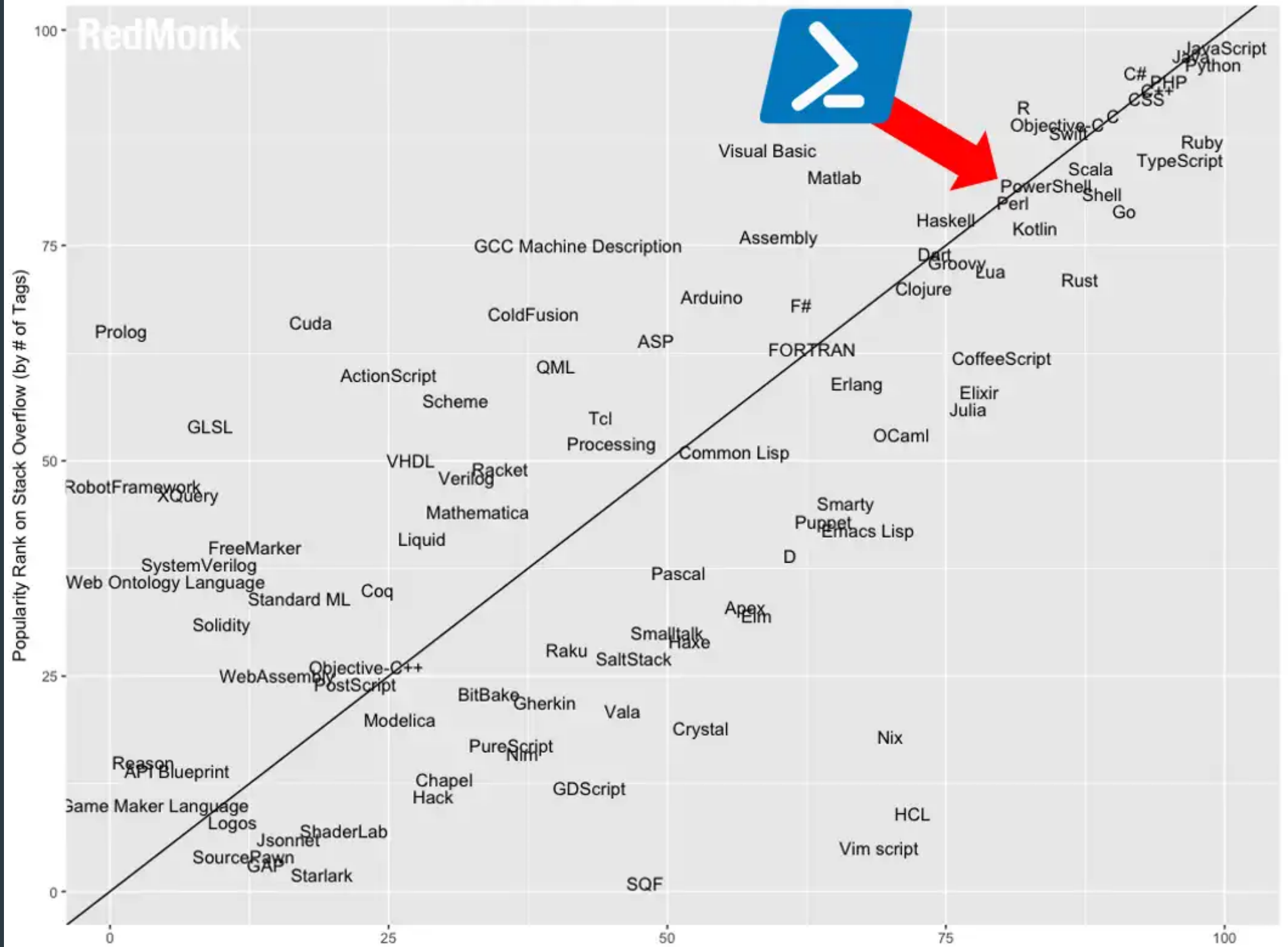
...a cross-platform (Windows, Linux, and macOS) automation and configuration tool/framework that works well with your existing tools and is optimized for dealing with structured data (e.g. JSON, CSV, XML, etc.), REST APIs, and object models. It includes a command-line shell, an associated scripting language and a framework for processing cmdlets. [PowerShell GitHub Page](#)

In other words, PowerShell is...

A user-focused typed programming language with native access to the host system and built-in support for structured data — available on Windows/Linux/Mac, pre-installed on Windows. [J. Wohlgemuth](#)



RedMonk Q320 Programming Language Rankings



Samples

```
redential = Get-ChildItem Cert:\CurrentUser\My | ? { $_.FriendlyName -like "Digital Signature"
```



```
Get-ItemProperty HKLM:\SOFTWARE\WOW6432Node\Microsoft\Windows\CurrentVersion\Uninstall\* |  
  Select-Object DisplayName, DisplayVersion, Publisher, InstallDate |  
  Sort-Object DisplayName |  
  Where-Object { $_.DisplayName.Length -gt 0 } |  
  Format-Table -AutoSize
```

Copy

```
Install-Module -Name Prelude -Scope CurrentUser
```

Copy

Why PowerShell?

Why PowerShell?



Structured Data Support

Why PowerShell?



Structured Data Support

PowerShell  dotnet

Why PowerShell?



Structured Data Support

PowerShell  dotnet



Developer Experience (DX)

Why PowerShell?



Structured Data Support

PowerShell  dotnet



Developer Experience (DX)



Cross Platform Support

Why PowerShell?



Structured Data Support

PowerShell  dotnet



Developer Experience (DX)



Cross Platform Support



Open Source



Structured Data Support

✧ Built-in XML support ✧

```
<Barrel>
  <Monkey Action="no-see">🐵</Monkey>
  <Monkey Action="no-hear">👂</Monkey>
  <Monkey Action="no-speak">🗣️</Monkey>
</Barrel>
```

Copy

```
# import data
[XML]$data = Get-Content -Path data.xml

# get information
$data.Barrel.Monkey.Count | Write-Host
```

Copy



Structured Data Support

✧ Built-in CSV support ✧

```
name,power,race,super
Goku,9001,Saiyan,yes
Gohan,3042,Hybrid,yes
Vegeta,8999,Saiyan,yes
Trunks,8500,Hybrid,yes
Picollo,8001,Namekian,no
Krillin,1000,Human,no
Yamcha,1,Human,no
```

Copy

```
# import data
$data = ConvertFrom-Csv (Get-Content -Path data.csv)

# get column
$data.name | Write-Host

# get row
$data[0] | Write-Host
```

Co

PowerShell ♡ dotnet



PowerShell dotnet

```
# import the code
Add-Type -TypeDefinition "
    using System;
    public class Calculator {
        public static double ToRadians(int degrees) {
            return degrees * (Math.PI / 180);
        }
    }
"

# use the code
[Calculator]::ToRadians(360)
```

Copy

PowerShell dotnet

```
# import the code
Add-Type -TypeDefinition "
    using System;
    public class Calculator {
        public static double ToRadians(int degrees) {
            return degrees * (Math.PI / 180);
        }
    }
"

# use the code
[Calculator]::ToRadians(360)
```

Copy

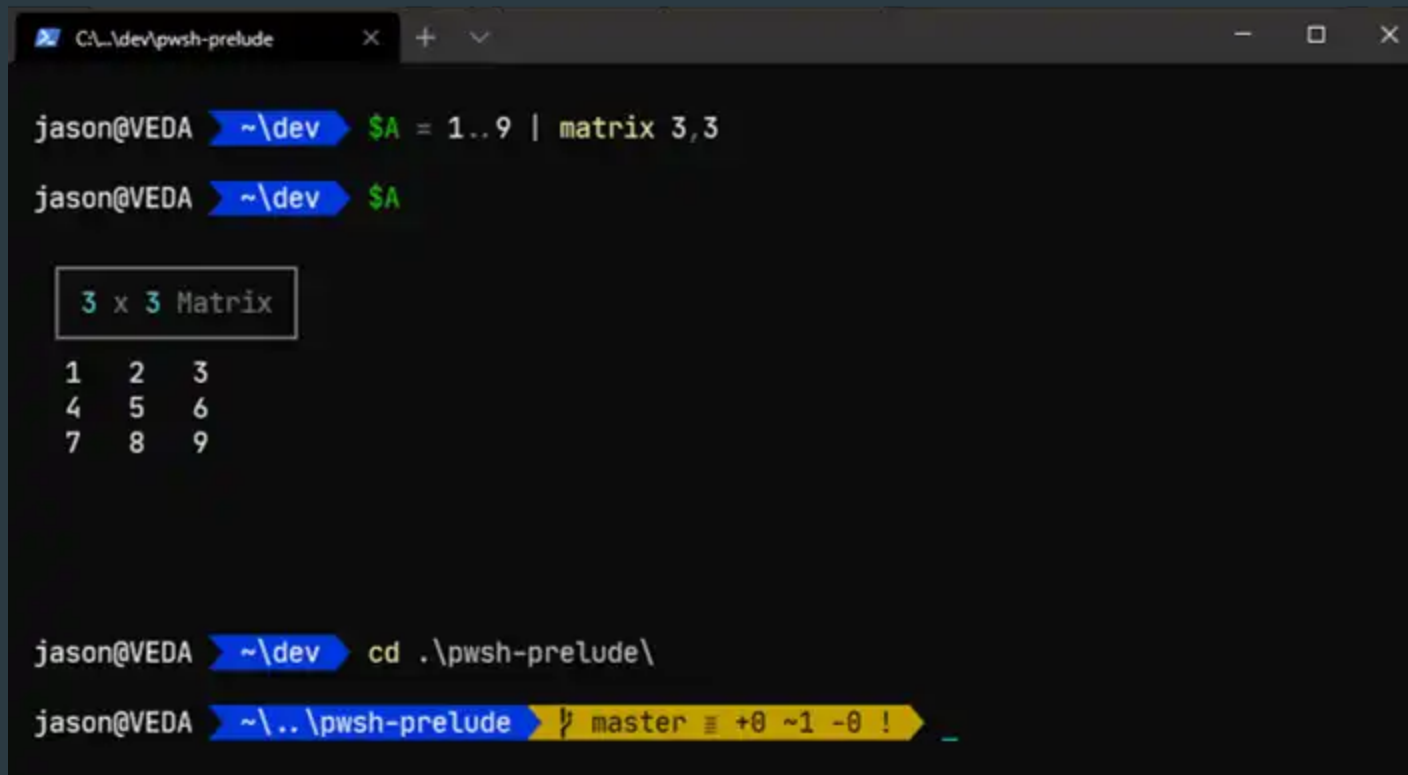
✧ Also works with dynamic linked libraries ✧

😊 Developer Experience (DX)

📖 Documentation / Get-Help <cmdlet>

📁 Mature workflows (lint, test, build etc...)

😱 Windows Terminal #cantBelieveItsNotLinux



```
C:\...\dev\pwsh-prelude x + v - □ x

jason@VEDA ~\dev $A = 1..9 | matrix 3,3

jason@VEDA ~\dev $A

3 x 3 Matrix
1 2 3
4 5 6
7 8 9

jason@VEDA ~\dev cd .\pwsh-prelude\

jason@VEDA ~\..\pwsh-prelude } master ≡ +0 ~1 -0 ! _
```



Cross platform

```
docker run -it mcr.microsoft.com/powershell
```

Copy



Open Source

<https://github.com/PowerShell/PowerShell>