



C/C++基礎程式設計

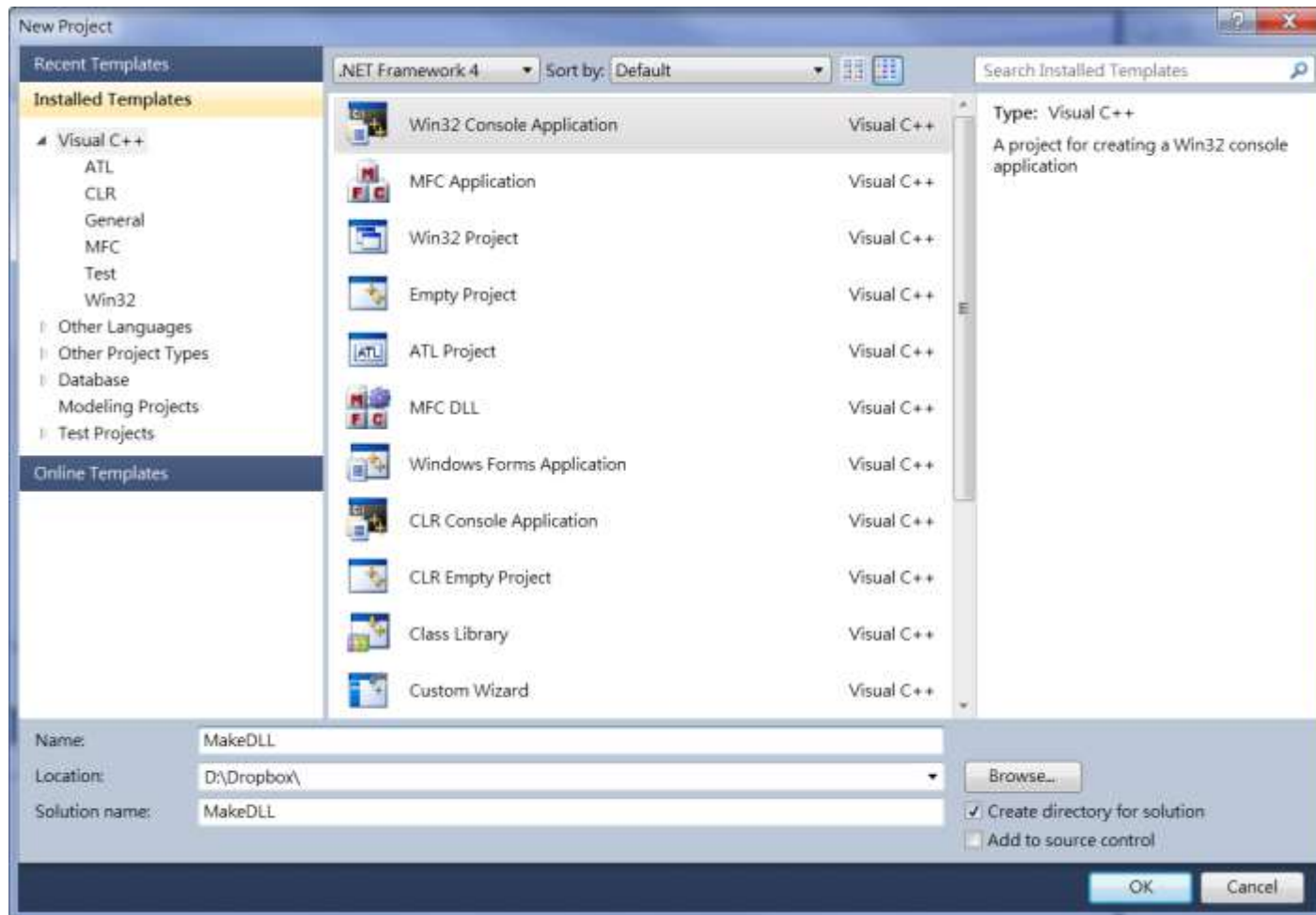
DLL建立與使用

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CSIE, NTU

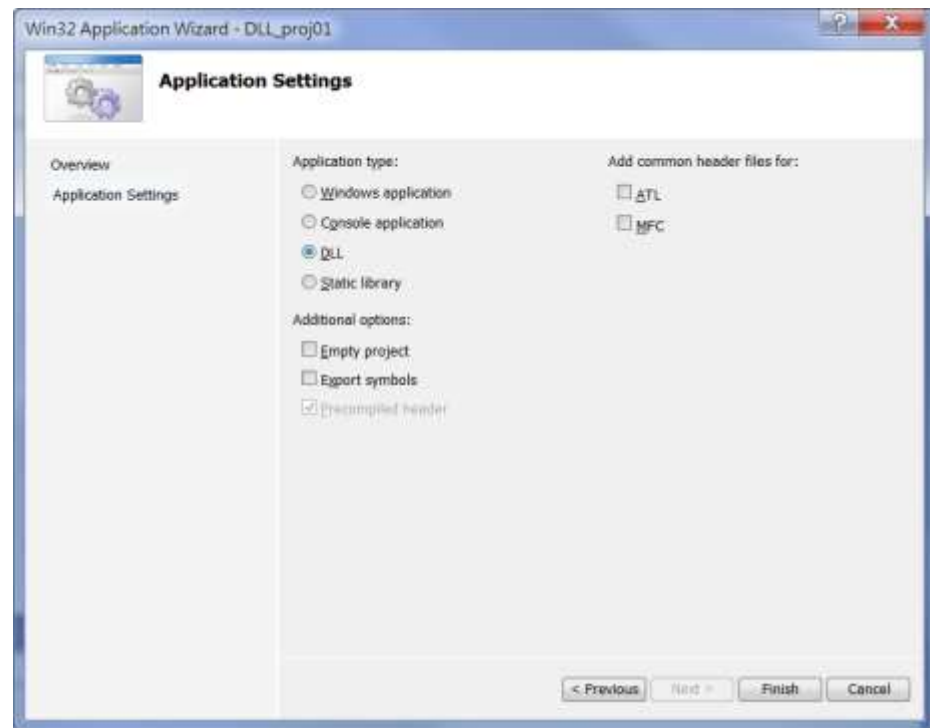
製作DLL

- 建立新專案，開啟win32主控台應用程式



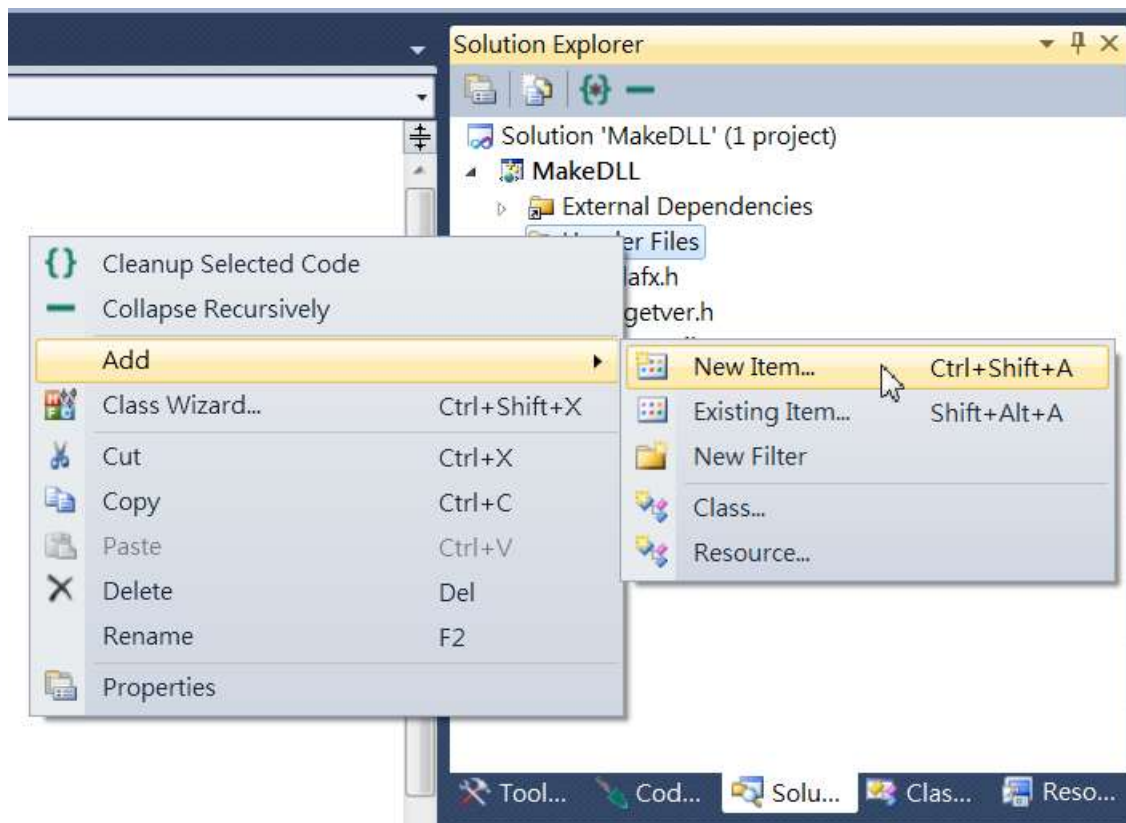
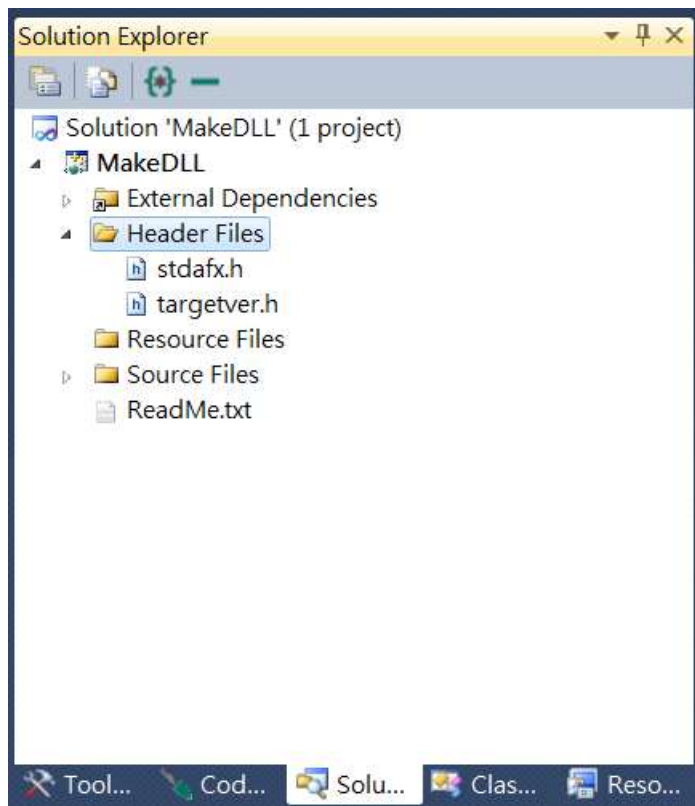
製作DLL

- 下一步
- 選擇DLL後按完成



製作DLL

- 在標頭檔(Header Files)上按右鍵，新增一個標頭檔(.h)，名字就跟DLL的名字一樣(自訂ex: adder.h)



Installed Templates

Visual C++

- UI
- Code
- Data
- Resource
- Web
- Utility
- Property Sheets

Sort by: Default



Search Installed Templates

	Windows Form	Visual C++
	C++ File (.cpp)	Visual C++
	HTML Page (.htm)	Visual C++
	Static Discovery File (.disco)	Visual C++
	Header File (.h)	Visual C++
	Midl File (.idl)	Visual C++
	Resource File (.rc)	Visual C++
	Server Response File (.srf)	Visual C++
	Module-Definition File (.def)	Visual C++
	Registration Script (.rgs)	Visual C++
	MFC Ribbon Definition XML File	Visual C++
	Property Sheet (.props)	Visual C++

Type: Visual C++
Creates a C++ header file

Name: adder

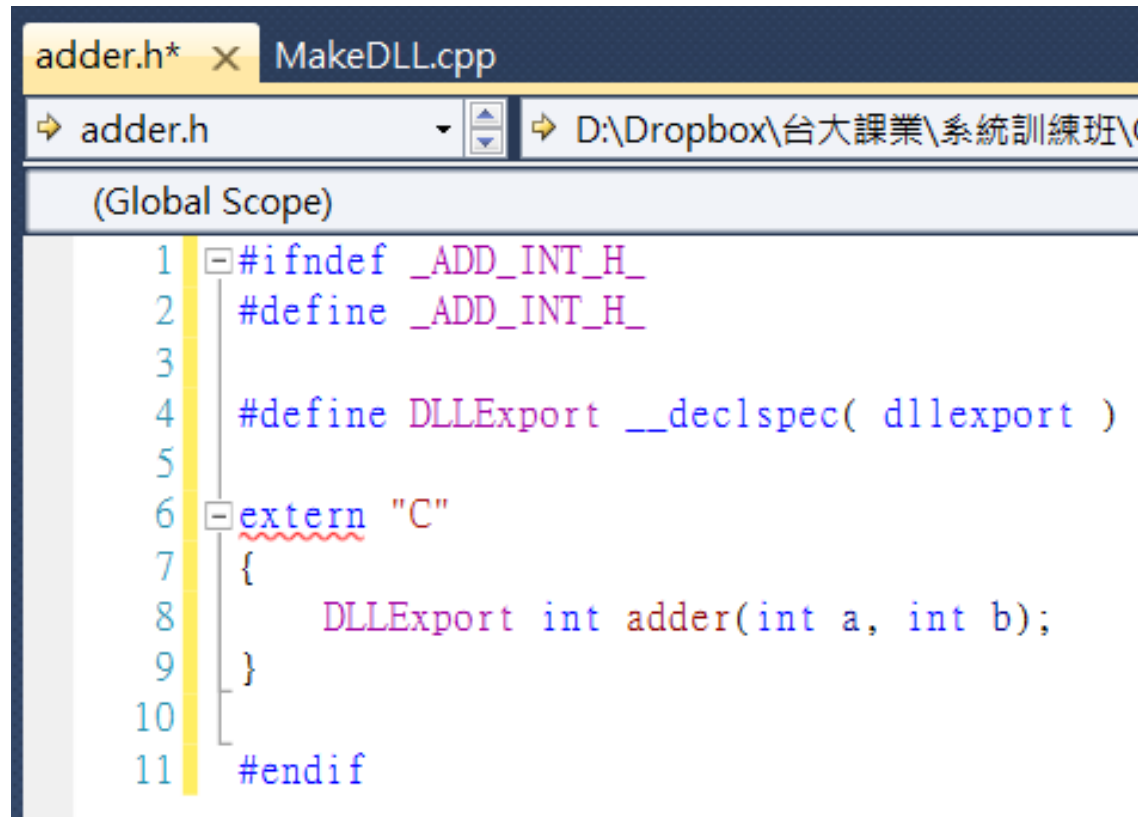
Location: D:\Dropbox\MakeDLL\MakeDLL\

Browse...

Add Cancel

製作 D L L

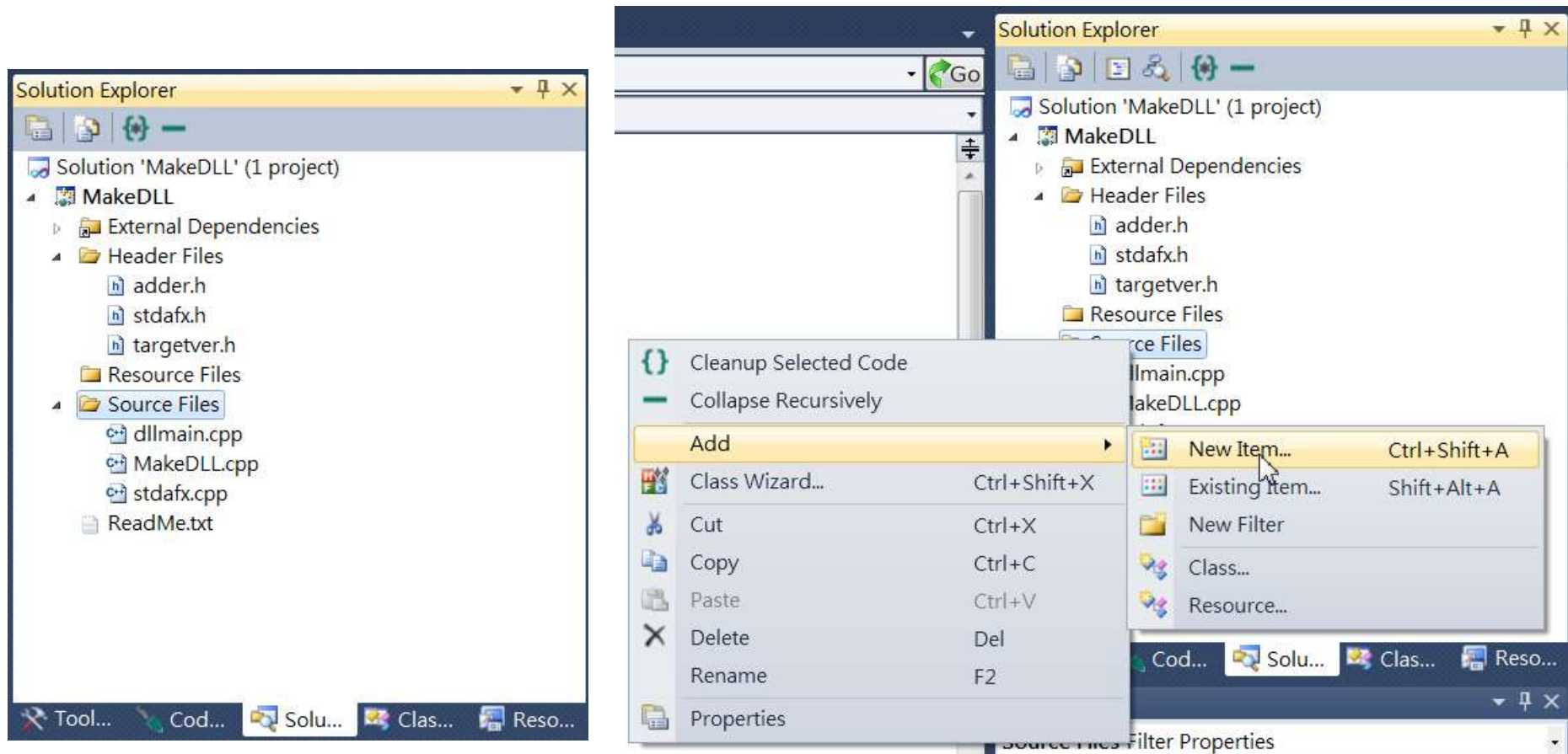
- 在標頭檔 (.h) 中宣告 D L L 的方法，並且定義 D L L export (可自行更改名字) 在方法的前面，將 D L L 的方法做輸出



```
adder.h* x MakeDLL.cpp
➔ adder.h ➔ D:\Dropbox\台大課業\系統訓練班\
(Global Scope)
1  #ifndef _ADD_INT_H_
2  #define _ADD_INT_H_
3
4  #define DLLExport __declspec( dllexport )
5
6  extern "C"
7  {
8      DLLExport int adder(int a, int b);
9  }
10
11 #endif
```

製作DLL

- 新增.cpp檔中寫函式的內容，對原始程式檔 (Source Files)按右鍵加入新項目



Installed Templates

Visual C++

UI

Code

Data

Resource

Web

Utility

Property Sheets

Sort by: Default

Windows Form

Visual C++

C++ File (.cpp)

Visual C++

HTML Page (.htm)

Visual C++

Static Discovery File (.disco)

Visual C++

Header File (.h)

Visual C++

Midl File (.idl)

Visual C++

Resource File (.rc)

Visual C++

Server Response File (.srf)

Visual C++

Module-Definition File (.def)

Visual C++

Registration Script (.rgs)

Visual C++

MFC Ribbon Definition XML File

Visual C++

Property Sheet (.props)

Visual C++

Search Installed Templates

Type: Visual C++

Creates a file containing C++ source code

Name:

adderr

Location:

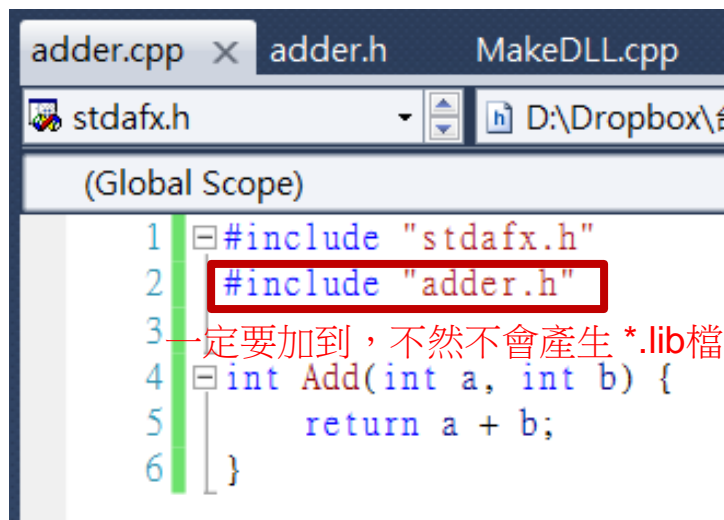
D:\Dropbox\MakeDLL\MakeDLL

Browse...

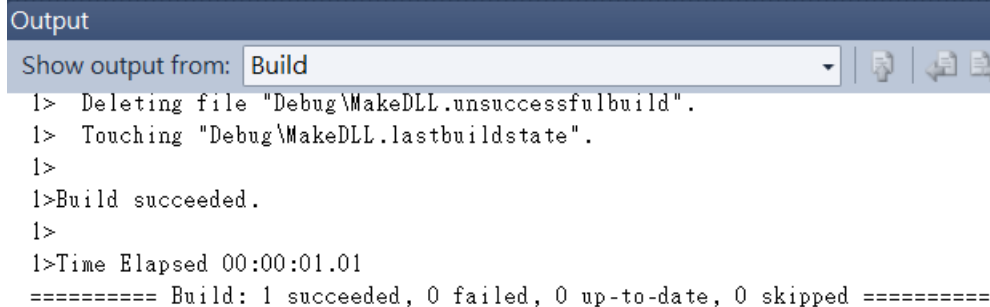
Add

Cancel

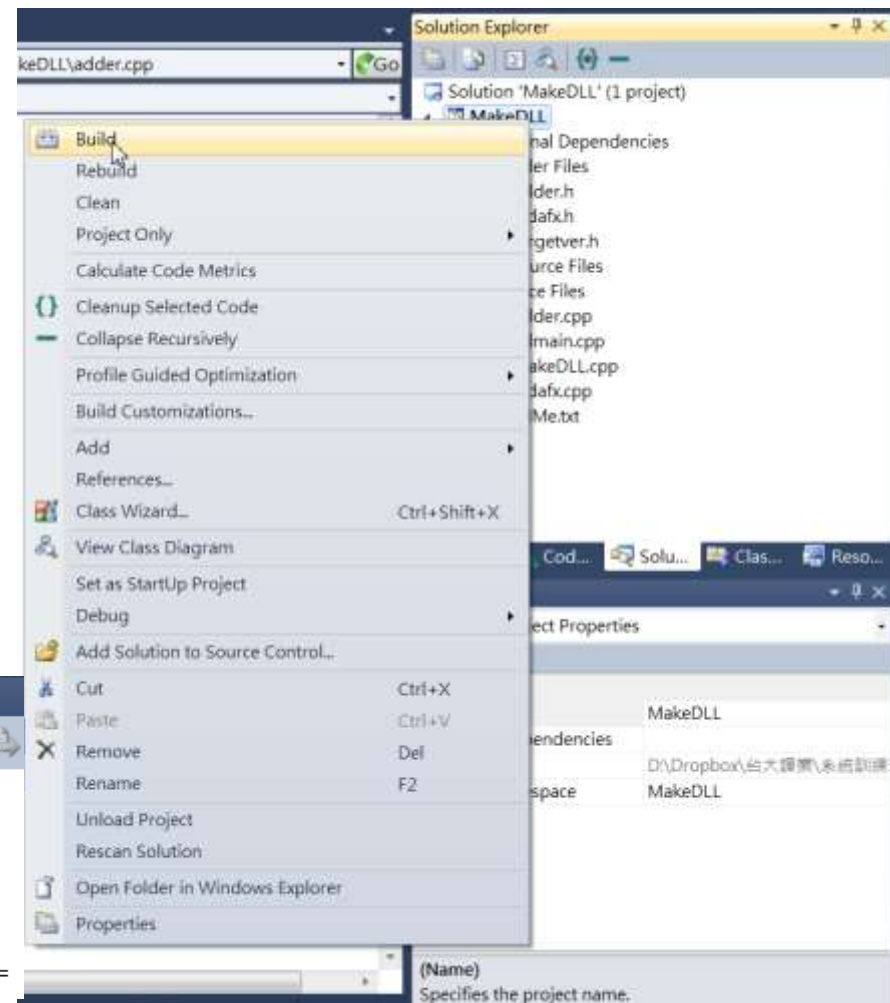
- 加入相對應函式的程式碼，並對專案編譯



```
1 #include "stdafx.h"
2 #include "adder.h"
3
4 int Add(int a, int b) {
5     return a + b;
6 }
```

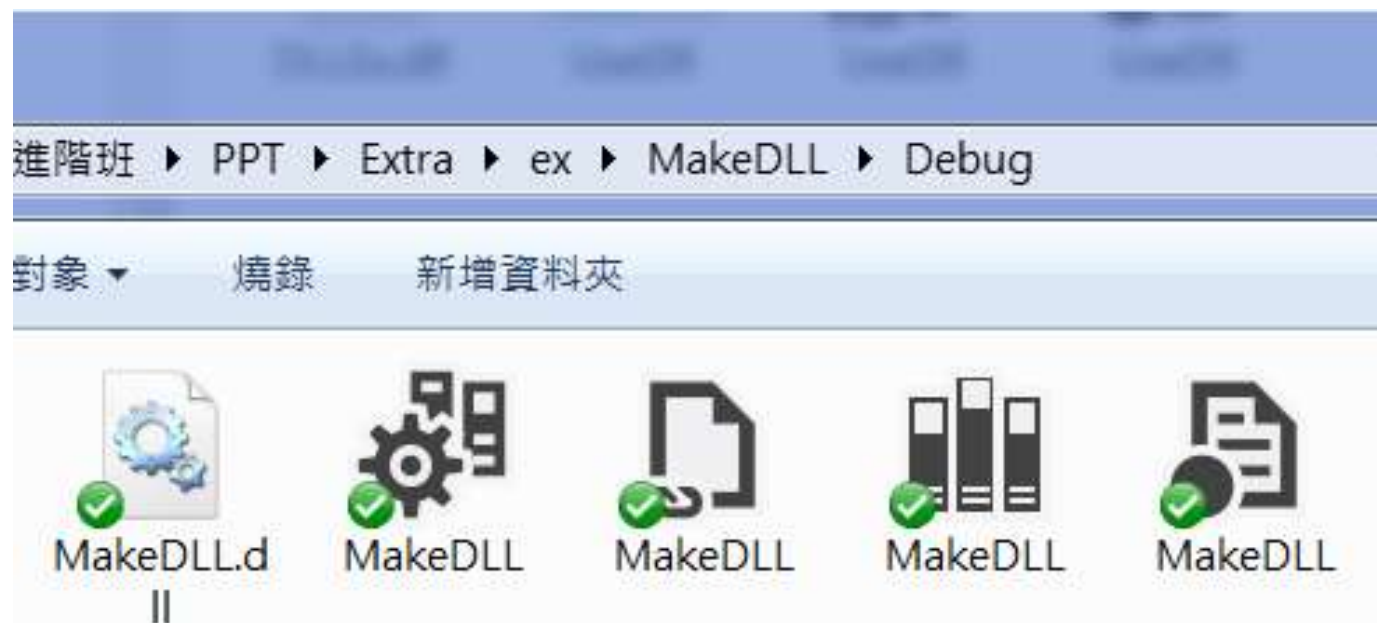


```
Output
Show output from: Build
1> Deleting file "Debug\MakeDLL.unsuccessfulbuild".
1> Touching "Debug\MakeDLL.lastbuildstate".
1>
1>Build succeeded.
1>
1>Time Elapsed 00:00:01.01
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
```



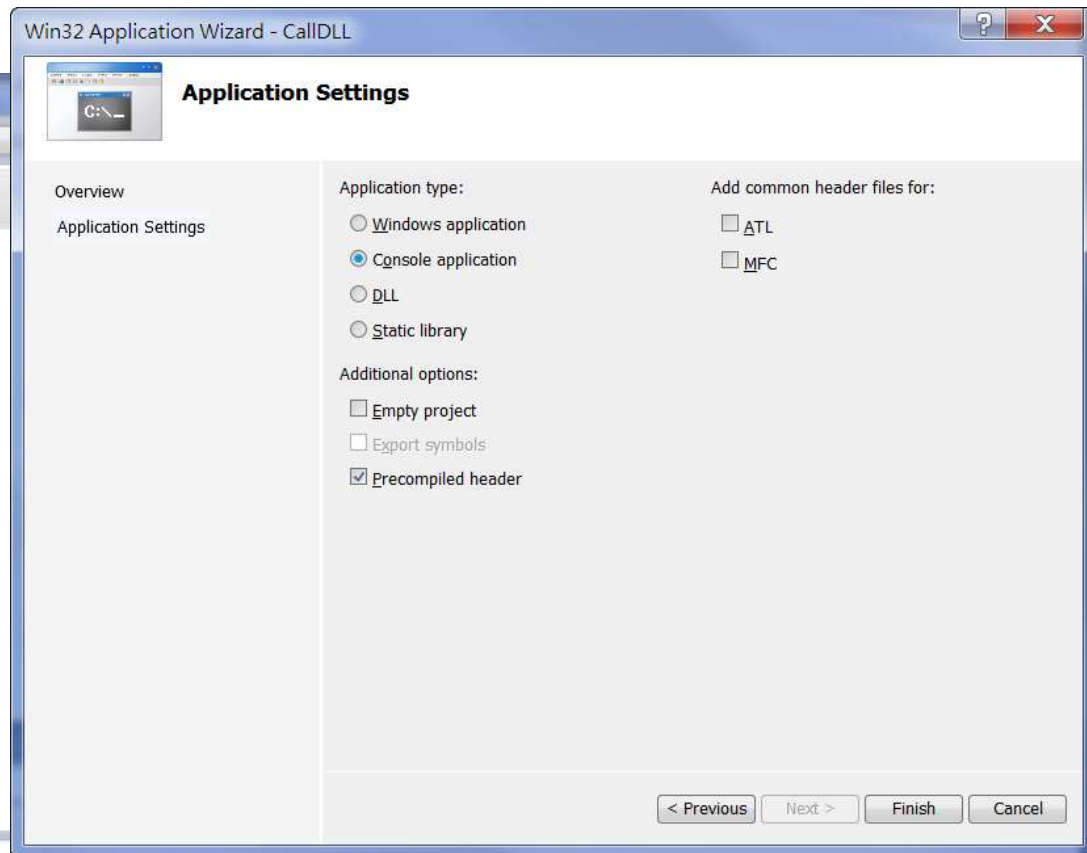
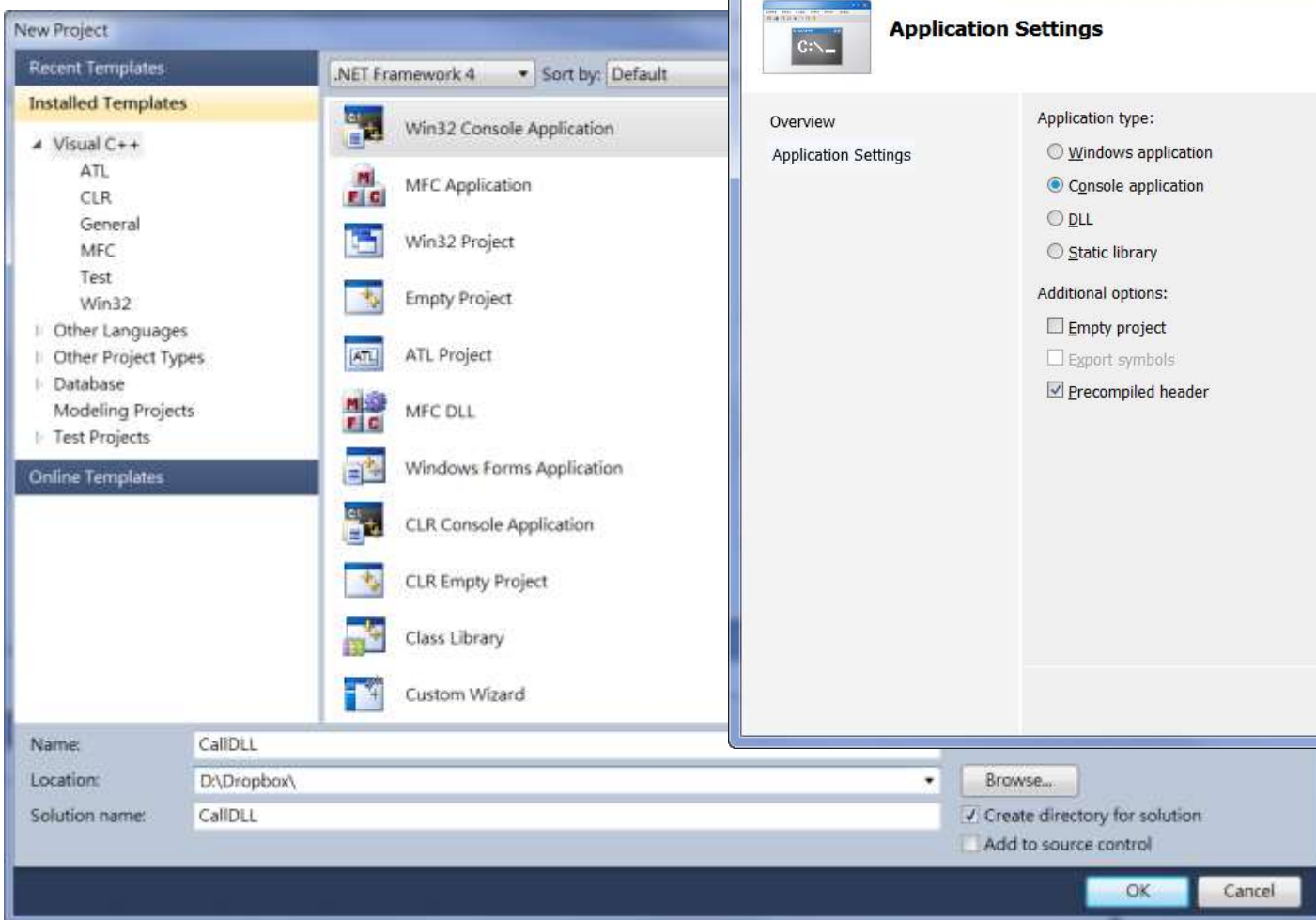
製作 D L L

- 你會在你的專案中找到你製作的 D L L 和你 D L L 的 .lib 檔



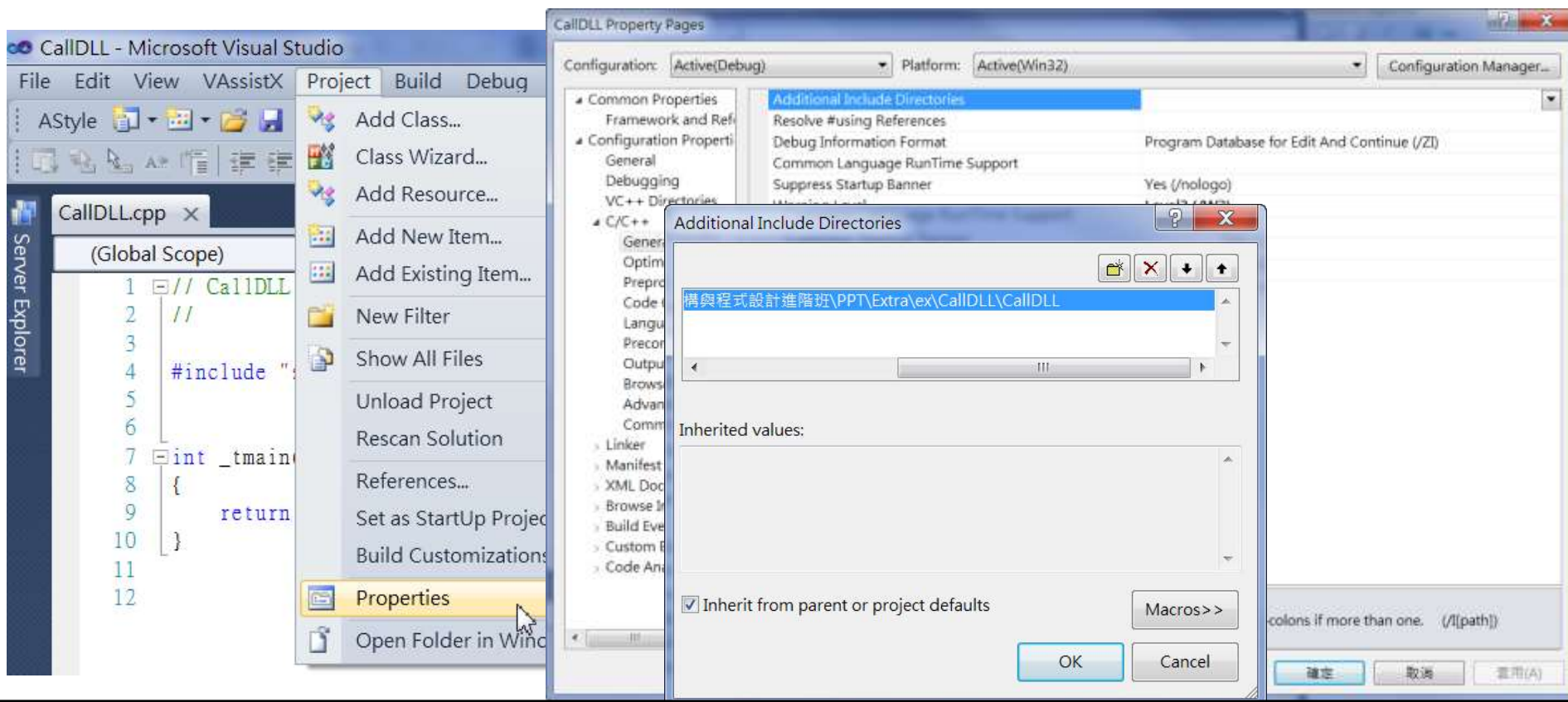
呼叫DLL

- 建立新C++專案



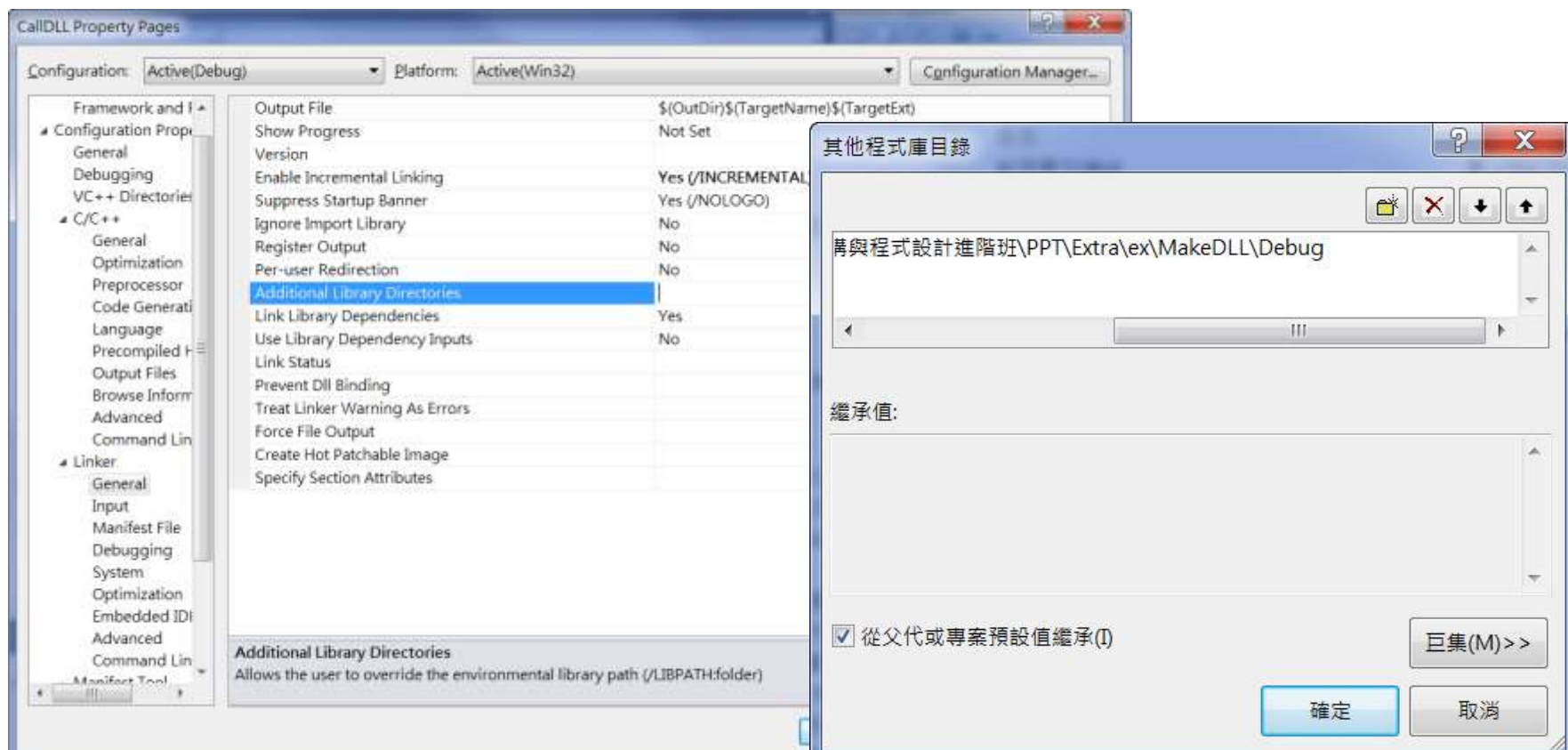
呼叫DLL

- 先在專案的屬性 (property) --> C/C++ --> 一般 (general) --> 其他Include目錄
將你剛剛做的DLL的(.h)檔的位置include進來



呼叫DLL

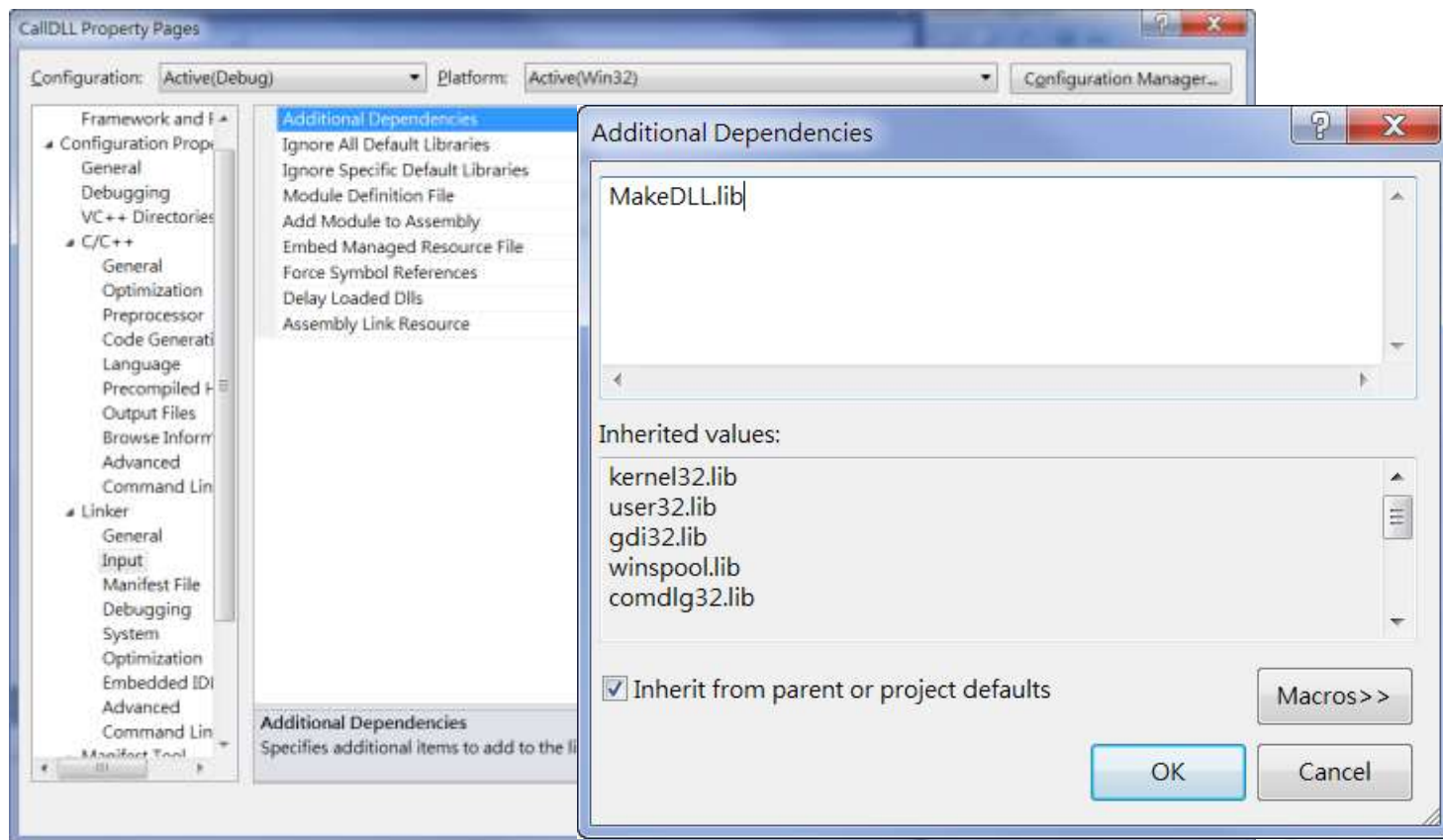
- 在連結器(linking) --> 一般(general) --> 其他程式庫目錄，在這邊將你剛剛製作的DLL的(.lib)檔的路徑加進來



呼叫DLL

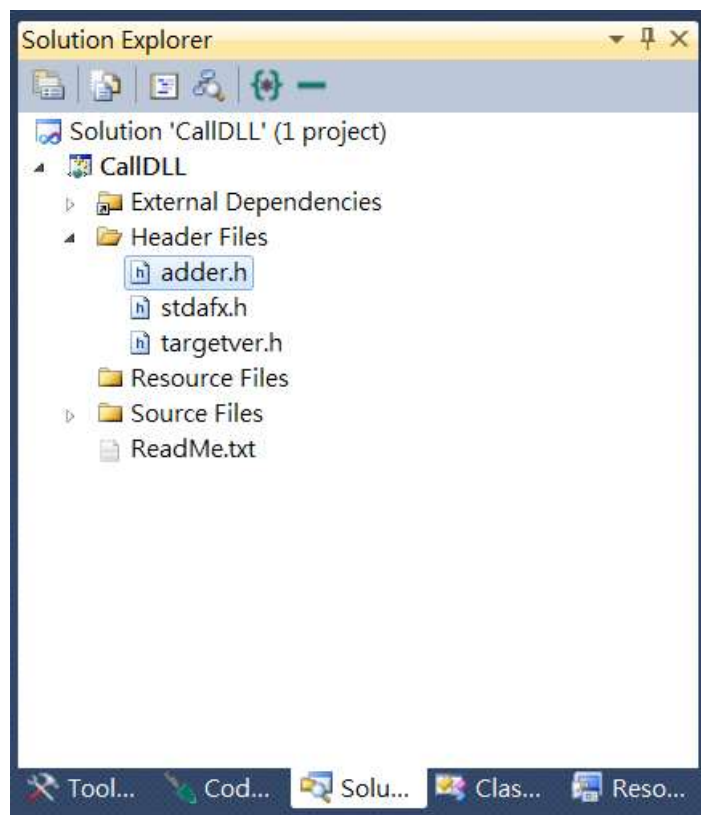
- 在連結器(linking) --> 輸入(input) --> 其它相依性 (additional dependencies)

輸入你剛剛製作的DLL(.lib)檔的名字 ex:
xxx.lib



呼叫 D L L

- 程式中記得include你的 D L L 的(.h)
接下來你就可以呼叫 D L L 中的方法來使用了

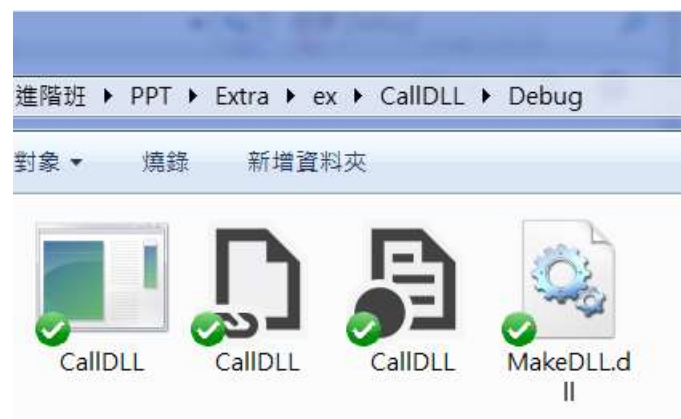
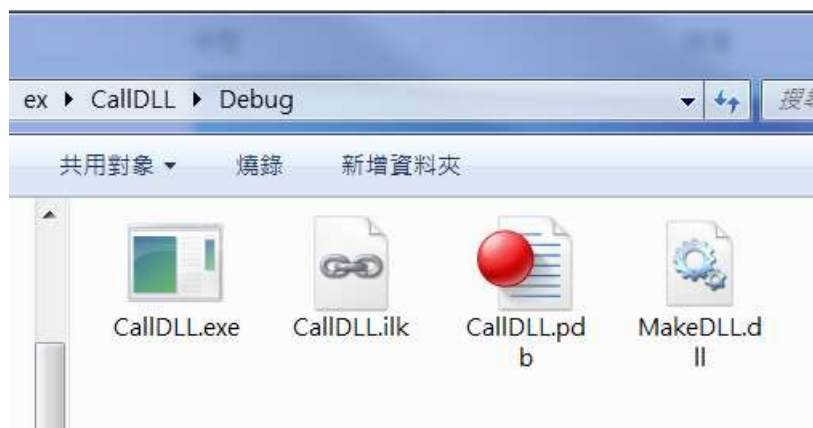


```
adder.h  CallDLL.cpp x
_tmain  int _tmain(int argc, _TCHAR* argv[])
(Global Scope) _tmain

1 // CallDLL.cpp : Defines the entry point for the
2 //
3
4 #include "stdafx.h"
5 #include <iostream>
6
7 #include "adder.h"
8
9
10 int _tmain(int argc, _TCHAR* argv[])
11 {
12     int sum = adder(10, 20);
13     std::cout << "adder = " << sum << std::endl;
14
15
16
17     system("pause");
```

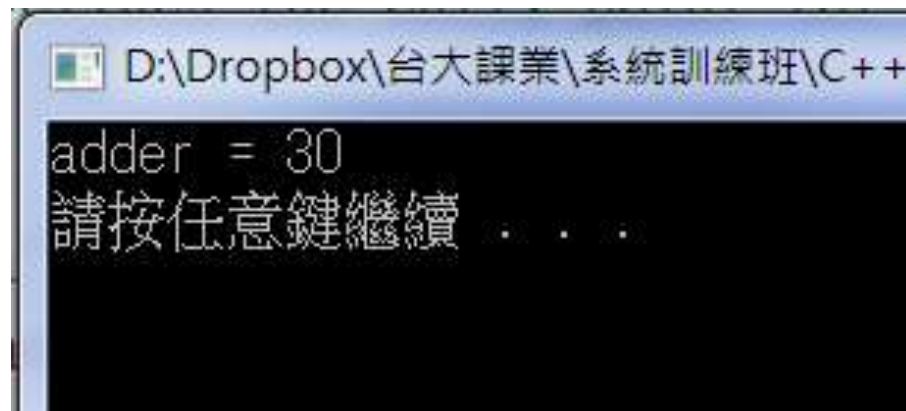
呼叫 D L L

- compiler完，記得將你剛剛製作的 D L L 放在你的 E X E 檔的同一個資料夾中



呼叫 D L L

- 執行程式，可以看到 D L L 呼叫成功囉！！！！



A screenshot of a Windows command prompt window. The title bar shows the path "D:\Dropbox\台大課業\系統訓練班\C++". The command prompt displays the text "adder = 30" on the first line and "請按任意鍵繼續 . . ." on the second line.

```
D:\Dropbox\台大課業\系統訓練班\C++  
adder = 30  
請按任意鍵繼續 . . .
```