

Syllabus

- Attendance: 10%
- Homework: 20%
- Midterm Exam: 30%
- Group Report: 40%, 2 students in one group
- 4/21 Midterm exam
- (4/28)11th week for report title and group members
- (5/12)12th week for report proposal (3~4 pages)
- (6/23)Final term week for presentation and demo
- Uploading PPT, source code and job assignment is necessary



Chapter 1

**Visual Studio &
Console Application Programming**



1.1 Introduction to Visual C#

- **Use C/C++ to develop business software**
 - ⇒ **High cost**
- **Upcoming Internet age, the ideal programming language**
 - ⇒ **Rapid development**
 - ⇒ **Synchronize with new Web standard, cross-platform**
 - ⇒ **ability to design mobile application**
 - ⇒ **easy to combine with existing application**
- **Visual C# are born**



1.1 Introduction to Visual C#

[Continue...](#)

- C# is read as C Sharp
- Designed for .NET Framework
- As powerful as C&C++ and as easy-to-use as VB
- The first component-based programming language
- 95% compatible with C++ and more similar with Java
- Customized for C++ programmer



Attribute of C#

- **C# is an advanced object-oriented programming language**
 - ⇒ **Offers object encapsulation, inheritance and polymorphism**
 - ⇒ **A simple and type-proof object-oriented language**
- **Rapidly build every application through .NET platform and offer tools and services with tools of computing and communication**

Attribute of C#

Continue...

- **Be able to build**
 - ① **Traditional Windows client application**
 - ② **Windows Market application**
 - ③ **Windows Phone application**
 - ④ **ASP.NET Web application**
 - ⑤ **XML Web Service**
 - ⑥ **Distributed components**
 - ⑦ **Client-server application**
 - ⑧ **Database application and more**

Attribute of C#

Continue...

- **C# offers advanced**
 - ① **Source code editor**
 - ② **User interface design tool**
 - ③ **Integrated debugging tool and other tools**
- **Easy to realize C# grammar and start working with knowing C, C++ or Java well**



1.1 Introduction to Visual Studio 2013

- **Simultaneously the program can be developed in:**
 - ⇒ **Visual Basic 2013**
 - ⇒ **Visual C++ 2013**
 - ⇒ **Visual C# 2013**
- **Allowed in the same Integrated Development Environment(IDE)**
- **IDE makes them**
 - ⇒ **Share tools**
 - ⇒ **Combine solutions from different programming languages**



1.2 Visual Studio 2013 Versions

1. Visual Studio Express 2013

2. Visual Studio Professional 2013

⇒ **Elementary development**

3. Visual Studio Premium 2013

⇒ **Enterprise application development**

4. Microsoft Visual Studio Ultimate 2013

⇒ **Enterprise application and team development**

5. Microsoft Visual Studio Test Professional 2013

How to Download VS2013



The screenshot shows a web browser window with the address bar displaying <http://www.cc.ncku.edu.tw/download/visualtool.htm>. The page title is "成功大學授權軟體下載中心" (NCKU Download Center). The main content area lists several software download options:

- Visual Studio 2012 中文專業版**
Visual Studio 2012 Cht Version
 - Visual Studio 2012 中文專業版(ISO 影像檔_下載點1)
 - Visual Studio 2012 中文專業版(ISO 影像檔_下載點2)
 - 說明: DVD 版本請燒錄成 DVD 光碟使用。
- Expression Studio 4 中文版**
Expression Studio 4 Cht Version
 - Expression Studio 4 中文版(ISO 影像檔_下載點1)
 - Expression Studio 4 中文版(ISO 影像檔_下載點2)
- Visual Studio 2010 中文專業版**
Visual Studio 2010 Cht Version
 - Visual Studio 2010 中文專業版(ISO 影像檔_下載點1)
 - Visual Studio 2010 中文專業版(ISO 影像檔_下載點2)
 - 說明: DVD 版本請燒錄成 DVD 光碟使用。
- Visual Studio 2008 中文專業版**
Visual Studio 2008 Cht Version
 - Visual Studio 2008 中文專業版 Part_1
 - Visual Studio 2008 中文專業版 Part_2
 - Visual Studio 2008 中文專業版 Part_3



Visual Studio Express 2013 Offers

- Free, simple and easy-to-learn development tools for beginners
- For students, beginners, part-timer, programming fans and their requirements
- Visual Studio Express 2013 offers:
 - ① Visual Studio Express 2013 for Web
 - ② Visual Studio Express 2013 for Windows 8
 - ③ Visual Studio Express 2013 for Windows Desktop
 - ④ Visual Studio Express 2013 for Windows Phone



Console Application

- **As executed**

- ⇒ **Traditional DOS text-only command line environment**
- ⇒ **Only develop programs which output text information**
- ⇒ **Low resources used**
 - ⇒ **Higher performance than Windows Form**

Applications

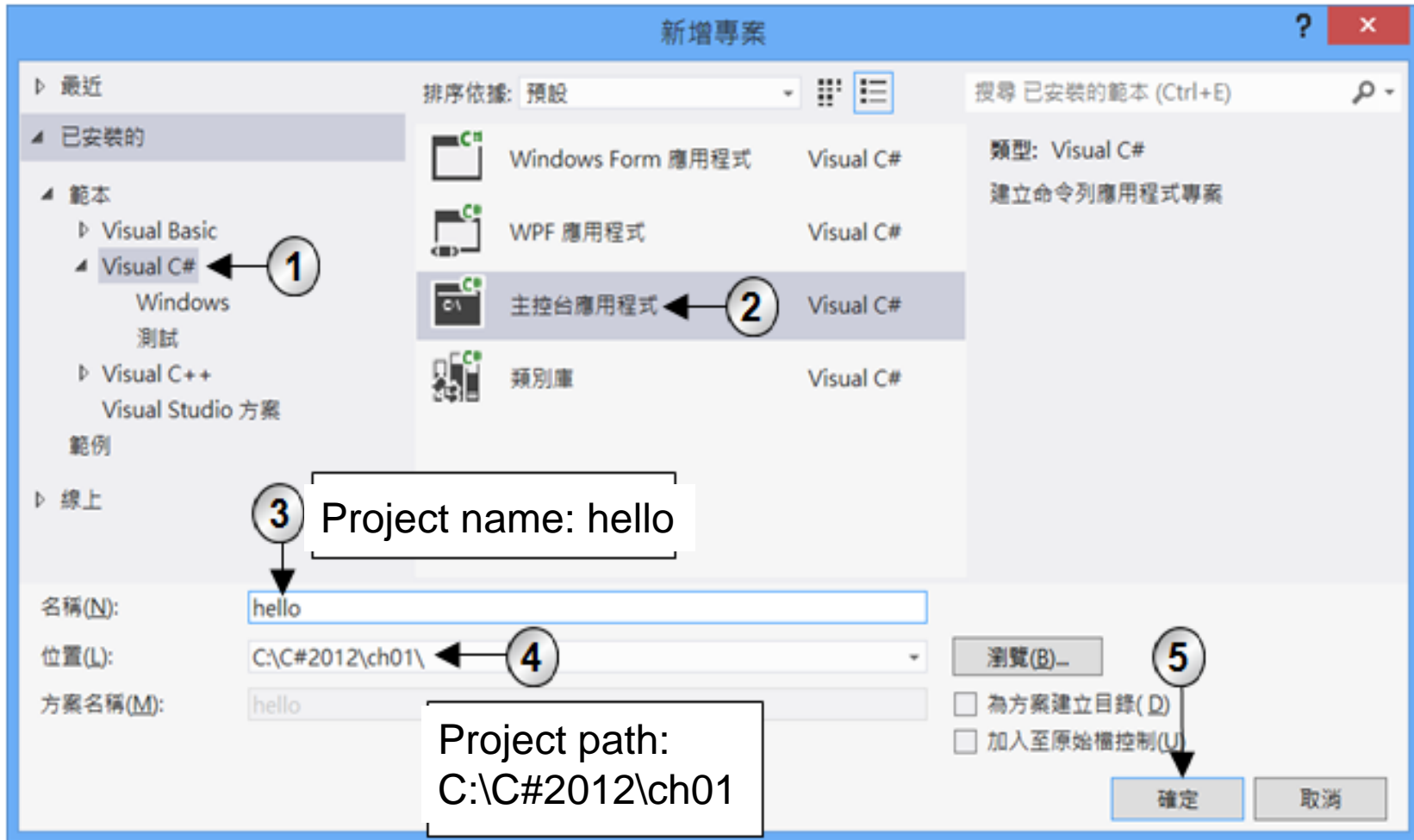


1.3 Introduction to Console Application

1.3.1 New project

- **Console Application**
The program for Console mode, in other words, the program run in the tradition DOS
- **Windows Form Application**
The program for Windows environment

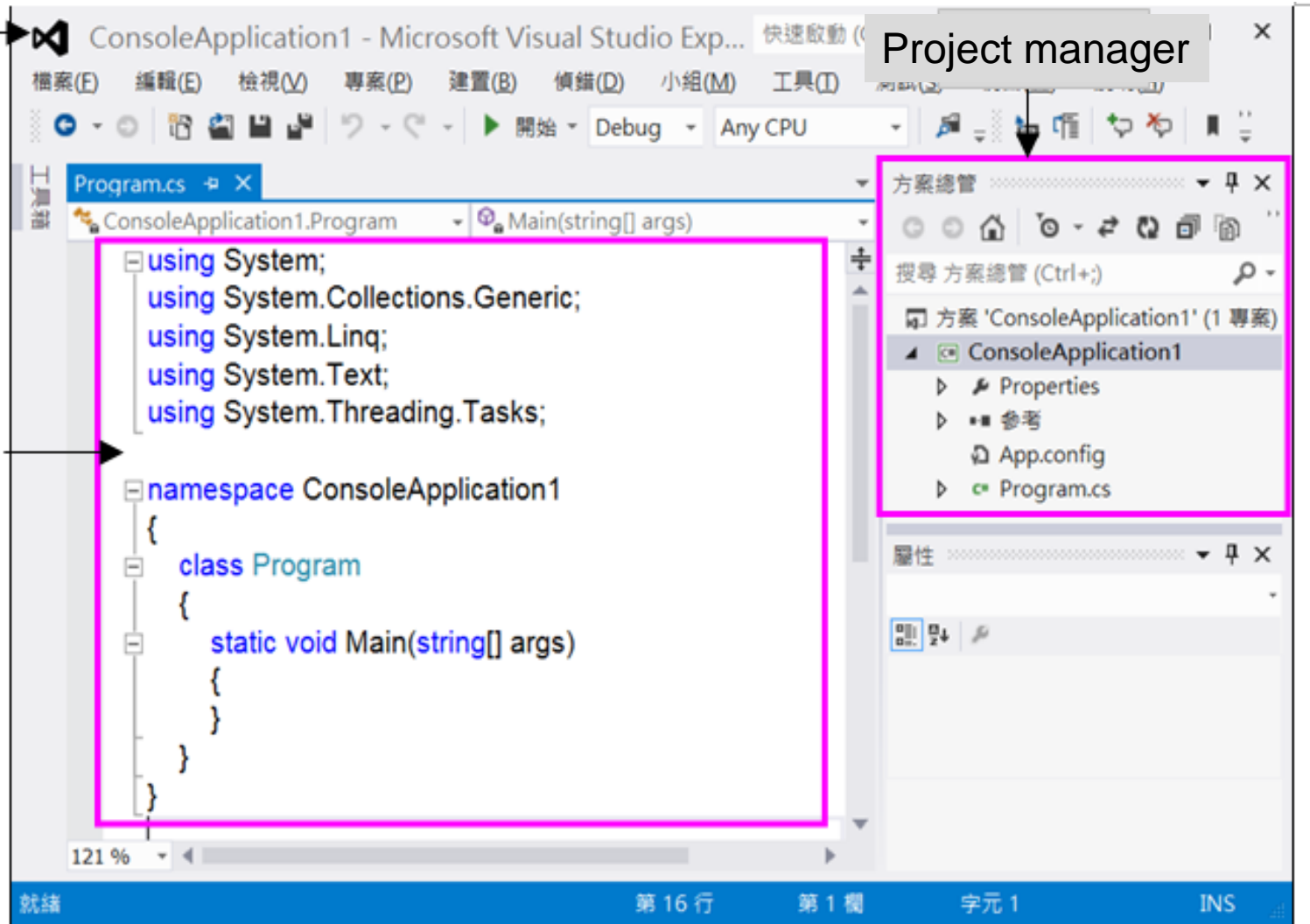
New project



Console development IDE

Project name

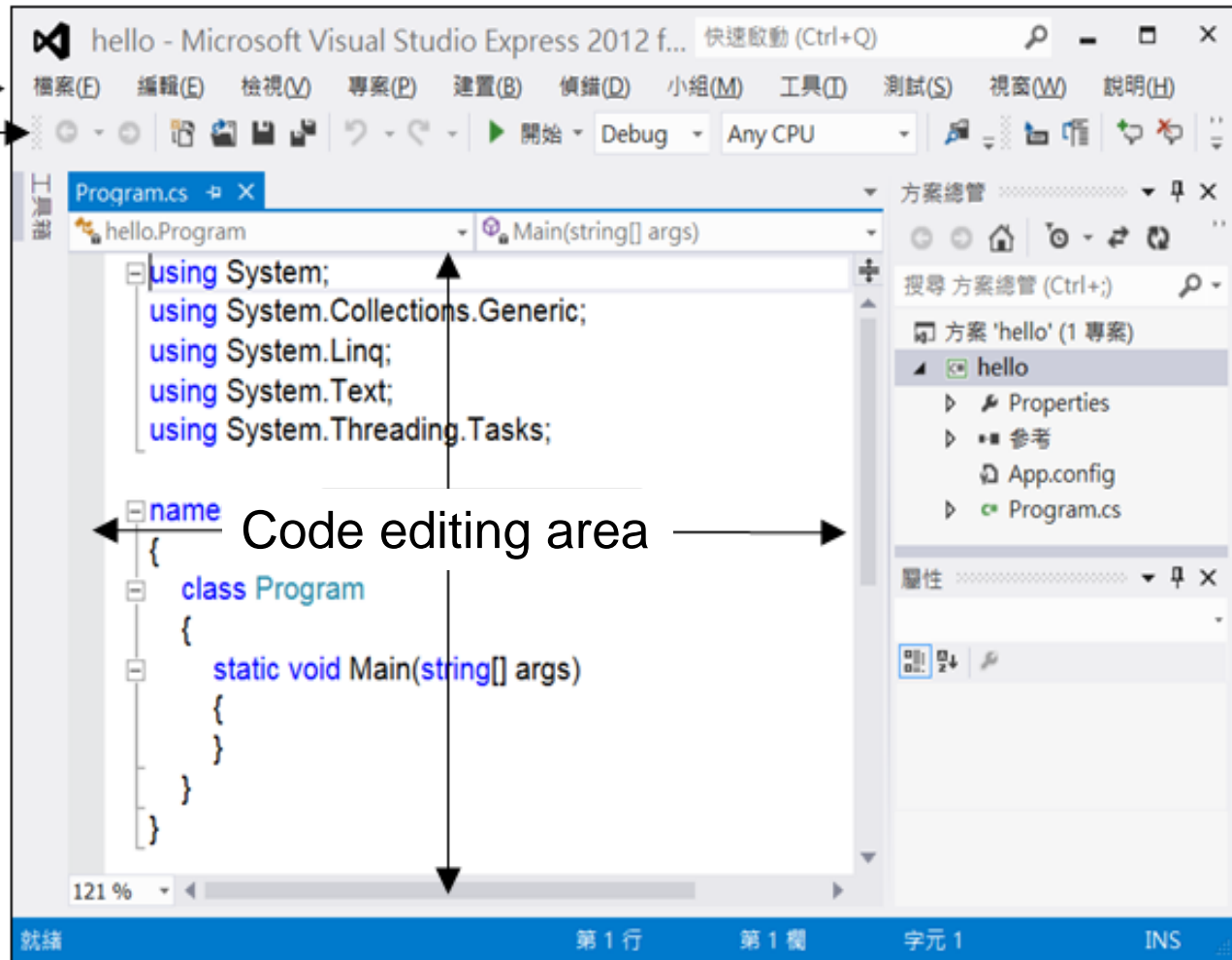
Code editor



Code editor window

Menu bar

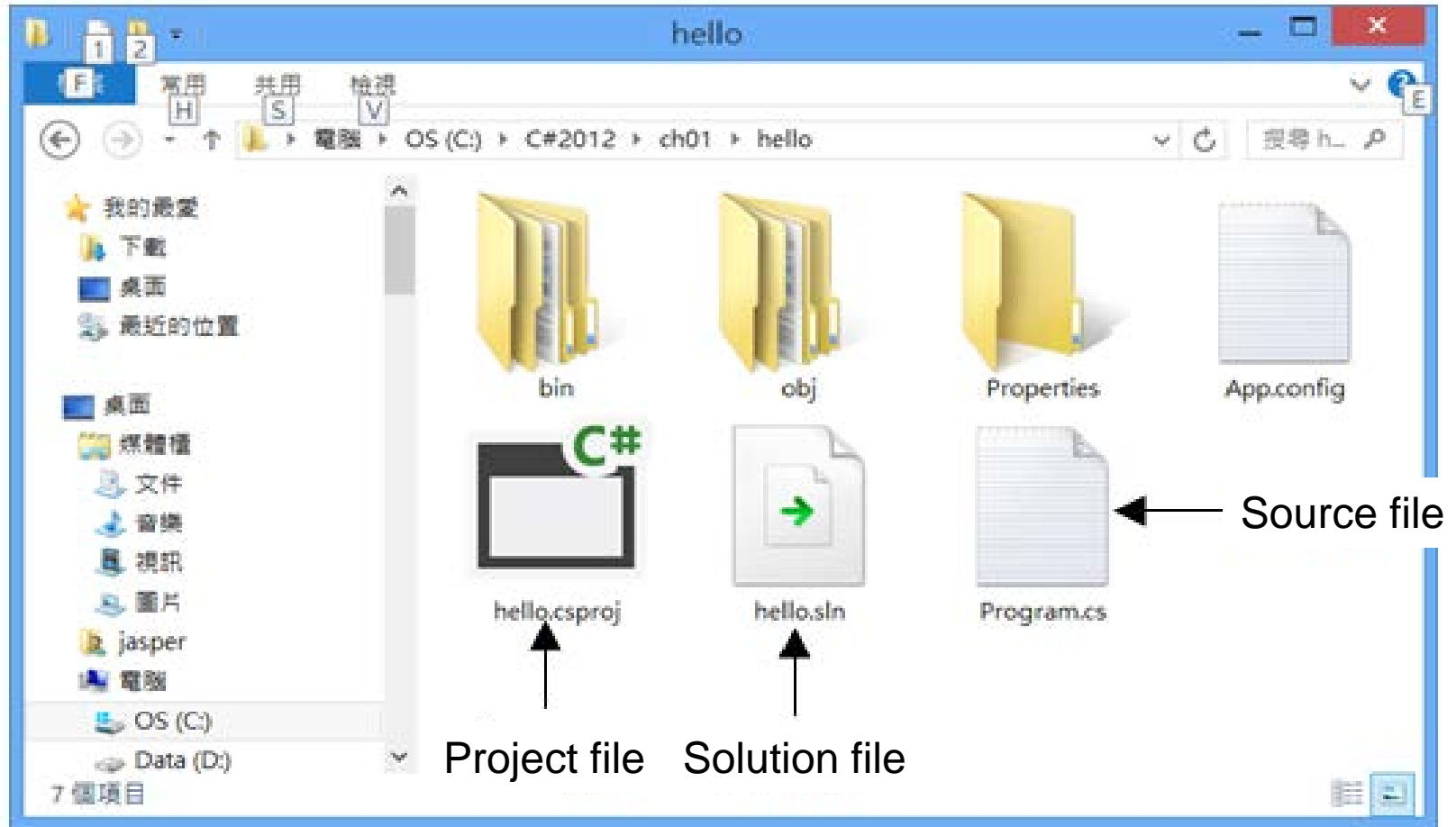
Standard
toolbar



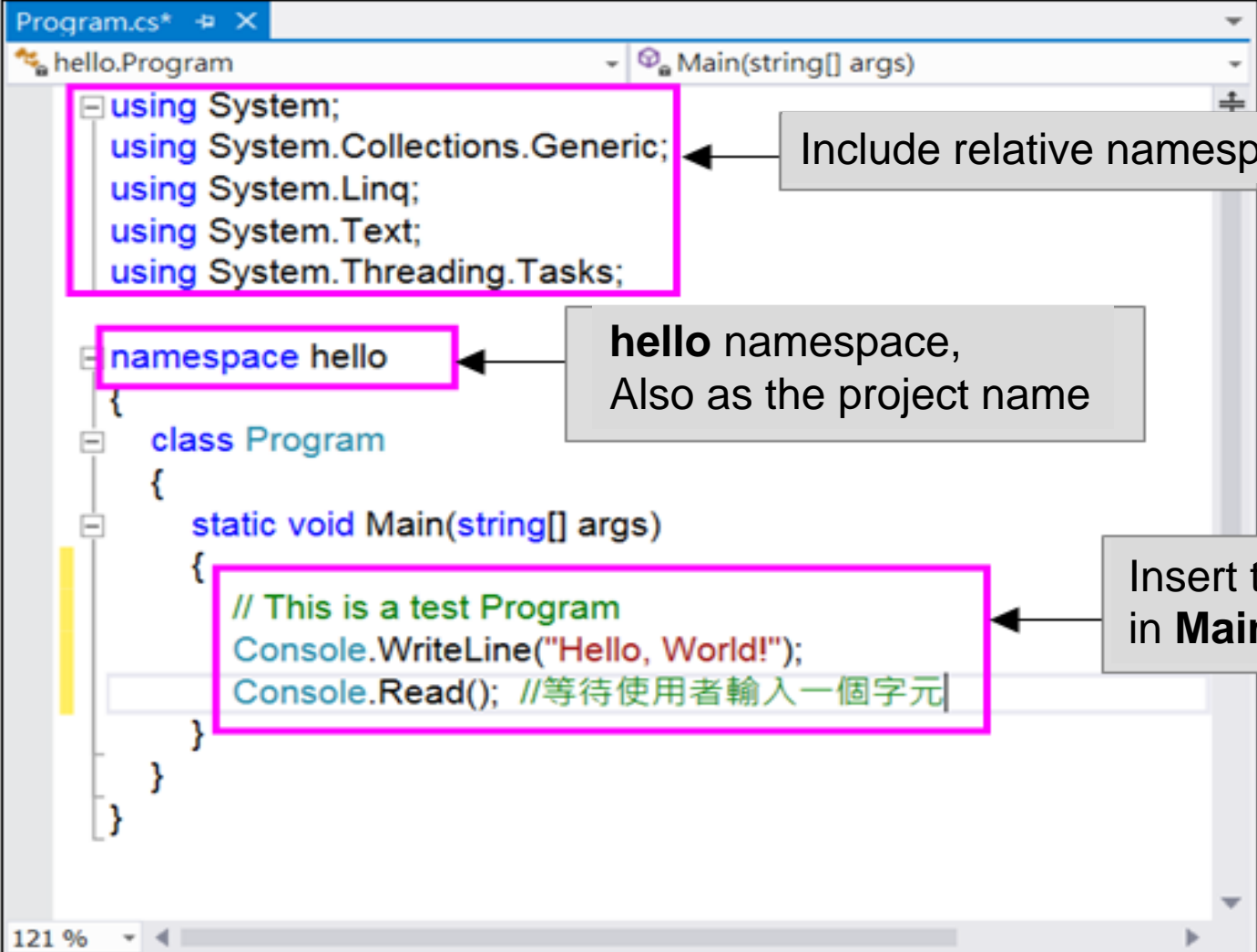
Project
manager

Property
window

Important files



Writing Codes



The image shows a screenshot of a C# code editor window titled "Program.cs*". The code is for a project named "hello.Program" and contains a `Main(string[] args)` method. The code is annotated with three callouts:

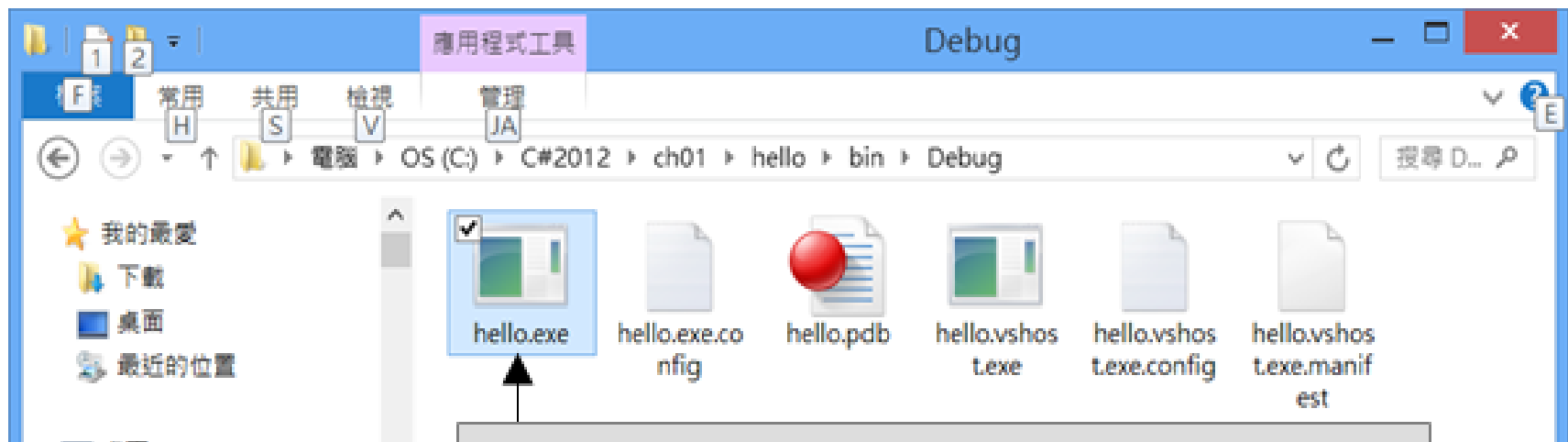
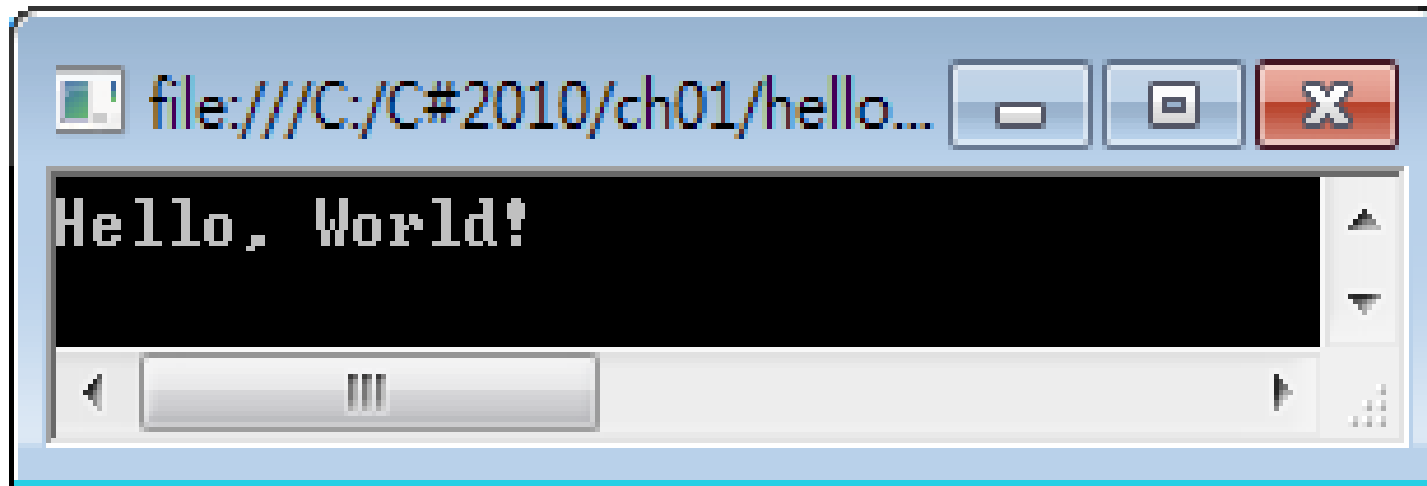
- Include relative namespace**: Points to the `using` statements at the top of the file.

```
using System;  
using System.Collections.Generic;  
using System.Linq;  
using System.Text;  
using System.Threading.Tasks;
```
- hello namespace, Also as the project name**: Points to the `namespace hello` declaration.

```
namespace hello  
{  
    class Program  
    {  
        static void Main(string[] args)  
        {  
            // This is a test Program  
            Console.WriteLine("Hello, World!");  
            Console.Read(); //等待使用者輸入一個字元  
        }  
    }  
}
```
- Insert these statement in **Main** function**: Points to the code inside the `Main` method.

```
// This is a test Program  
Console.WriteLine("Hello, World!");  
Console.Read(); //等待使用者輸入一個字元
```

The code is displayed at 121% zoom.



The *.exe executable file will be generated under bin/Debug directory of the current project directory if the compiling is successful

1.4 First Console Application

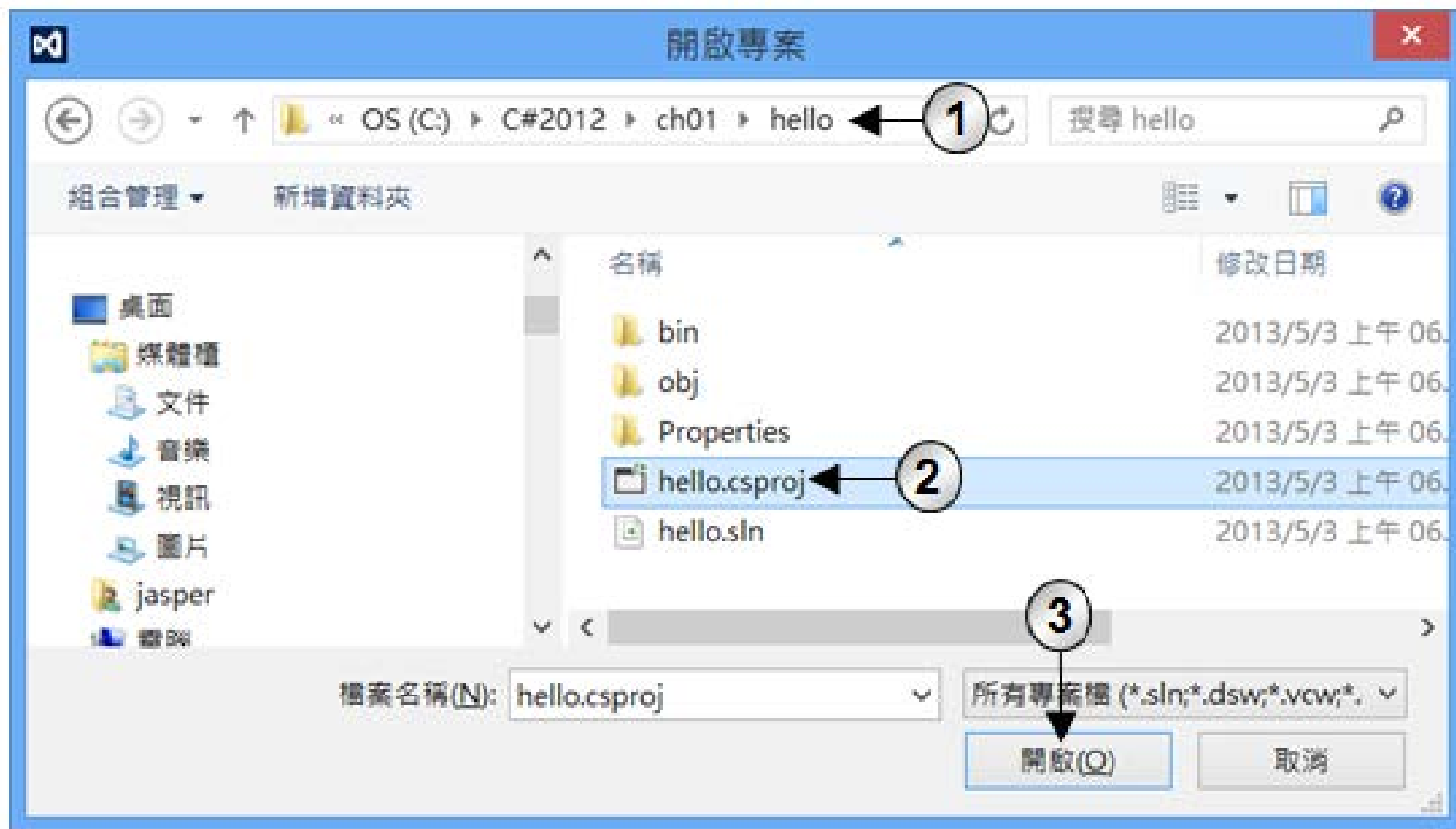
Use the steps of console application design above to write a simple program.
To display “Hello, World!” on the screen

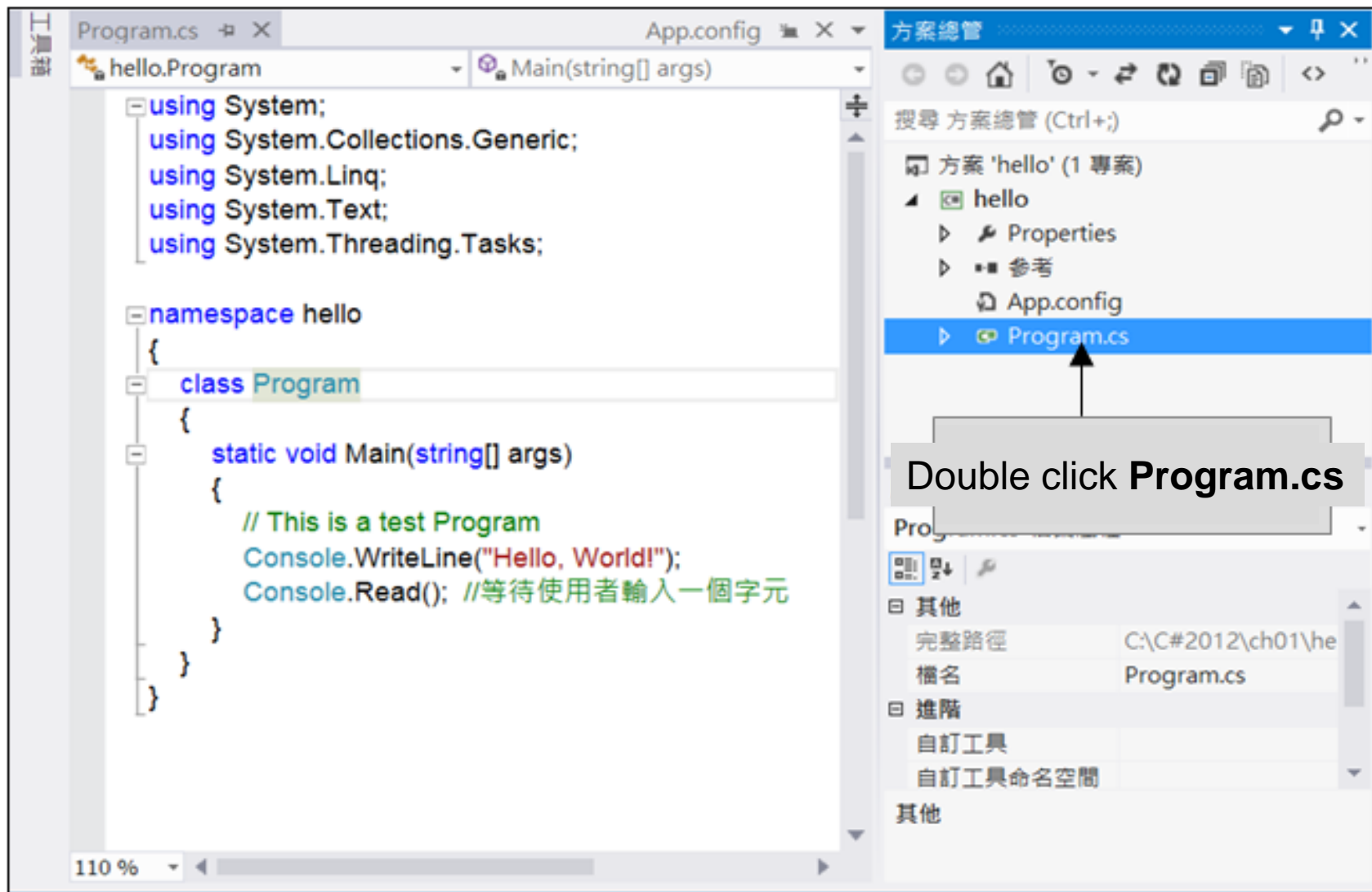


1.3.2 Close Project

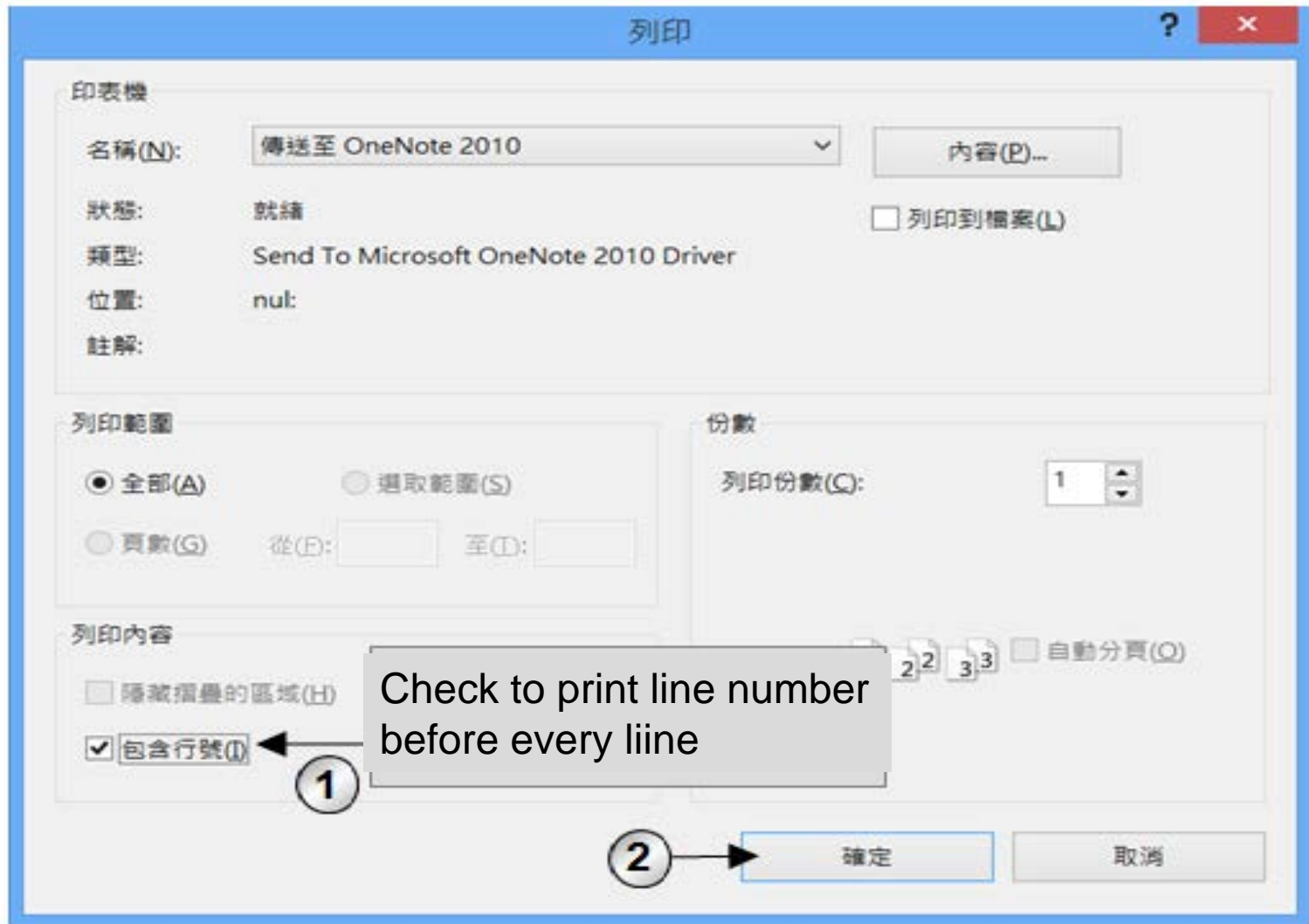


Open Project





Print Source Code



C:\C#2012\ch01\hello\Program.cs

```
-----  
01 using System;  
02 using System.Collections.Generic;  
03 using System.Linq;  
04 using System.Text;  
05  
06 namespace hello  
07 {  
08     class Program  
09     {  
10         static void Main(string[] args)  
11         {  
12             // This is a test Program  
13             Console.WriteLine("Hello, World!");  
14             Console.Read();  
15         }  
16     }  
17 }
```



1.5 Solution and Project

- Solution and project file is the necessities of efficient developing management in VS 2013
- Ex: reference, data link, directory and file
 - ⇒ The user interface to view and manage these container and related items
 - ⇒ Provide **Project Manager** window in IDE

1.5 Solution and Project

Continue...

- As the IDE create a new project:
 - ⇒ Project extension is *.csproj
 - ⇒ Automatically create a solution file with the same name as the project, extension is *.sln
- A solution can include one or more projects
 - ⇒ The system automatically takes the first created project as the **initial project**
- A solution include one or more projects and the files and meta-data to define projects

1.5 Solution and Project

Continue ...

- A project generates one or many output files as building, a project includes source files, related meta-data (ex: component reference and build instructions)
- Many files are generated as writing C# program in console application, Windows application, Windows Market app, Windows Phone app or ASP .NET Web application
 - ⇒ Putting all related files which includes system files, images, data and sounds in the same directory is recommended for duplication and management



Thank you

Take a Break ...