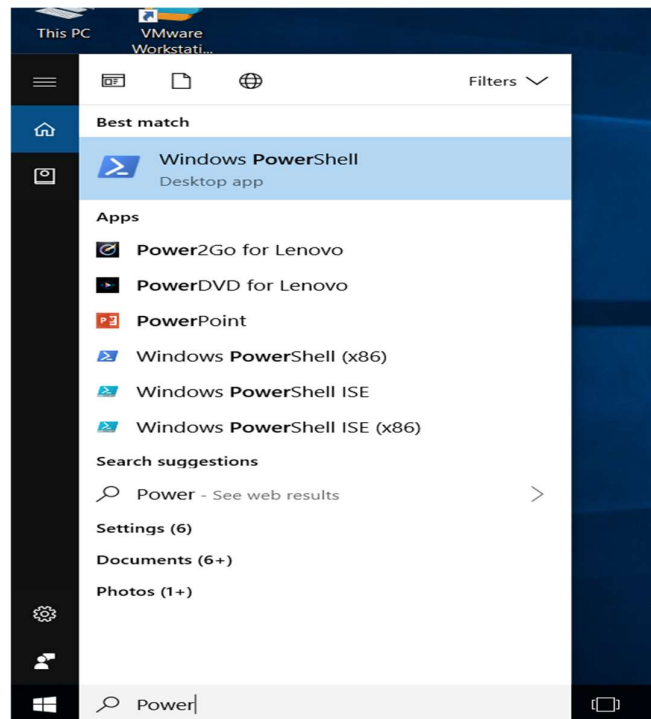


BASICS OF WINDOWS POWERSHELL

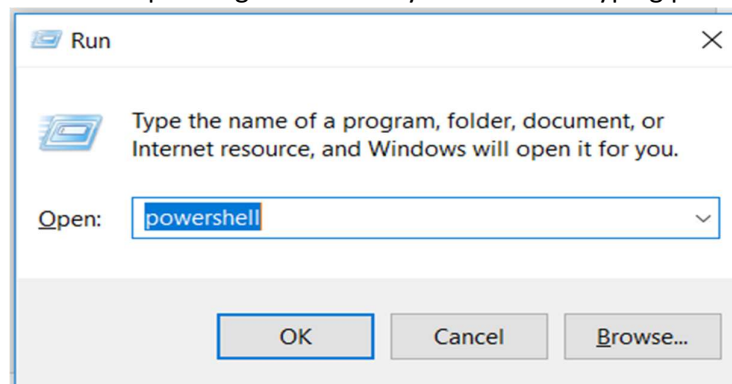
Windows PowerShell is a Windows command-line shell designed especially for system administrators. Windows PowerShell introduces the concept of a cmdlet a simple, single-function command-line tool built into the shell. Like many shells, it gives us access to the file system on the computer.

PowerShell supports aliases to refer to commands by alternate names. Aliasing allows users with experience in other shells to use common command names that they already know for similar operations in PowerShell.

PowerShell can be opened directly from the search bar by typing PowerShell as shown :



Or it can be Run i.e. pressing Windows key + R and then typing powershell as :



THE CONCEPT OF PATH

A path is a unique location to a file or a folder in the file system of an OS. A path to a file is a combination of / and alpha-numeric characters.

Absolute Path :

An absolute path is defined as a complete path from start of actual file system from / directory. i.e. the path of the file or directory is specified with reference to the root directory.

To write an absolute path-name:

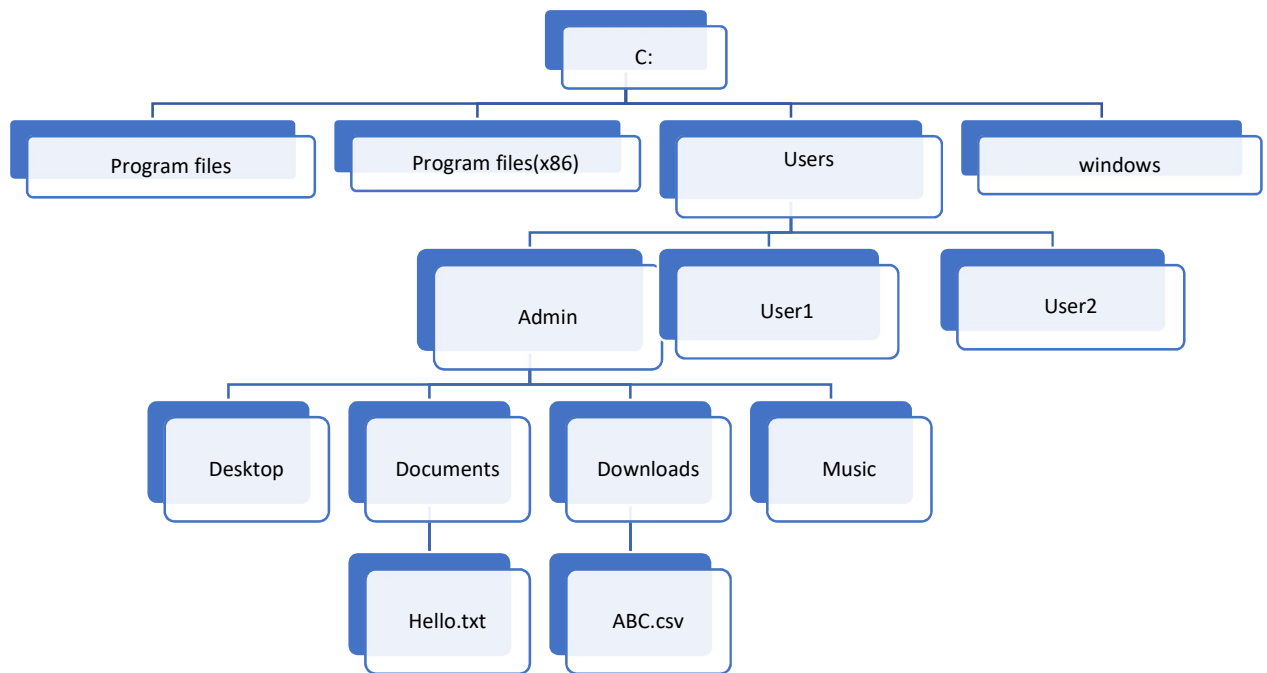
- Start at the root directory and work down.
- Write a slash (/) after every directory name (last one is optional)

Relative Path :

Relative path is defined as the path related to the present working directory (pwd). It starts at your current directory. It uses either the current or parent directory as reference and specifies the path relative to it.

A relative path-name uses:

- **.** (a single dot) - this represents the current directory.
- **..** (two dots) - this represents the parent directory.



Hierarchy of File System

Example of Absolute Path : To specify the path of Hello.txt, we started from the root directory i.e. C: and then to Users -> Admin -> Documents -> Hello.txt

➤ `cat C:/Users/Admin/Documents/Hello.txt/`

Example of Relative Path : Now, we are presently at the Documents directory and if we have to access ABC.csv, instead of specifying the full path from C: we can just give the relative path to change the parent directory as :

➤ `cd ../Downloads`

➤ `cat ABC.csv`

POWERSHELL BASIC COMMANDS -

1. PowerShell Version : To check PowerShell Version , the cmdlet used is :

\$PSVersionTable

```
Windows PowerShell
PS C:\Users\Ki > $PSVersionTable

Name                           Value
----                           -
PSVersion                      5.1.16299.820
PSEdition                      Desktop
PSCompatibleVersions           {1.0, 2.0, 3.0, 4.0...}
BuildVersion                   10.0.16299.820
CLRVersion                     4.0.30319.42000
WSManStackVersion              3.0
PSRemotingProtocolVersion      2.3
SerializationVersion           1.1.0.1
```

2. To print a statement on the terminal , the alias used :

>echo

```
Windows PowerShell
PS C:\Users\K\Desktop> echo PowerShell
PowerShell
```

3. To clear the terminal the cmdlet is :

>Clear-Host

The **alias** used are :

>clear OR **>cls**

The **keyboard shortcut** : **Ctrl+L**

4. To check the current directory we are currently working in, the alias is :

>pwd

```
Windows PowerShell
PS C:\Users\K > pwd

Path
----
C:\Users\K

PS C:\Users\K >
```

5. To check the contents of a folder, the alias used is :

>ls

```
PS C:\Users\K > ls

Directory: C:\Users\K

Mode                LastWriteTime         Length Name
----                -
d-r---            04-01-2019      13:54         3D Objects
d-r---            04-01-2019      13:54         Contacts
d-r---            04-01-2019      13:54         Desktop
d-----          11-01-2019      13:14 Destination_dir
d-r---            10-01-2019      18:51     Documents
d-r---            10-01-2019      16:30     Downloads
d-r---            04-01-2019      13:54     Favorites
d-r---            04-01-2019      13:54         Links
d-r---            04-01-2019      13:54         Music
dar--l            11-01-2019       08:49     OneDrive
d-r---            11-01-2019      15:00     Pictures
d-r---            04-01-2019      13:54     Saved Games
d-r---            04-01-2019      13:54     Searches
d-r---            04-01-2019      13:54     Videos
-a----            11-01-2019      12:01        541 .hello.txt.un~
-a----            11-01-2019      12:01       1495 _viminfo
```

6. To change the directory we want to work in, the alias to be used is :

>cd (directory name) OR **>chdir** (directory name)

```
PS C:\Users\K > cd .\Documents\
PS C:\Users\K > \Documents>
```

```
Windows PowerShell
PS C:\Users\Kl... > chdir G:\HADOOP\
PS G:\HADOOP>
```

7. To read the manual of the command or to get help about a command, the alias used is :

>man *(command name or alias)*

```
Windows PowerShell
PS C:\Users\Kl... > man ls

NAME
    Get-ChildItem

SYNTAX
    Get-ChildItem [[-Path] <string[]>] [[-Filter] <string>] [-Include <string[]>] [-Exclude <string[]>] [-Recurse] [-Depth <uint32>] [-Force] [-Name] [-UseTransaction] [-Attributes {ReadOnly | Hidden | System | Directory | Archive | Device | Normal | Temporary | SparseFile | ReparsePoint | Compressed | Offline | NotContentIndexed | Encrypted | IntegrityStream | NoScrubData}] [-Directory] [-File] [-Hidden] [-ReadOnly] [-System] [<CommonParameters>]

    Get-ChildItem [[-Filter] <string>] -LiteralPath <string[]> [-Include <string[]>] [-Exclude <string[]>] [-Recurse] [-Depth <uint32>] [-Force] [-Name] [-UseTransaction] [-Attributes {ReadOnly | Hidden | System | Directory | Archive | Device | Normal | Temporary | SparseFile | ReparsePoint | Compressed | Offline | NotContentIndexed | Encrypted | IntegrityStream | NoScrubData}] [-Directory] [-File] [-Hidden] [-ReadOnly] [-System] [<CommonParameters>]

ALIASES
    gci
    ls
    dir
```

8. To create folders , the **cmdlet** is :

>New-Item -Path '(specify full path)' -Item-Type Directory

The **alias** used is :

>mkdir

```
Windows PowerShell
PS C:\Users\K > mkdir Test_dir1

Directory: C:\Users\K

Mode                LastWriteTime         Length Name
----                -
d-----          11-01-2019     12:08         Test_dir1

PS C:\Users\K > New-Item Folder1 -ItemType Directory

Directory: C:\Users\K

Mode                LastWriteTime         Length Name
----                -
d-----          11-01-2019     15:11         Folder1
```

9. To create files :

Different types of files (ex – csv, xml, txt etc) can be created by this cmdlet by specifying the required extension.

>New-Item -Path '(specify full path here)' -ItemType File

```
PS C:\Users\K > New-Item -Path "C:\Users\K\test_file.txt" -ItemType File
```

10. To copy folders the alias to be used is :

>cp -r (Source path) (Destination path)

```
PS C:\Users\K > cp -r .\Test_dir1\ .\Test_directory\
PS C:\Users\K >
```

11. To remove folders :

>rmdir

```
PS C:\Users\K > rmdir -r .\Test_dir1\
PS C:\Users\K >
```

12. To delete files the alias used is :

>rm OR **>ri**

```
PS C:\Users\K > rm .\abc.txt
PS C:\Users\K >
```

13. To move folders the alias used is :

>mv (Source path) (Destination path)

```
Windows PowerShell
PS C:\Users\K > mv .\Test_directory1\ .\Destination\
```

14. To move files alias used is :

>mv (Source path) (destination path)

```
PS C:\Users\K \Destination\Test_directory1> mv file1.txt file2.txt
PS C:\Users\K \Destination\Test_directory1> ls

Directory: C:\Users\K \Destination\Test_directory1

Mode                LastWriteTime         Length Name
----                -
-a----           11-01-2019         12:31             0 file2.txt

PS C:\Users\K \Destination\Test_directory1>
```

15. To rename file or folder :

>Rename-Item (Path of the folder/file to be renamed) (new name)

```
PS C:\Users\K > Rename-Item .\Destination_directory\ Destination_dir
PS C:\Users\K > ls

Directory: C:\Users\K

Mode                LastWriteTime         Length Name
----                -
d-r---           04-01-2019         13:54     3D Objects
d-r---           04-01-2019         13:54     Contacts
d-r---           04-01-2019         13:54     Desktop
d-----          11-01-2019         12:31 Destination_dir
d-r---          10-01-2019         18:51     Documents
```



```

PS C:\Users\Kl > Rename-Item .\Destination_directory\Test_directory1\hello.txt HelloWorld.txt
PS C:\Users\Kl > ls .\Destination_directory\Test_directory1\

Directory: C:\Users\Kl \Destination_directory\Test_directory1

Mode                LastWriteTime         Length Name
----                -
-a-----         11-01-2019     12:45             0 HelloWorld.txt

```

16. To perform file Operations, the cmdlets are :

>Set-Content (*Path of the file in which is to be written*) "text to be written"

>Get-Content (*Path of the file which is to be read*)

#The alias that can be used to read the contents of the file : **cat** (*path of the file*)

>Append-Content (*Path of the file in which is to be written*) "text to be added"

>Clear-Content (*Path of the file of which contents are to be erased*)

```

PS C:\Users\K > Set-Content .\Destination_dir\abc.txt "This is done for training purposes"
PS C:\Users\K > Get-Content .\Destination_dir\abc.txt
This is done for training purposes
PS C:\Users\K > Clear-Content .\Destination_dir\abc.txt
PS C:\Users\K > Get-Content .\Destination_dir\abc.txt
PS C:\Users\K >

```