Introduction to PowerShell

Aim

Background

Primitive Data Types

Comparison Operators

Variables

Control Structures

Functions

Common APIs

Coding Standard

Further Reading

***Go through New User Script at the end***

Aim:

* What will you learn?
  + What Powershell is.
  + What it’s based off of.
  + What type of tasks can Powershell be used to do/automate.
  + How to find new cmdlets for Powershell.
  + What type of data it can handle.
  + How to compare data in Powershell.
  + What a variable is.
  + How to use three types of control structures.
  + How to create functions.
  + How to connect to Office 365 (Exchange).
  + How to connect to Office 365 (Msol).
  + How to write readable scripts.
* What will you get out of it?
  + Become less afraid of Powershell.
  + Have a firm enough knowledge of Powershell to have the confidence to go away and research how to do tasks such as setting mailbox permissions.

Background:

* Scripting language
  + It’s a powerful shell, not a programming language.
    - A programing language is complied, whereas Powershell is interpreted with just in time compilation.
  + Can provide functionality for applications.
    - Active Directory Administrative Centre
    - Unity
  + Advantages of scripting (write once – run forever).
  + Target Audience is sysadmins not devs.
  + Basically a modern replacement for cmd prompts, dos, batchscripts etc.
  + Useful for automating processes and finding out information.
* Based on .Net
  + Allows you to call .Net objects
  + This can be used to create GUIs, invoke Excel etc.
  + Explain .NET
    - What is .NET
* Object-Based as opposed to text based
  + Everything is a .NET object as opposed to just text.
  + Encapsulates everything inside an object.
* ISE
  + Integrated scripting environment.
  + Used for writing, testing and debugging scripts.
  + Benefits of ISE/Shell.
* Naming Structure
  + Get, Set, Add, New and Remove are the basic verbs
  + <verb>-<noun>
* Tips and tricks
  + Use Get-Help (-example and –whatif)
  + Tab to autocomplete cmdlets

Primitive Data Types:

Boolean/String/Int

* What is it?
* How/why are they used?
* Show examples.
* Answer questions.

Comparison Operators:

* When the input to the operator is singular it returns a Boolean value
* When the input to the operator is a collection, the operator returns any matching values.
  + If there are no matches in a collection the operator returns nothing.
* Gt
  + Greater-than
* Lt
  + Less-than
* Like
  + Match using the wildcard character \*
* Eq
  + Equals To

Variables:

* What is a variable?
  + A way to store data
  + Can change
  + Script contains code that tells PC what to do and data that it uses whilst running
  + Variables are a type of data value which the script can use
  + Defined as certain data types which limits the form of the data
  + Local and Global variables

Control Structures (IMPORTANT!!!):

* Elseif
  + If a statement is true do something
  + Else do something else
  + If no else just skips the if statement
* While
  + While a condition is true do something
  + If the condition is not true skip
  + Make sure that these sections can always end
* Foreach
  + For each object in an array do something

Functions:

* What is a function
* Syntax
* Why use functions
* Use functions with parameters

Common APIs:

* Office 365 (Exchange)
  + How to connect
  + What can you do?
    - Get-Mailbox
    - Get-MailboxFolderPermissions
  + How to disconnect.
* Office 365 (Msol)
  + How to connect
  + What can you do?
    - Get-MsolUser
  + How to disconnect.

Standard:

* Use comments
* Intend stuff
* Structure of the script

Further reading:

* Provide reference slide and maybe zip of example files
* Recommend technet, reddit, powershell.org, powershell.com