

# Chapter 34: Reflection

## Section 34.1: Retrieve Properties for an Instance of a Class

```
Imports System.Reflection

Public Class PropertyExample

    Public Function GetMyProperties() As PropertyInfo()
        Dim objProperties As PropertyInfo()
        objProperties = Me.GetType().GetProperties(BindingFlags.Public Or BindingFlags.Instance)
        Return objProperties
    End Function

    Public Property ThisWillBeRetrieved As String = "ThisWillBeRetrieved"

    Private Property ThisWillNot As String = "ThisWillNot"

    Public Shared Property NeitherWillThis As String = "NeitherWillThis"

    Public Overrides Function ToString() As String
        Return String.Join(", ", GetMyProperties().Select(Function(pi) pi.Name).ToArray)
    End Function
End Class
```

The Parameter of `GetProperties` defines which kinds of Properties will be returned by the function. Since we pass `Public` and `Instance`, the method will return only properties that are both public and non-shared. See The Flags attribute for an explanation on how Flag-enums can be combined.

## Section 34.2: Get a method and invoke it

Static method:

```
Dim parseMethod = GetType(Integer).GetMethod("Parse", {GetType(String)})
Dim result = DirectCast(parseMethod.Invoke(Nothing, {"123"}), Integer)
```

Instance method:

```
Dim instance = "hello".ToUpper
Dim method = GetType(String).GetMethod("ToUpper", {})
Dim result = method.Invoke(instance, {})
Console.WriteLine(result) 'HELLO
```

## Section 34.3: Create an instance of a generic type

```
Dim openListType = GetType(List(Of ))
Dim typeParameters = {GetType(String)}
Dim stringListType = openListType.MakeGenericType(typeParameters)
Dim instance = DirectCast(Activator.CreateInstance(stringListType), List(Of String))
instance.Add("Hello")
```

## Section 34.4: Get the members of a type

```
Dim flags = BindingFlags.Static Or BindingFlags.Public Or BindingFlags.Instance
Dim members = GetType(String).GetMembers(flags)
```

```
For Each member In members
    Console.WriteLine($"{member.Name}, ({member.MemberType})")
Next
```

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