

財務演算法

Financial Algorithms

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目 錄

Visual C++ 2015 使用說明

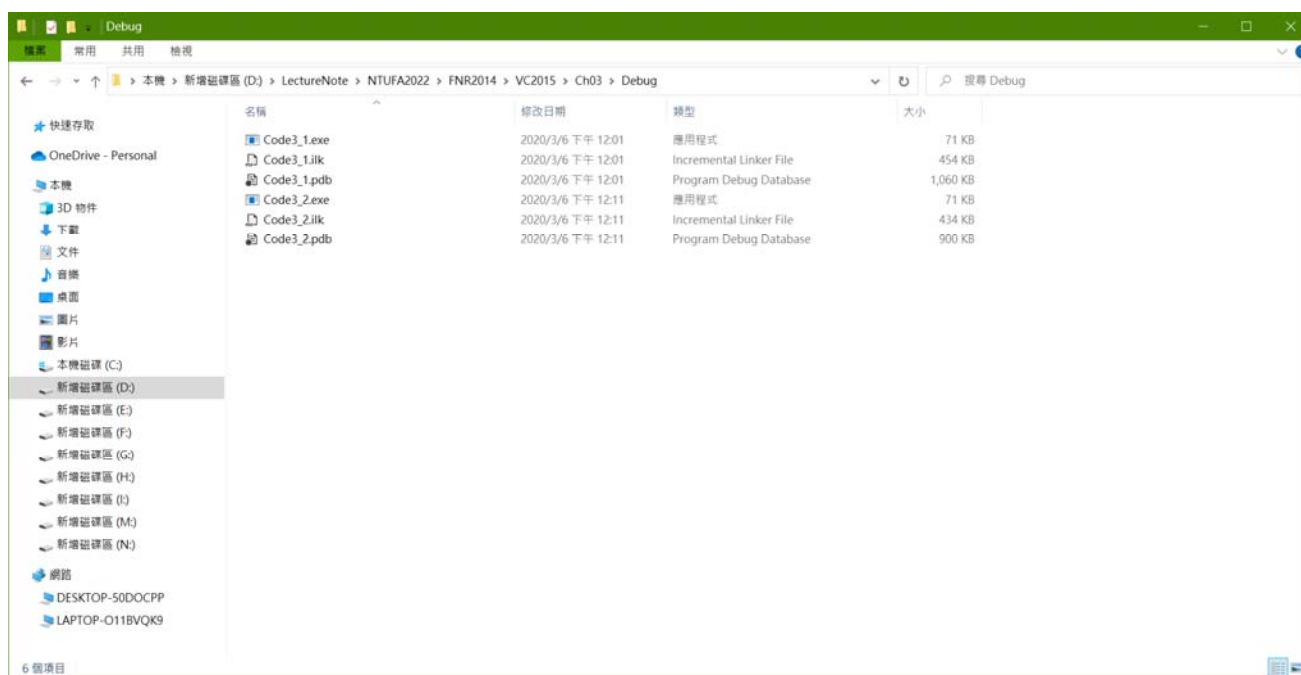
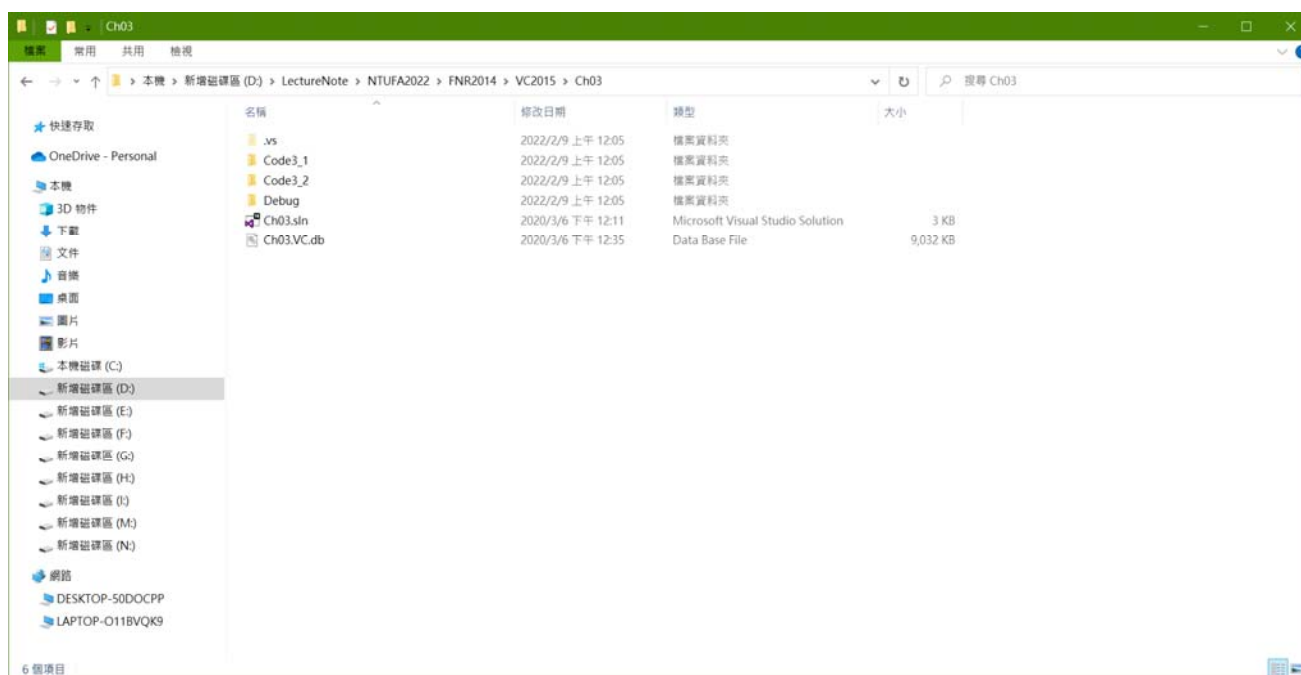
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Borland C++ Builder 6 使用說明

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一、專案結果

◆ Chapter 3 有兩個範例，產生執行檔，如下位址。

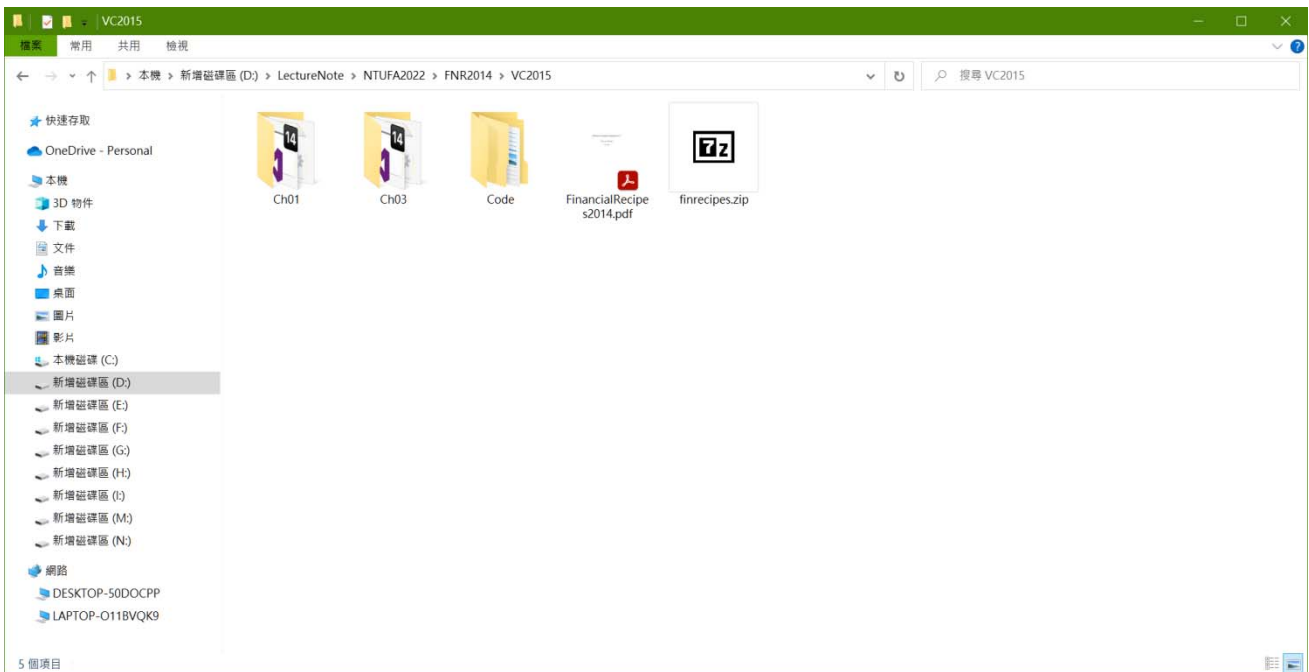


➤ 執行結果

```
命令提示字元
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03>cd debug
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>dir /w
磁碟區 D 中的磁碟是 新增磁碟區
磁碟區序號: A624-91C0
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug 的目錄
[.]          [..]          Code3_1.exe  Code3_1.ilc  Code3_1.pdb  Code3_2.exe  Code3_2.ilc  Code3_2.pdb
6 個檔案      3,060,116 位元組
2 個目錄      1,688,399,220,736 位元組可用
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>Code_3_1.exe
'Code_3_1.exe' 不是內部或外部命令、可執行的程式或批次檔。
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>Code3_1.exe
present value, 10% discretely compounded interest = 30.1653
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>Code3_2.exe
present value, 5% discretely compounded interest = 9.29705
internal rate of return = 0.1
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>
```

二、檔案分佈

◆ 下載的壓縮檔與 pdf。

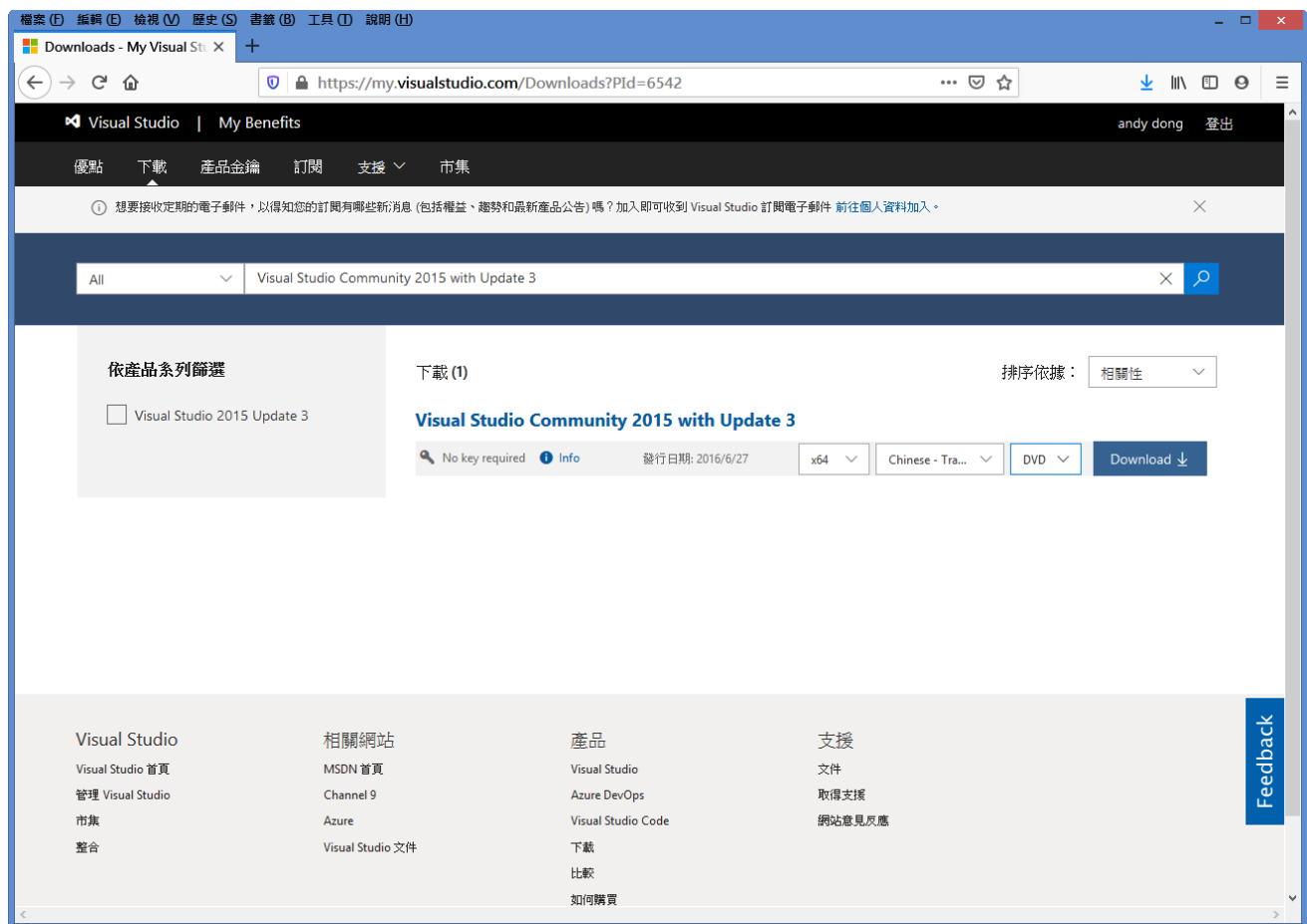


◆ 所有的 code，放在下面位址。



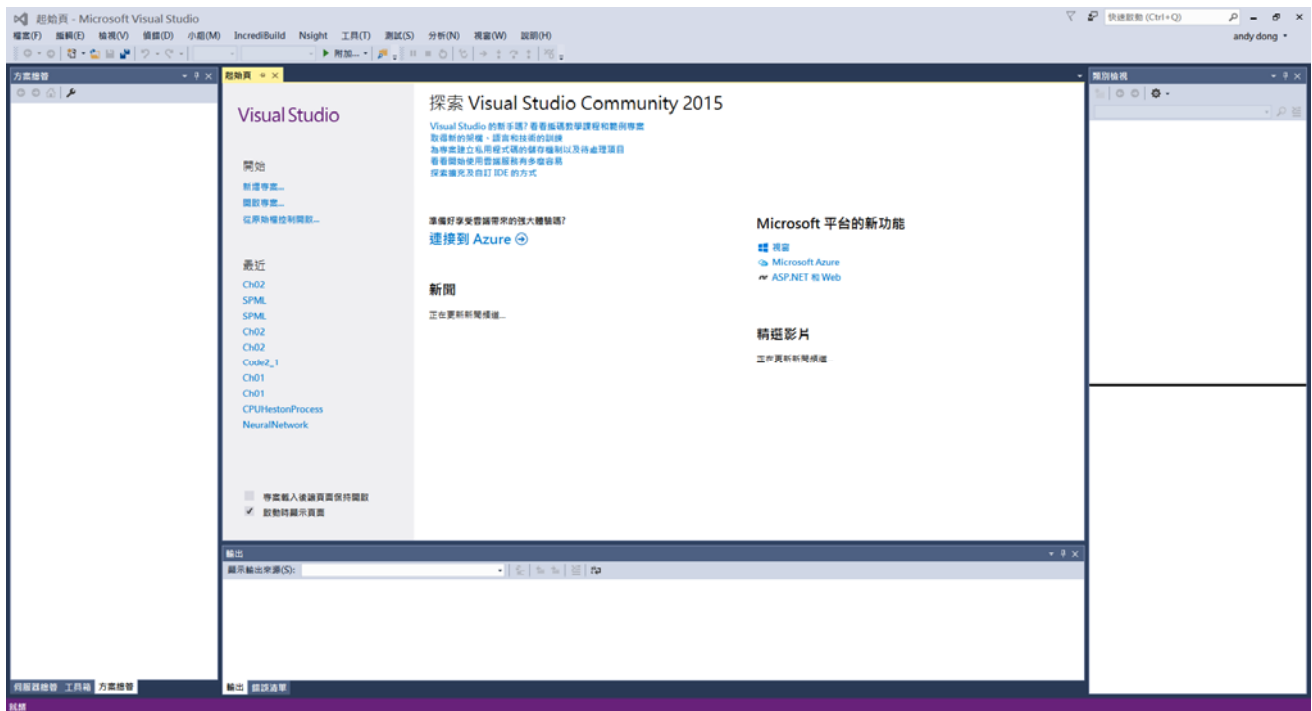
三、使用 Visual Studio 2015

◆ 下載 Visual Studio 2015

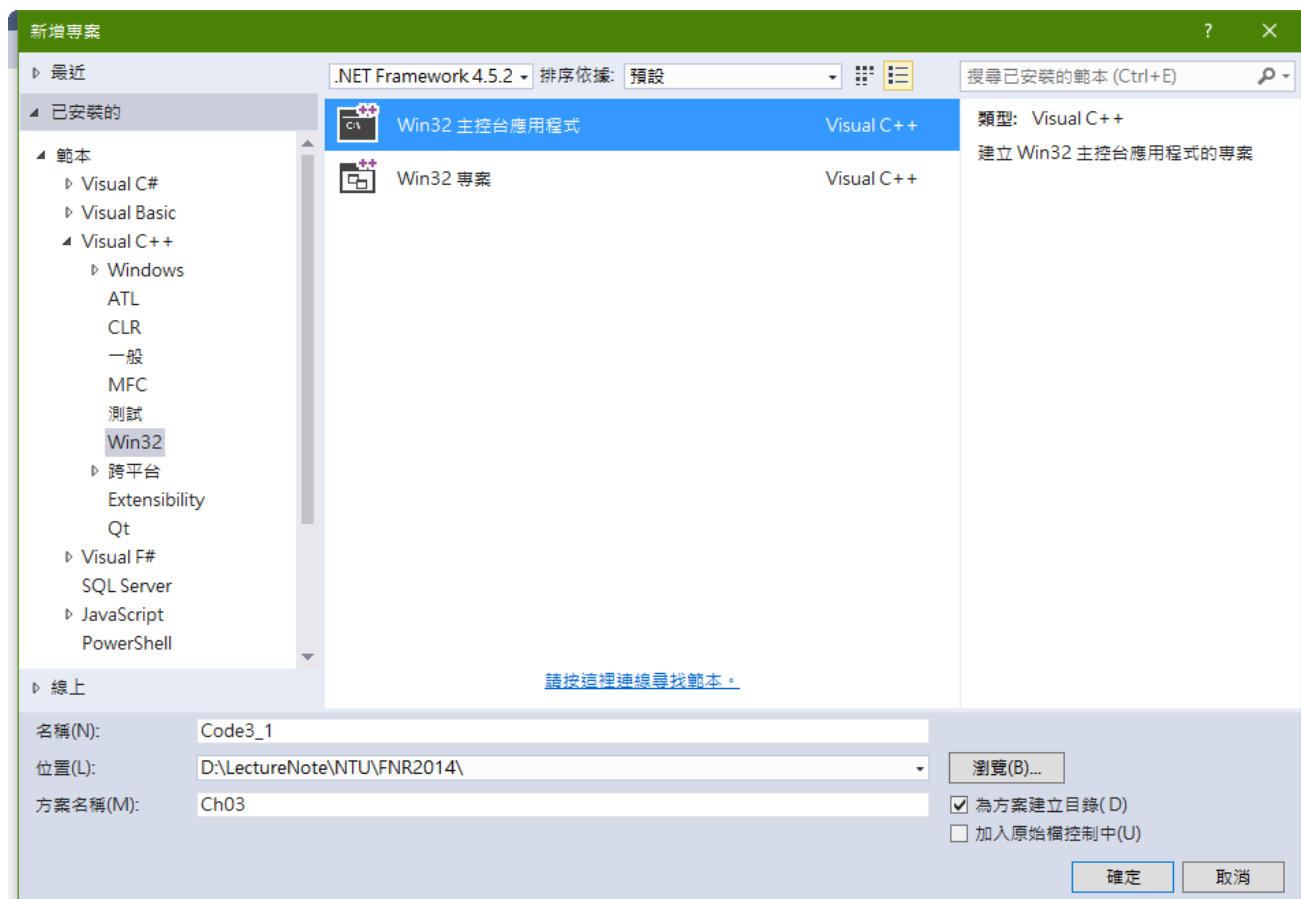
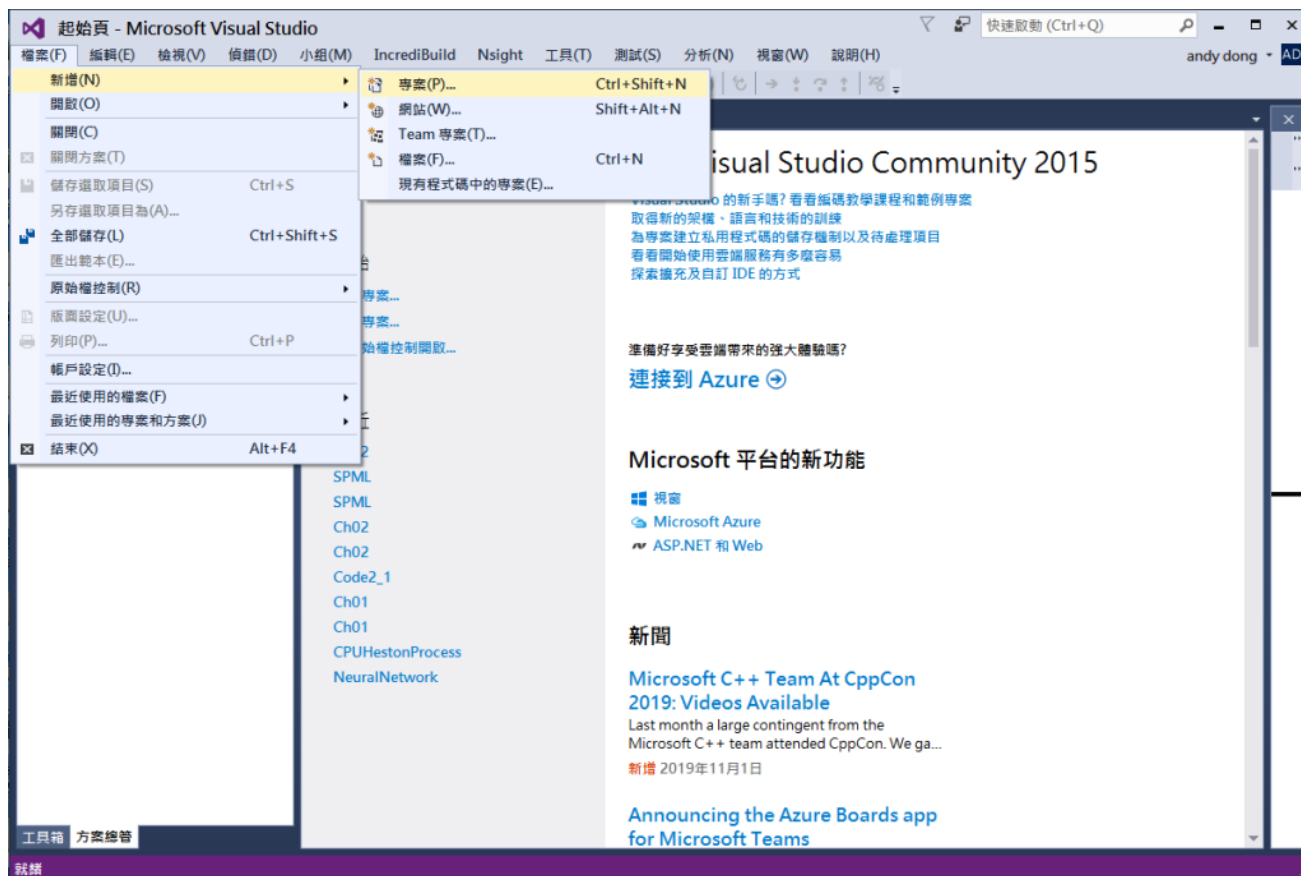


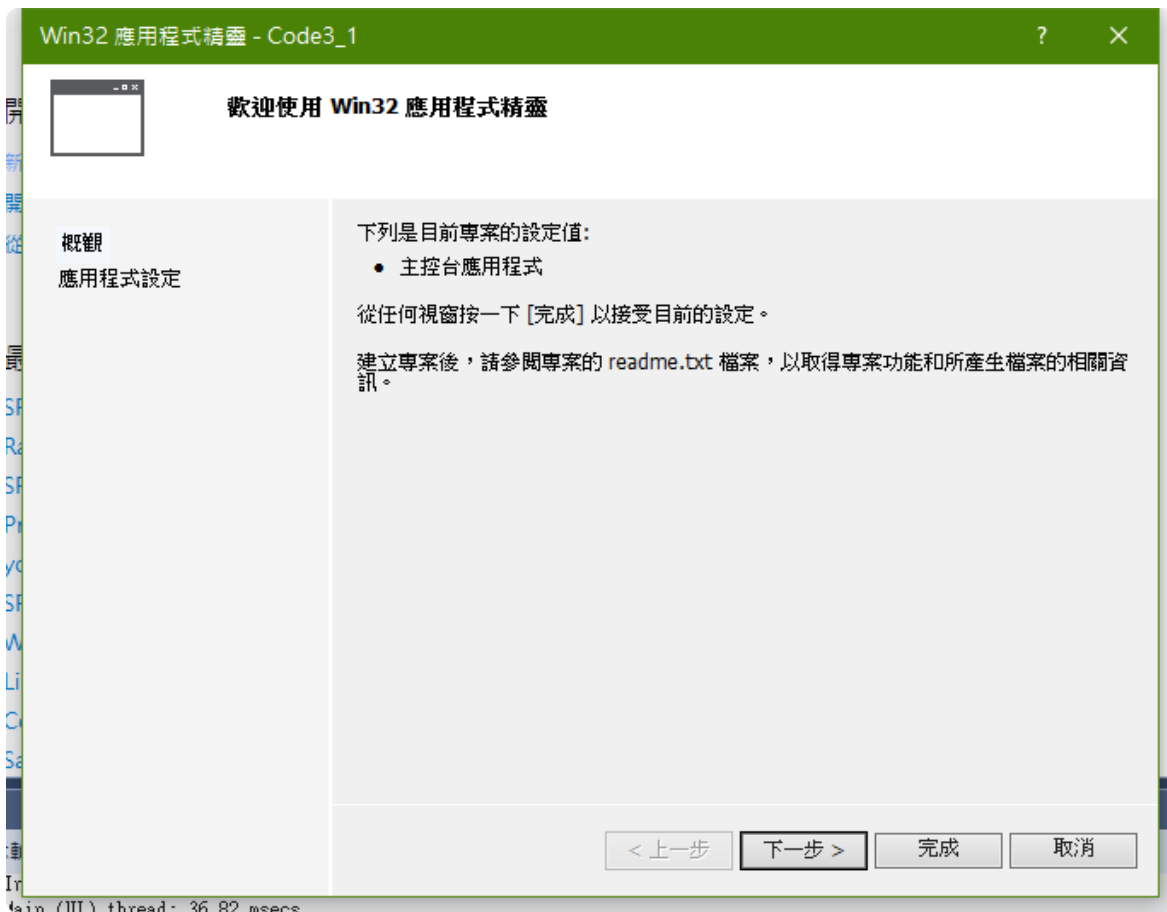
➤ 可能須要註冊

◆ 安裝完成，執行 VS2015

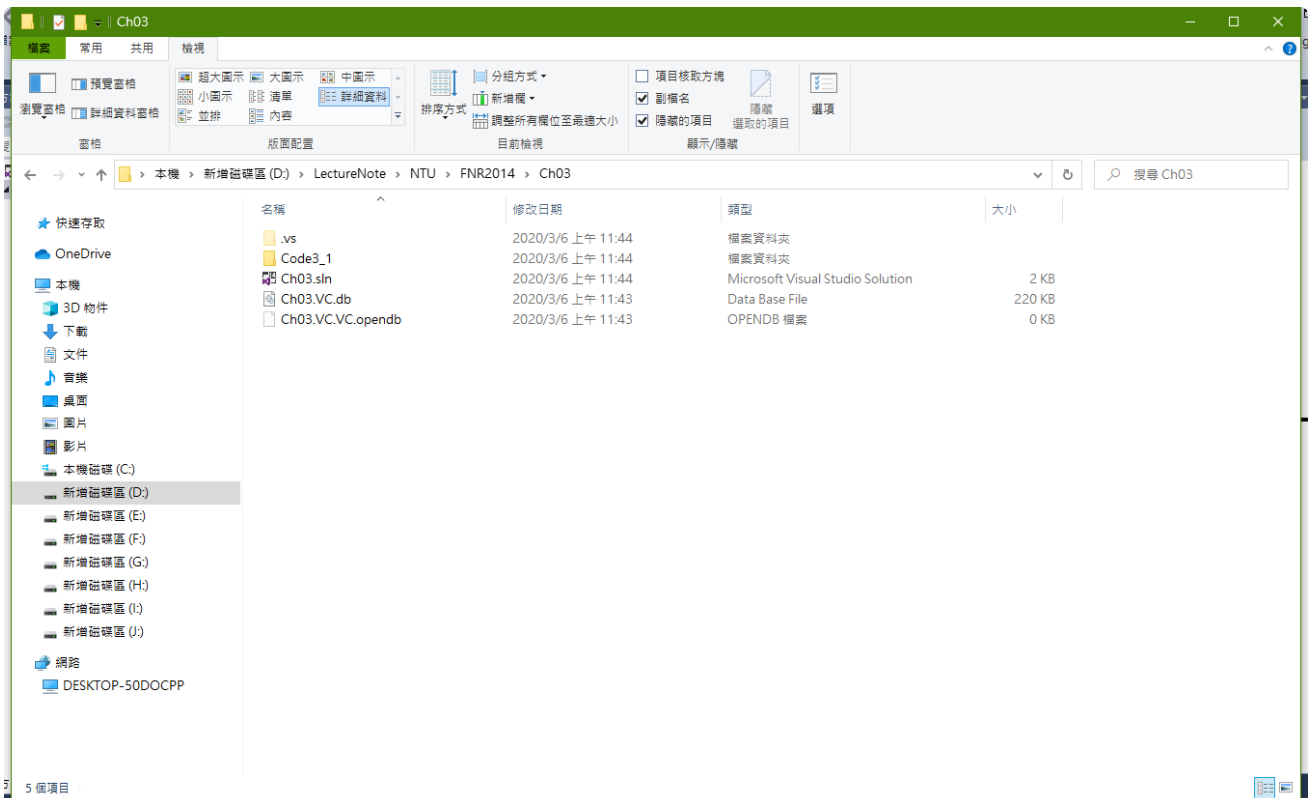
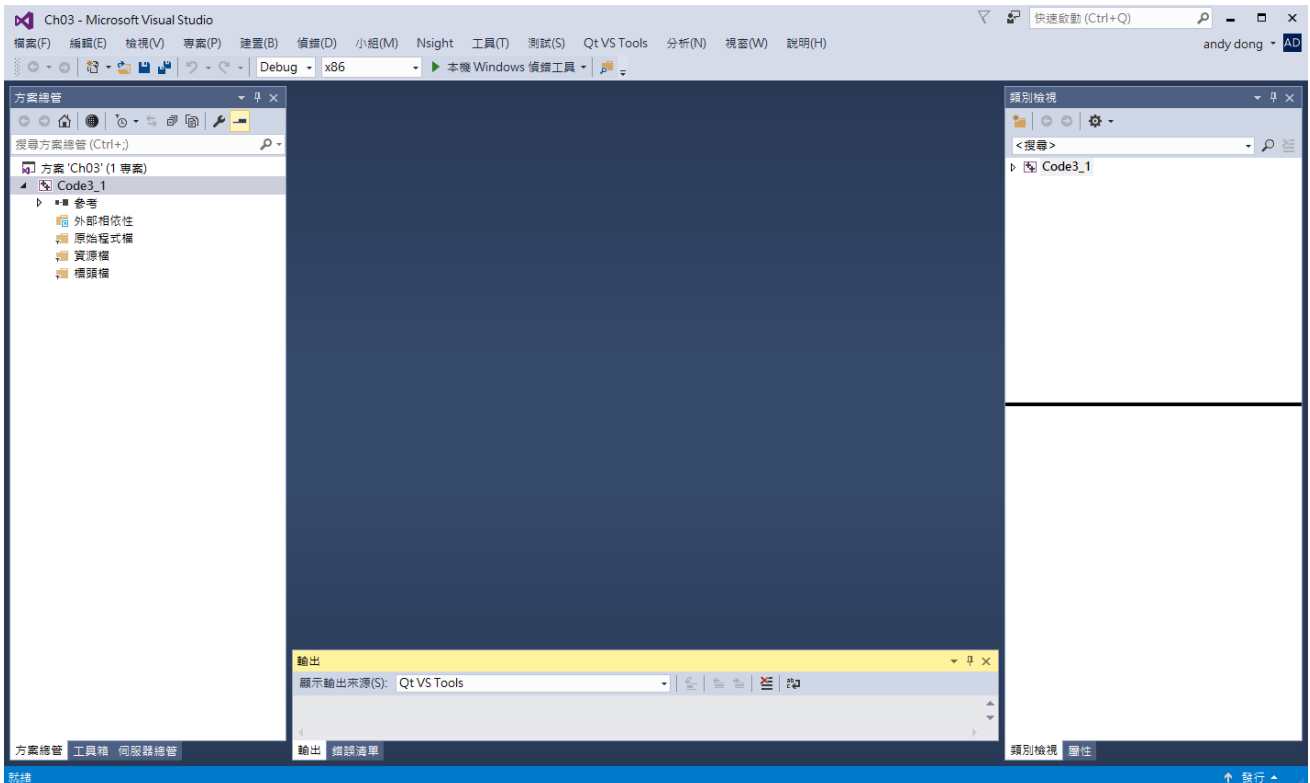


◆ 新增專案

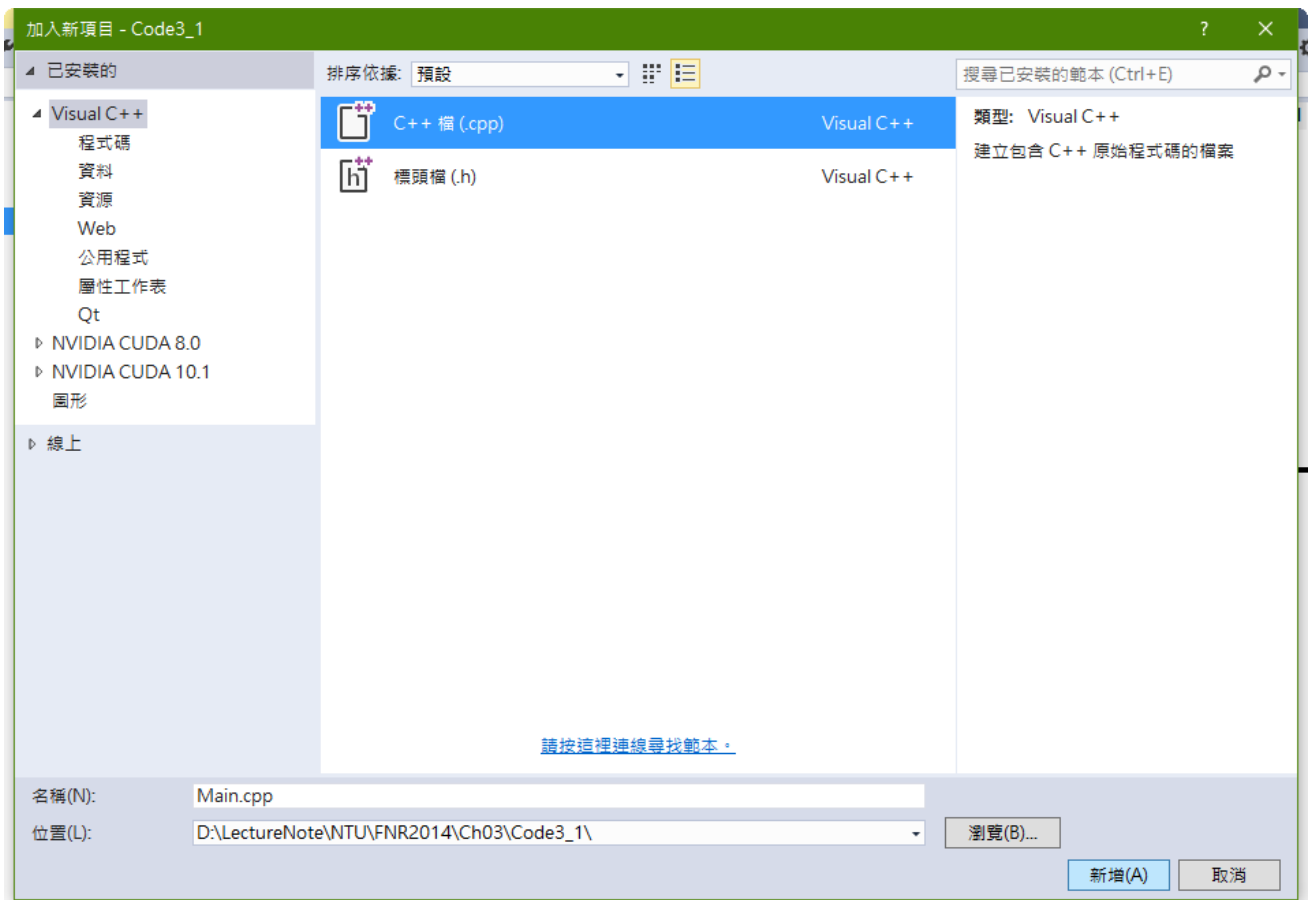
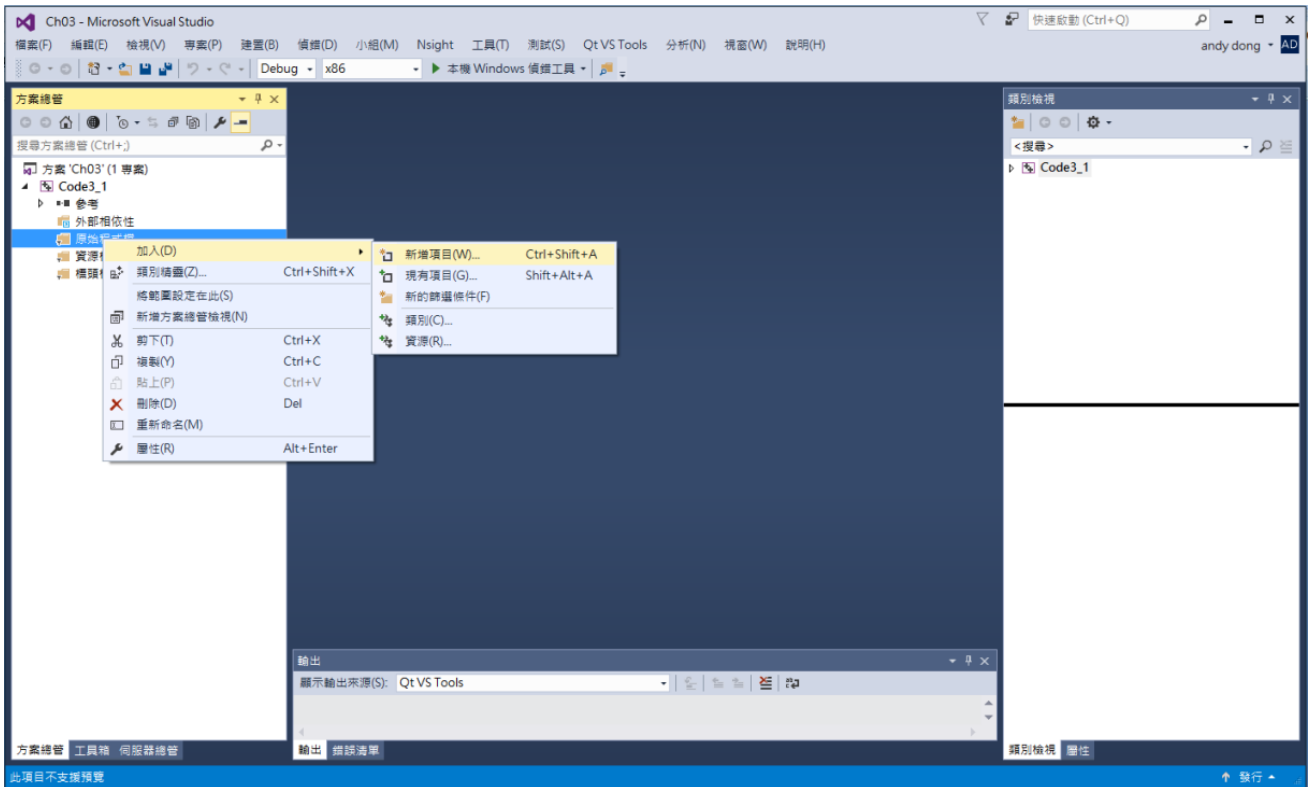


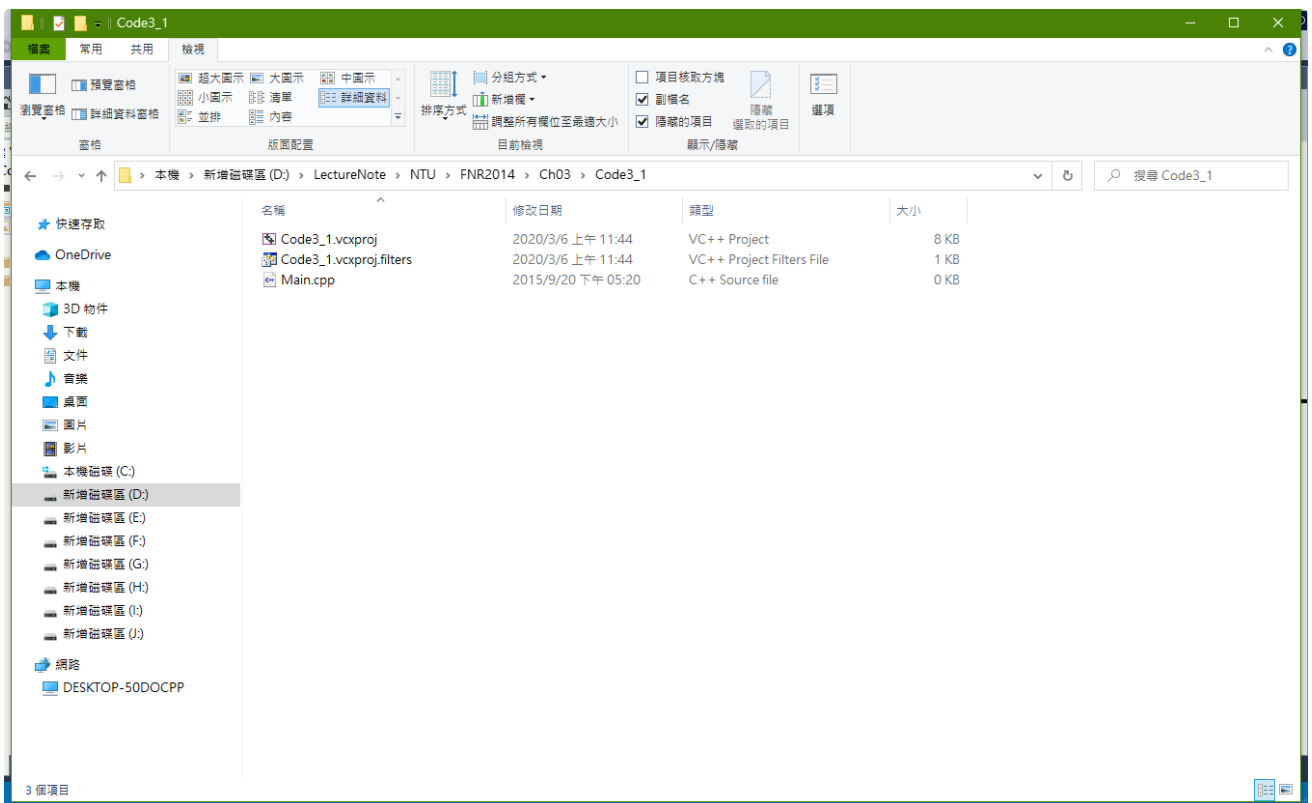
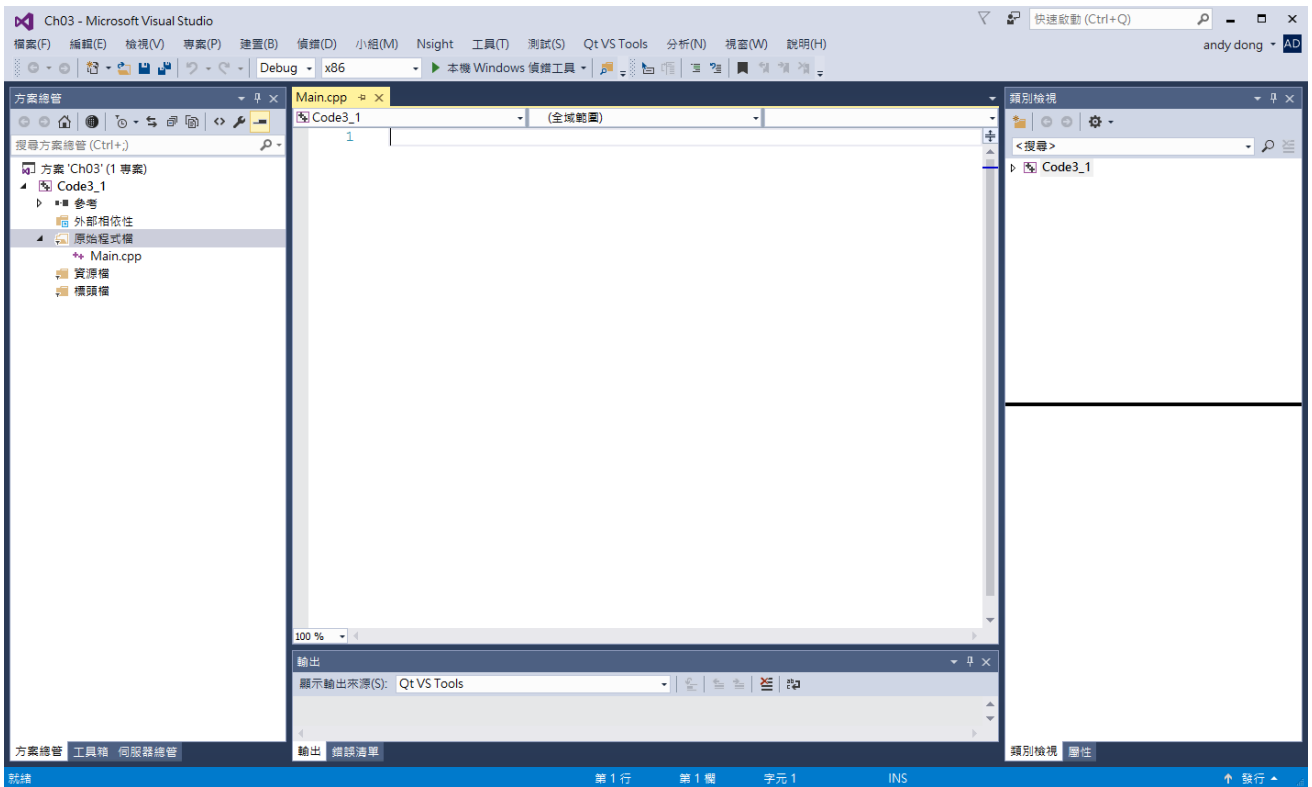


◆ 產生框架

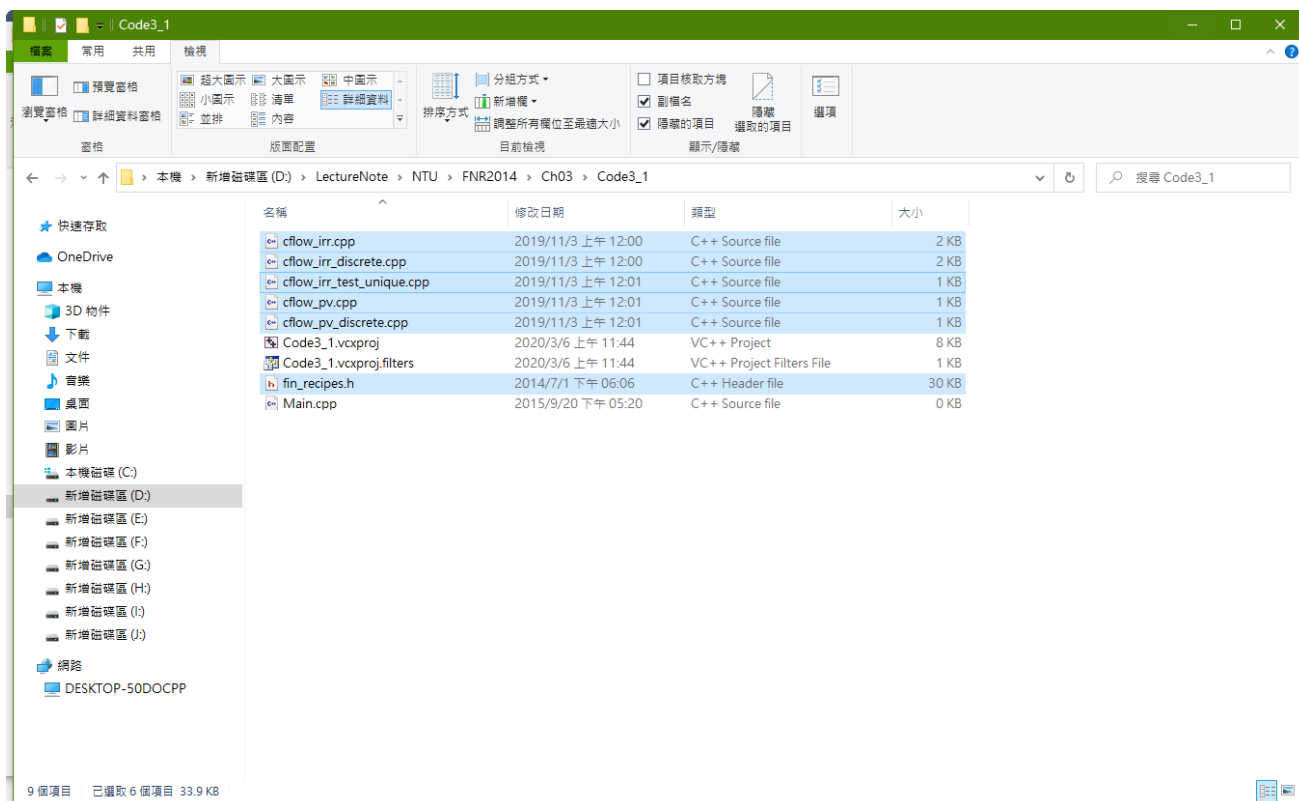
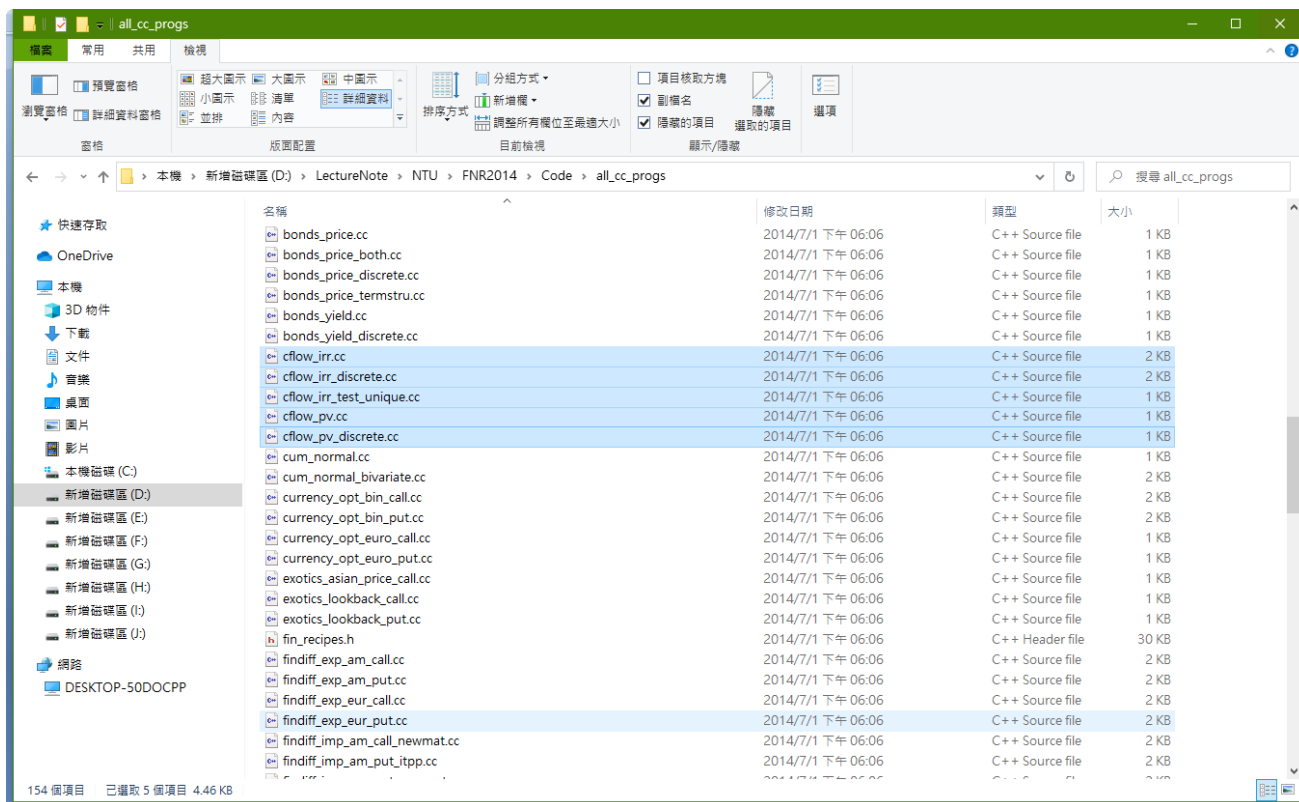


◆ 加入主程式，main.cpp

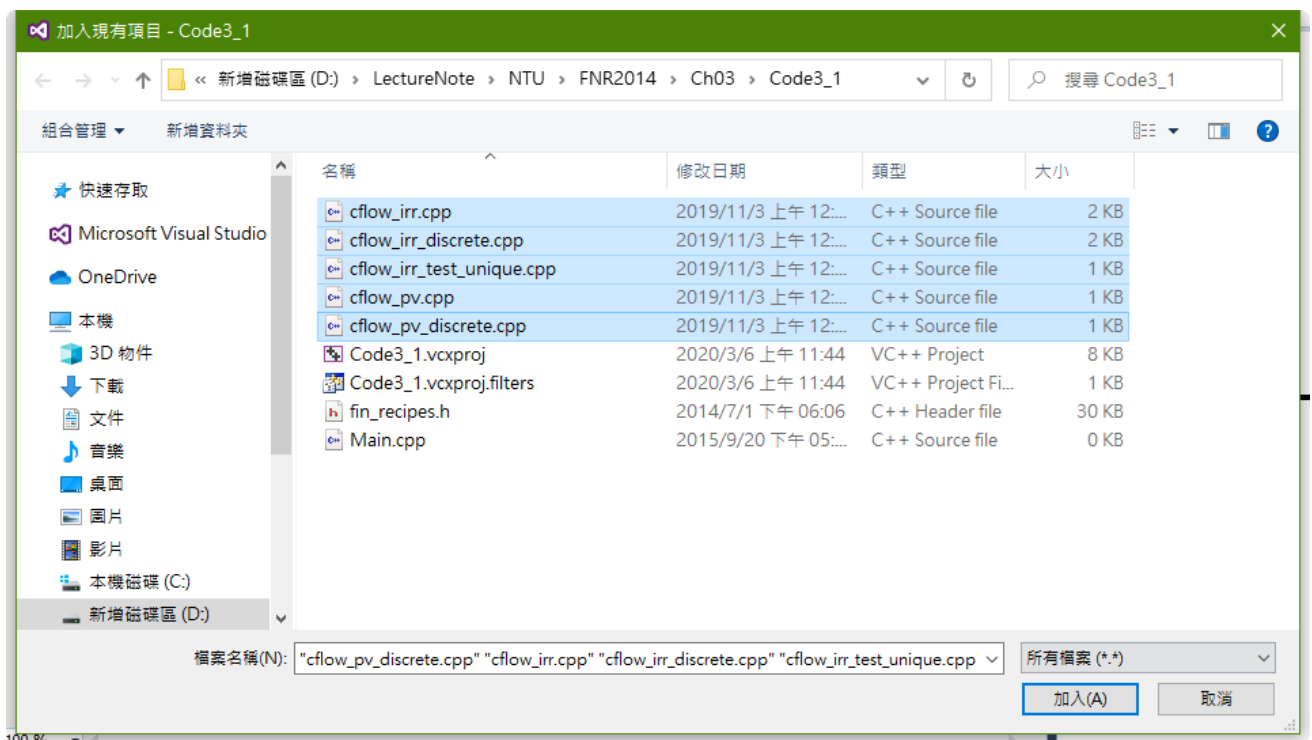
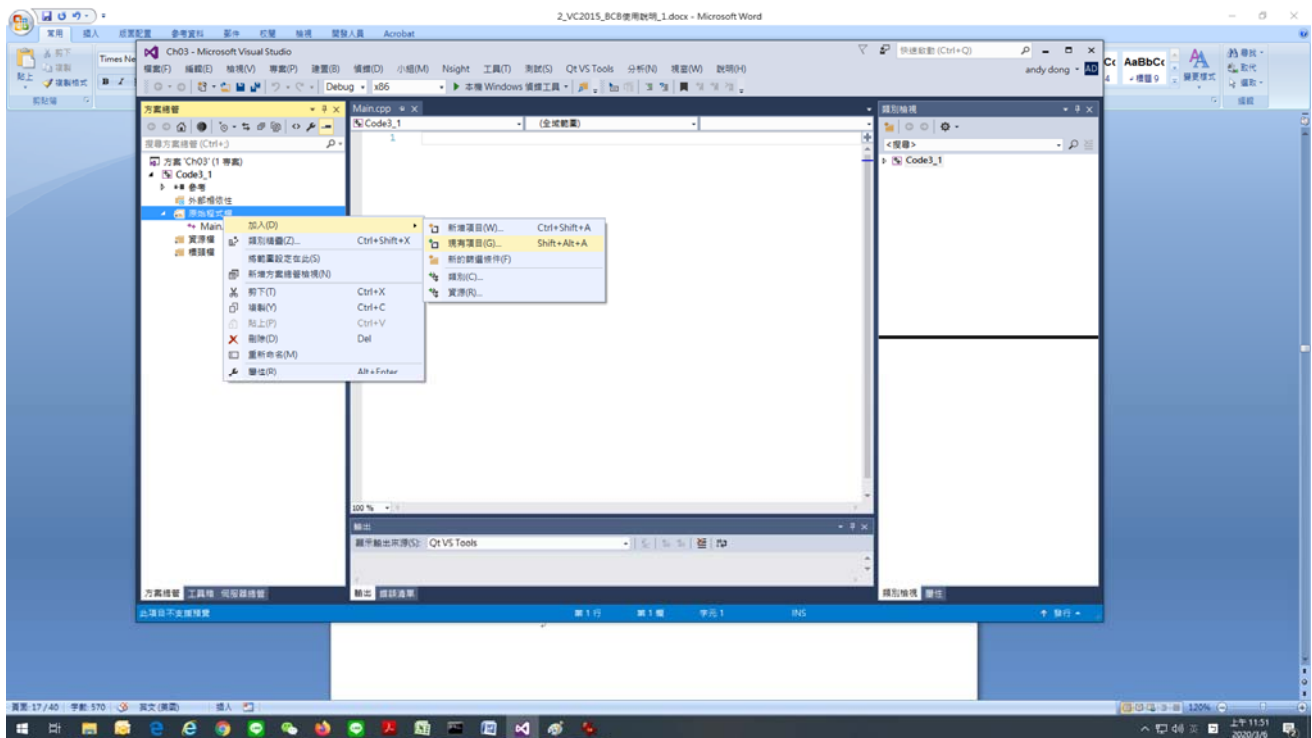


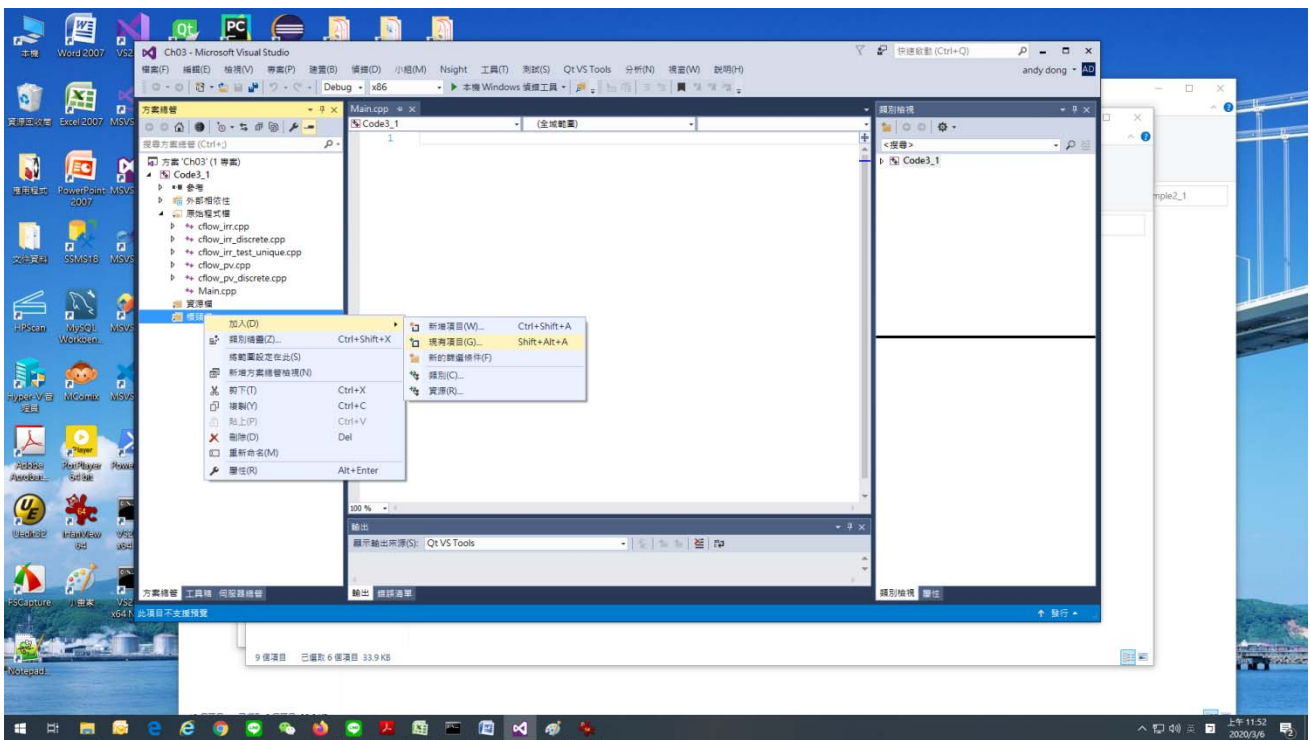
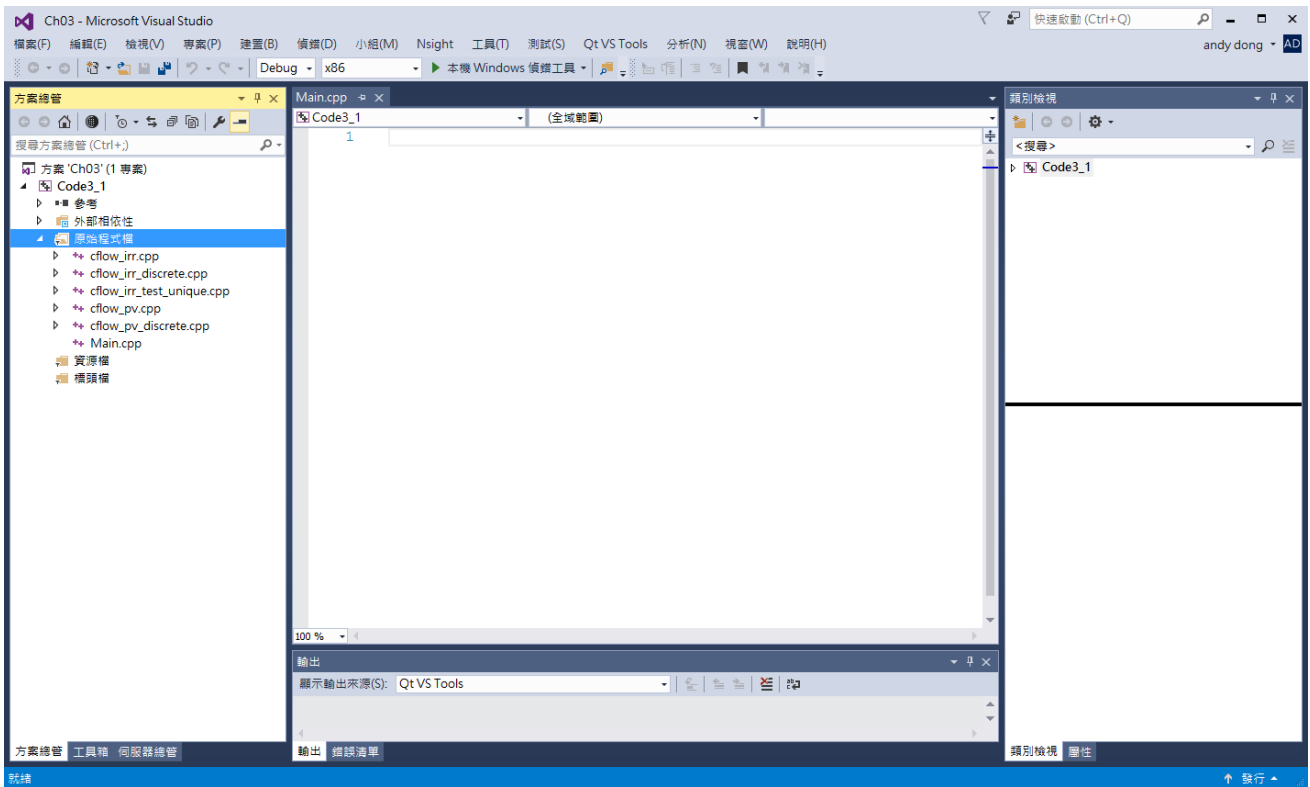


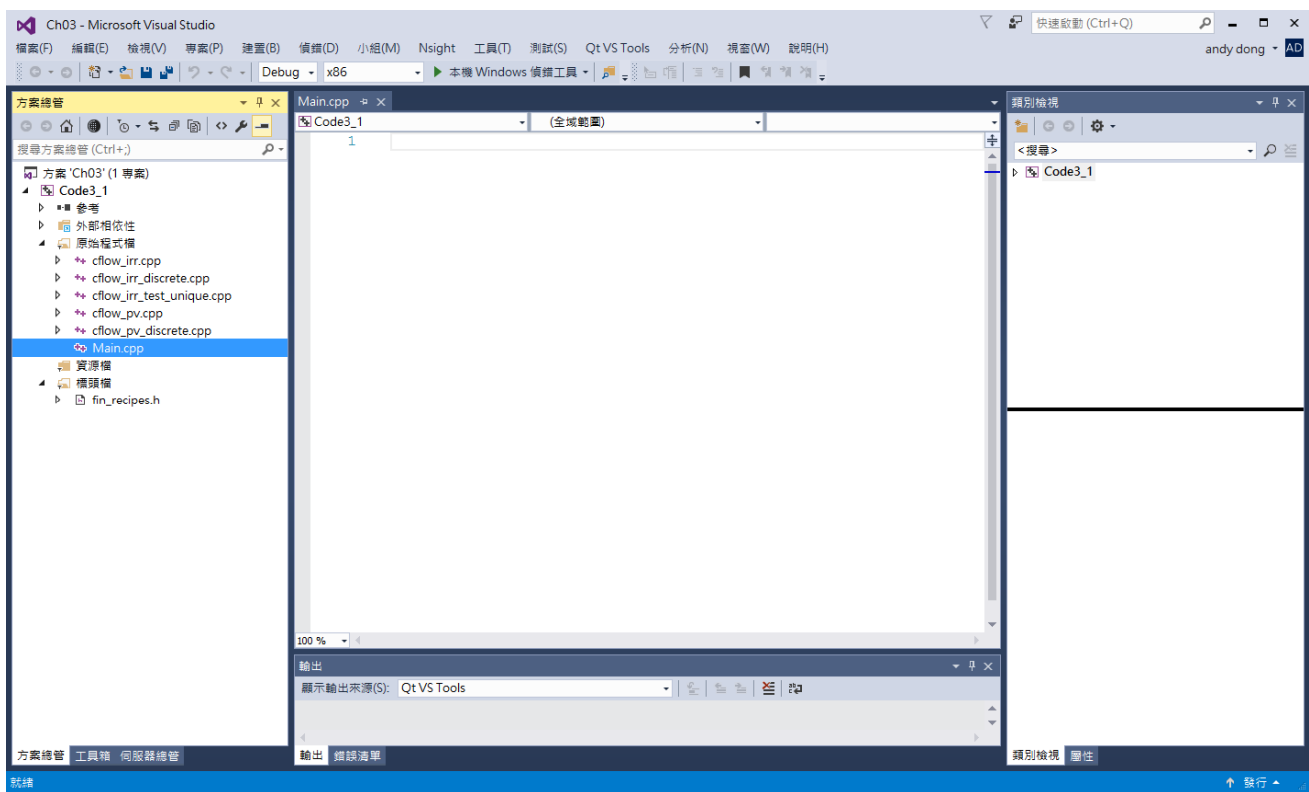
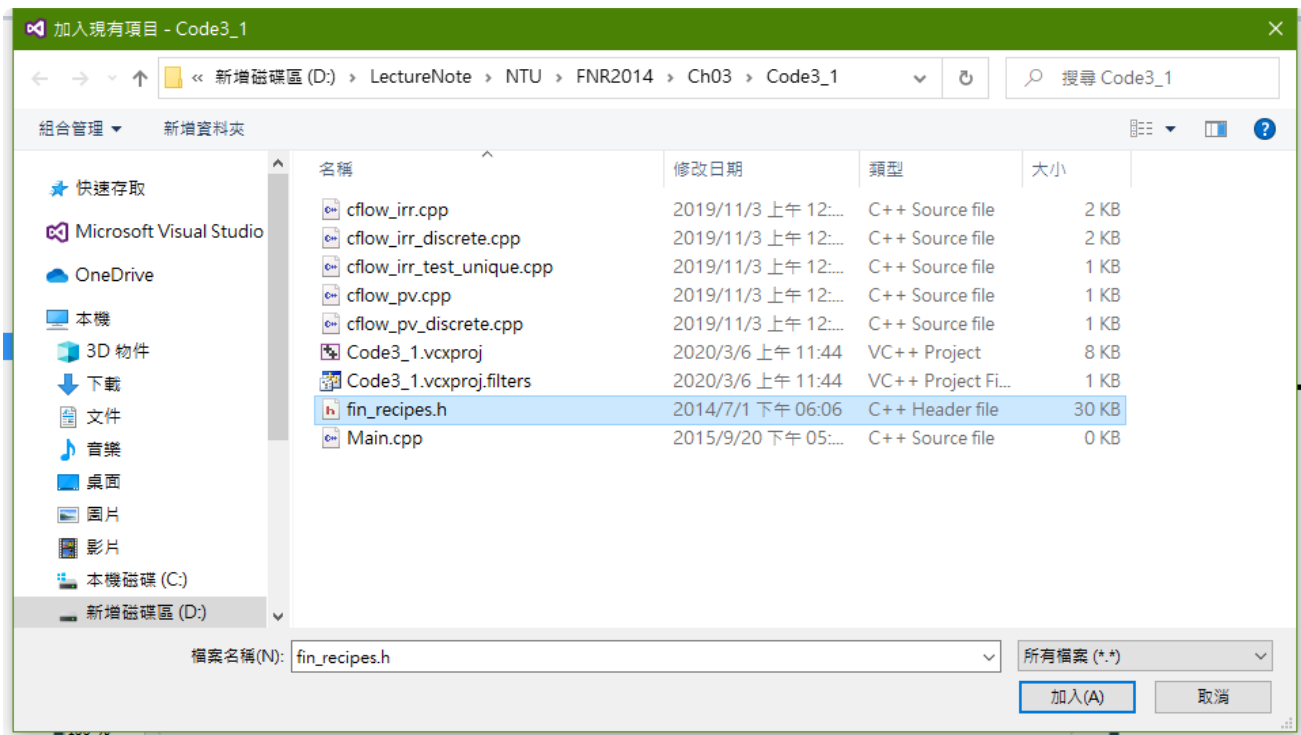
◆ 將相關檔案由 Code，Copy 到目錄下，



◆ 加入檔案到專案內

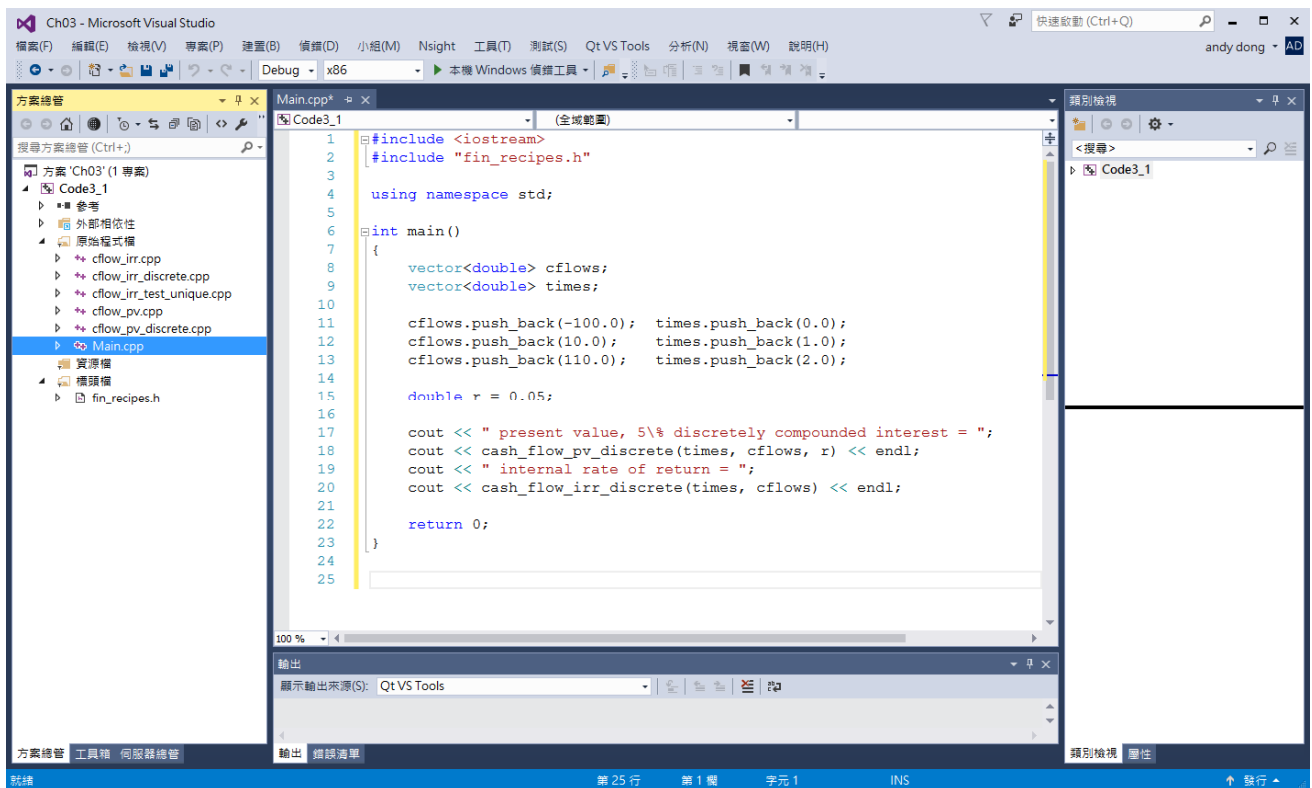




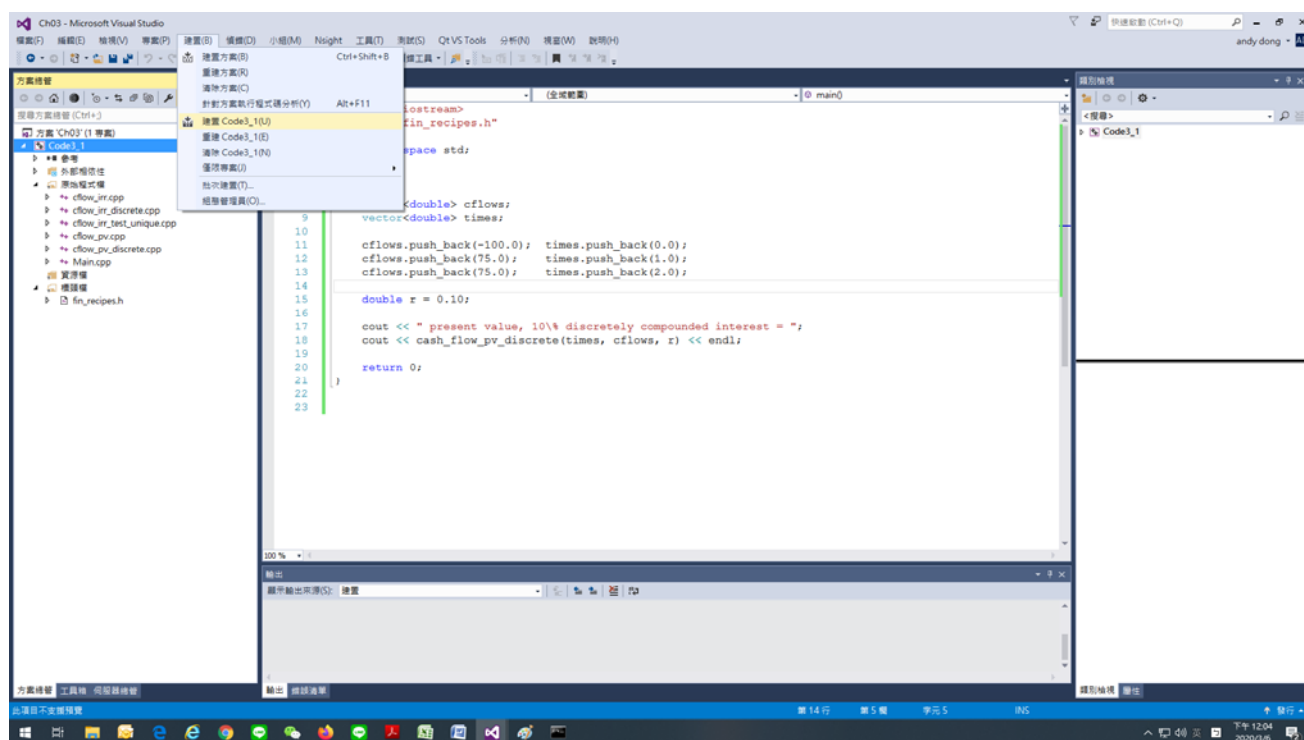
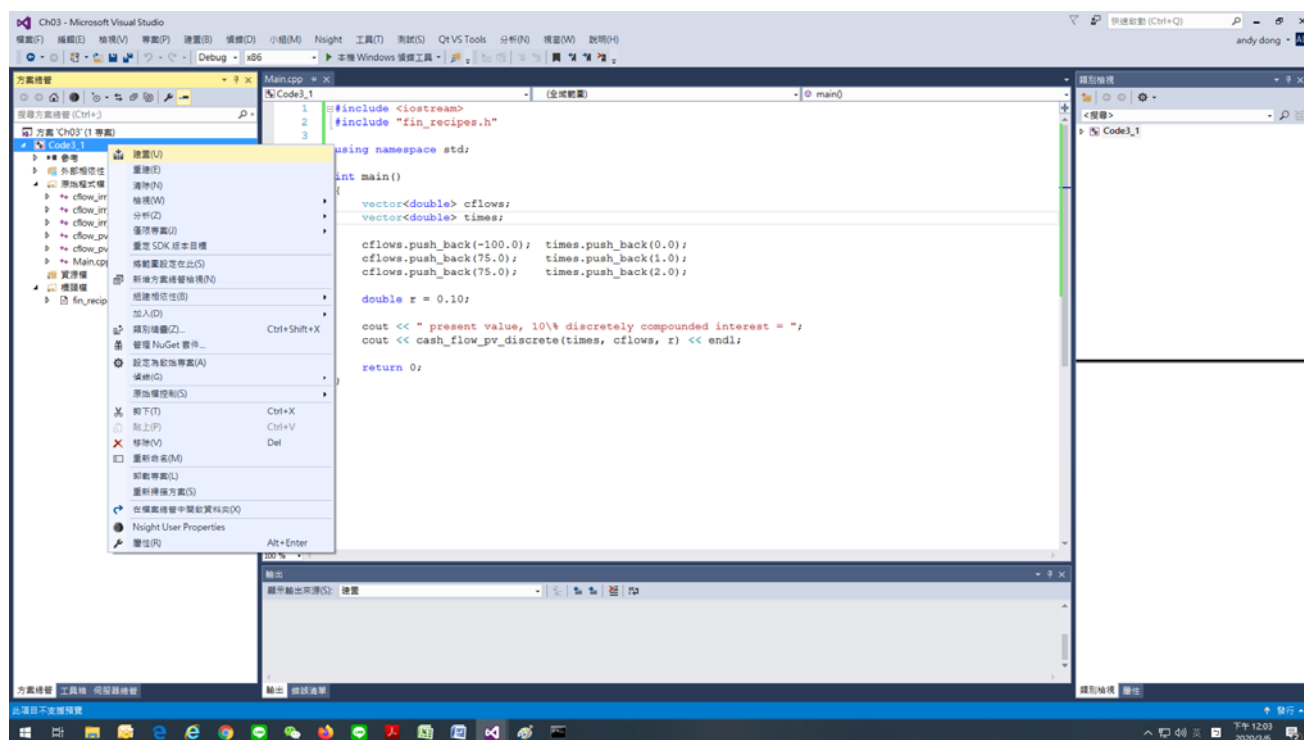


四、編譯程式

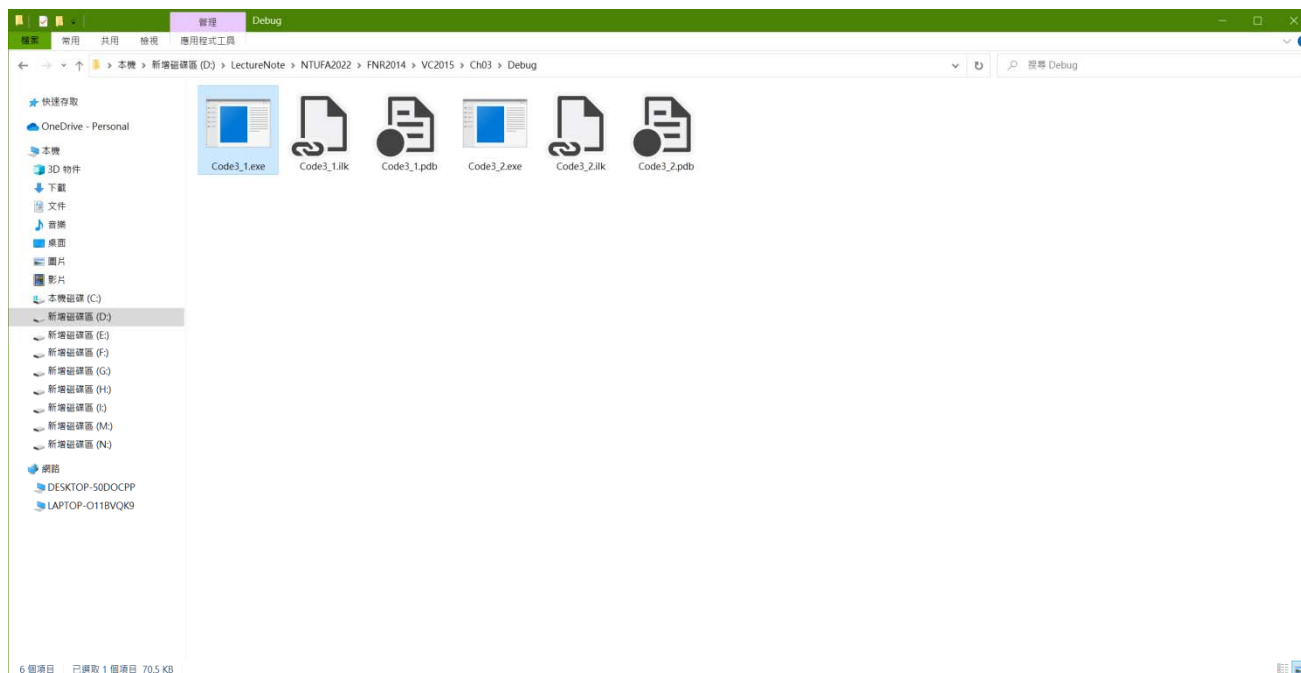
◆ 將程式碼打入，



◆ 編譯程式



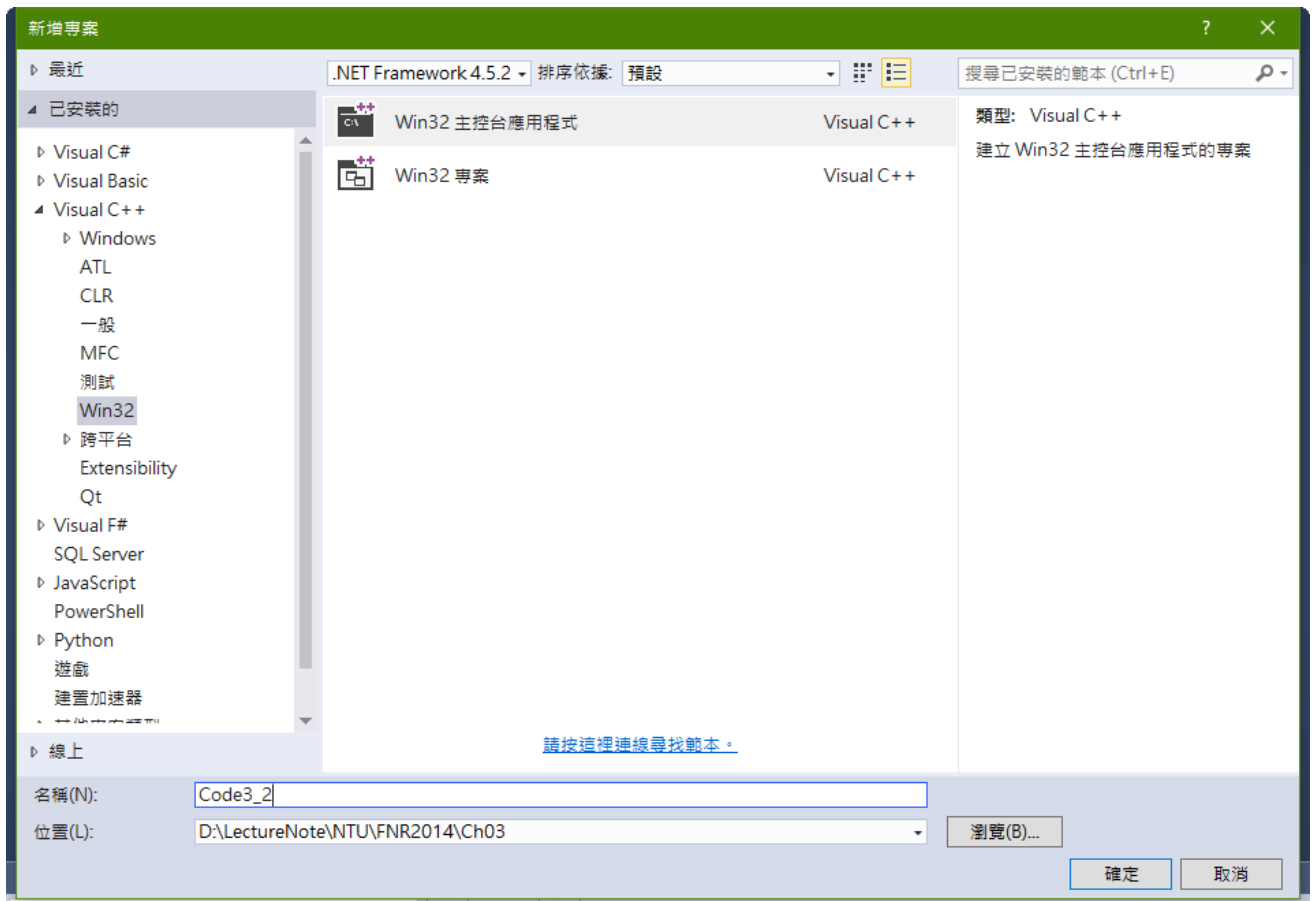
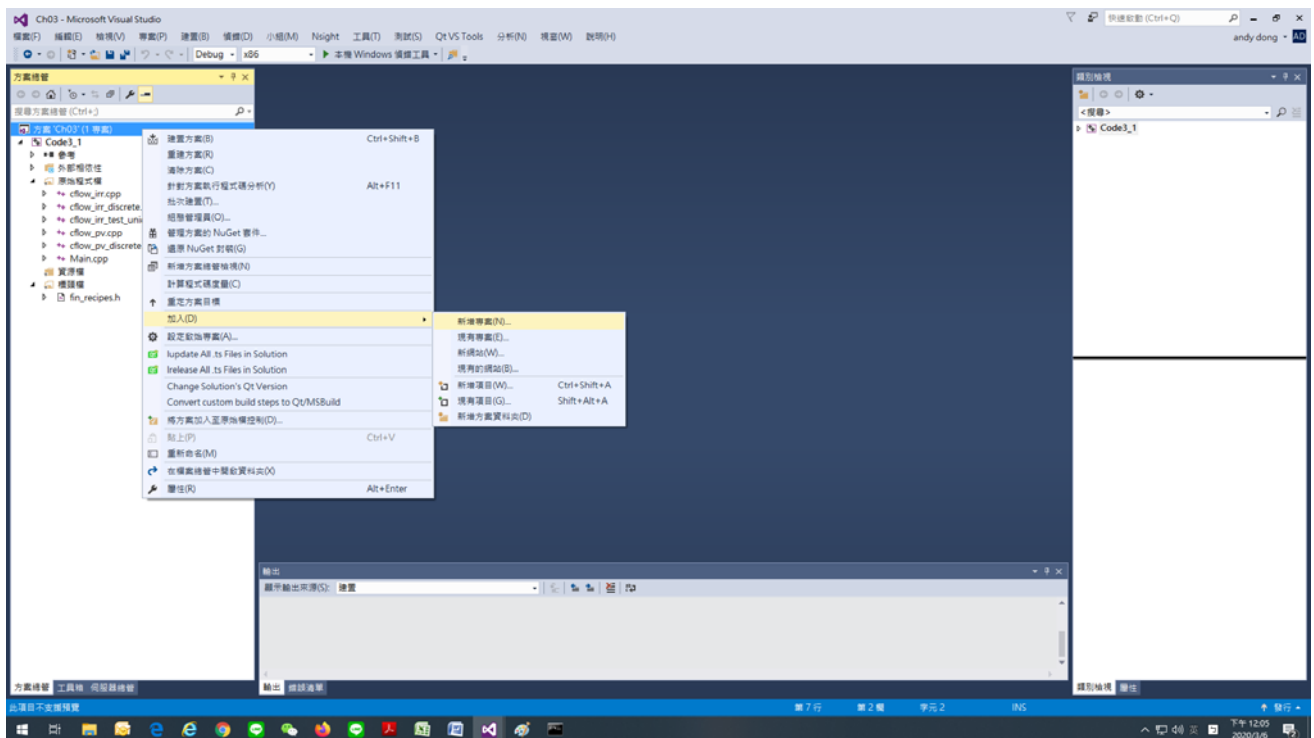
◆ 輸出

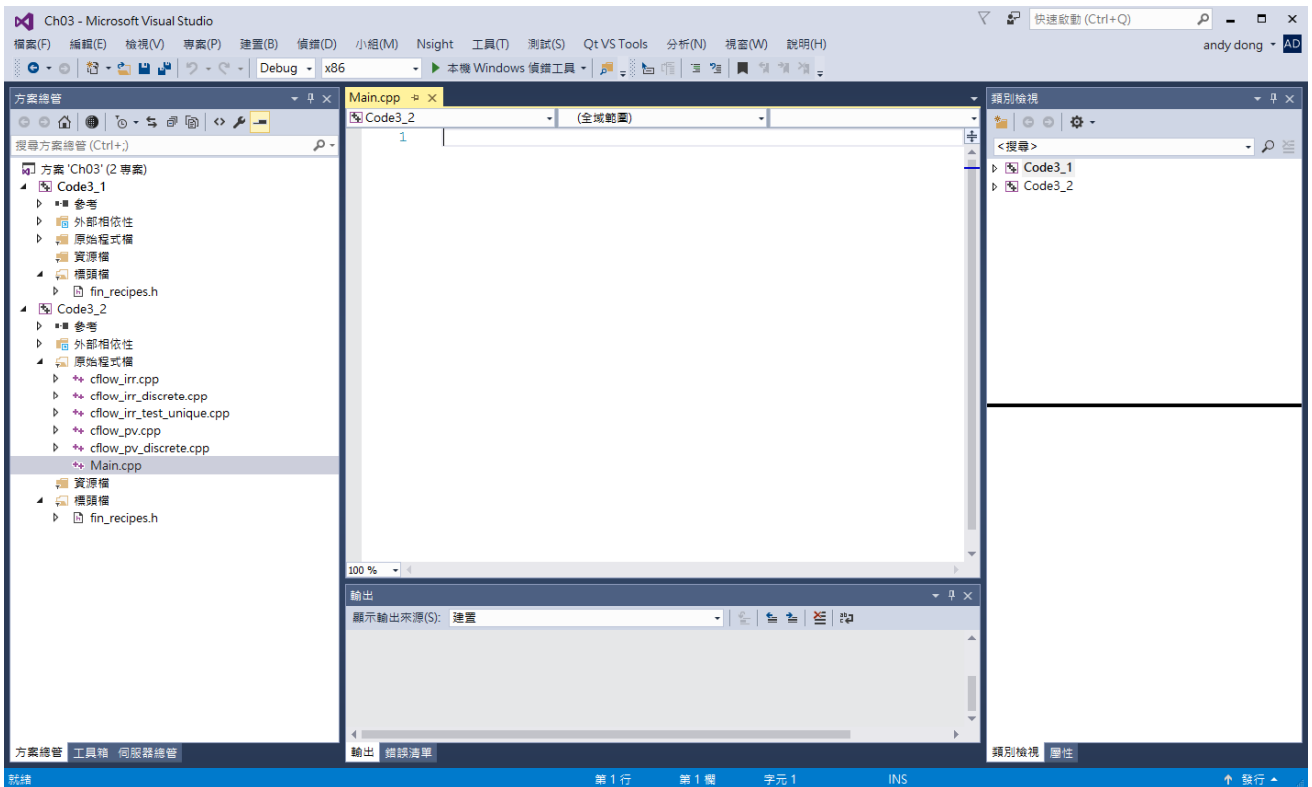


```
命令提示字元
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03>cd debug
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>dir /w
磁碟區 D 中的磁碟是 新增磁碟區
磁碟區序號: A624-91C0
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug 的目錄
[.]          [..]          Code3_1.exe  Code3_1.ilink  Code3_1.pdb  Code3_2.exe  Code3_2.ilink  Code3_2.pdb
6 個檔案    3,060,116 位元組
2 個目錄    1,688,399,220,736 位元組可用
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>Code3_1.exe
'Code3_1.exe' 不是內部或外部命令、可執行的程式或批次檔。
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>Code3_1.exe
present value, 10% discretely compounded interest = 30.1653
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>Code3_2.exe
present value, 5% discretely compounded interest = 9.29705
internal rate of return = 0.1
D:\LectureNote\NTUFA2022\FNR2014\VC2015\Ch03\Debug>
```

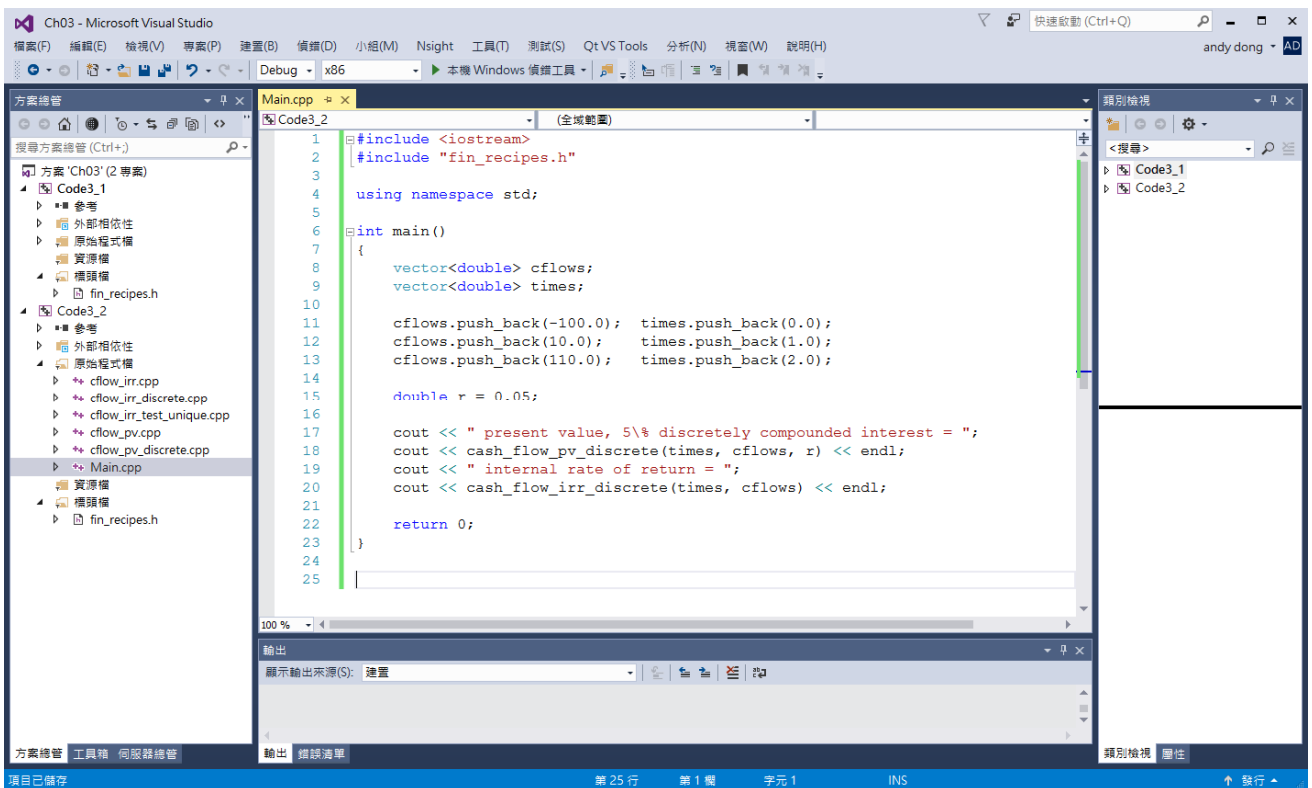
五、新增另一專案

◆ 新增 Code3_2，

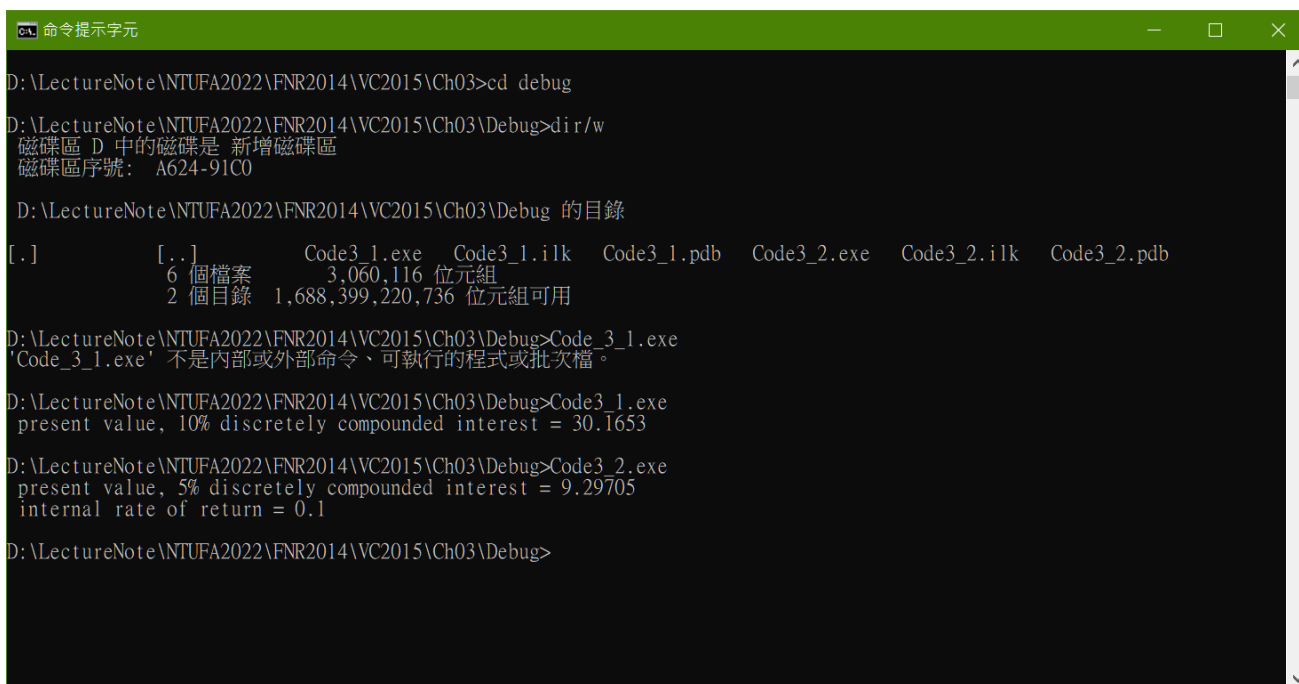
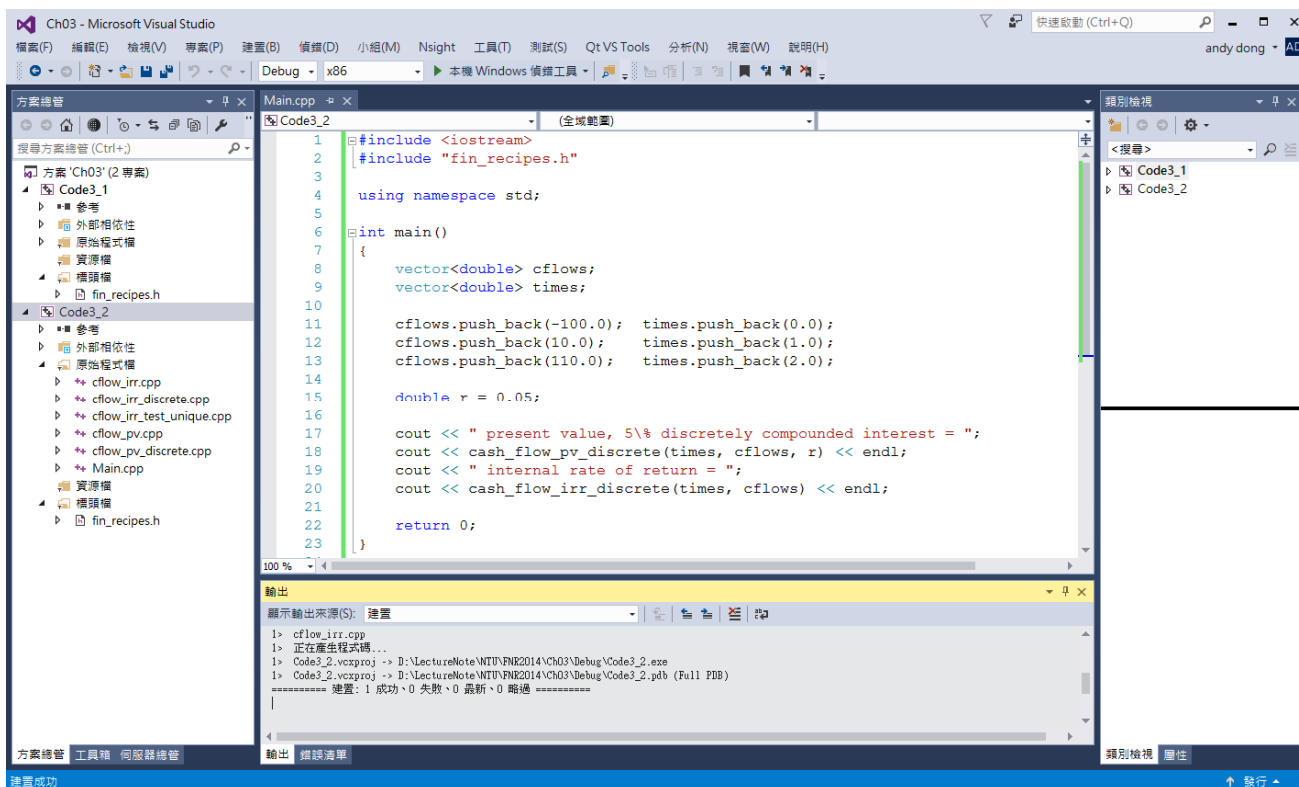




◆ 將程式碼打入，

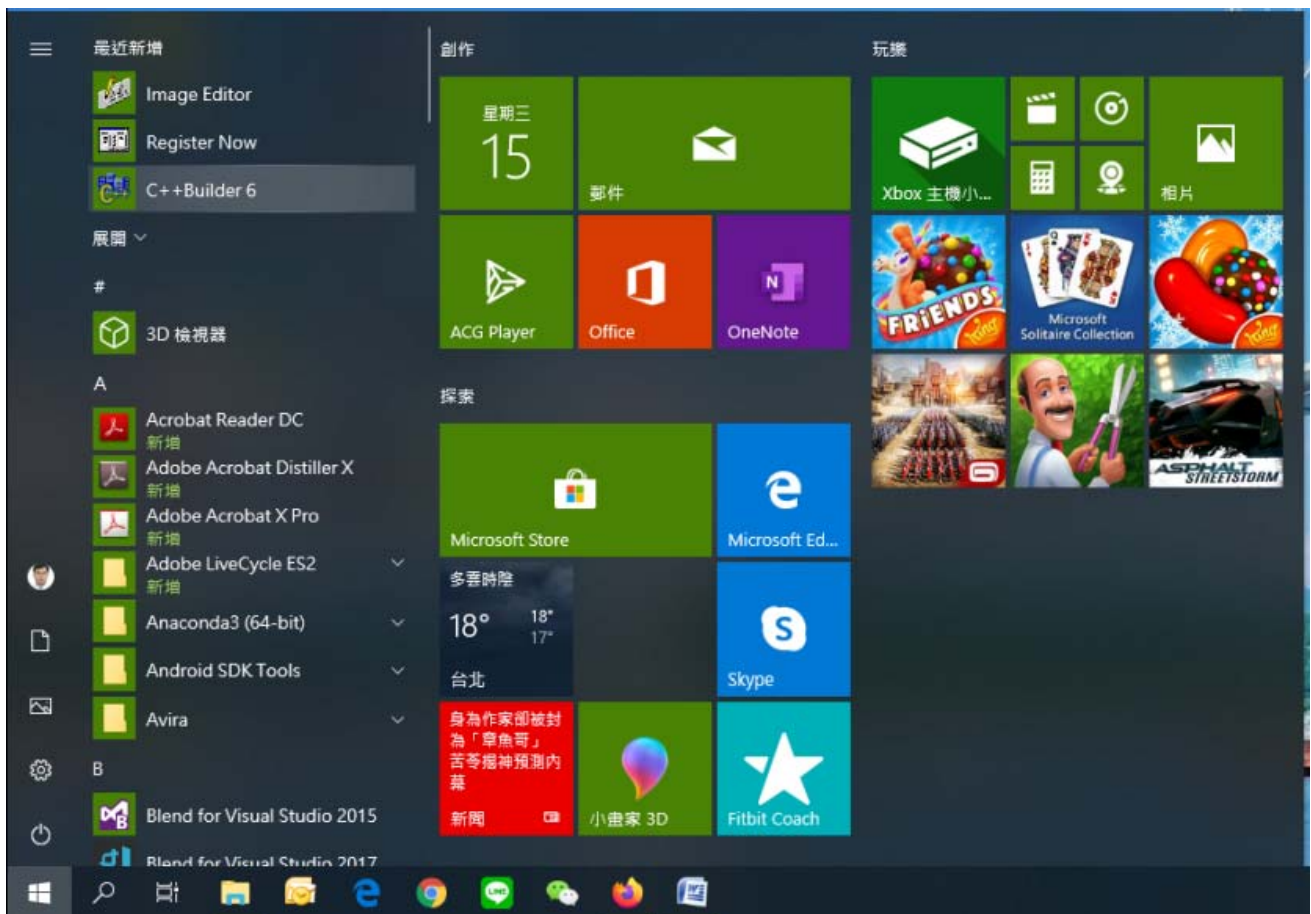


◆ 編譯程式，執行

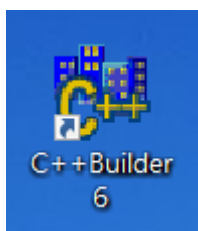


六、使用 BCB 6.0

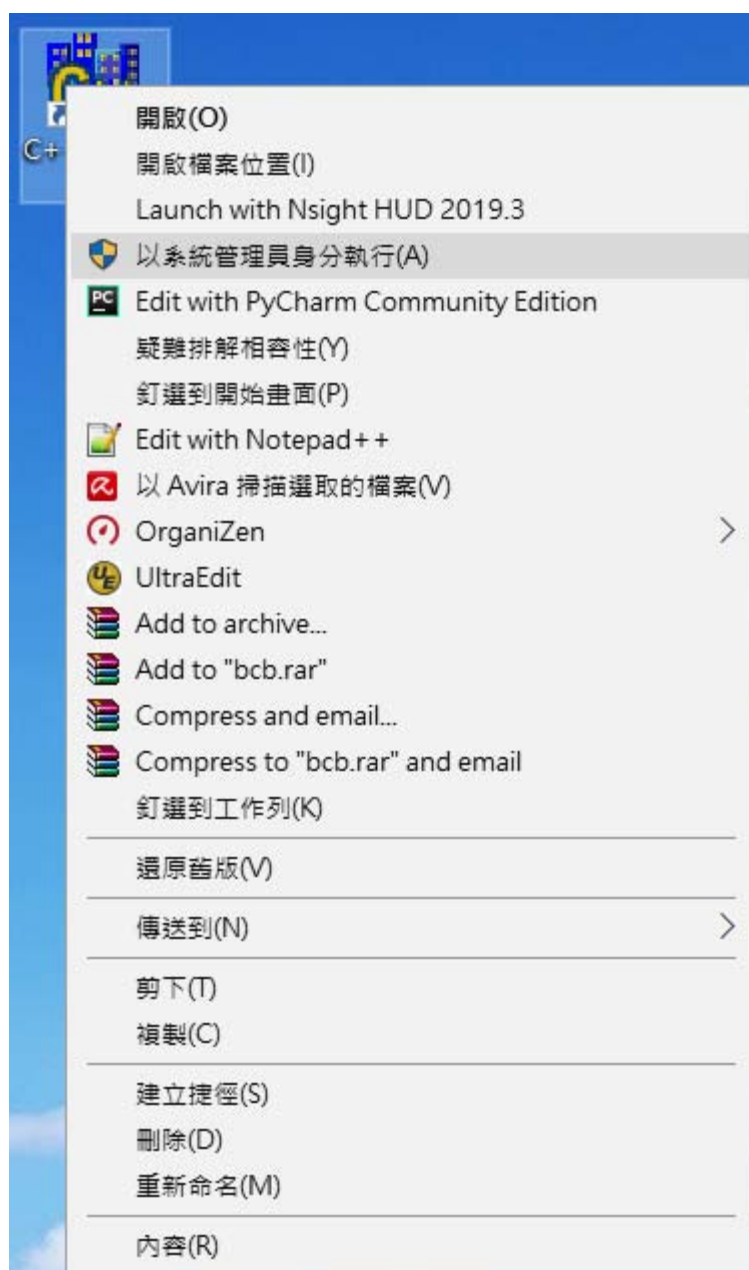
◆ 安裝 BCB 6.0，完成後重新開機，程式出現在選單中。



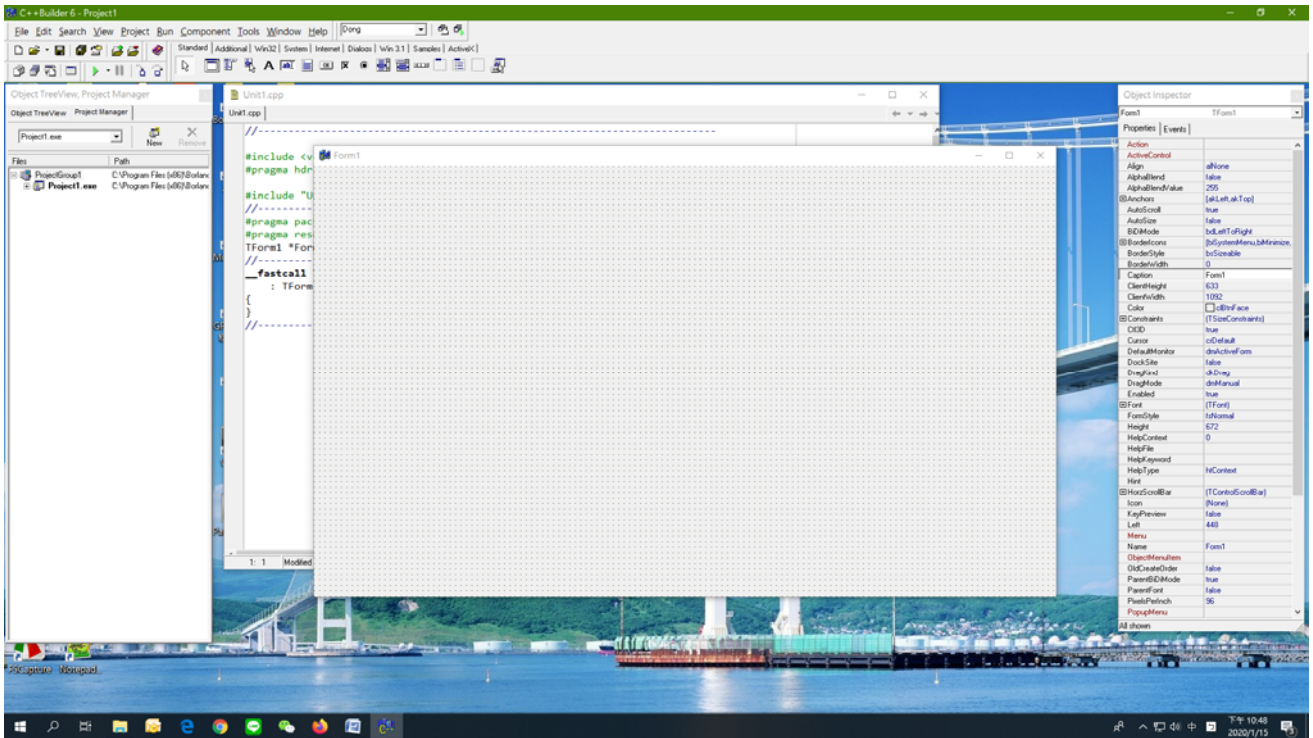
► 拖拉到桌面上。



- 以系統管理員身分執行，完成登錄事項。

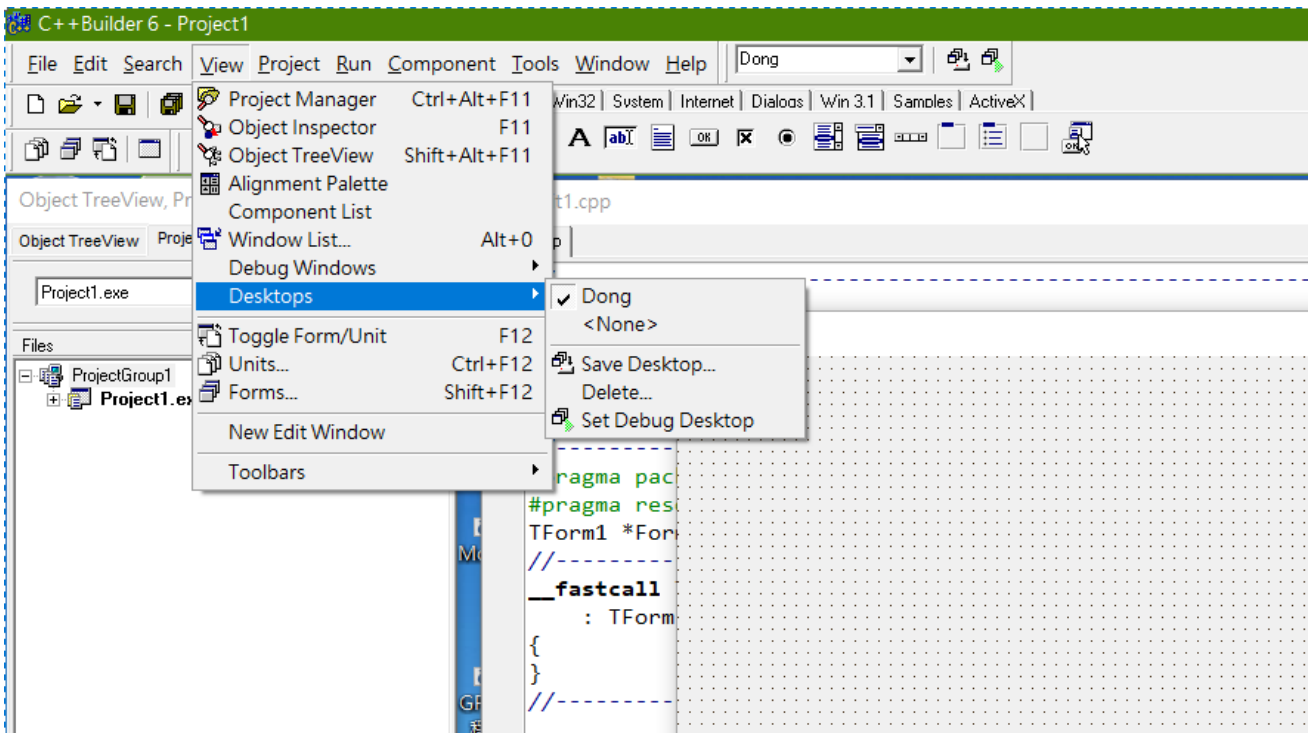


◆ 程式執行畫面，



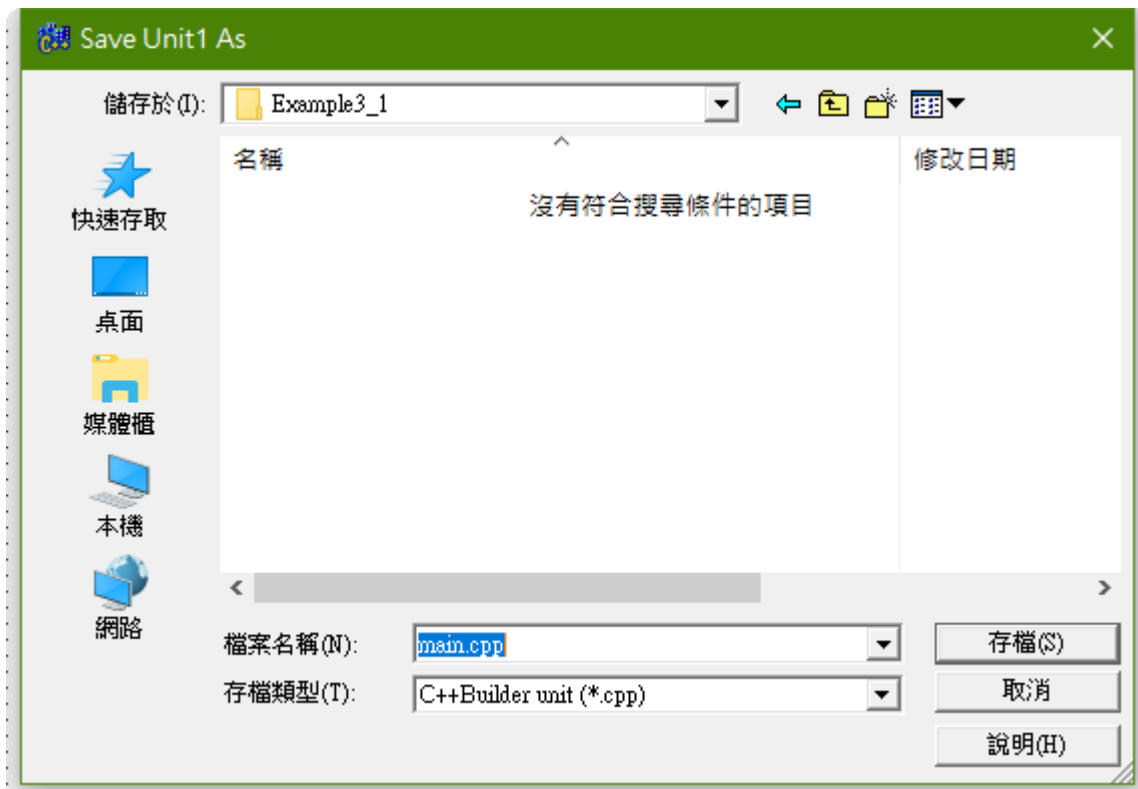
➤ 調整各類設定，字型、版面。

➤ 完成設定後，儲存桌面設定。

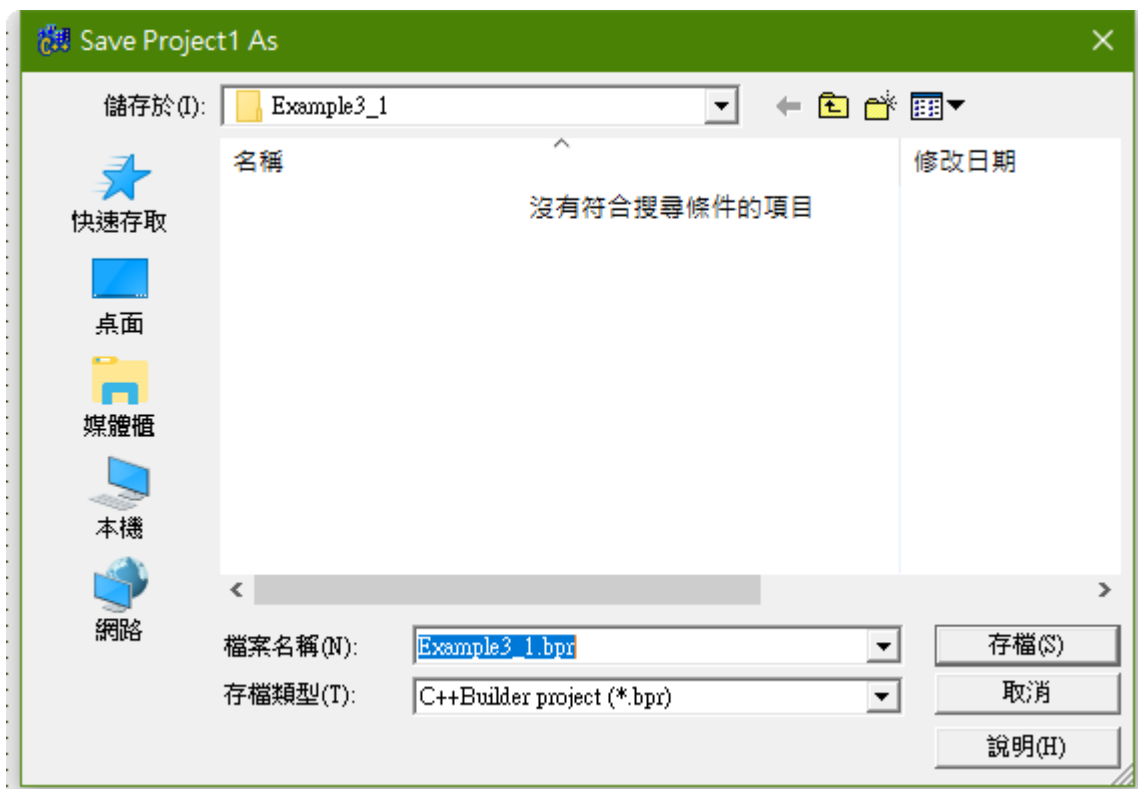


◆ 儲存檔案

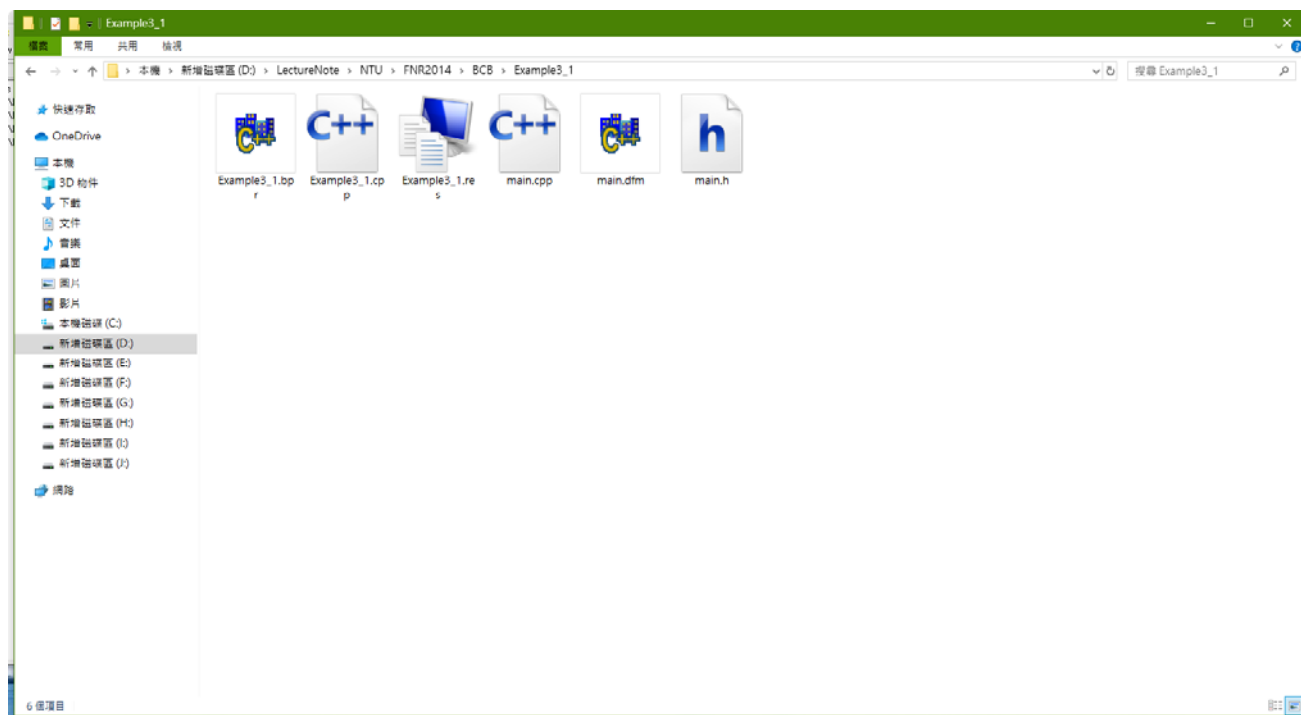
➤ 儲存 Unit1.cpp



➤ 儲存專案

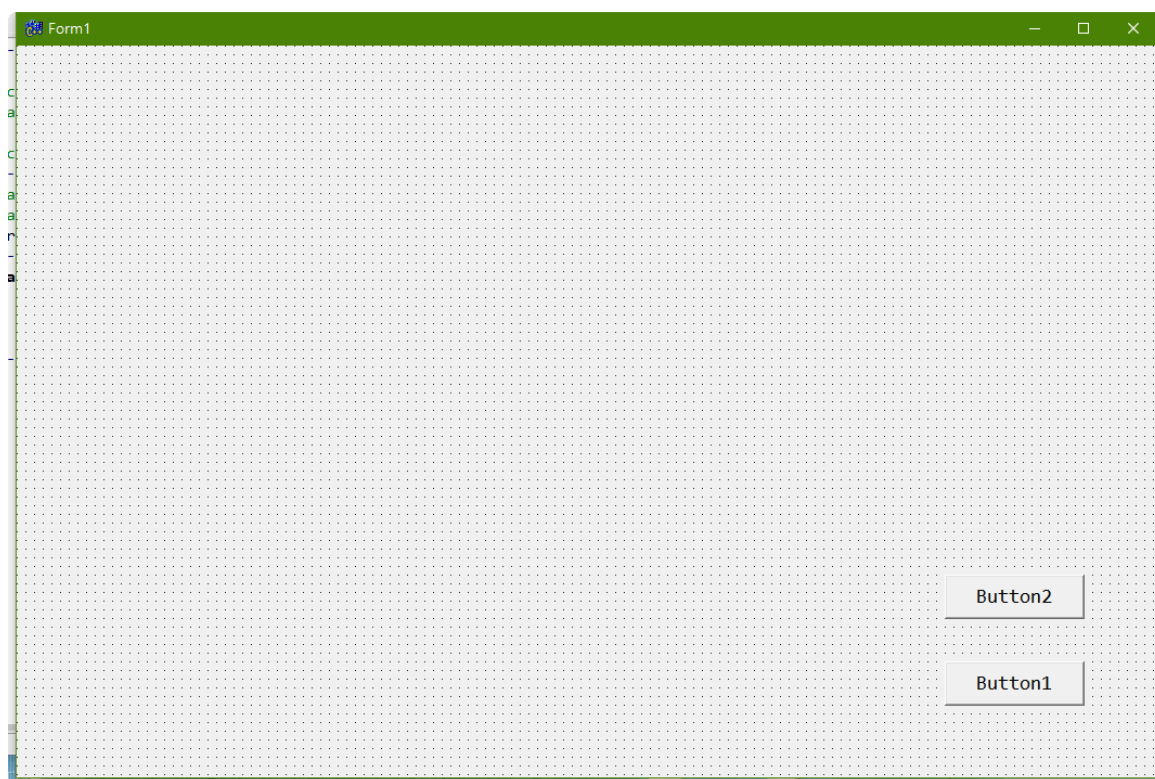


➤ 檔案位址

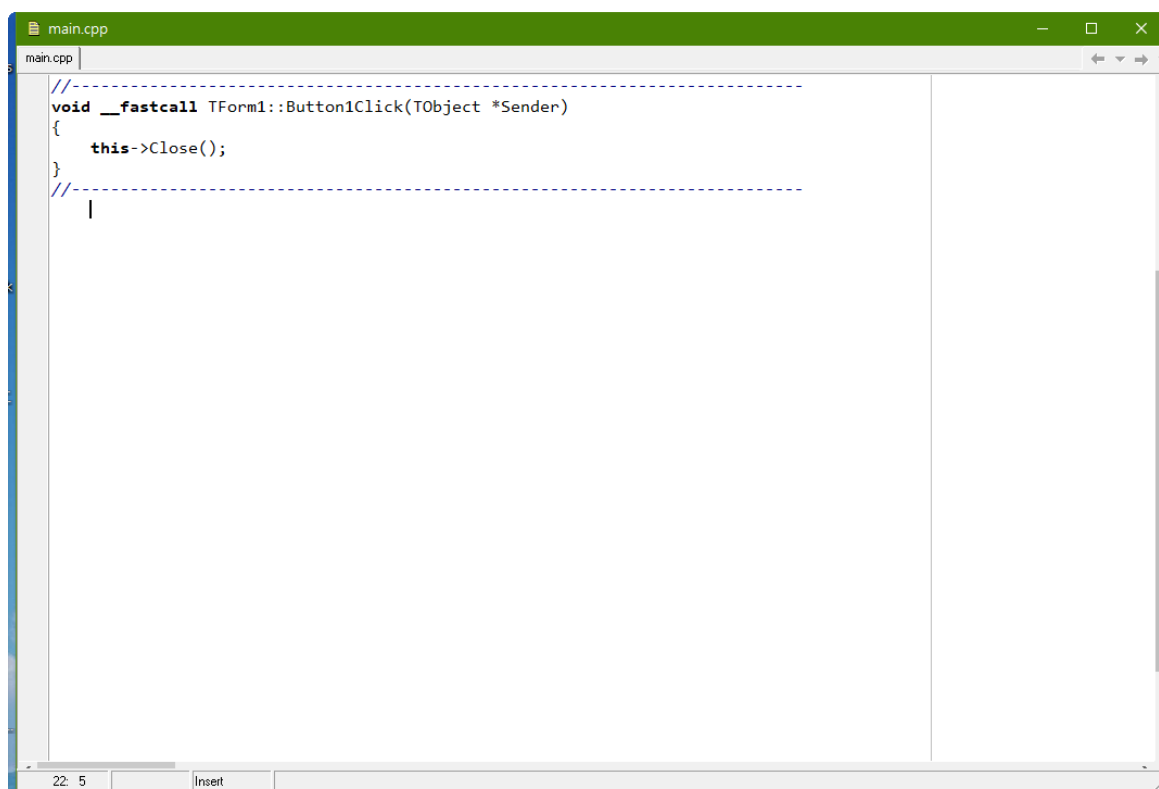


七、編譯程式

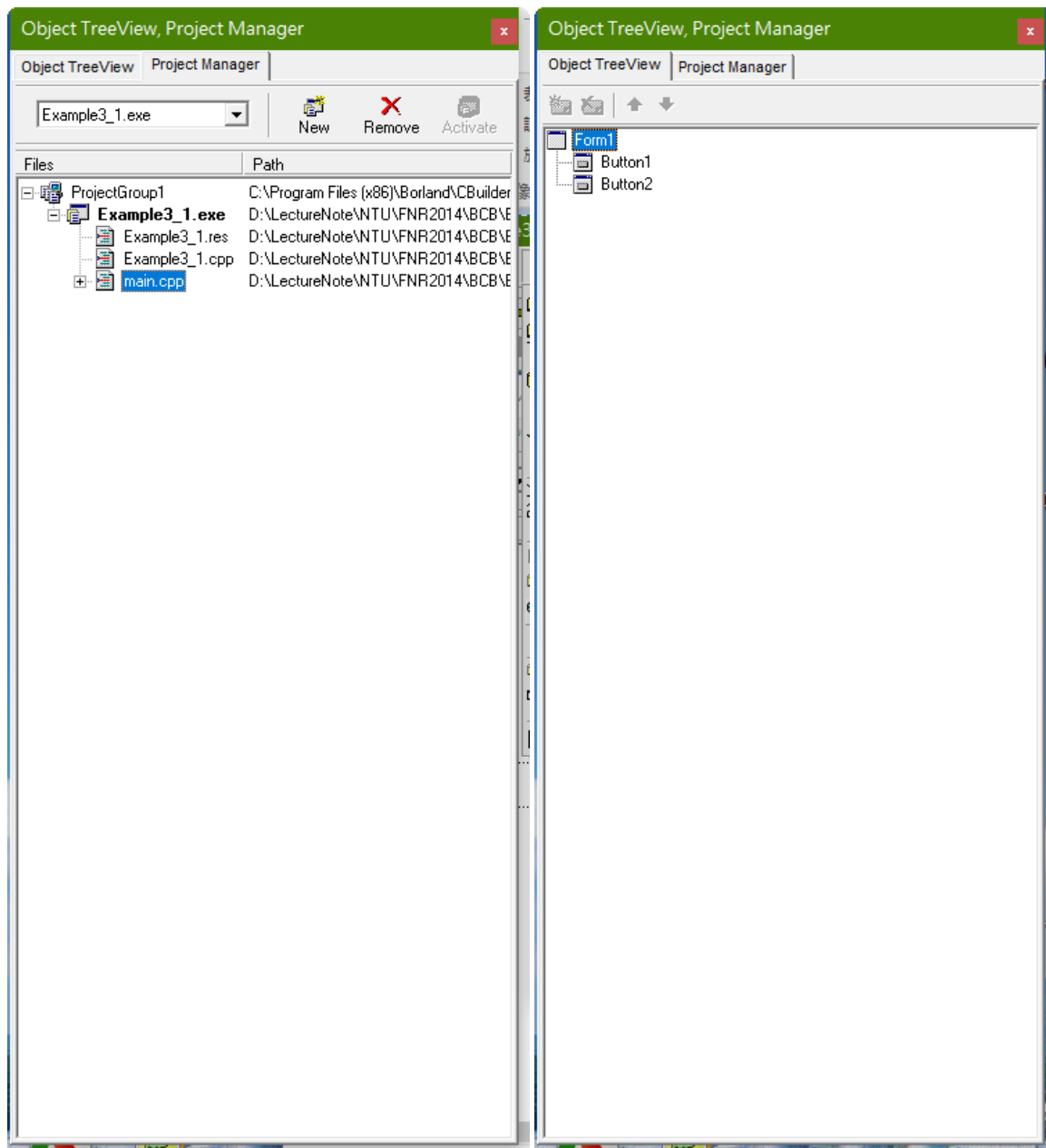
◆ 放上元件



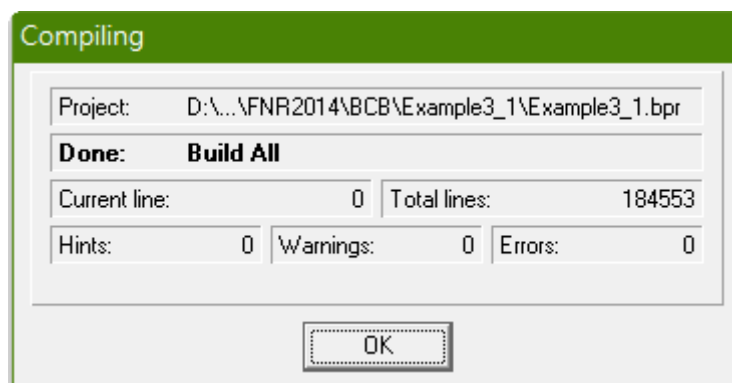
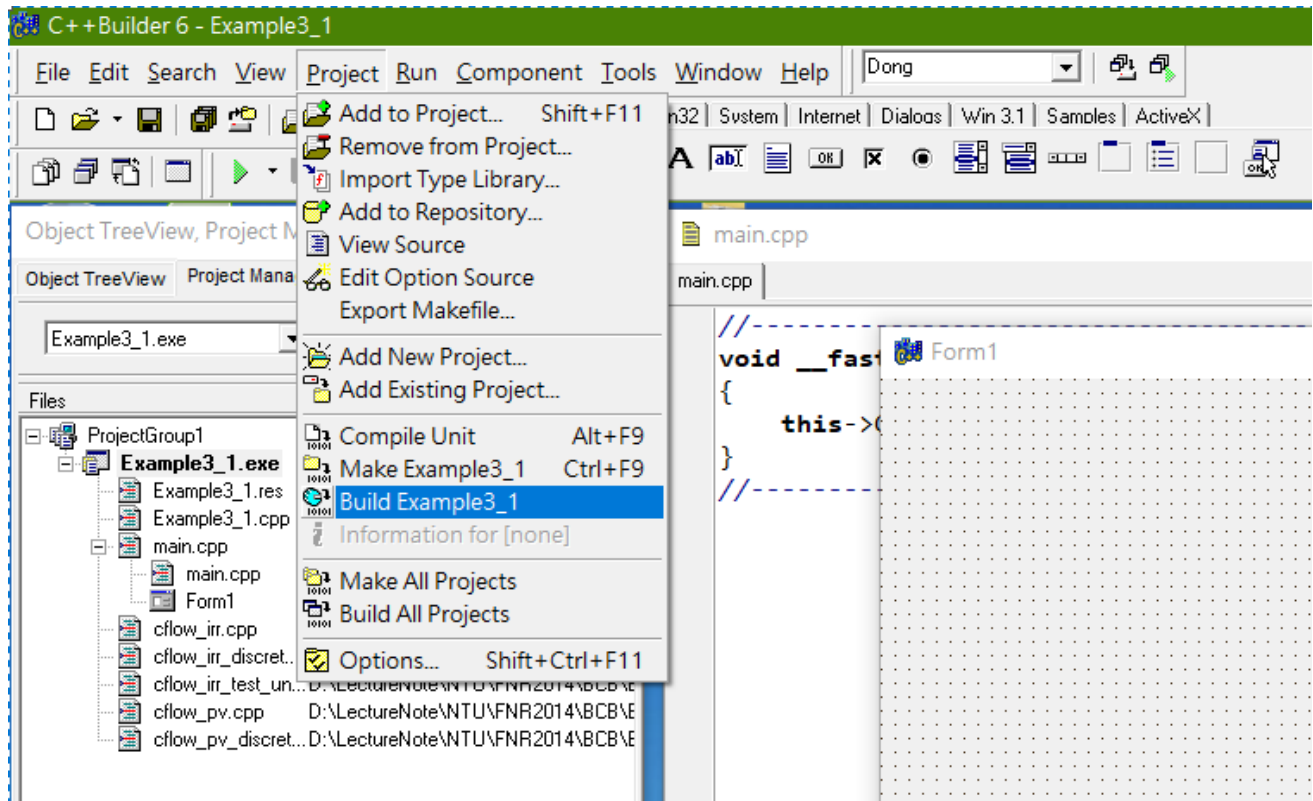
➤ 放上程式碼



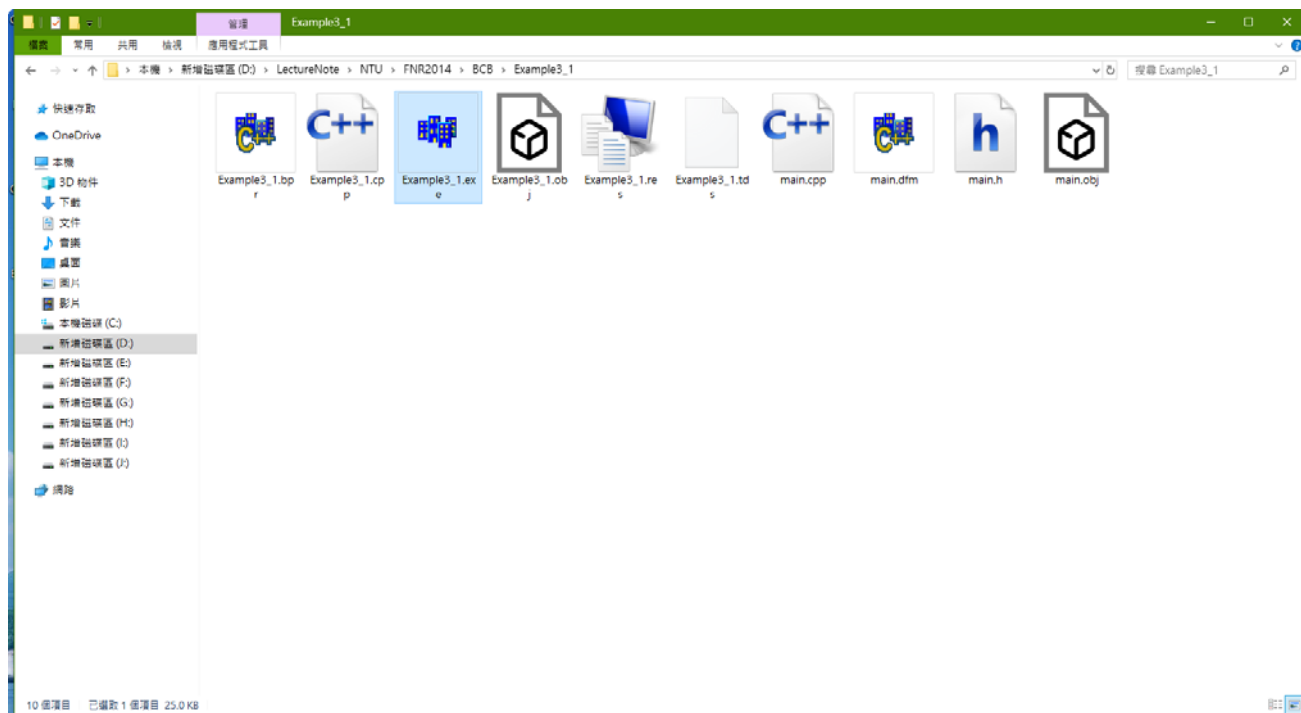
► 專案內容



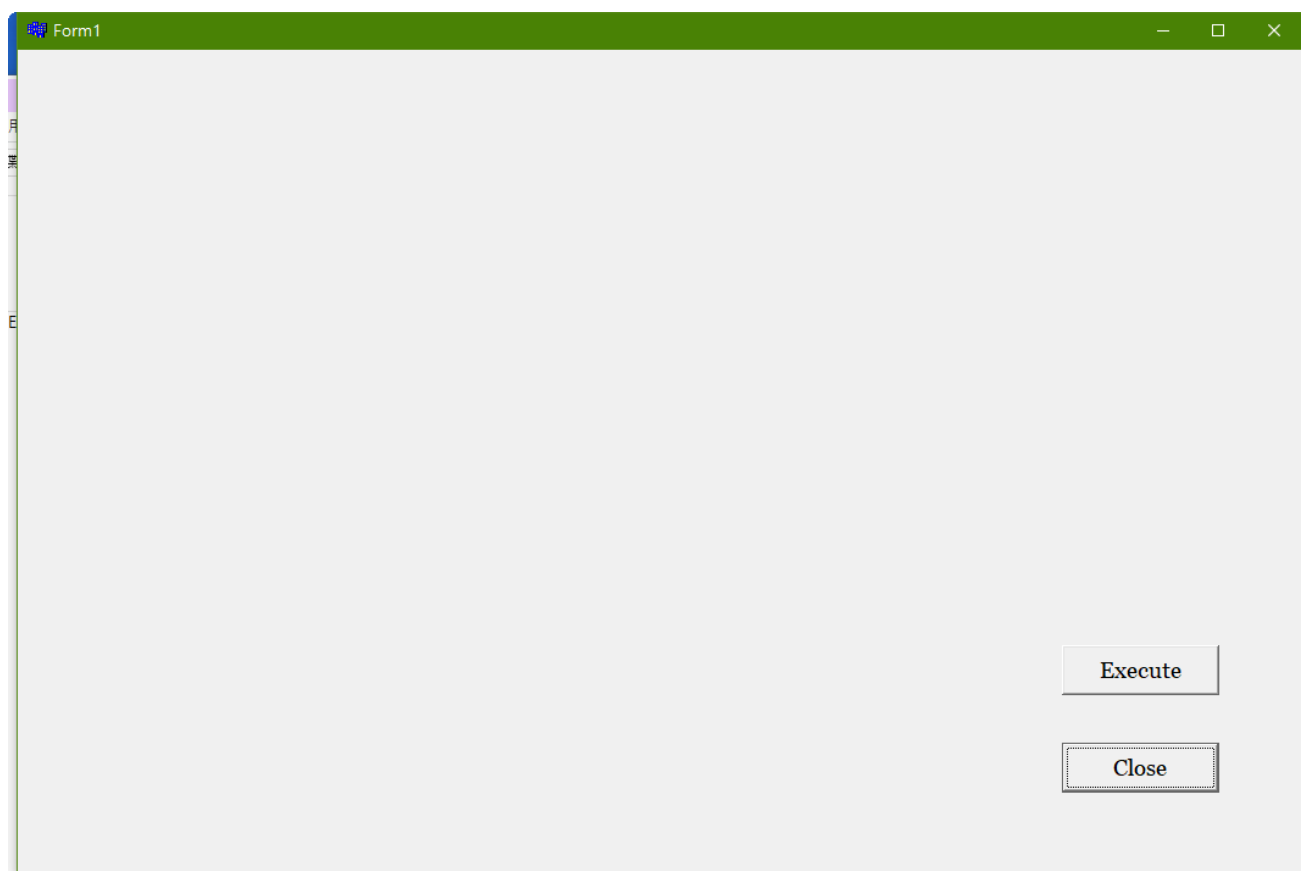
◆ Project->Build



◆ 輸出

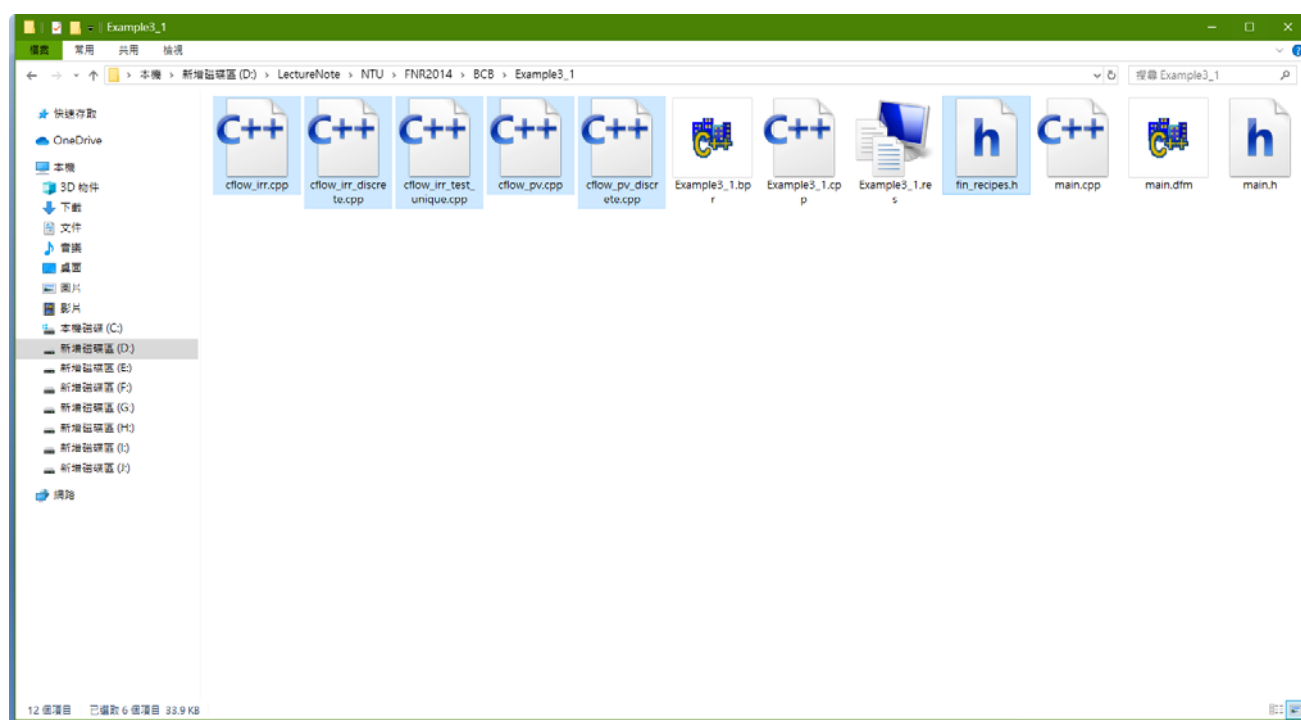


➤ 執行

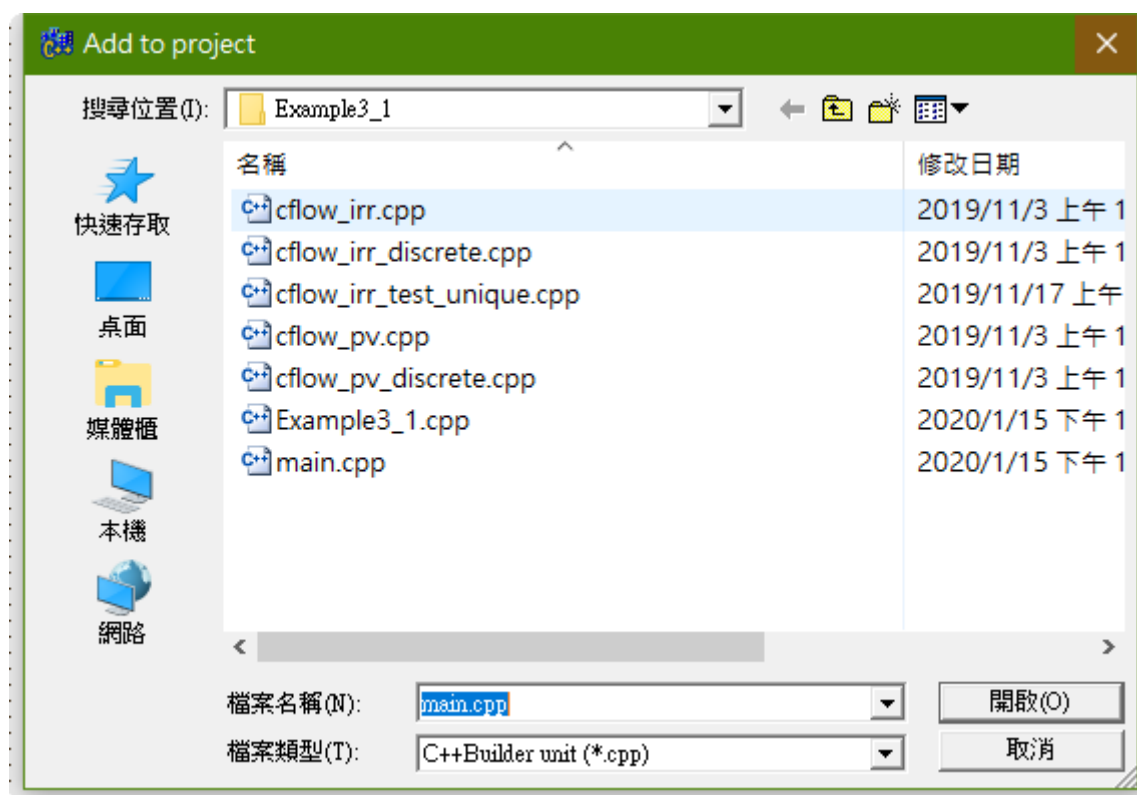


八、輸出結果

◆ 拷貝檔案



➤ 加入檔案



◆ 編輯畫面

Form1

	Label15	Label16
Label11	Edit1	Edit2
Label12	Edit3	Edit4
Label13	Edit5	Edit6
Label14	Edit7	
	Label17	Label18
	Edit8	Edit9

Calculate

Close

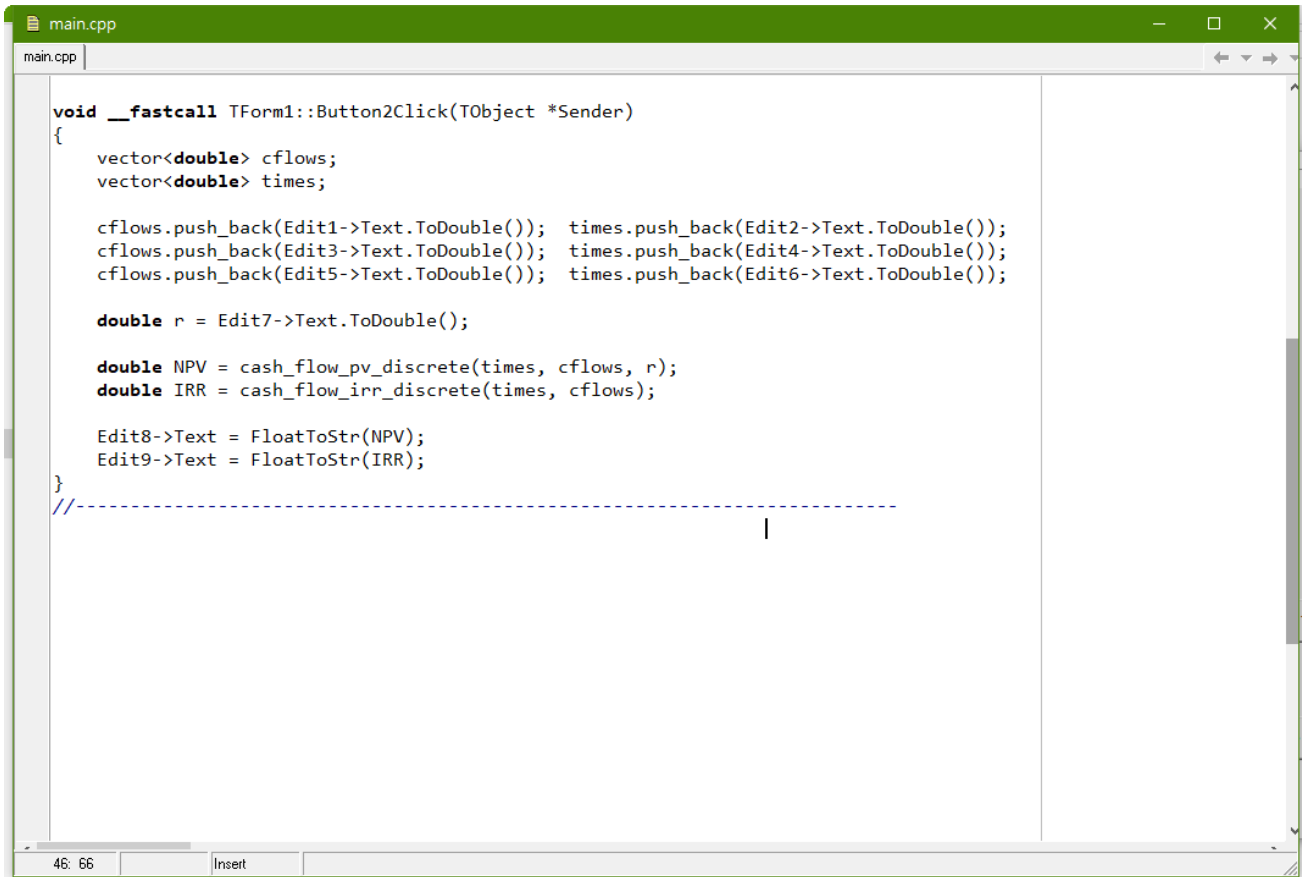
Form1

	Amount	Time
Cash Flow 0:	-100.0	0.0
Cash Flow 1:	10.0	1.0
Cash Flow 2:	110.0	2.0
Interest Rate:	0.05	
CF NPV		CF IRR

Calculate

Close

◆ 加入程式碼



```
main.cpp
main.cpp

void __fastcall TForm1::Button2Click(TObject *Sender)
{
    vector<double> cflows;
    vector<double> times;

    cflows.push_back(Edit1->Text.ToDouble()); times.push_back(Edit2->Text.ToDouble());
    cflows.push_back(Edit3->Text.ToDouble()); times.push_back(Edit4->Text.ToDouble());
    cflows.push_back(Edit5->Text.ToDouble()); times.push_back(Edit6->Text.ToDouble());

    double r = Edit7->Text.ToDouble();

    double NPV = cash_flow_pv_discrete(times, cflows, r);
    double IRR = cash_flow_irr_discrete(times, cflows);

    Edit8->Text = FloatToStr(NPV);
    Edit9->Text = FloatToStr(IRR);
}
//-----
|
```

46: 66 Insert

➤ Code

```
//-----
#include <vcl.h>
#pragma hdrstop

#include "main.h"
#include "fin_recipes.h"
//-----
#pragma package(smart_init)
#pragma resource "*.dfm"

using namespace std;

TForm1 *Form1;
//-----
__fastcall TForm1::TForm1(TComponent* Owner)
: TForm(Owner)
{
}
//-----
void __fastcall TForm1::Button1Click(TObject *Sender)
{
    this->Close();
}
//-----

void __fastcall TForm1::Button2Click(TObject *Sender)
{
    vector<double> cflows;
    vector<double> times;

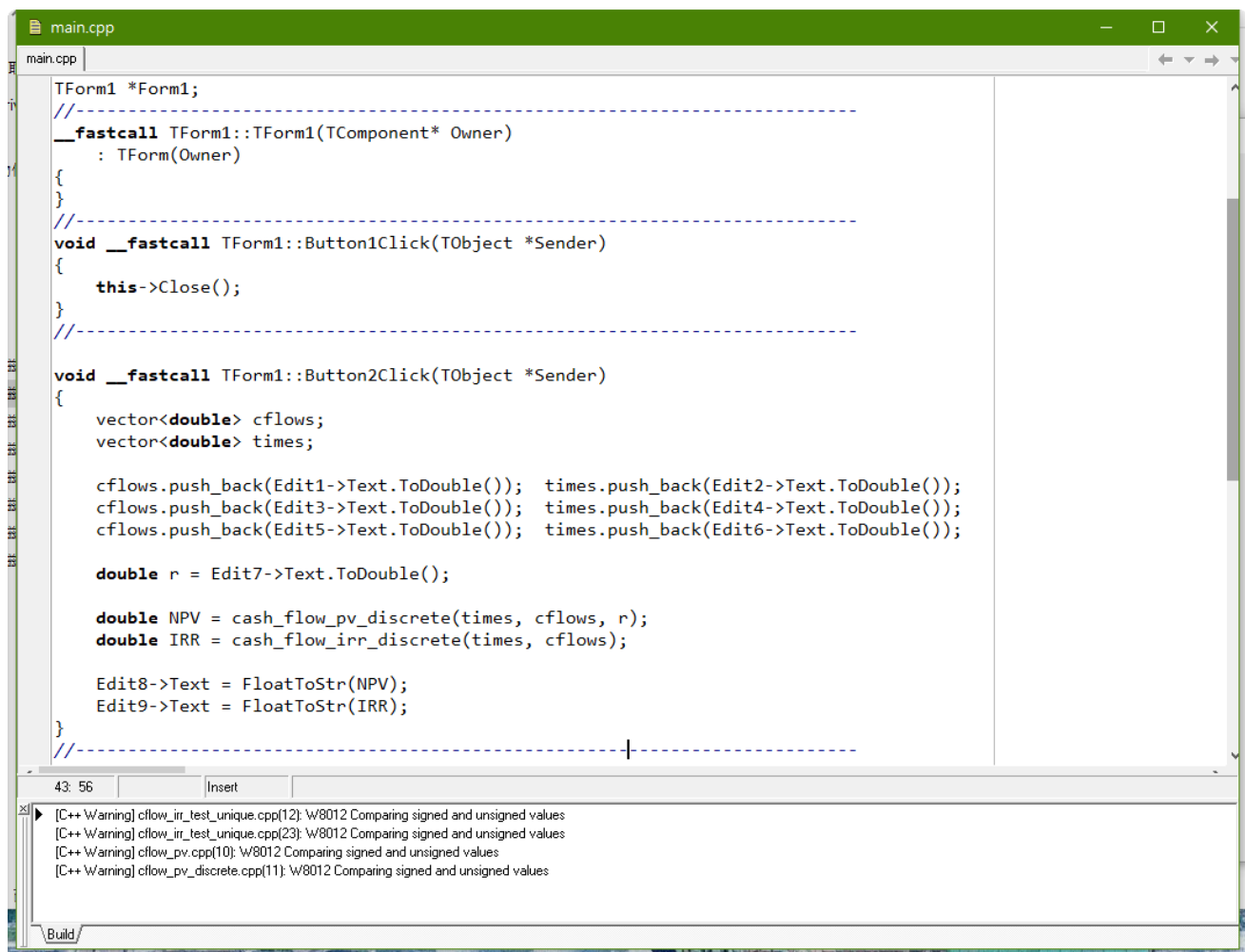
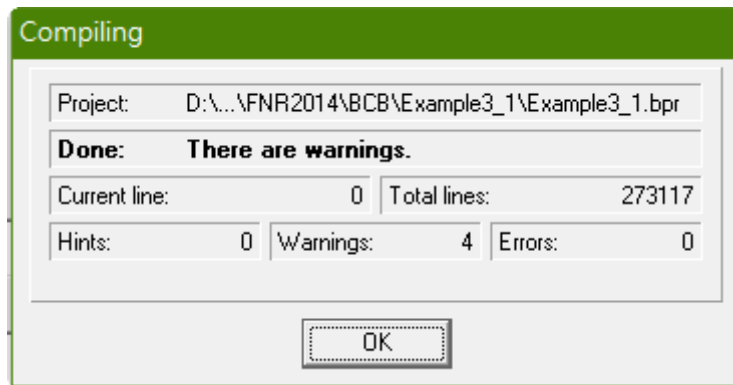
    cflows.push_back(Edit1->Text.ToDouble()); times.push_back(Edit2->Text.ToDouble());
    cflows.push_back(Edit3->Text.ToDouble()); times.push_back(Edit4->Text.ToDouble());
    cflows.push_back(Edit5->Text.ToDouble()); times.push_back(Edit6->Text.ToDouble());

    double r = Edit7->Text.ToDouble();

    double NPV = cash_flow_pv_discrete(times, cflows, r);
    double IRR = cash_flow_irr_discrete(times, cflows);

    Edit8->Text = FloatToStr(NPV);
    Edit9->Text = FloatToStr(IRR);
}
//-----
```

◆ 編譯



◆ 執行

Form1

	Amount	Time
Cash Flow 0	<input type="text" value="-100.0"/>	<input type="text" value="0.0"/>
Cash Flow 1	<input type="text" value="10.0"/>	<input type="text" value="1.0"/>
Cash Flow 2	<input type="text" value="110.0"/>	<input type="text" value="2.0"/>
Interest Rate	<input type="text" value="0.05"/>	

CF NPV	<input type="text"/>	CF IRR	<input type="text"/>	<input type="button" value="Calculate"/>
	<input type="text"/>		<input type="text"/>	<input type="button" value="Close"/>

Form1

	Amount	Time
Cash Flow 0	<input type="text" value="-100.0"/>	<input type="text" value="0.0"/>
Cash Flow 1	<input type="text" value="10.0"/>	<input type="text" value="1.0"/>
Cash Flow 2	<input type="text" value="110.0"/>	<input type="text" value="2.0"/>
Interest Rate	<input type="text" value="0.05"/>	

CF NPV	<input type="text" value="9.2970521541"/>	CF IRR	<input type="text" value="0.1"/>	<input type="button" value="Calculate"/>
				<input type="button" value="Close"/>