

<epam>

# Object Properties and Methods

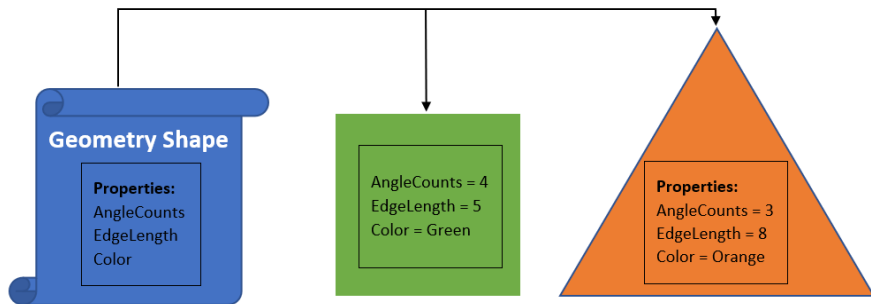
Scripting: PowerShell Essentials



**TRAINING**  
C E N T E R

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# PowerShell Objects and Classes



```
$square = [PSCustomObject]@{
    AngleCounts = 4
    EdgeLength = 5
    Color = "Green"
}
```

```
class GeometryShape {
    [int]$AngleCounts
    [int]$EdgeLength
    [string]$Color
}
```

```
$square = New-Object GeometryShape
$square.AngleCounts = 4
$square.EdgeLength = 5
$square.Color = "Green"
```

```
$triangle = New-Object GeometryShape
```

# PowerShell Properties & Methods

```
# Define class
class Circle {
    [int]$Radius

    Circle( [int]$r ){
        $this.Radius = $r
    }

    [double]GetCircumference() {
        return $( 2 * [System.Math]::PI * $this.Radius)
    }
}

# Create object
$round = New-Object Circle -ArgumentList 5
# Retrive properties value
$round.Radius
# invoke method
$round.GetCircumference()
```

```
# Create object
$round = [PSCustomObject]@{
    Radius = 5
}

# Define method in script block
$ScriptBlock = {
    return $( 2 * [System.Math]::PI * $this.Radius)
}

# Add method as member to $round object
Add-Member `
    -InputObject $round `
    -MemberType ScriptMethod `
    -Name "GetCircumference" `
    -Value $ScriptBlock

# Retrive properties value
$round.Radius
# invoke method
$round.GetCircumference()
```

# Retrieving object information with Get-Member

```
PowerShell 6 (x64)
PS C:\> Get-Member -InputObject $round

    TypeName: Circle
Name      MemberType Definition
-----
Equals    Method      bool Equals(System.Object obj)
GetCircumference Method      double GetCircumference()
GetHashCode Method      int GetHashCode()
GetType    Method      type GetType()
ToString   Method      string ToString()
Radius     Property     int Radius {get;set;}
```

```
PowerShell 6 (x64)
PS C:\> Get-Member -InputObject $(Get-ChildItem)[0] -MemberType Method

    TypeName: System.IO.DirectoryInfo
Name      MemberType Definition
-----
Create     Method      void Create()
CreateSubdirectory Method      System.IO.DirectoryInfo CreateSubdirectory(string path)
Delete     Method      void Delete(), void Delete(bool recursive)
EnumerateDirectories Method      System.Collections.Generic.IEnumerable[System.IO.DirectoryInfo] EnumerateDirectories(...)
EnumerateFiles Method      System.Collections.Generic.IEnumerable[System.IO.FileInfo] EnumerateFiles(), System.C...
EnumerateFileSystemInfos Method      System.Collections.Generic.IEnumerable[System.IO.FileSystemInfo] EnumerateFileSystemI...
Equals     Method      bool Equals(System.Object obj)
GetDirectories Method      System.IO.DirectoryInfo[] GetDirectories(), System.IO.DirectoryInfo[] GetDirectories(...)
GetFiles   Method      System.IO.FileInfo[] GetFiles(), System.IO.FileInfo[] GetFiles(string searchPattern),...
GetFileSystemInfos Method      System.IO.FileSystemInfo[] GetFileSystemInfos(), System.IO.FileSystemInfo[] GetFileSy...
GetHashCode Method      int GetHashCode()
GetLifetimeService Method      System.Object GetLifetimeService()
GetObjectData Method      void GetObjectData(System.Runtime.Serialization.SerializationInfo info, System.Runtime...
GetType    Method      type GetType()
InitializeLifetimeService Method      System.Object InitializeLifetimeService()
MoveTo     Method      void MoveTo(string destDirName)
Refresh    Method      void Refresh()
ToString   Method      string ToString()
```

```
PowerShell 6 (x64)
PS C:\> Get-Member -InputObject $(Get-Date) -MemberType Properties

    TypeName: System.DateTime
Name      MemberType Definition
-----
DisplayHint NoteProperty DisplayHintType DisplayHint-DateTime
Date       Property      datetime Date {get;}
Day         Property      int Day {get;}
DayOfWeek   Property      System.DayOfWeek DayOfWeek {get;}
DayOfYear   Property      int DayOfYear {get;}
Hour        Property      int Hour {get;}
Kind        Property      System.DateTimeKind Kind {get;}
Millisecond Property      int Millisecond {get;}
Minute      Property      int Minute {get;}
Month       Property      int Month {get;}
Second      Property      int Second {get;}
Ticks       Property      long Ticks {get;}
TimeOfDay   Property      timespan TimeOfDay {get;}
Year        Property      int Year {get;}
DateTime    ScriptProperty System.Object DateTime {get-if (($ & Set-StrictMode -Version 1; $this.DisplayHint)) -ieq "Dat...
```