Advanced Scripting   
Running Scripts

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# 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://lf.cit.byui.edu/as/rhello.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? A command not found exception
   4. Enter  
      ./rhello.ps1
      1. What was the result? The script ran
   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? Click or tap here to enter text.
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\dotnet\  
      C:\Program Files\NVIDIA Corporation\NVIDIA NvDLISR  
      C:\Program Files\Microsoft VS Code\bin  
      C:\WINDOWS\system32  
      C:\WINDOWS  
      C:\WINDOWS\System32\Wbem  
      C:\WINDOWS\System32\WindowsPowerShell\v1.0\  
      C:\WINDOWS\System32\OpenSSH\  
      C:\Program Files (x86)\Windows Kits\10\Windows Performance Toolkit\  
      C:\Program Files (x86)\Windows Kits\10\Microsoft Application Virtualization\Sequencer\  
      C:\Users\Harris\AppData\Local\Microsoft\WindowsApps
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. Adjust the following sample command accordingly:  
   $env:Path +=';d:\psfiles\scripts'
   1. What command did you enter to add to your search path? $env:Path +=';C:\Users\User\Documents\psfiles\scripts'
4. Try to run your script again:  
   rhello.ps1
   1. What was the result? The script ran
5. Change to any directory you want. Can you run the script by just entering rhello.ps1? yes
6. Open a new PowerShell window. Can you run the script by just entering rhello.ps1? no
7. What can you infer about the **$env:Path** modifications you did? Temporary changes stored in memory for that process only.

# 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? Vscode opened up
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? The script ran
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 (or macOS).

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 lf.cit.byui.edu/as/rhello.ps1  
   or curl:  
   curl lf.cit.byui.edu/as/rhello.ps1 -o rhello.ps1  
   or from a PowerShell prompt:  
   Invoke-WebRequest lf.cit.byui.edu/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 (Unix/Linux) shell 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? The script ran
   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 use this shell command:  
      **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 an **x** in the permission columns it is executable.

# Deliverable

Upload this document with completed answers to i-learn.