RSCG nr 10 : System.Runtime.InteropServices

Info

Nuget : https://www.nuget.org/packages/System.Runtime.InteropServices/

You can find more details at : https://learn.microsoft.com/en-us/dotnet/standard/native-interop/pinvoke-source-generation
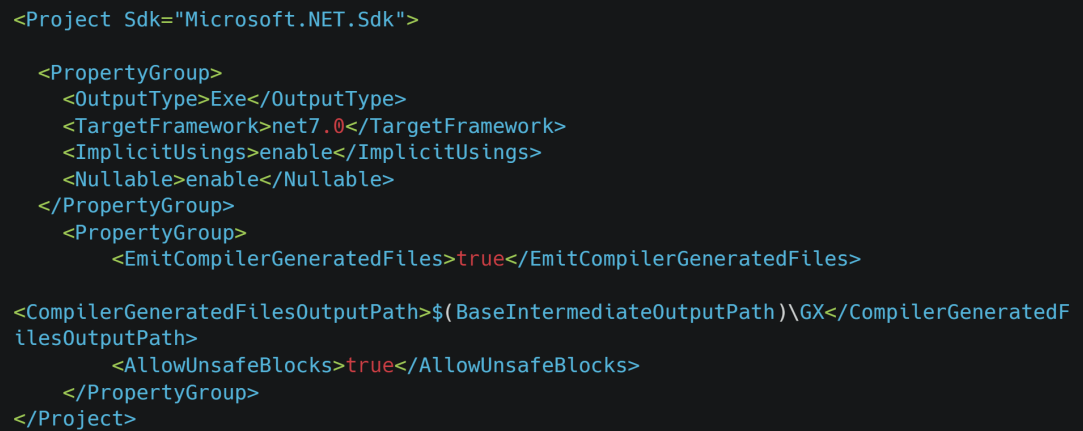
Author :Microsoft

Source : https://www.nuget.org/packages/System.Runtime.InteropServices/

About

Generate PInvoke calls

How to use

Add reference to the System.Runtime.InteropServices in the csproj

```xml
<Project Sdk="Microsoft.NET.Sdk">

  <PropertyGroup>
    <OutputType>Exe</OutputType>
    <TargetFramework>net7.0</TargetFramework>
    <ImplicitUsings>enable</ImplicitUsings>
    <Nullable>enable</Nullable>
  </PropertyGroup>
    <PropertyGroup>
        <EmitCompilerGeneratedFiles>true</EmitCompilerGeneratedFiles>

<CompilerGeneratedFilesOutputPath>$(BaseIntermediateOutputPath)\GX</CompilerGeneratedFilesOutputPath>
        <AllowUnsafeBlocks>true</AllowUnsafeBlocks>
    </PropertyGroup>
</Project>
```

This was for me the starting code

I have **coded** the file Program.cs

```
WriteLine(MessageBoxW(IntPtr.Zero, "asd", "asd", 1));
//RSCG
WriteLine(MessageBoxW_LI(IntPtr.Zero, "asd", "asd", 1));
```

I have **coded** the file DemoMsgBox.cs

```
partial class DemoImport
{
    [DllImport("user32.dll", EntryPoint = "MessageBoxW", CharSet = CharSet.Unicode,
SetLastError = true)]

    internal static extern int MessageBoxW(IntPtr hWnd, string lpText, string
lpCaption, uint uType);


    [LibraryImport("user32.dll", EntryPoint = "MessageBoxW", SetLastError = true,
StringMarshalling = StringMarshalling.Utf16)]

    internal static partial int MessageBoxW_LI(IntPtr hWnd, string lpText, string
lpCaption, uint uType);
}
```

I have **coded** the file globals.cs

```
global using static System.Console;
global using static DemoImport;
global using System.Runtime.InteropServices;
```

And here are the *generated* files

The file *generated* is LibraryImports.g.cs

```
•// <auto-generated/>
unsafe partial class DemoImport
{

[System.CodeDom.Compiler.GeneratedCodeAttribute("Microsoft.Interop.LibraryImportGenera
tor", "7.0.8.17405")]
    [System.Runtime.CompilerServices.SkipLocalsInitAttribute]
    internal static partial int MessageBoxW_LI(nint hWnd, string lpText, string
lpCaption, uint uType)
    {
        int __lastError;
        int __retVal;
        // Pin - Pin data in preparation for calling the P/Invoke.
        fixed (void* __lpText_native =
&global::System.Runtime.InteropServices.Marshalling.Utf16StringMarshaller.GetPinnableR
eference(lpText))
        fixed (void* __lpCaption_native =
&global::System.Runtime.InteropServices.Marshalling.Utf16StringMarshaller.GetPinnableR
eference(lpCaption))
        {
            System.Runtime.InteropServices.Marshal.SetLastSystemError(0);
            __retVal = __PInvoke(hWnd, (ushort*)__lpText_native,
(ushort*)__lpCaption_native, uType);
            __lastError = System.Runtime.InteropServices.Marshal.GetLastSystemError();
        }

        System.Runtime.InteropServices.Marshal.SetLastPInvokeError(__lastError);
        return __retVal;
        // Local P/Invoke
        [System.Runtime.InteropServices.DllImportAttribute("user32.dll", EntryPoint =
"MessageBoxW", ExactSpelling = true)]
        static extern unsafe int __PInvoke(nint hWnd, ushort* lpText, ushort*
lpCaption, uint uType);
    }
}
```

You can download the code and this page as pdf from https://ignatandrei.gith
ub.io/RSCG_Examples/v2/docs/System.Runtime.InteropServices

You can see the whole list at https://ignatandrei.github.io/RSCG_Examples/
v2/docs/List-of-RSCG