Power Shell 101

Module 7 Hands-on Activity – PowerShell in VSCode

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Learning Outcomes

- Learn on the difference between Write-Output vs. Write-Host
- Learn about Read-Host
- Learn how to make an InputBox

Resources

- Different ways to Write and Read-Host
  - https://docs.microsoft.com/en-us/powershell/module/microsoft.powershell.utility/?view=powershell-6
  - https://www.youtube.com/playlist?list=PL6D474E721138865A
- InputBox
  - https://www.itprotoday.com/powershell/getting-input-and-inputboxes-powershell

Activities

- Write
- Read-Host
- InputBox
- Q&A

Write

1. Open PowerShell in VSCode.

2. We will start by first learning the difference between Write-Output and Write-Host. Type:

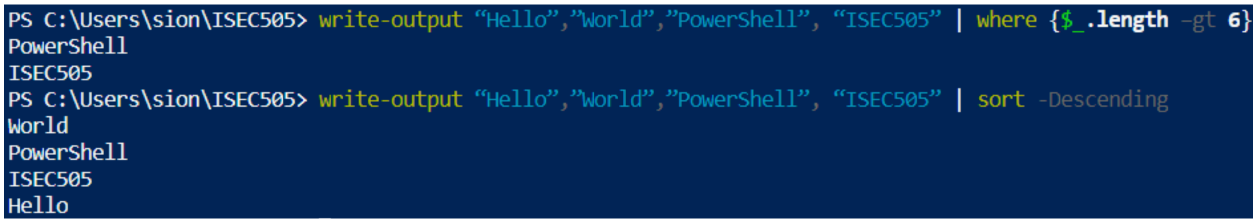
```
% Write-Output “Hello”

% Write-Host “Hello”
```

   It looks like they are the same but they work in very different ways. The main difference between them is that Write-Output sends the specified object down the pipeline to the next command while Write-Host writes to the console itself.

3. Here is an example with Write-Output. Let’s put a few strings into a pipeline and filter to get only the strings that have a length greater than 6. Type:

```
% write-output “Hello”,”World”,”PowerShell”, “ISEC505” | where
{$_.length -gt 6}
```

```
% write-output “Hello”,”World”,”PowerShell”, “ISEC505” | sort
-Descending
```

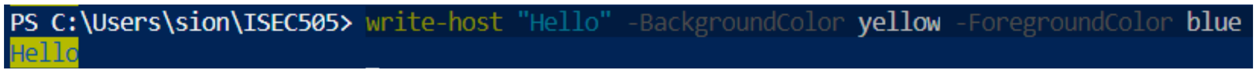


```
PS C:\Users\sion\ISEC505> write-output “Hello”,”World”,”PowerShell”, “ISEC505” | where {$_.length -gt 6}
PowerShell
ISEC505
PS C:\Users\sion\ISEC505> write-output “Hello”,”World”,”PowerShell”, “ISEC505” | sort -Descending
World
PowerShell
ISEC505
Hello
```

The only strings that have a length greater than 6 are “PowerShell” and “ISEC505” and they are the only one that made it through the command. You can try it with Write-Host, and it will not give you the same result because Write-Host does not send the objects down the pipeline.

4. As mentioned above, Write-Host writes to the console itself so you can specify background and foreground colors. Here is an example. Type:

```
% write-host "Hello" -BackgroundColor yellow -ForegroundColor
blue
```

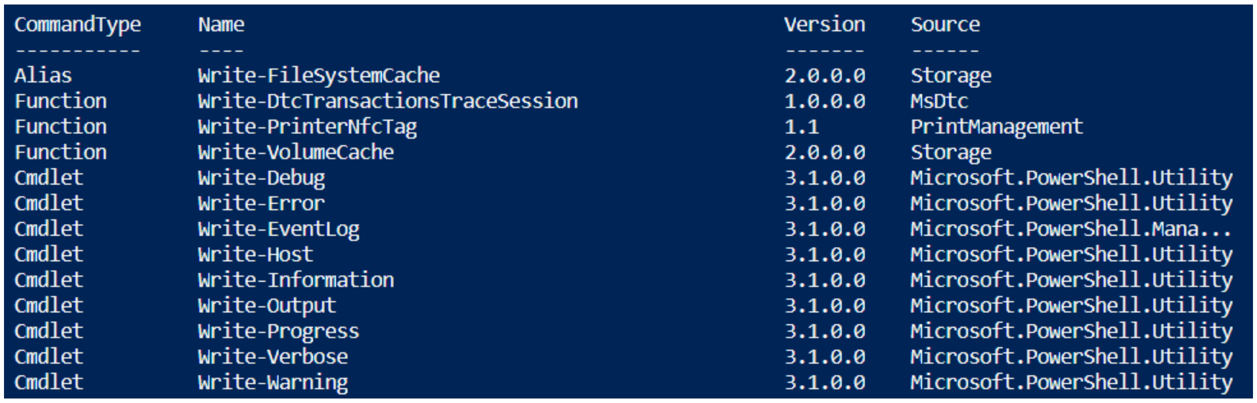


```
PS C:\Users\sion\ISEC505> write-host "Hello" -BackgroundColor yellow -ForegroundColor blue
Hello
```

However, it is not used for the output of your script and simply used for display and therefore, it is best not to use this command.

5. Now let’s see some other write cmdlets. Type:

```
% get-command -verb write
```



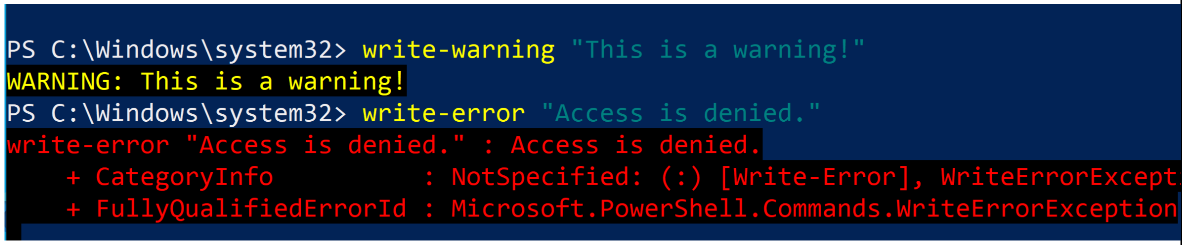
```
CommandType     Name                                Version    Source
-----------     ----                                -------    ------
Alias           Write-FileSystemCache               2.0.0.0    Storage
Function        Write-DtcTransactionsTraceSession   1.0.0.0    MsDtc
Function        Write-PrinterNfcTag                 1.1        PrintManagement
Function        Write-VolumeCache                   2.0.0.0    Storage
Cmdlet          Write-Debug                         3.1.0.0    Microsoft.PowerShell.Utility
Cmdlet          Write-Error                         3.1.0.0    Microsoft.PowerShell.Utility
Cmdlet          Write-EventLog                      3.1.0.0    Microsoft.PowerShell.Mana...
Cmdlet          Write-Host                          3.1.0.0    Microsoft.PowerShell.Utility
Cmdlet          Write-Information                   3.1.0.0    Microsoft.PowerShell.Utility
Cmdlet          Write-Output                        3.1.0.0    Microsoft.PowerShell.Utility
Cmdlet          Write-Progress                      3.1.0.0    Microsoft.PowerShell.Utility
Cmdlet          Write-Verbose                       3.1.0.0    Microsoft.PowerShell.Utility
Cmdlet          Write-Warning                       3.1.0.0    Microsoft.PowerShell.Utility
```

Here are the descriptions for each of the write cmdlets to keep in mind:

Cmdlet	Description
Write-Debug	Writes debug messages to the console from a script or command.
Write-Error	Declares a non-terminating error. By default, errors are sent in the error stream to the host program to be displayed, along with output.
Write-EventLog	Writes an event to an event log.
Write-Information	Specifies how PowerShell handles information stream data for a command.
Write-Progress	Displays a progress bar in a Windows PowerShell command window that depicts the status of a running command or script. You can select the indicators that the bar reflects and the text that appears above and below the progress bar.
Write-Verbose	Writes text to the verbose message stream in PowerShell.
Write-Warning	Writes a warning message to the PowerShell host. The response to the warning depends on the value of the user's $WarningPreference variable and the use of the *WarningAction* common parameter.

Q1

Search online and provide an example of how to use two of the Write cmdlets on the table above. Provide your screen captures below.

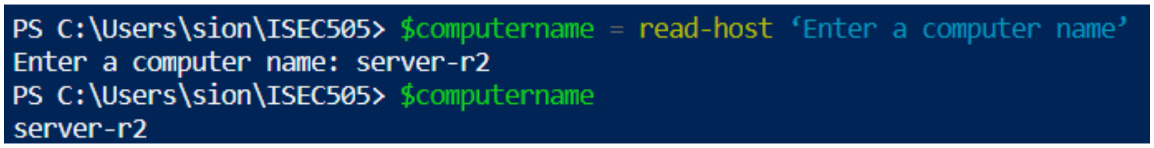


```
PS C:\Windows\system32> write-warning "This is a warning!"
WARNING: This is a warning!
PS C:\Windows\system32> write-error "Access is denied."
write-error "Access is denied." : Access is denied.
    + CategoryInfo          : NotSpecified: (:) [Write-Error], WriteErrorExcept
    + FullyQualifiedErrorId : Microsoft.PowerShell.Commands.WriteErrorException
```

Read-Host

6. One way to gather input from a user is to use the Read-Host cmdlet. This command accepts a prompt and allows the user to type a response. Create a variable, and have it equal to the read-host cmdlet and a prompt. Thereafter, provide a response. Note that the response is placed into the pipeline.

```
% $computername = read-host 'Enter a computer name'
```



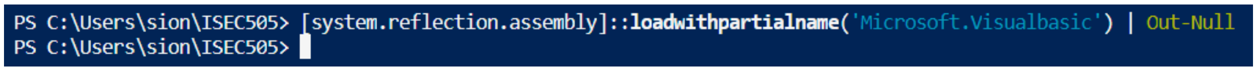
```
PS C:\Users\sion\ISEC505> $computername = read-host 'Enter a computer name'
Enter a computer name: server-r2
PS C:\Users\sion\ISEC505> $computername
server-r2
```

If you see the contents of the variable that you created, you will see that the response was placed into that variable.

InputBox

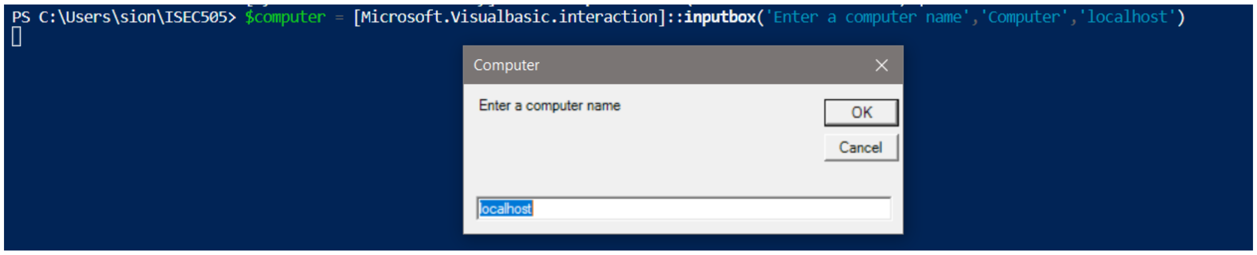
7. There may be times when you need to display a popup dialog box. To do this, we need to use System.Reflection.Assembly .NET Framework class to load the 'Microsoft.VisualBasic'. The following command loads the part of the .NET Framework into memory. The loading generates a success message, which is piped to Out-Null to suppress it.

   ```
   %[system.reflection.assembly]::loadwithpartialname('Microsoft.
   Visualbasic') | Out-Null
   ```



```
PS C:\Users\sion\ISEC505> [system.reflection.assembly]::loadwithpartialname('Microsoft.Visualbasic') | Out-Null
PS C:\Users\sion\ISEC505>
```

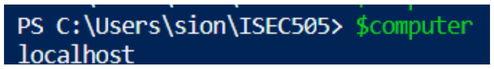
8. Once this is done, create a variable and ask the interaction class of the Microsoft.VisualBasic part of the framework to use the InputBox() method. You can put up to three arguments in this order: (1) your prompt, (2) the title for the dialog box, and (3) a default value.



```
PS C:\Users\sion\ISEC505> $computer = [Microsoft.Visualbasic.interaction]::inputbox('Enter a computer name','Computer','localhost')
```

9. When you click enter, it launches the InputBox with the arguments that you set. Click OK. What is in the textbox will end up in the computer variable that we created. Type:

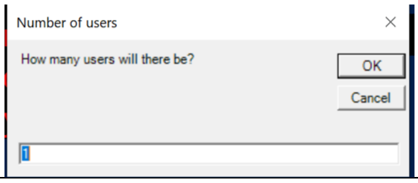
   ```
   % $computer
   ```

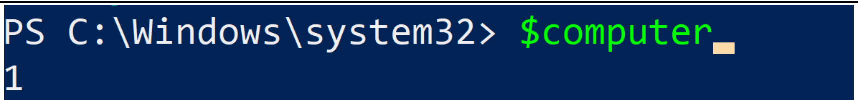


```
PS C:\Users\sion\ISEC505> $computer
localhost
```

Q2

Create a different example of the InputBox (using different arguments) and provide a screen capture of the InputBox and output of the variable that you created.





```
PS C:\Windows\system32> $computer
1
```

<u>Q3</u>

What is MsgBox() and how is it different to InputBox()?
MsgBox gives the user a pop-up message and the response from the user could be limited to them selecting yes or no. An InputBox is a pop-up message that asks the user a question and is expecting the user to input an answer, hence the name 'Input'Box.

PUSH YOUR WORK TO GITHUB

Once you completed the Hands-on practice, **export this document to PDF**, save in the same Module 6 folder you cloned, then do the following to push your work to GitHub

Open the terminal from the VSCode by hitting the control + ~ key, make sure you are in the right path, for example: KimNguyen/Desktop/ISEC505/HOP07-KimNguyenMai/Module 7

Type the following command:

>>> **git add .** (to copy all changes you have made)
>>> **git commit -m "Submission for Module 7 – YOUR GITHUB USERNAME"** (To add a message to your submission)
>>> **git push origin master** (to upload your work to Github)