
Subject: Re: cpp/icpp name clashes [BUG]

Posted by [Sender Ghost](#) on Mon, 15 Mar 2010 02:57:51 GMT

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Question:

How GCC, MSC, OW, CLANG compilers will assemble following source code consisted of FileName, FileName.cpp, FileName.h, FileName.icpp, main.cpp files?

Answer:

GCC input:

```
gcc -x c++ FileName FileName.cpp FileName.icpp main.cpp
```

GCC output files:

a.exe

MSC input:

```
cl /nologo /TP FileName FileName.cpp FileName.icpp main.cpp
```

MSC output:

FileName

FileName.cpp

FileName.icpp

main.cpp

Generating Code...

FileName.obj : warning LNK4042: object specified more than once; extras ignored

FileName.obj : warning LNK4042: object specified more than once; extras ignored

main.obj : error LNK2019: unresolved external symbol "int __cdecl ICppFunction(void)"
(?ICppFunction@@YAHXZ) referenced in function _main

main.obj : error LNK2019: unresolved external symbol "int __cdecl CppFunction(void)"
(?CppFunction@@YAHXZ) referenced in function _main

FileName.exe : fatal error LNK1120: 2 unresolved externals

OW input:

```
wcl386 -zq -cc++ FileName FileName.cpp FileName.icpp main.cpp
```

Some OW output:

Error! E2028: int near Function() is an undefined reference

Error! E2028: int near ICppFunction() is an undefined reference

file MAIN.obj(C:\MAIN.CPP): undefined symbol int near Function()

file MAIN.obj(C:\MAIN.CPP): undefined symbol int near ICppFunction()

Error: Linker returned a bad status

CLANG input:

```
clang -x c++ FileName FileName.cpp FileName.icpp main.cpp
```

CLANG output files:

a.out

Conclusion:

Some compilers can resolve extension clashes internally, but others only with output renaming.

Notes:

For testing used following tools:

gcc (TDM-2 mingw32) 4.4.1

Microsoft (R) 32-bit C/C++ Optimizing Compiler Version 15.00.30729.01 for 80x86

Open Watcom C/C++32 Compile and Link Utility Version 1.9beta1 LA

clang version 1.1 (trunk 98527)

Source code:

File FileName:

```
#include "FileName.h"
```

```
int Function()
{
    return 0;
}
```

File FileName.cpp:

```
#include "FileName.h"
```

```
int CppFunction()
{
    return 1;
}
```

File FileName.h:

```
#ifndef __FileName_h__
#define __FileName_h__
```

```
int Function();
int CppFunction();
int ICppFunction();
```

```
#endif
```

File FileName.icpp:

```
#include "FileName.h"
```

```
int ICppFunction()  
{  
    return 2;  
}
```

File main.cpp:

```
#include "FileName.h"
```

```
int main()  
{  
    int result = Function() + CppFunction() + ICppFunction();  
  
    return result; // 3  
}
```
