

HW1 2150276 沈卓成

生成程序集

Code:

```
public sealed class Program
{
    public static void Main()
    {
        System.Console.WriteLine("Hi,.NET");
    }
}
```

输入命令:

```
csc /out:D:\dotnet\C-\HW1\Program.exe /t:exe /r:mscorlib.dll D:\dotnet\C-\HW1\Program.cs
```

出现 Program.exe 文件

```
D:\dotnet\C-\HW1>csc /out:D:\dotnet\C-\HW1\Program.exe /t:exe /r:mscorlib.dll D:\dotnet\C-\HW1\Program.cs
Microsoft (R) Visual C# Compiler version 4.8.4084.0
for C# 5
Copyright (C) Microsoft Corporation. All rights reserved.

This compiler is provided as part of the Microsoft (R) .NET Framework, but only supports language versions u
p to C# 5, which is no longer the latest version. For compilers that support newer versions of the C# progra
mming language, see http://go.microsoft.com/fwlink/?LinkID=533240

D:\dotnet\C-\HW1>
```

简化命令:

```
csc /out:fred.exe /t:exe Program.cs
```

```
D:\dotnet\C-\HW1>csc /out:fred.exe /t:exe Program.cs
Microsoft (R) Visual C# Compiler version 4.8.4084.0
for C# 5
Copyright (C) Microsoft Corporation. All rights reserved.

This compiler is provided as part of the Microsoft (R) .NET Framework, but only supports language versions u
p to C# 5, which is no longer the latest version. For compilers that support newer versions of the C# progra
mming language, see http://go.microsoft.com/fwlink/?LinkID=533240
```

再简化:

```
csc Program.cs
```

```
D:\dotnet\C-\HW1>csc Program.cs
Microsoft (R) Visual C# Compiler version 4.8.4084.0
for C# 5
Copyright (C) Microsoft Corporation. All rights reserved.
```

This compiler is provided as part of the Microsoft (R) .NET Framework, but only supports language versions up to C# 5, which is no longer the latest version. For compilers that support newer versions of the C# programming language, see <http://go.microsoft.com/fwlink/?LinkID=533240>

检验结果:

```
D:\dotnet\C-\HW1>Program.exe
Hi, .NET
```

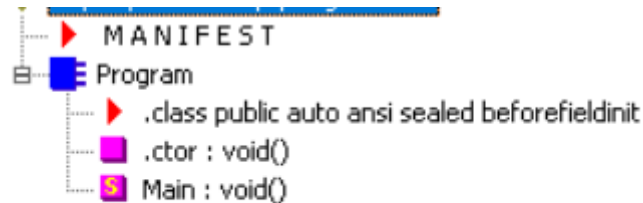
应答文件命令:

```
csc $Test.rsp Program.cs
```

```
D:\dotnet\C-\HW1>csc $Test.rsp Program.cs
Microsoft (R) Visual C# Compiler version 4.8.4084.0
for C# 5
Copyright (C) Microsoft Corporation. All rights reserved.
```

This compiler is provided as part of the Microsoft (R) .NET Framework, but only supports language versions up to C# 5, which is no longer the latest version. For compilers that support newer versions of the C# programming language, see <http://go.microsoft.com/fwlink/?LinkID=533240>

ildasm查看



MANIFEST:

```

// Metadata version: v4.0.30319
// assembly extern mscorlib
{
    .publickeytoken = (07 7A 5C 56 19 34 EB 89 ) // .z\0.4..
    .ver 4:0:0:0
}
assembly Program
{
    .custom instance void [mscorlib]System.Runtime.CompilerServices.CompilationRelaxationsAttribute::ctor(int32) = ( 01 00 00 00 00 00 00 00 )
    .custom instance void [mscorlib]System.Runtime.CompilerServices.RuntimeCompatibilityAttribute::ctor() = ( 01 00 01 00 54 02 16 57 72 61 70 AE 6F 6E 45 78 // ....T..WrapNonE
63 65 70 74 69 6F 6E 54 68 72 6F 77 73 01 ) // ceptionThrows.
    .hash algorithm 0x00000004
    .ver 0:0:0:0
}
.module Program.exe
// GUID: {45C884a1-4380-4557-8C4B-F7A26BF8C8CE}
.imagebase 0x00400000
.file alignment 0x00000200
.stackreserve 0x00100000
.subsystem 0x0003 // WINDOWS_GUI
.corFlags 0x00000001 // ILONLY
// Image base: 0x000001E56AA30000
```

合并模块并生成程序集

Code:

```
public class csharpf
{
    public void ffunc()
    {
        System.Console.WriteLine("Hello f");
    }
}
```

```
public class csharp r
{
    public void rfunc()
    {
        System.Console.WriteLine("Hello r");
    }
}
```

生成一个模块

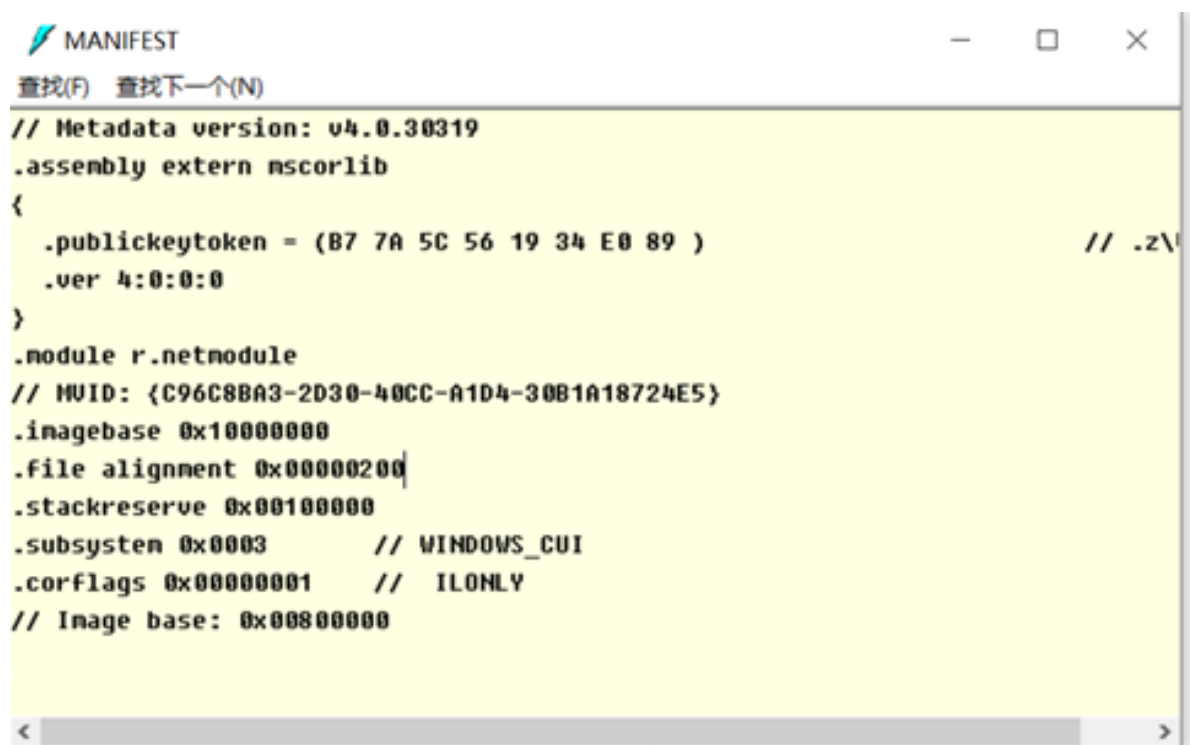
```
csc /t:module r.cs
```

```
(base) PS D:\dotnet\C-\HW1> csc /t:module r.cs
Microsoft (R) Visual C# Compiler version 4.8.4084.0
for C# 5
Copyright (C) Microsoft Corporation. All rights reserved.

This compiler is provided as part of the Microsoft (R) .NET Framework, but only supports language versions up to C# 5, which
is no longer the latest version. For compilers that support newer versions of the C# programming language, see http://go.mi
crosoft.com/fwlink/?LinkID=533240

(base) PS D:\dotnet\C-\HW1> 
```

生成的模块:



The screenshot shows a text editor window titled "MANIFEST" with a search bar at the top. The main content area displays the text of a manifest file, which is a XML document used by the .NET runtime to describe an assembly. The text is as follows:

```
// Metadata version: v4.0.30319
.assembly extern mscorlib
{
    .publickeytoken = (B7 7A 5C 56 19 34 E0 89 ) // .z\
    .ver 4:0:0:0
}
.module r.netmodule
// GUID: {C96C8BA3-2D30-40CC-A1D4-30B1A18724E5}
.imagebase 0x10000000
.file alignment 0x00000200
.stackreserve 0x00100000
.subsystem 0x0003 // WINDOWS_CUI
.corflags 0x00000001 // ILONLY
// Image base: 0x00800000
```

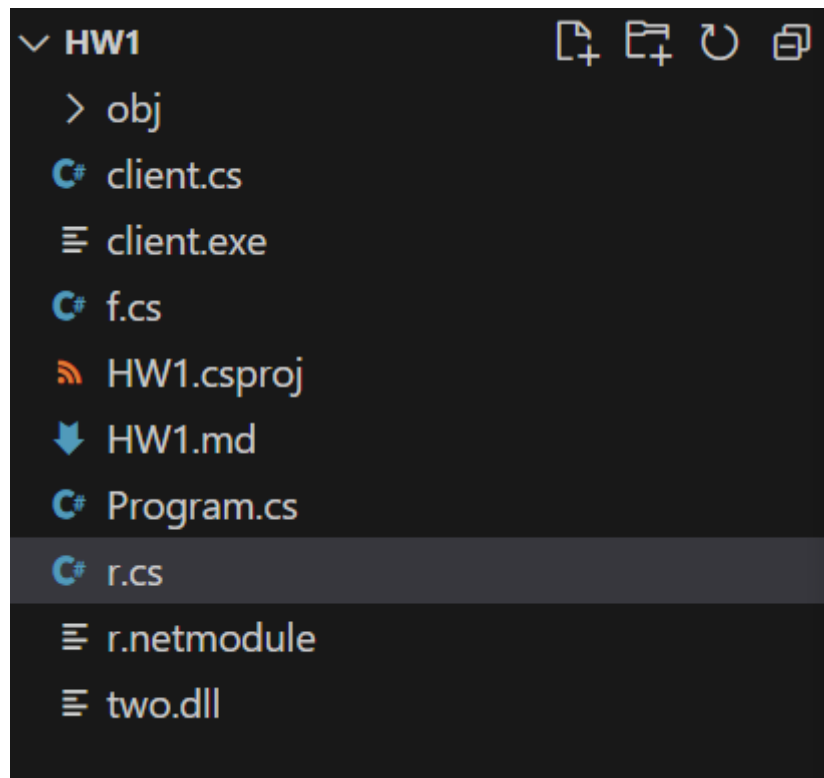
使用第一个模块和第二个模块生成一个程序集:

```
csc /out:two.dll /t:library /addmodule:r.netmodule f.cs
```

```
(base) PS D:\dotnet\C-\HW1> csc /out:two.dll /t:library /addmodule:r.netmodule f.cs
Microsoft (R) Visual C# Compiler version 4.8.4084.0
for C# 5
Copyright (C) Microsoft Corporation. All rights reserved.

This compiler is provided as part of the Microsoft (R) .NET Framework, but only supports language versions up to C# 5, which
is no longer the latest version. For compilers that support newer versions of the C# programming language, see http://go.microsoft.com/fwlink/?LinkID=533240
```

目录列表如图所示:



查看生成程序集:

```

查找(F)  查找下一个(N)
// Metadata version: v4.0.30319
.assembly externmscorlib
{
    .publickeytoken = (07 7A 5C 56 19 34 E0 89 )           // .
    .ver 4:0:0:0
}
.assembly two
{
    .custom instance void [mscorlib]System.Runtime.CompilerServices.RuntimeCo
    .custom instance void [mscorlib]System.Runtime.CompilerServices.Compilati
    .hash algorithm 0x00008004
    .ver 0:0:0:0
}
.file r.netmodule
    .hash = (07 E2 84 97 F4 92 43 A2 77 B9 1A 01 80 DB E8 93 // .....C.w
            A7 04 CE 2C ) // ...
.class extern public csharp
{
    .file r.netmodule
    .class 0x02000002
}
.module two.dll
// GUID: {1EA4CEDA-6655-43DA-ACF4-97FAED488B52}
.imagebase 0x10000000
.file alignment 0x00000200
.stackreserve 0x00100000
.subsystem 0x0003 // WINDOWS_CUI
.corflags 0x00000001 // ILONLY
// Image base: 0x07200000

```

```

csc /t:module f.cs
al /out:two.dll /t:library r.netmodule f.netmodule

```

```

MANIFEST
查找(F)  查找下一个(N)
// Metadata version: v4.0.30319
.assembly externmscorlib
{
    .publickeytoken = (07 7A 5C 56 19 34 E0 89 )           // .NET4..
    .ver 4:0:0:0
}
.assembly jack
{
    .custom instance void [mscorlib]System.Runtime.CompilerServices.RuntimeCompatibilityAttribute::.ctor() = ( 01 00 01 00 54 02 16 57 72 61 70 AE 6F 6E 45 70
    .hash algorithm 0x00008004                               63 65 70 74 69 6F 6E 54 68 72 6F 77 73 01 )
    .ver 0:0:0:0
}
.file r.netmodule
    .hash = (07 E2 84 97 F4 92 43 A2 77 B9 1A 01 80 DB E8 93 // .....C.w.....
            A7 04 CE 2C ) // ...
.file f.netmodule
    .hash = (40 09 00 C2 C1 27 C9 72 53 50 E9 06 31 96 1F EF // K.....r$]..1...
            97 9A 7A 0F ) // ..t.
.class extern public csharp
{
    .file r.netmodule
    .class 0x02000002
}
.class extern public csharp
{
    .file f.netmodule
    .class 0x02000002
}
.module jack.dll
// GUID: {04F0A887-0877-4104-9330-A6A9FE6A9E03}

```

测试程序:

```
D:\dotnet\C-\HW1>client
```

```
Hi,.NET
```

```
Hello f
```

```
D:\dotnet\C-\HW1>
```