Advanced Scripting   
Running Scripts

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Document Prepared for: CIT361 Student

# Name Zach Lucas ID 895649438

# Instructions

Save a copy of this document. Answer all questions directly in this document. You will save and upload this completed document as your homework submission.

# Overview

You will learn how to run scripts in both Windows and Linux.

# Requirements

* PowerShell or PowerShell Core on Windows
* PowerShell Core on Linux
* rhello.ps1 script from previous exercise.

# Setup

You should have the script rhello.ps1 in your psfiles\scripts folder. If not get a copy from [http://cf.esage.com/as/remoterhello.ps1](http://cf.esage.com/as/remotehello.ps1)

# Task 1—Running scripts in Windows

Running scripts in Windows.

## Steps

1. Running scripts in the current directory.
   1. Ensure your rhello.ps1 file is in your psfiles/scripts directory.
   2. Make your psfiles/scripts directory your current directory.
   3. Enter   
      rhello.ps1
      1. What was the result? It throws an error because the command wasn’t found but it does exist in my current location if I type ./rhello.ps1 instead
   4. Enter  
      ./rhello.ps1
      1. What was the result? Hi class, today is 9/28/2021
   5. If you need to run a script that is in your current directory you must use a relative path to call it. Since it is in your current directory the relative path is **.** (remember **.** is this directory) then the path separator, then script name.
2. Change your current directory to the psfiles directory, it should be the parent of your current directiory. Enter  
   cd ..
3. Now run the script from here. Enter  
   scripts\rhello.ps1

# Task 2—Scripts and the Search Path.

If a script is in your search path you can run it by just specifying the name of the script. In this task you will add your psfiles/scripts folder to your search path.

## Steps

1. Your current directory should be your psfiles folder. If not, make it so. Try to run your script. Enter  
   rhello.ps1
   1. What was the result? Didn’t work because it is an incorrect filename
2. View your current search path. Enter the command  
   D:\psfiles\scripts> $env:Path -split ';'
   1. You should see all the directories in your search path. List them:  
      C:\WINDOWS\system32  
      C:\WINDOWS  
      C:\WINDOWS\System32\Wbem  
      C:\WINDOWS\System32\WindowsPowerShell\v1.0\  
      C:\WINDOWS\System32\OpenSSH\  
      C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common  
      C:\Program Files\NVIDIA Corporation\NVIDIA NvDLISR  
      C:\Program Files\PowerShell\7\  
      C:\Users\Zach\AppData\Local\Microsoft\WindowsApps  
      C:\Users\Zach\AppData\Local\Programs\Microsoft VS Code\bin
3. Now add your **psfiles/scripts** folder to your search path. I don’t know where your psfiles are so you will have to put the absolute path in. My absolute path is d:\psfiles\scripts. Adjusts the sample command accordingly.   
   $env:Path +=';d:\psfiles\scripts'
4. Try to run your script again  
   rhello.ps1
   1. What was the result? Hi class, today os 9/28/2021
5. Change to any directory you want. Can you run the script by just entering rhello.ps1? Yes you can
6. Open a new PowerShell window. Can you run the script by just entering rhello.ps1? No
7. What can you infer about the $env:Path modifications you did? That it only applies to the current session you are in.

# Task 3—Running Scripts from Other Programs

Any program that can start a process can run PowerShell Scripts.

## Steps

1. Run your script from our old friend cmd.exe. Open a Windows Command Prompt (not PowerShell).
2. Make **psfiles\scripts** your current directory.
3. Try to execute the PowerShell script by typing:  
   rhello.ps1
   1. What was the result? It opens notepad with all the code in txt format
4. To run a PowerShell script from another program you first must run PowerShell then tell PowerShell the script to execute. To run our script with Windows PowerShell, enter:  
   powershell -file rhello.ps1
5. You can also pass arguments to the script. Try this:  
   powershell -file rhello.ps1 Genius
6. What was the result? Hi Genius, today is 9/28/2021
7. If you want to run your script with PowerShell Core you can do it as well. Enter:  
   pwsh -file rhello.ps1 Genius

# Task 4—Running PowerShell on Linux (OSX).

Running PowerShell on Linux is very similar to Windows. It works pretty much the same way as on Windows with one exception. If you set your script up correctly Linux will call PowerShell automatically for you.

## Steps

1. For this you will need a copy of the **rhello.ps1** script in Linux. To get a copy you can use wget or curl. Here is a wget example.   
   wget cf.esage.com/as/rhello.ps1  
   or curl  
   curl cf.esage.com/as/rhello.ps1 -o rhello.ps1  
   or from a PowerShell prompt  
   Invoke-WebRequest cf.esage.us/as/rhello.ps1 -outfile rhello.ps1
2. Run the script with PowerShell. From your bash shell Enter:  
   pwsh rhello.ps1
   1. Did it work? Yes
3. One of the great features of Unix based operating systems is that you can tell the bash shell what script language to run the script in by a comment at the top of the file. The comment starts with a **!**, since the comment character is # the top line will start with a # (sharp) and a ! (bang) or shebang. Look at the first line of the rhello.ps1 script. Enter the command  
   head -n 1 rhello.ps1
   1. You can see the shebang followed by the path to PowerShell.
4. Try running the script directly. Since the script is in our current directory try:  
   ./rhello.ps1
   1. What was the result? Hi class, today is 9/28/2021. You are running on PowerShell Core smartypants. Not only that you are running on OSX
   2. This may or may not have worked depending on your Linux installation. If it did not work, you will need to add the execute permission to the file. To do that enter:  
      **chmod +x rhello.ps1**
   3. Try it again it should work now.
   4. To see if the file has execute permission enter the command:  
      ls -l rhello.ps1  
      If you see and x in the permission columns it is executable.

# Deliverable

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