Chapter 13

File and Multimedia Design

13-1 File and Stream

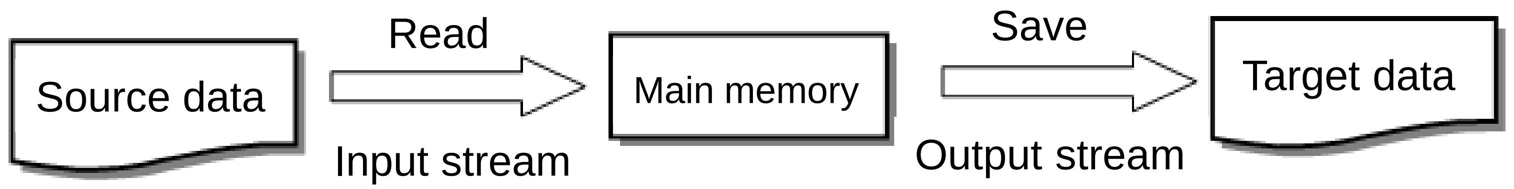
- Data process in previous chapters
  ⇨ data and source code in the same place, get input data from keyboard, output data is not saved
- Disadvantages of putting data and code together
  ⇨ have to modify data in the source code
  ⇨ key in data every time the program runs
  ⇨ execution is required to see the result
- Advantages of separating data and code
  ⇨ use program to modify data files
  ⇨ one program can process many data files

13-1 File and Stream

- C# uses stream to process data input and output
- Stream is like a tap that water flows from higher place to lower place
  ⇨ single direction, the processed character cannot be processed again
- Stream is assembled by characters or bytes
- Data process can be divided into “character stream” and “data stream”

13-1 File and Stream

- Input stream
  data from keyboard or file reading
- Output stream
  result of data process is saved into file, printed or shown on the screen



13-1 File and Stream

Types of data file:

1. Text file

- **Save character data, every byte is character**
- **Character stream**
- **Process character by character in single direction**

2. Binary file

- **Also called non-character file, Bytes data not processed**
- **Binary stream**
- **As scrambled code in text editor**

13-2 System.IO Namespace

- **When C# program uses stream, there is a code required: using System.IO;**
- **System.IO classes for file and directory process**

Class	Description
Directory	Providing directory of creating, deleting, moving and showing. All methods are static methods, object realization is not required
DirectoryInfo	Providing directory of creating, deleting and so on. Methods are identical to methods of Directory, but object realization is required
File	Providing file of creating, opening, duplication, deleting and moving. All methods are static, object realization is not required

Class	Description
FileInfo	Providing file creating, opening and so on. Methods are identical to methods of File, but object realization is required
FileStream	Providing file I/O process. Synchronous and asynchronous file reading and writing are supported
StreamWriter	Character stream file writer
StreamReader	Character stream file reader
BinaryWriter	Binary stream file writer
BinaryReader	Binary stream file reader

13-3 Directory Operation

- **Create, delete, move and get working directory in C#:**

  1. Directory class

  2. DirectoryInfo class

Directory Class

- All methods are static methods
- Ex: create “my” folder and its sub folder “test” in C: root directory

  Directory.CreateDirectory("c:\\my\\test\\")
- Add @ symbol before path string for ignoring \ as an escape character

  Directory.CreateDirectory(@"c:\my\test\")

DirectoryInfo Class

- **All methods are NOT static methods**
- **The way to create “D:\my\test1” with Directory class is rewritten in DirectoryInfo class:**

```
DirectoryInfo dirInfo = new  DirectoryInfo(@"D:\my\test1\");
dirinfo.Create();
```

Directory Static Methods

1. CreateDirectory(path)
   create the folder of designated path. The parent folders are also created if they do not exist

Ex: create directory "test" under "D:\my", there are 2 usages

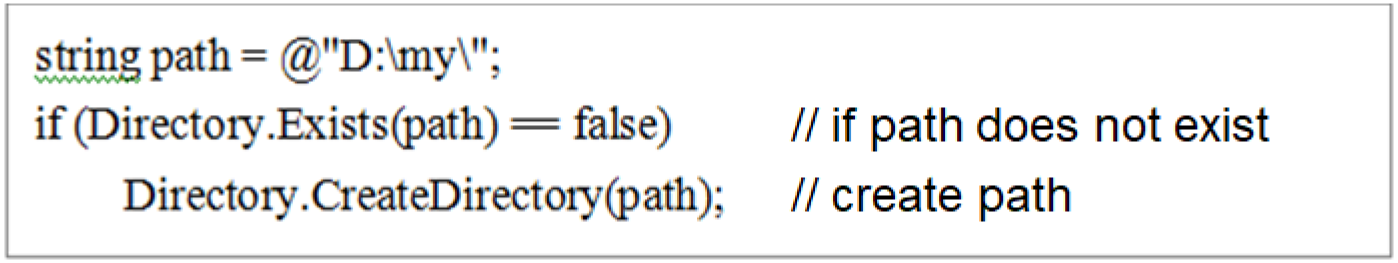
```
Directory.CreateDirectory(@"D:\my\test\");
Directory.CreateDirectory("D:\\my\\test\\");   ⇦ 省略@
```

Directory Static Methods

2. Exists(path)

   examine whether the directory of path is in existence or not. Return true for existence and return false for not

Ex: examine “D:\my” is in existence or not. Create D:\my if the directory does not exist



```
string path = @"D:\my\";
if (Directory.Exists(path) == false)        // if path does not exist
      Directory.CreateDirectory(path);      // create path
```

if (Directory.Exists(path) == false) can be rewritten in
if (!Directory.Exists(path))

Directory Static Methods

3. Delete (path, recursive)

- Delete the folder designated path
- If recursive = true, the sub folders and files are also deleted
- If recursive = false and there are folders or files in the directory, deleting is cancelled

Ex: delete all sub folders and files in D:\my directory

```
Directory.Delete(@"D:\my\", true);
```

Directory Static Methods

4. Move(sourceDir, destDir)

- Move all files and folders in sourceDir to destDir
- Ex: move folders and files in D:\my to D:\you

```
Directory.Move(@"D:\my", @"D:\you");
```

Directory Static Methods

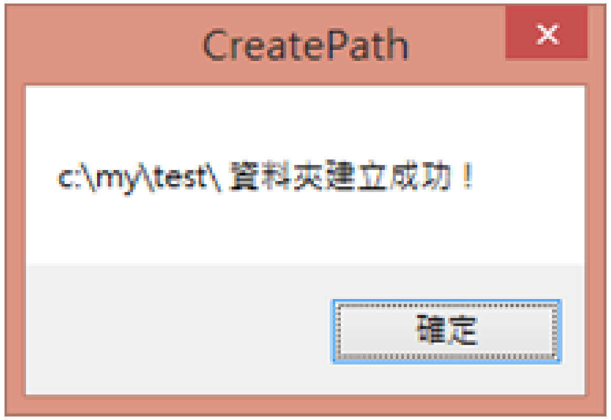
5. GetDirectories(path)
   get list of child directories of the path’s designated folder, return string array
6. GetFiles(path)
   get list of child files of the path’s designated folder, return string array

Example(CreatePath):

Design a program to create folders. Requirements:
Create C:\my\test folder in C: disc

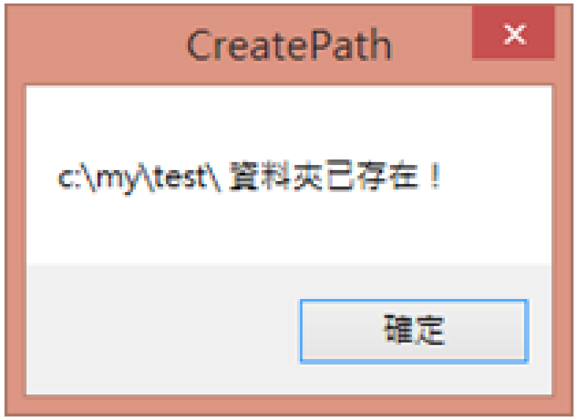
1. If the folder exists, show message “C:\my\test資料夾已存在”
2. If the folder does not exist, create the folder and show message “C:\my\test 資料夾建立成功”

Result:


CreatePath

c:\my\test\ 資料夾建立成功！

或

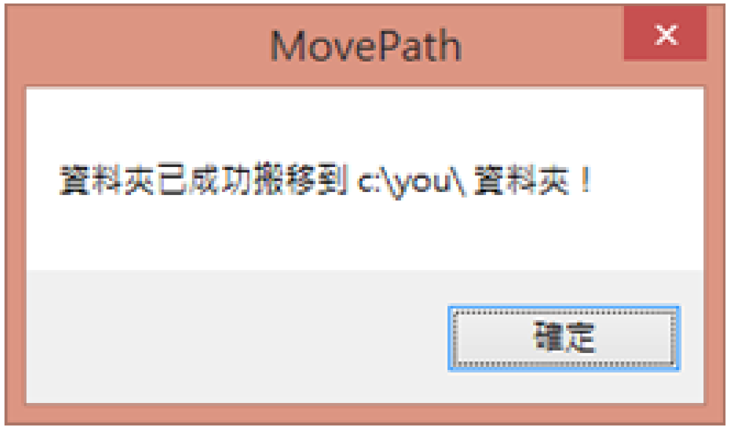

CreatePath

c:\my\test\ 資料夾已存在！

Example(MovePath):

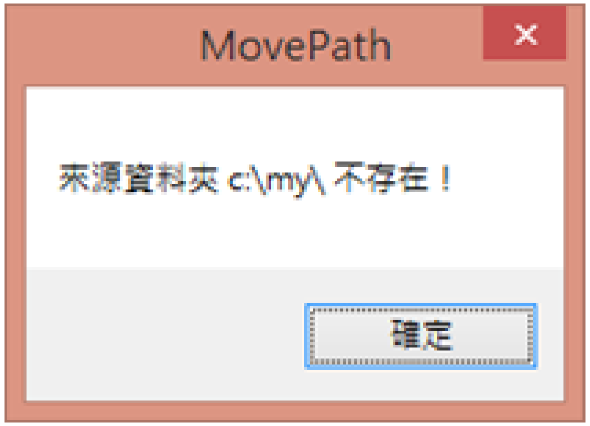
Design a program to move folders. Requirements:
Move folder “C:\my”, its sub folders and files to “C:\you”

Result:


MovePath

資料夾已成功搬移到 c:\you\ 資料夾！

或


MovePath

來源資料夾 c:\my\ 不存在！

Directory moving successfully

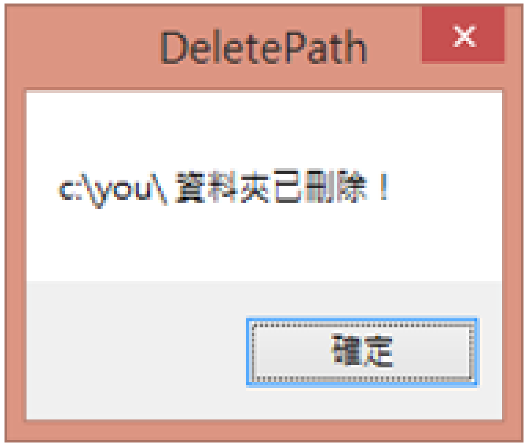
Directory don’t exist

Example(DeletePath):

From previous example, design a program to delete folders. Requirements:
Delete C:\you folder, its sub folders and files

1. If the folder is deleted successfully, show the left figure
2. If the folder you are going to delete does not exist, show the right figure

Result:

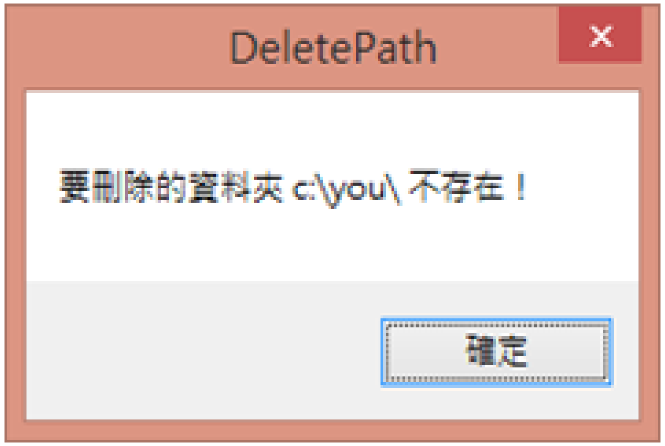


DeletePath

c:\you\ 資料夾已刪除！

確定

或



DeletePath

要刪除的資料夾 c:\you\ 不存在！

確定

13-4 File Operation

- C# uses File class and FileInfo class to access file data
- File class
  all methods are static methods
  ⇨ use File.methodName to call the method
- FileInfo class
  realization is required

FileInfo Constructor

1. FileInfo(String path)

- For building solid file object
- Parameter path is path of directory or file
- Ex: create a FileInfo object called finfo and open “D:\my\htc.txt”

```
FileInfo finfo = new FileInfo(@“d:\my\htc.txt”);
      or
FileInfo finfo = new FileInfo(“d:\\my\\htc.txt”);
```

FileInfo Properties

Property	Description
Exists	Acquire whether the designated file is in existence or not true: exist, false: do not exist. Ex:finfo.Exists
FullName	Get full path of the file, the path includes directories ex: finfo.FullName
Name	Get the file name with the extension Ex: finfo.Name
Extension	Get the extension of the file Ex: finfo.Extension
DirectoryName	Get the path of the directory which the file belongs to. Ex: finfo.DirectoryName
Length	Get the size of file Ex: finfo.Length

FileInfo Methods

1. Create()

- To create and open the file assigned by FileInfo object
- The path has to exist , otherwise an error will occur.
- Ex: finfo is a FileInfo object and finfo stands for "D:\my\htc.txt"

```
FileInfo finfo = new FileInfo("d:\\my\\htc.txt");
FileStream fs = finfo.Create();          // create htc.txt
```

FileInfo Methods

2. Close()

- To close the file referred by the opened FileInfo object
- File stream in the same function has to be closed if the stream is no longer to be used
  ⇨ otherwise repeated realization error will occurs
- Ex: close the file referred by FileInfo object fs
  fs.Close();

FileInfo Methods

3. CopyTo (String path, Boolean)

- Copy the current file to the file assigned by path, the source file still exists
- Copy to bin\Debug of project directory if the path is not defined
- The path of the target directory has to be created in advance, otherwise the error will occurs when copying
- If the second parameter is true, overwrite the file if it is already in existence, and false for not overwriting

FileInfo Methods

Ex: copy the file “D:\my\htc.txt” assigned by finfo to “D:\you\newhtc.txt”

```
FileInfo finfo = new FileInfo(“d:\\my\\htc.txt”);
finfo.CopyTo(“d:\\you\\newhtc.txt”, true);
```

FileInfo Methods

4. MoveTo(String path)

- Move the current file to the file assigned by path, the source file is removed
- Moving does not have overwriting function, the target directory has to be created and the target file cannot exist before moving

Ex: move the file “D:\my\htc.txt” assigned by finfo to “D:\you\newhtc.txt”

```
FileInfo finfo = new FileInfo(“d:\\my\\htc.txt”);
finfo.MoveTo(“d:\\you\\newhtc.txt”);
```

FileInfo Methods

5. Delete()

- Delete the designated file referred by FileInfo object
- Ex: delete the file “D:\you\newhtc.txt” assigned by finfo object
  FileInfo finfo = new FileInfo(“d:\\you\\newhtc.txt”);
  finfo.Delete();

FileInfo Methods

6. CreateText()

- Create and open a new text file assigned by FileInfo object
- The new file has no data, StreamWriter is required for writing data
- If the file exists, clear the content. If the file does not exist, create a new file
- The designated path of the directory has to be created in advance otherwise the errors would occur

FileInfo Methods

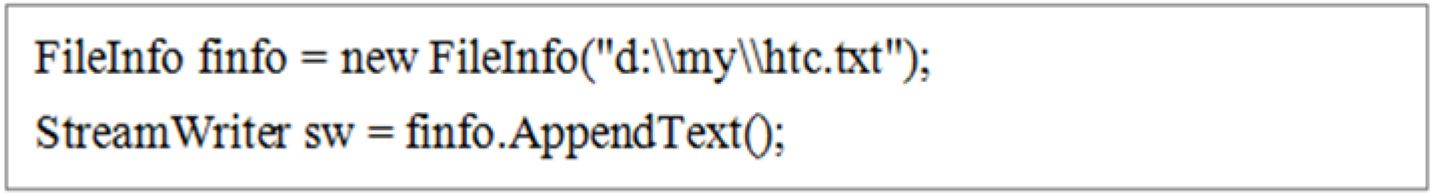
- **Ex: create a new file called "htc.txt" in D:\my directory and assign StreamWriter "sw" as output data stream to write output data into the file**
  FileInfo finfo = new FileInfo("d:\\my\\htc.txt");
  StreamWriter sw = finfo.CreateText();

FileInfo Methods

7. AppendText()

- Use StreamWriter to append the data to the end of the text file
- If the file exists ⇨ open the file
- If the file does not exist ⇨ create a new file

Ex: open the text file “D:\my\htc.txt” and assign StreamWriter sw as output data stream. Write output data at the end of file with output data stream

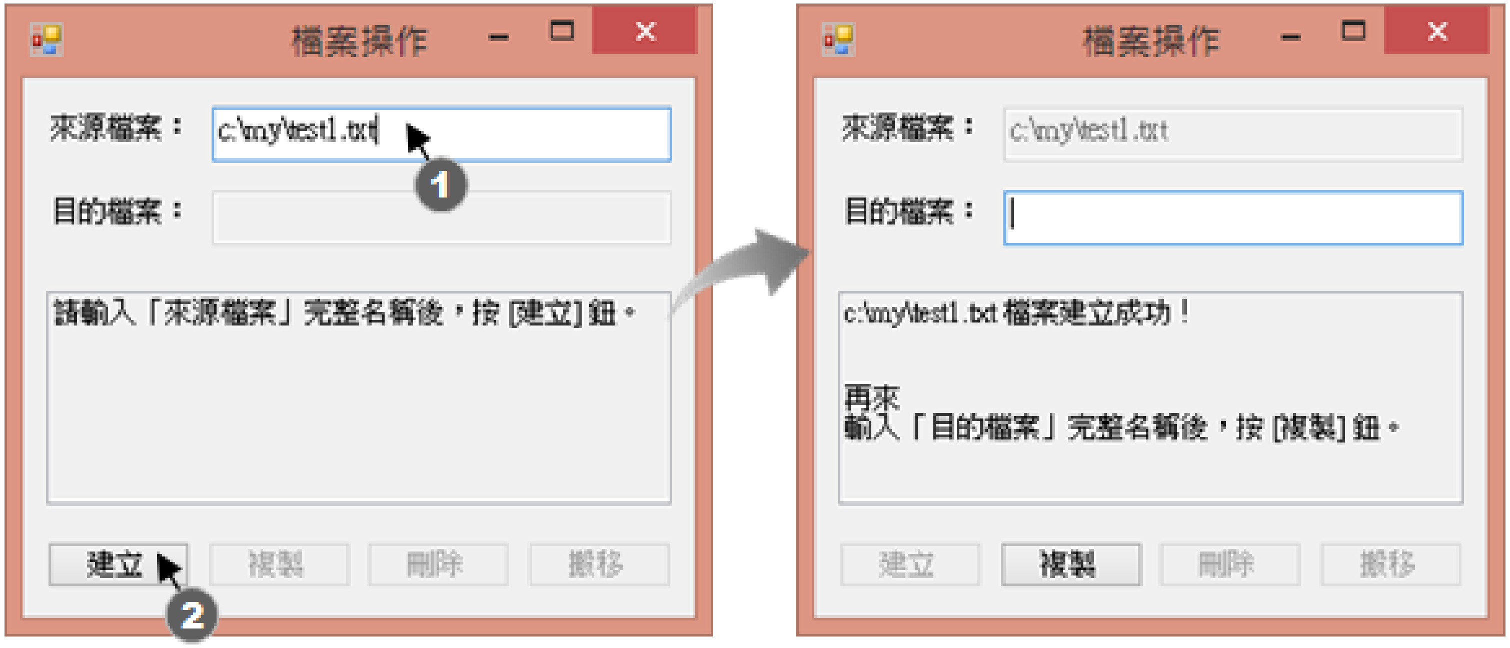


```
FileInfo finfo = new FileInfo("d:\\my\\htc.txt");
StreamWriter sw = finfo.AppendText();
```

Example(FileOperate):

Design a program which can create, copy, delete and move data file.
Requirements:

1. The program starts as shown in figure 1. “建立” button is available but others are not
2. Input “C:\my\test1.txt” in source file, and press “建立” button to show message “C:\my\test1.txt檔案建立成功!” as shown in figure 2. In the meantime, “複製” button is available and others are not



來源檔案：c:\my\test1.txt

目的檔案：

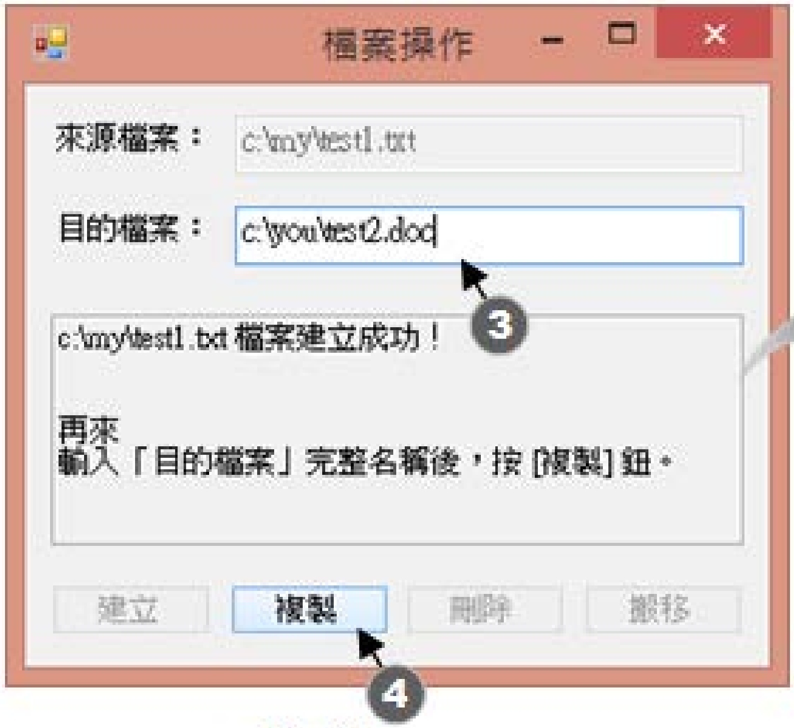
請輸入「來源檔案」完整名稱後，按 [建立] 鈕。

來源檔案：c:\my\test1.txt

目的檔案：

c:\my\test1.txt 檔案建立成功！

再來
輸入「目的檔案」完整名稱後，按 [複製] 鈕。



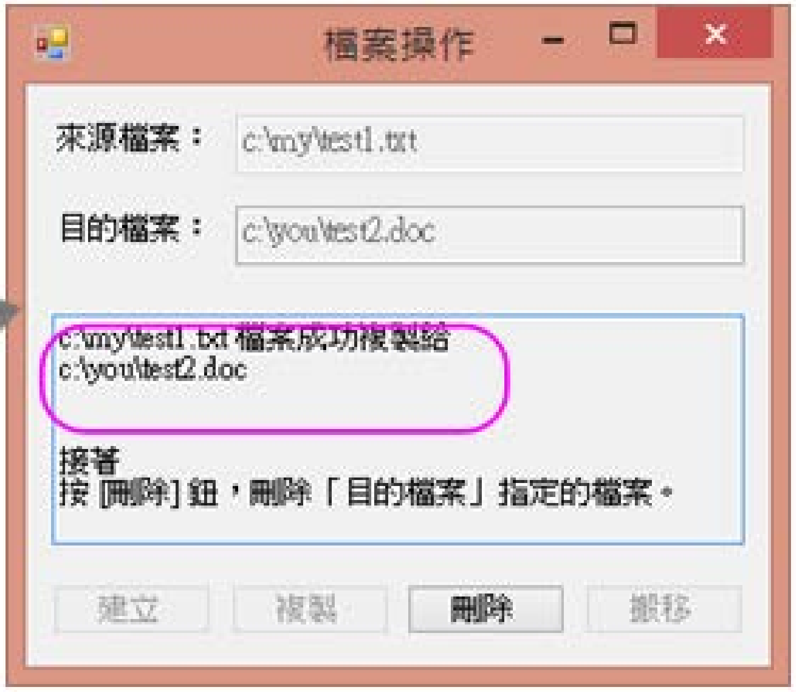
來源檔案： c:\my\test1.txt

目的檔案： c:\you\test2.doc

```
c:\my\test1.txt 檔案建立成功！


再來
輸入「目的檔案」完整名稱後，按 [複製] 鈕。
```

⬆圖 3



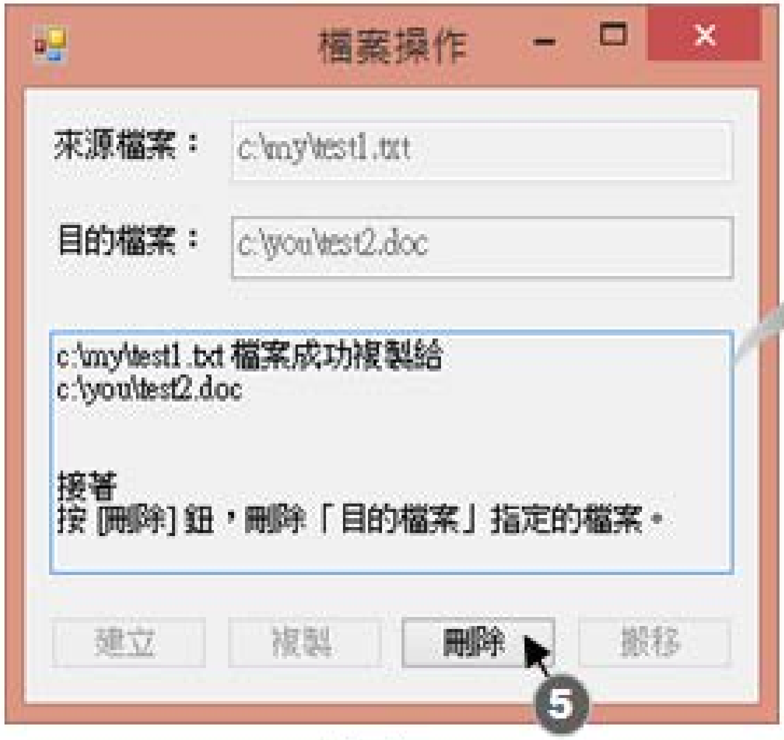
來源檔案： c:\my\test1.txt

目的檔案： c:\you\test2.doc

```
c:\my\test1.txt 檔案成功複製給
c:\you\test2.doc


接著
按 [刪除] 鈕，刪除「目的檔案」指定的檔案。
```

⬆圖 4



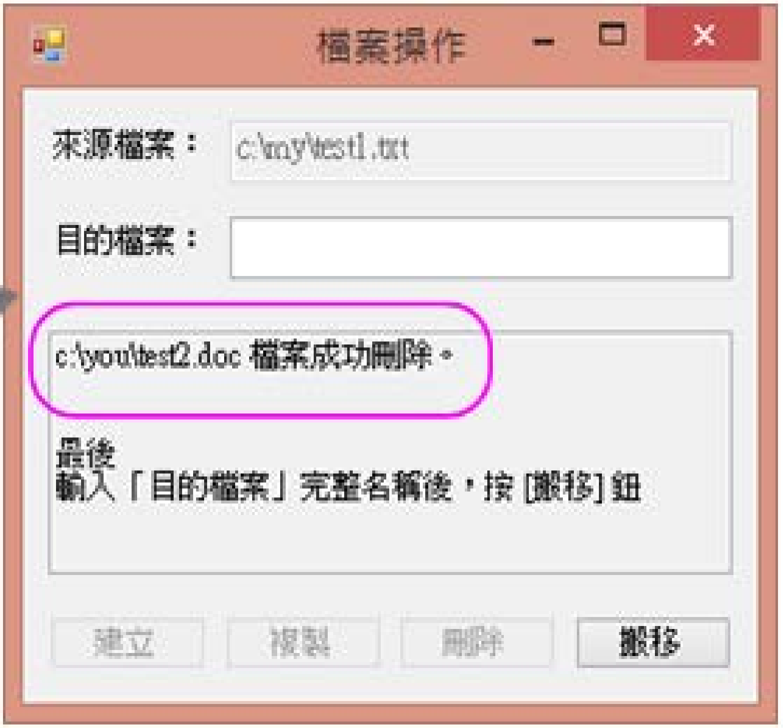
來源檔案： c:\my\test1.txt

目的檔案： c:\you\test2.doc

```
c:\my\test1.txt 檔案成功複製給
c:\you\test2.doc


接著
按 [刪除] 鈕，刪除「目的檔案」指定的檔案。
```

⬆圖 5



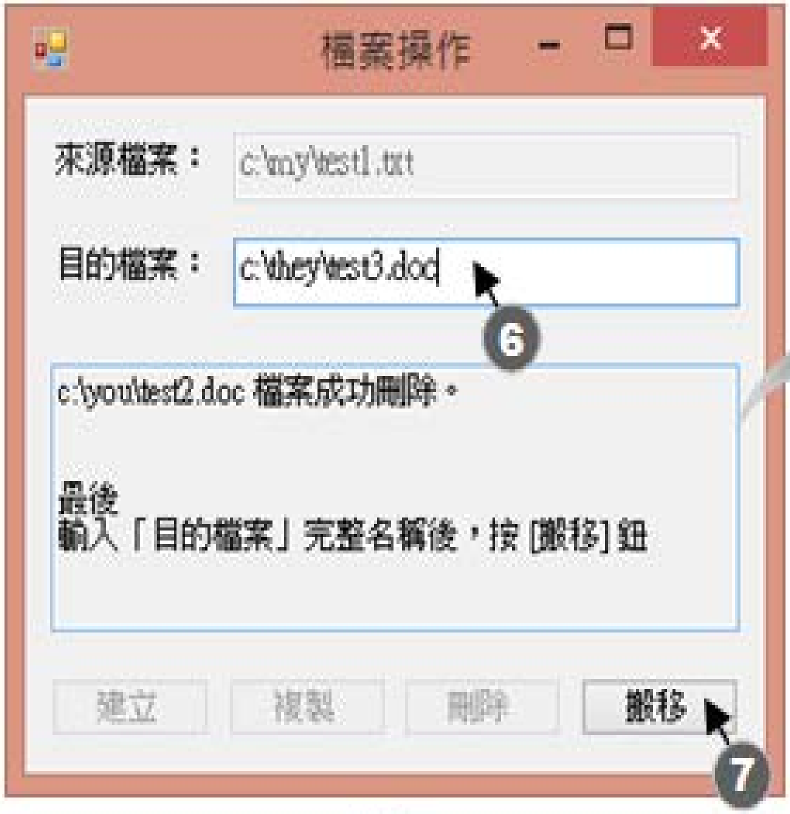
來源檔案： c:\my\test1.txt

目的檔案：

```
c:\you\test2.doc 檔案成功刪除。


最後
輸入「目的檔案」完整名稱後，按 [搬移] 鈕
```

⬆圖 6



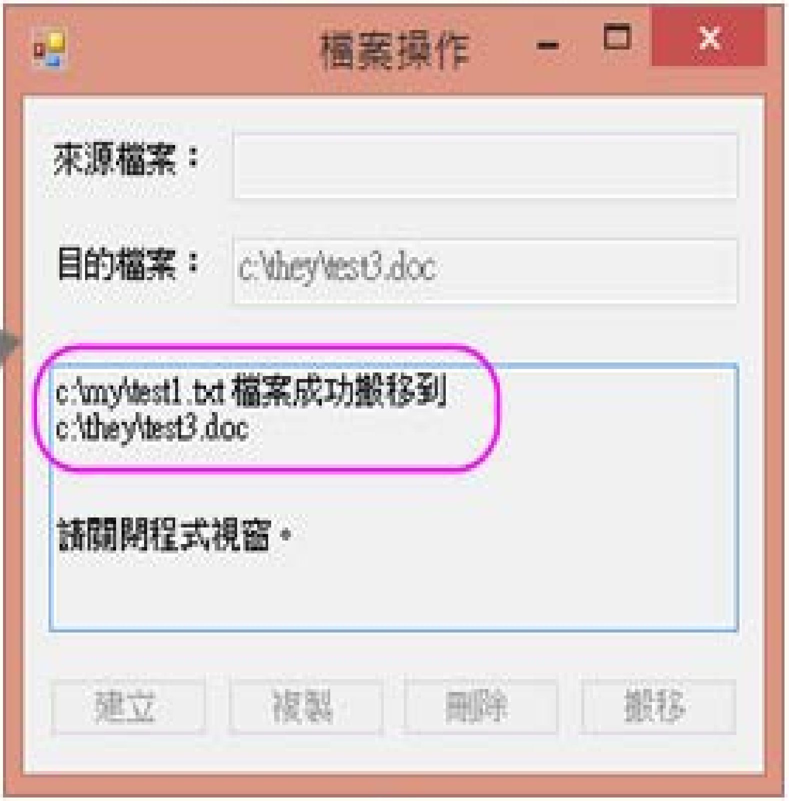
來源檔案：c:\my\test1.txt

目的檔案：c:\they\test3.doc

```
c:\you\test2.doc 檔案成功刪除。


最後
輸入「目的檔案」完整名稱後，按 [搬移] 鈕
```

⬆圖 7



來源檔案：

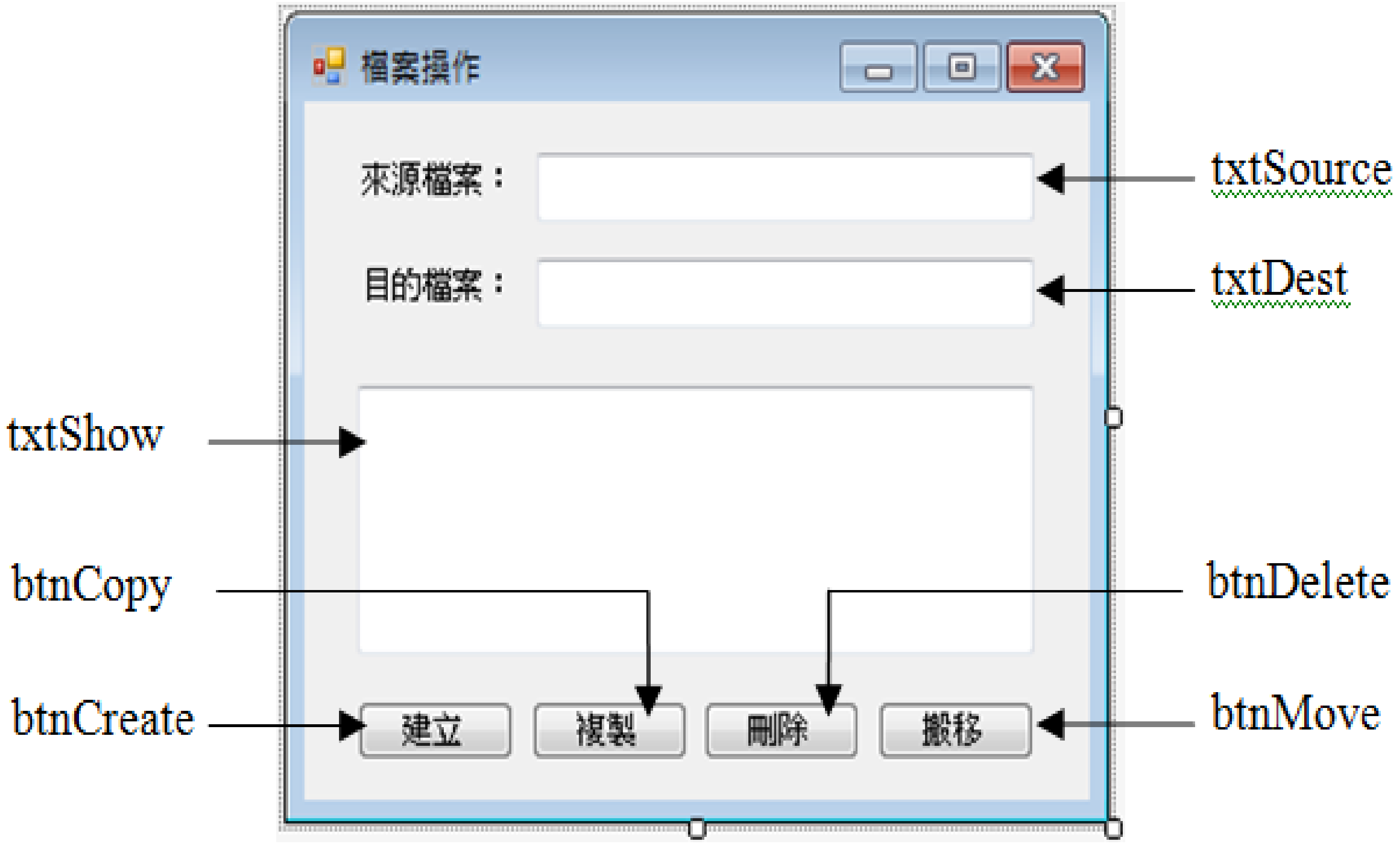
目的檔案：c:\they\test3.doc

```
c:\my\test1.txt 檔案成功搬移到
c:\they\test3.doc


請關閉程式視窗。
```

⬆圖 8

Design User Interface



13-5 Text Data Read & Write

- StreamWriter Class
  ⇨ process text data writing
  StreamReader Class
  ⇨ process text data reading
- StreamWriter Methods:

Method	Description
Write(String)	Write string data into the file and attach to the end of file
WriteLine(String)	Write string data and new line character into the file
Flush()	Clear buffer data
Close()	Close data stream object

Ex: use the methods provided by FileInfo and StreamWriter to write data. The data is written into D:\my\apple.txt through StreamWriter sw

Steps to Write Text File

Step 1 create FileInfo object

```
FileInfo finfo = new FileInfo(@“d:\my\apple.txt”);
FileInfo finfo = new FileInfo(“d:\\my\\apple.txt”);
```

Step 2 choose the way to open data file

1. use CreateText()

```
StreamWriter sw = finfo.CreateText();
```

2. use AppendText()

```
StreamWriter sw = finfo.AppendText();
```

Step 3 write data

1. sw.Write(string)

   write the string and attach to the end of file

2. sw.Writline(string)

   write the string with new line character

Step 4 put data of output stream into the file and erase the buffer

```
sw.Flush();
```

Step 5 Close the file

```
sw.Close();
```

Ex1: put input data of textBox1 into the string array called product line by line

```
int k = 0;
foreach (string item in textBox1.Lines )
{
        product[k] = item ;
        k++ ;
}
```

Ex2: show every element of product string array on label1. The AutoSize property of label1 should set to false before execution, so can enlarge manually for multi-line display

```
foreach (string item in product )
        lblShow.Text += item + "\n";
```

Ex3: create FileInfo object called finfo, the object opens D:\my\apple.txt text file. The file is created if the file does not exist

```
string filename = @"D:\my\apple.txt";
FileInfo finfo = new FileInfo(filename);
if (!Directory.Exists(finfo.DirectoryName))
      Directory.CreateDirectory(finfo.DirectoryName);
```

Ex4: create and open the text file referred by finfo object. The data output stream sw is also created. To output data, use the data output stream to write data into the file referred by finfo object

```
StreamWriter sw = finfo.CreateText();
```

Ex5: write every element of product string array into the file assigned by sw stream object

```
foreach (string item in product)
      sw.WriteLine(item);
```

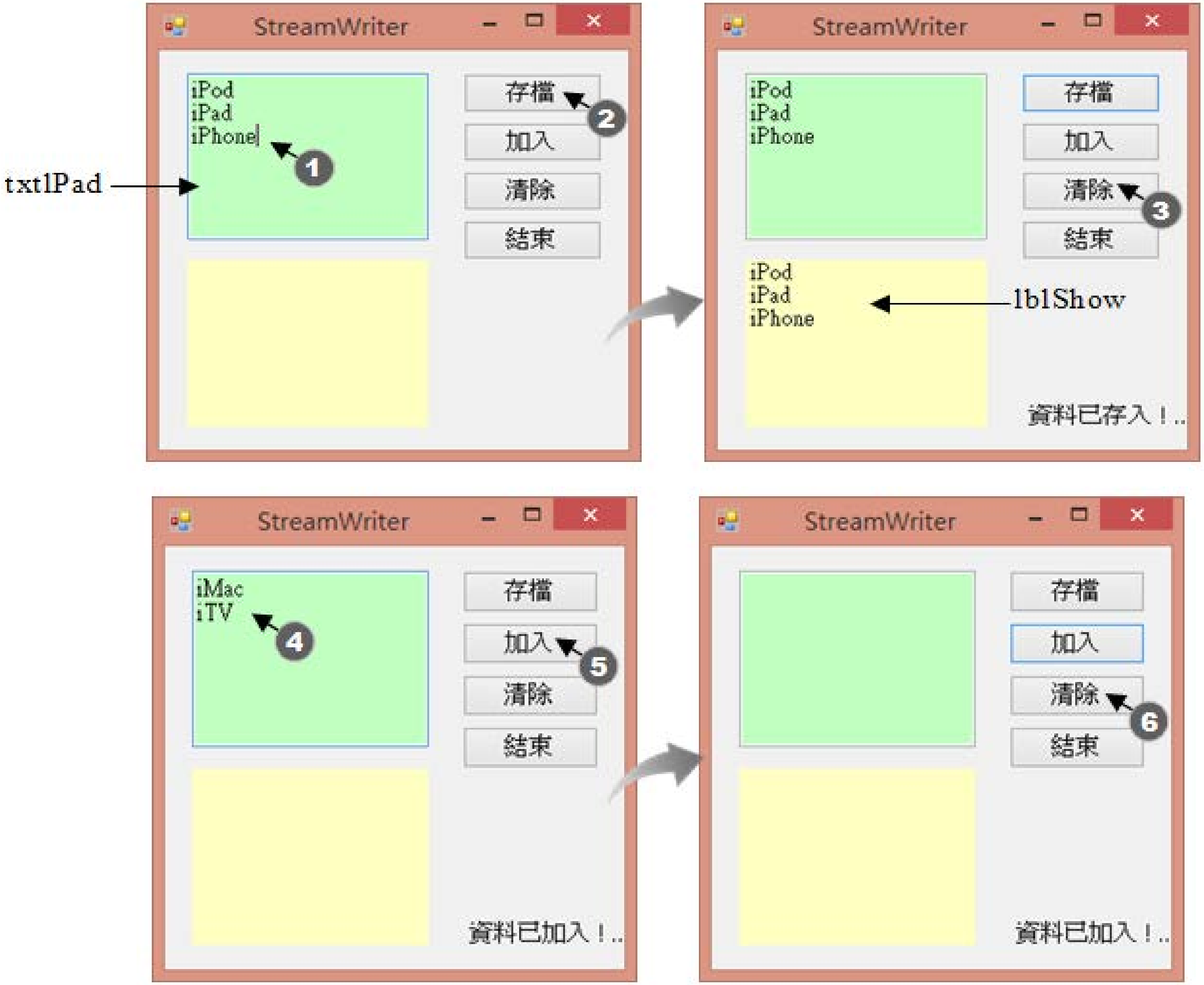
Ex6: write all data of textBox1 into the file assigned by sw stream object

```
sw.WriteLine(textBox1.Text) ;
```

Example(StreamWriter1):

Design a program to write text inputted by keyboard into the text file.
Requirements:

1. Input 3-line text into txtIPad text box with keyboard. Use enter to change to new line.
2. Press “存檔” button to verify and save 3-line text into d:\my\apple.txt, then show the message in lblShow label



```
iPod
iPad
iPhone
```

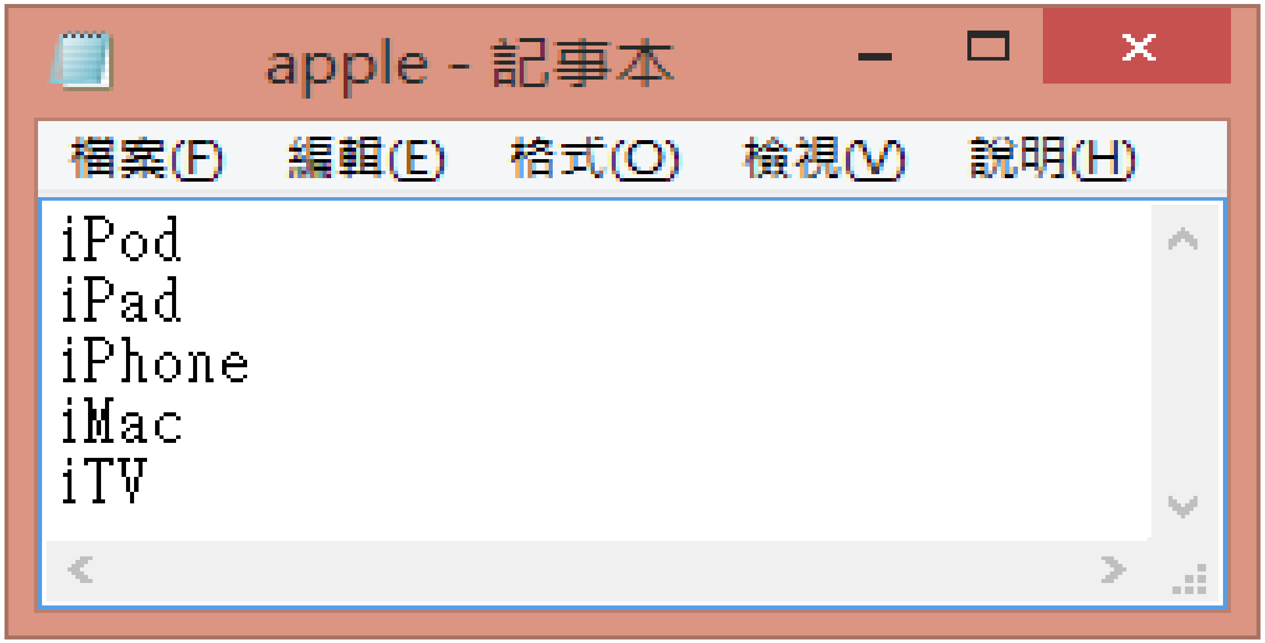
```
iPod
iPad
iPhone
```

資料已存入！...

```
iMac
iTV
```

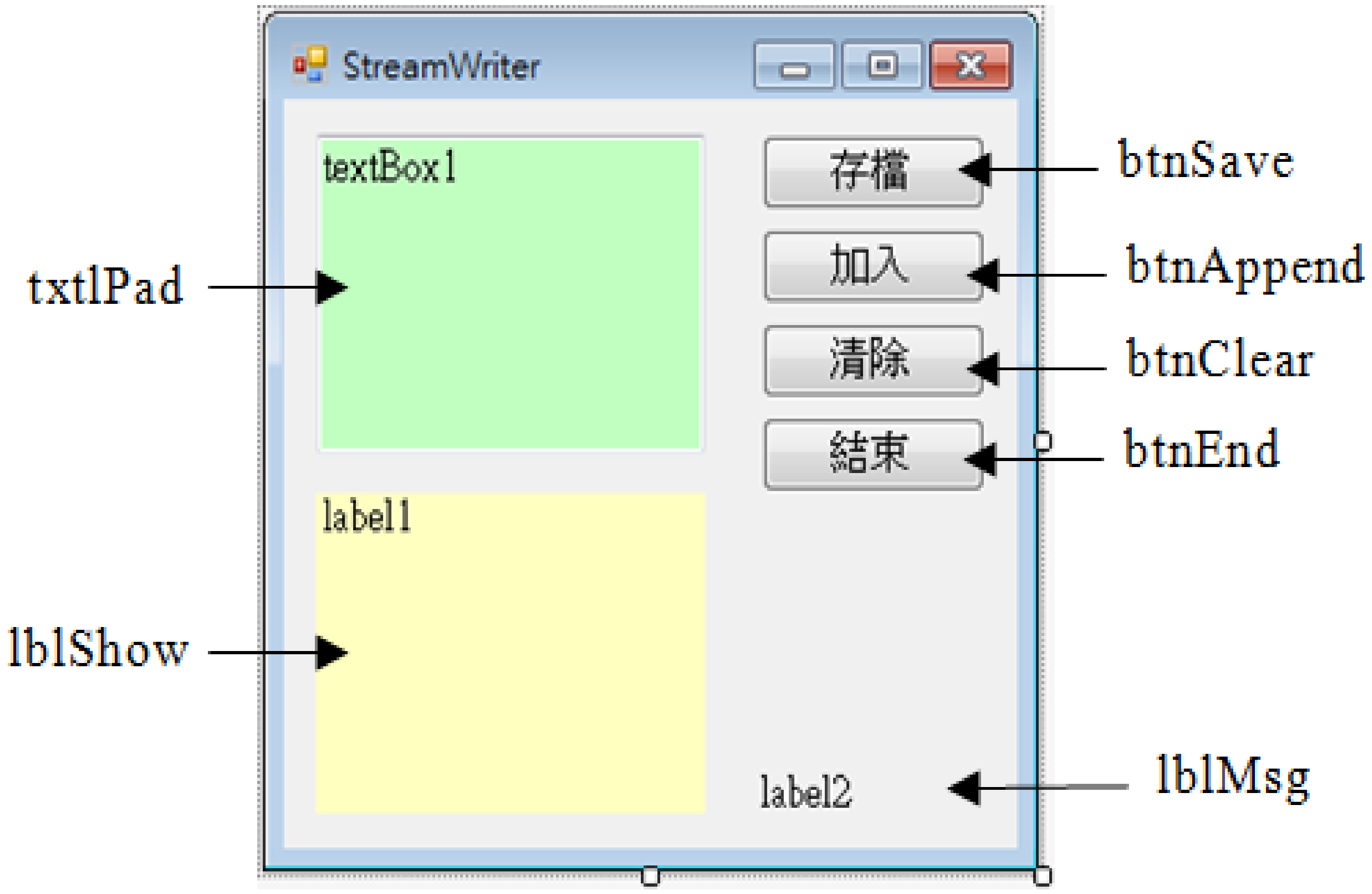
資料已加入！...

資料已加入！...



```
iPod
iPad
iPhone
iMac
iTV
```

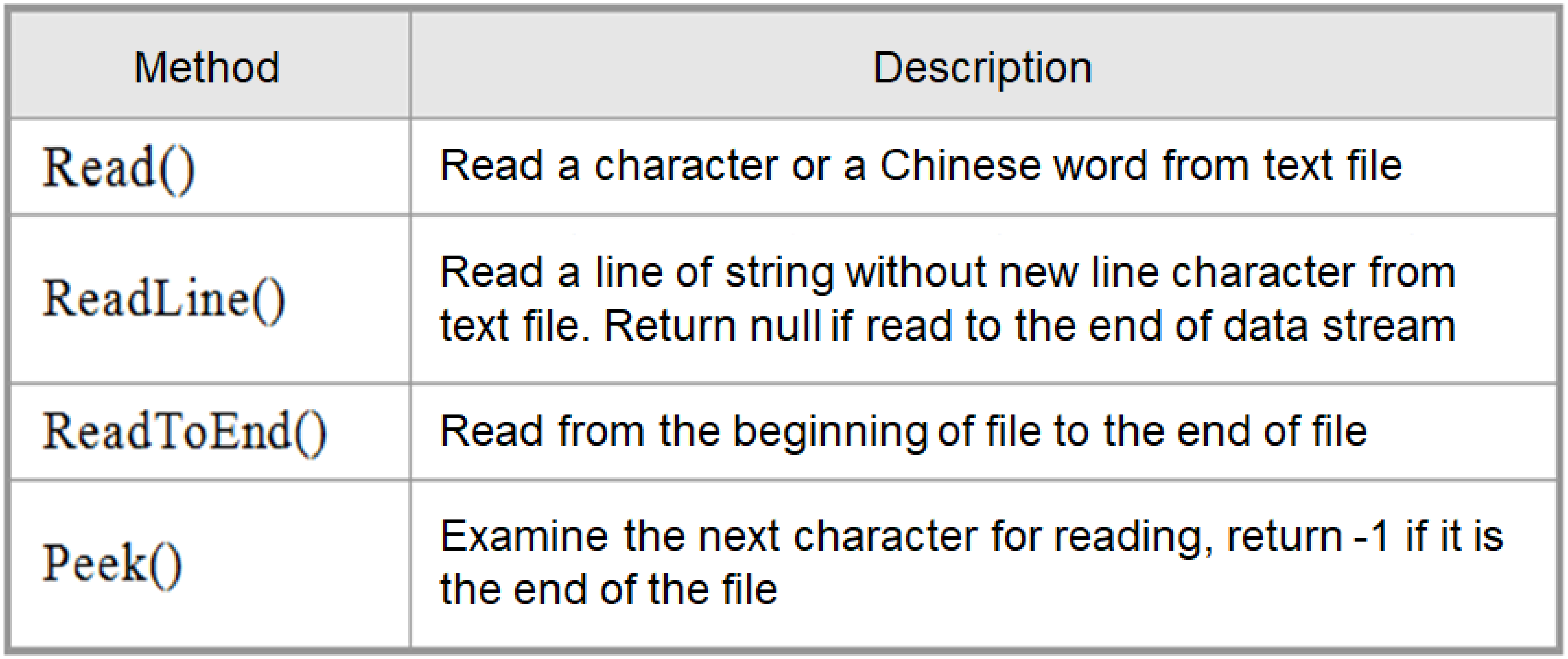
Design User Interface



Read Character Stream Data from Text File

- Use StreamReader class to read character stream data from the text file
- When reading:
  ① read a character at a time
  ② read a line of string at a time
  ③ read the whole text

StreamReader Methods



Method	Description
Read()	Read a character or a Chinese word from text file
ReadLine()	Read a line of string without new line character from text file. Return null if read to the end of data stream
ReadToEnd()	Read from the beginning of file to the end of file
Peek()	Examine the next character for reading, return -1 if it is the end of the file

Steps to Read Text File

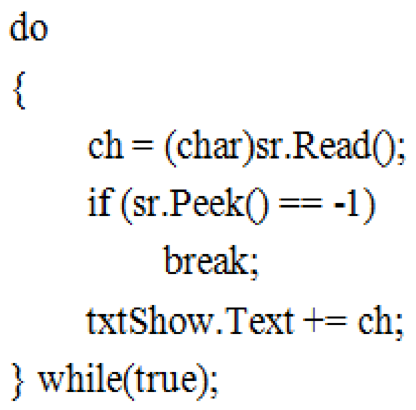
Step1 create stream reader

StreamReader sr = new StreamReader(path);

Step2 read data

1. read a character every time

Ex: in the loop, use Read() to get a character every time, and use Peek() to check the document is fully read or not. Peek() returns -1 when reading is finished and exit the loop



```
do
{
        ch = (char)sr.Read();
        if (sr.Peek() == -1)
                break;
        txtShow.Text += ch;
} while(true);
```

Use MessageBox to check the read character

```
DialogResult result;
result = MessageBox.Show("按<是>鈕繼續輸出 按<否>鈕離開, "是否繼續",
            MessageBoxButtons.YesNo, MessageBoxIcon.Exclamation);
if (result == DialogResult.No) // 按 <否>鈕
{
    txtShow.Text = "" ;
    return;
}
```

2. read a line of string every time

Ex: in the loop, use ReadLine() to get a string which has no new line character every time, add “\r\n” manually each time when displayed. If already read to the end of data stream, return null to check whether reading has ended.

```
do
{
        data = sr.ReadLine();
        if (data == null) break;
        txtShow.Text += data + "\r\n";
} while(true);
```

Escape char	Description
\'	Insert a single quote
\"	Insert a double quote
\\	Insert a back slash
\a	Trigger a system alarm sound
\b (Backspace)	Backspace
\f (Form Feed)	Insert a form feed
\n (New line)	Insert a new line
\r (Return)	Move cursor to the beginning of line
\t (Tab)	Insert a tab
\udddd	Insert an Unicode character
\v	Insert a vertical tab
\0 (Null space)	A null space

3. read one chapter at a time

use ReadToEnd() to read text from the current position of the cursor to the end of file

```
txtShow.Text = sr.ReadToEnd();
```

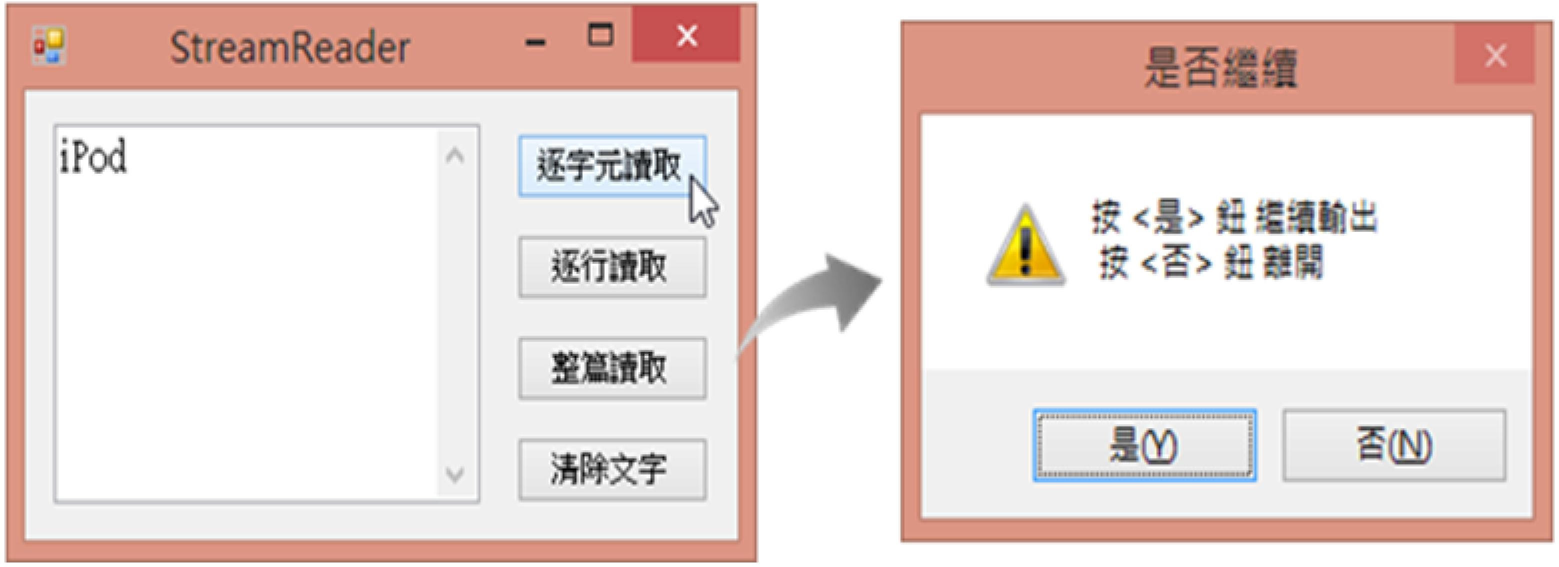
Step3 close data stream

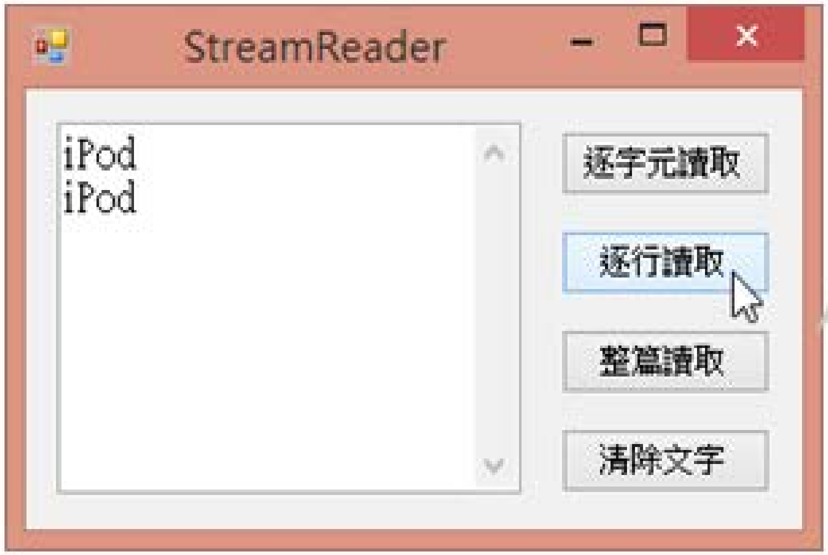
sr.Close();

```
sr.Close();
```

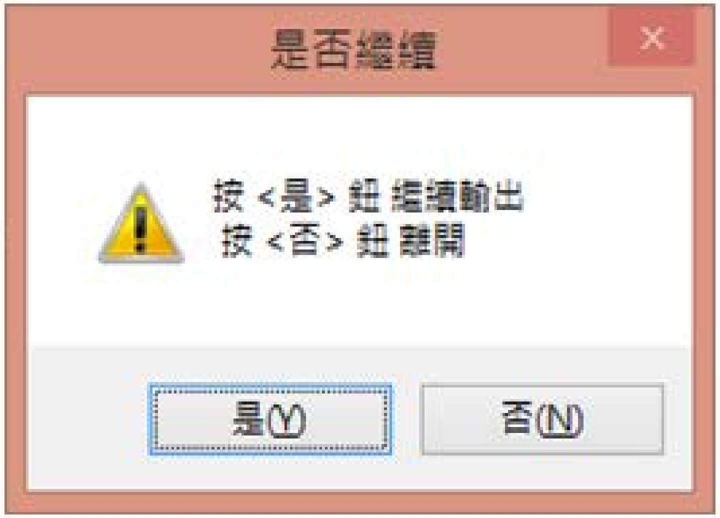
Example(StreamReader1):

Design a program to load text file. The functions include “逐字元讀取”, “逐行讀取” and “整篇文章讀取”. The example file is D:\my\apple.txt. The program reads the characters by the chosen function.

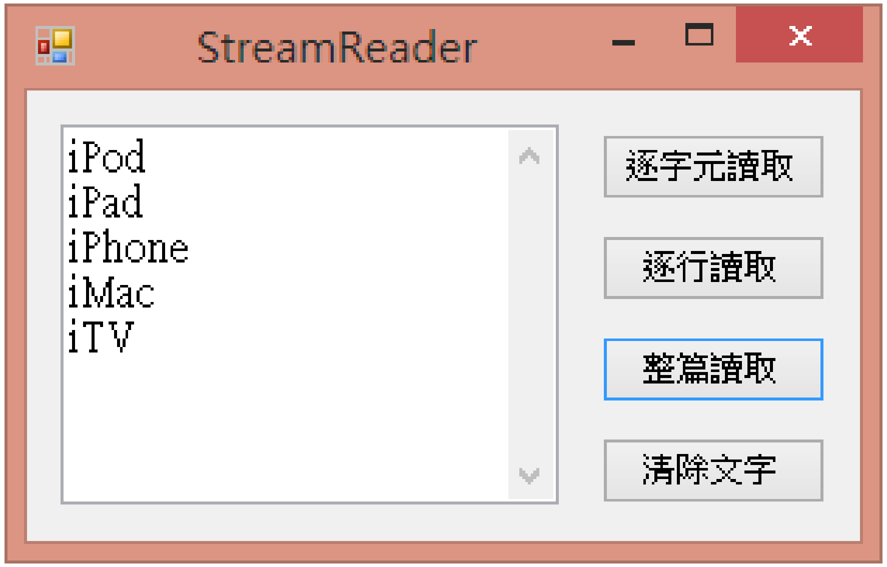




```
iPod
iPod
```

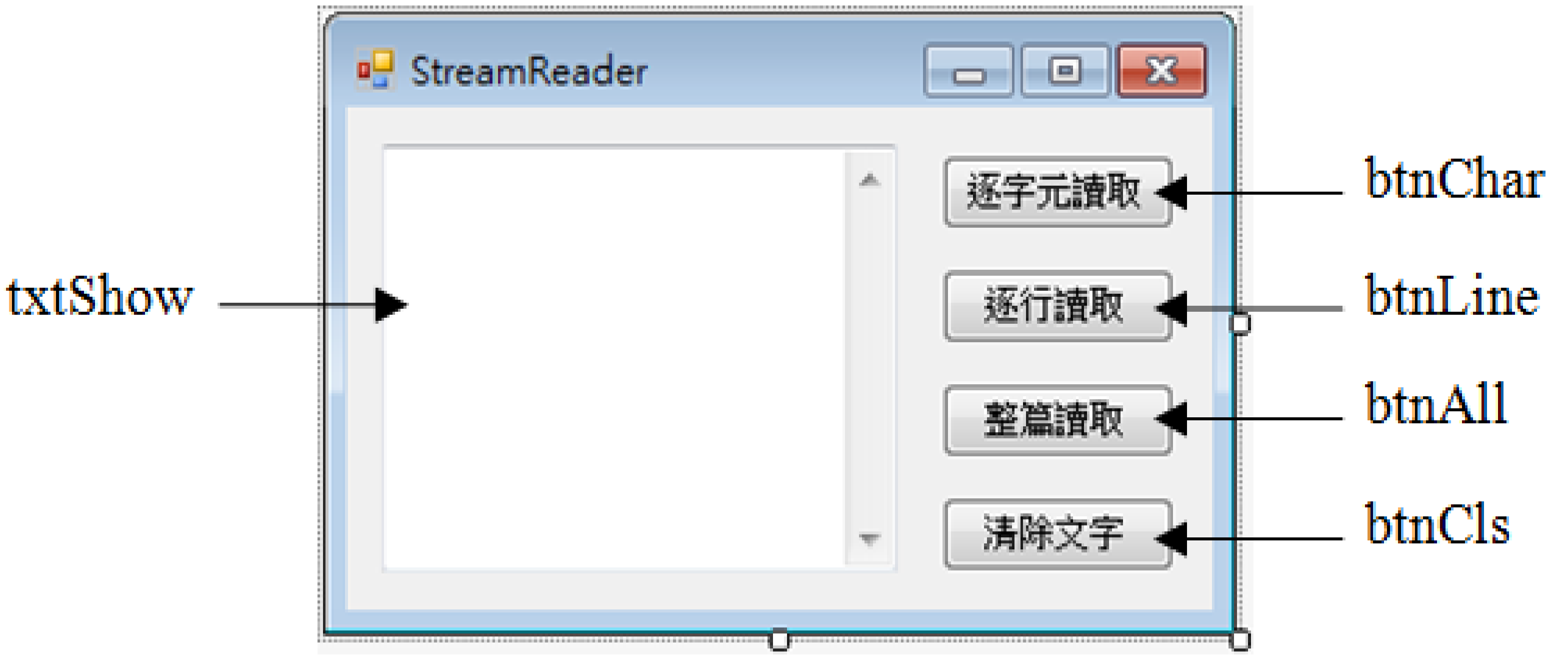


按 <是> 鈕 繼續輸出
按 <否> 鈕 離開



```
iPod
iPad
iPhone
iMac
iTV
```

Design User Interface



13-6 Binary File Read and Write

- C# provides FileStream, BinaryWriter and BinaryReader for processing binary data writing and reading
- Write or read binary file in bit

① Use FileStream object to link file and set the file open mode

② Assign BinaryReader and BinaryWriter to process binary data stream

FileStream() Constructor

- C# provides several types of FileStream(), this chapter introduces the FileStream() with 2 parameters to open binary file
  FileStream(string path, FileMode.mode);
- First parameter path: assign binary file name for creating or opening
- Second parameter FileMode.mode: whether file access mode is set

FileMode Enumeration

FileMode.mode const	Description
FileMode.Create	Create new file, overwrite the file if it exists, the file is in written mode
FileMode.Open	Open current file, error occurs if the file does not exist, the file is in read mode
FileMode.OpenOrCreate	If the file exists, open it; if the file does not exist, create it. The file is in read and write mode
FileMode.Append	If the file exists, open it and append data to the end of file; if the file does not exist, create it. The file is in written mode

Ex: create a FileStream object called fsOut, and fsOut links to D:\my\data.bin. If the file does not exist, create it; if the file exists, open it. File mode is OpenOrCreate

```
FileStream fsOut = new FileStream("d:\\my\\data.bin", FileMode.OpenOrCreate);
```

Ex: create a FileStream object called fsIn, and fsIn links to D:\my\data.bin. If the file does not exist, show error message; if the file exists, open it. File mode is Open

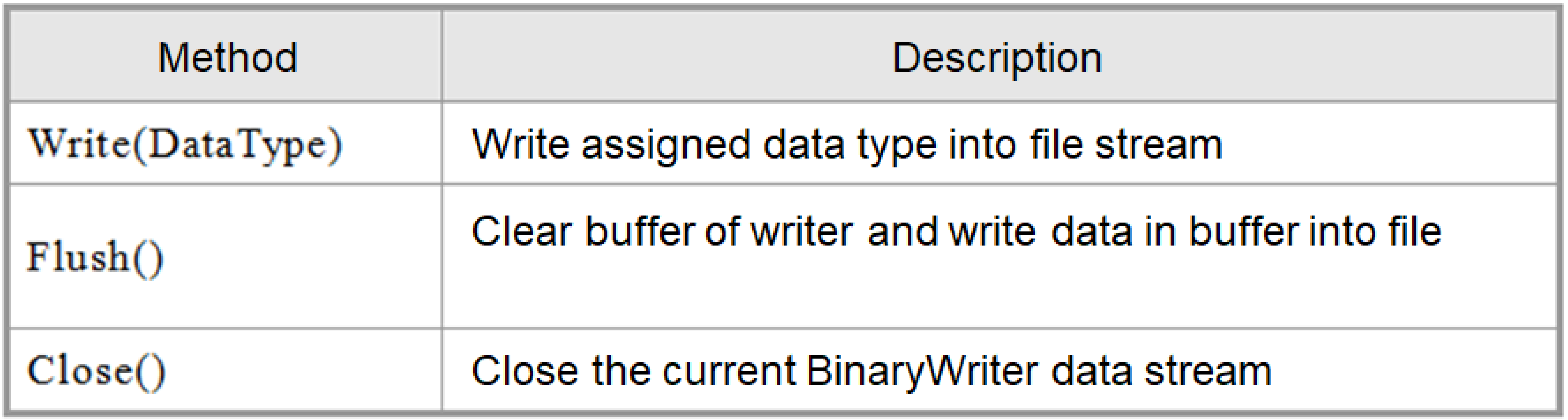
```
FileStream fsIn = new FileStream("d:\\my\\data.bin", FileMode.Open);
```

BinaryWriter Class

- How to
  ① create FileStream object called fsOut
  ② create BinaryWriter object called bw
  ③ write binary output stream into the designated binary file
  FileStream fsOut = new FileStream(“d:\\my\\data.bin”,
          FileMode.OpenOrCreate);
  BinaryWriter bw = new BinaryWriter(fsOut);

- Can be merged into 1 line:
  BinaryWriter bw = new BinaryWriter(new FileStream("d:\mydata.bin",FileMode. OpenOrCreate);

BinaryWriter Methods



Method	Description
Write(DataType)	Write assigned data type into file stream
Flush()	Clear buffer of writer and write data in buffer into file
Close()	Close the current BinaryWriter data stream

BinaryReader Class

- How to
  ① create FileStream object called fsIn
  ② create BinaryReader object called br
  ③ read designated binary file “D:\mydata.bin” to stream
  FileStream fsIn = new FileStream (“d:\mydata.bin”,
          FileMode.Open);
  BinaryReader bw = new BinaryReader(fsIn);

- Can be merged into 1 line:
  BinaryReader bw = new BinaryReader(new FileStream("d:\mydata.bin",FileMode.Open);

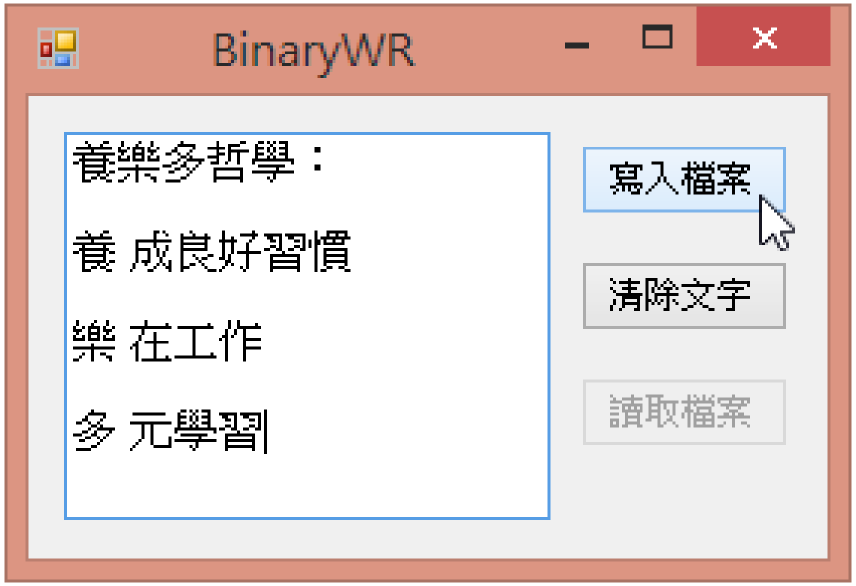
BinaryReader Methods

Method	Description
Close()	Close current reader and data stream
ReadString()	Read string data from opened data stream
ReadBytes()	Read designated bytes from current data stream, and put data into byte array

Example(BinaryWR):

Apply the method of BinaryWriter and BinaryReader mentioned before, now write a program for reading and writing binary file. Requirements:

1. When the program starts, “寫入檔案” and “清除文字” buttons are available but “讀取檔案” button is disabled
   - ① Input text in the text box
   - ② Press “寫入檔案” button to write text into D:\test\data.bin in binary mode
   - ③ All buttons are available
2. Press “清除文字” button to clear text in the text box
3. Press “讀取檔案” button to load content of D:\test\data.bin and put into the text box



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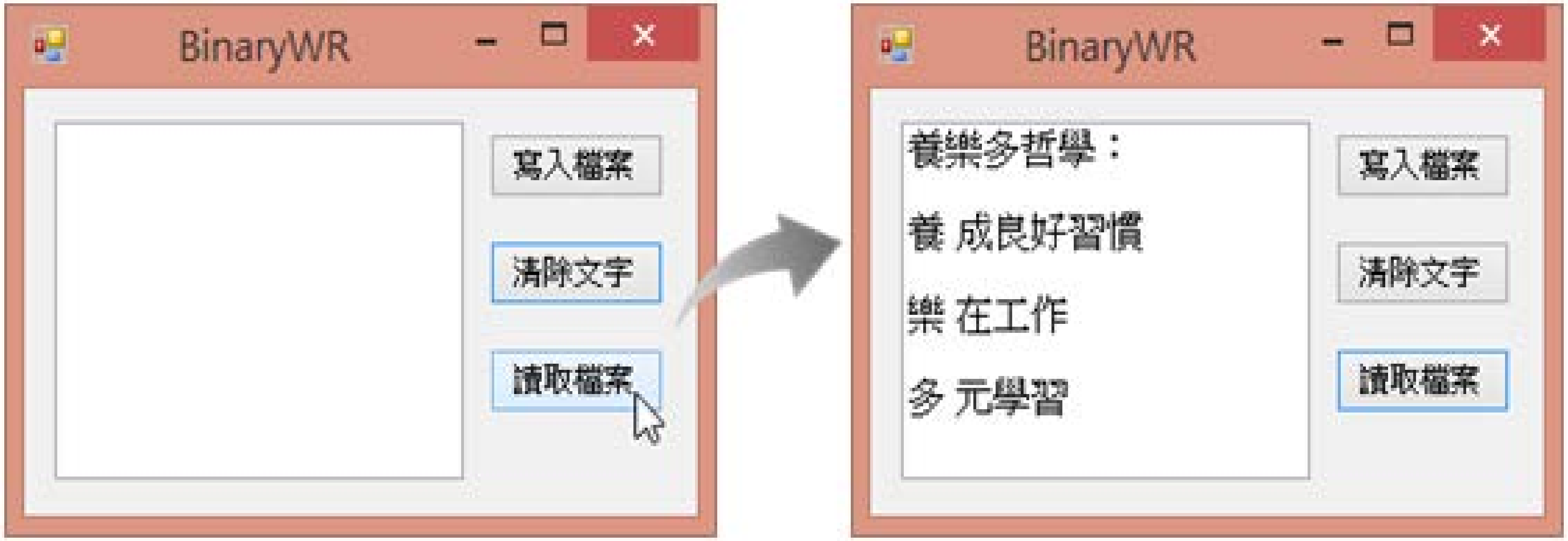

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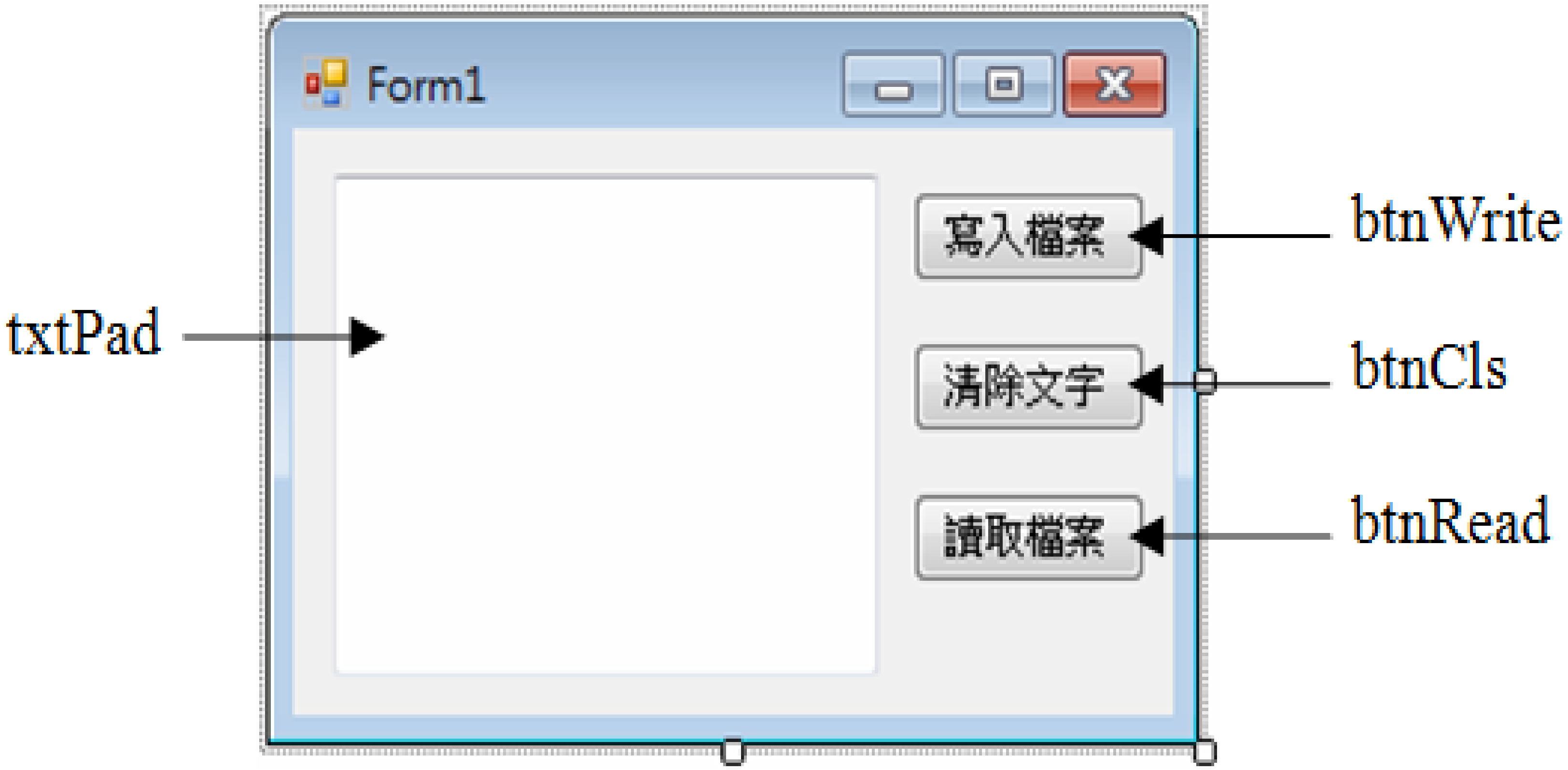
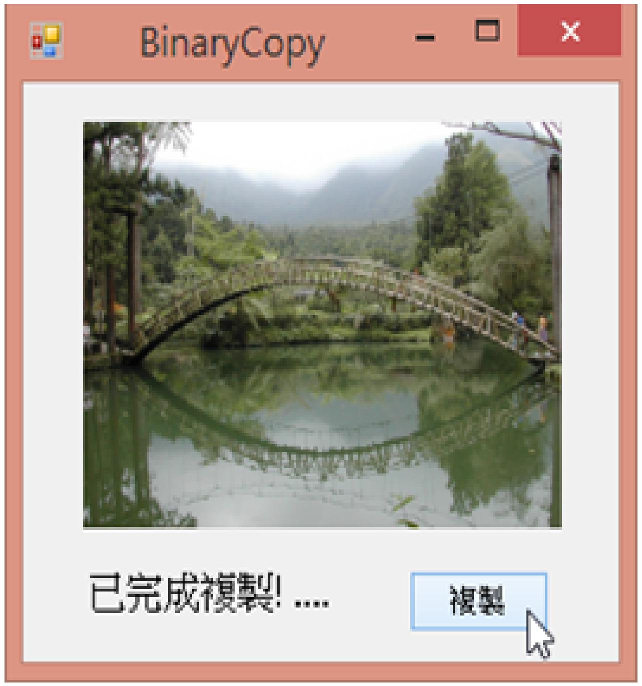
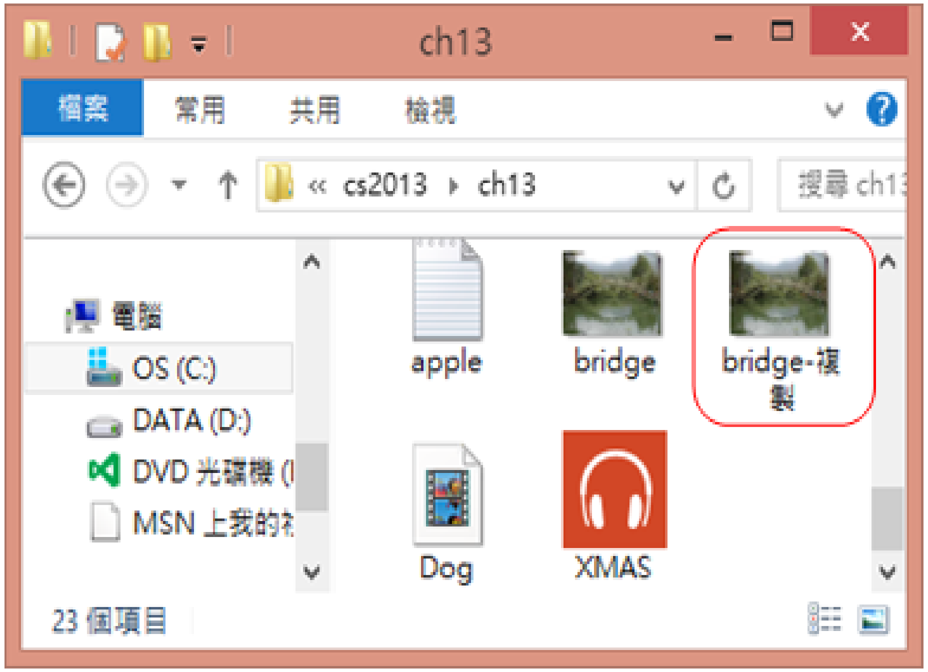
Design User Interface



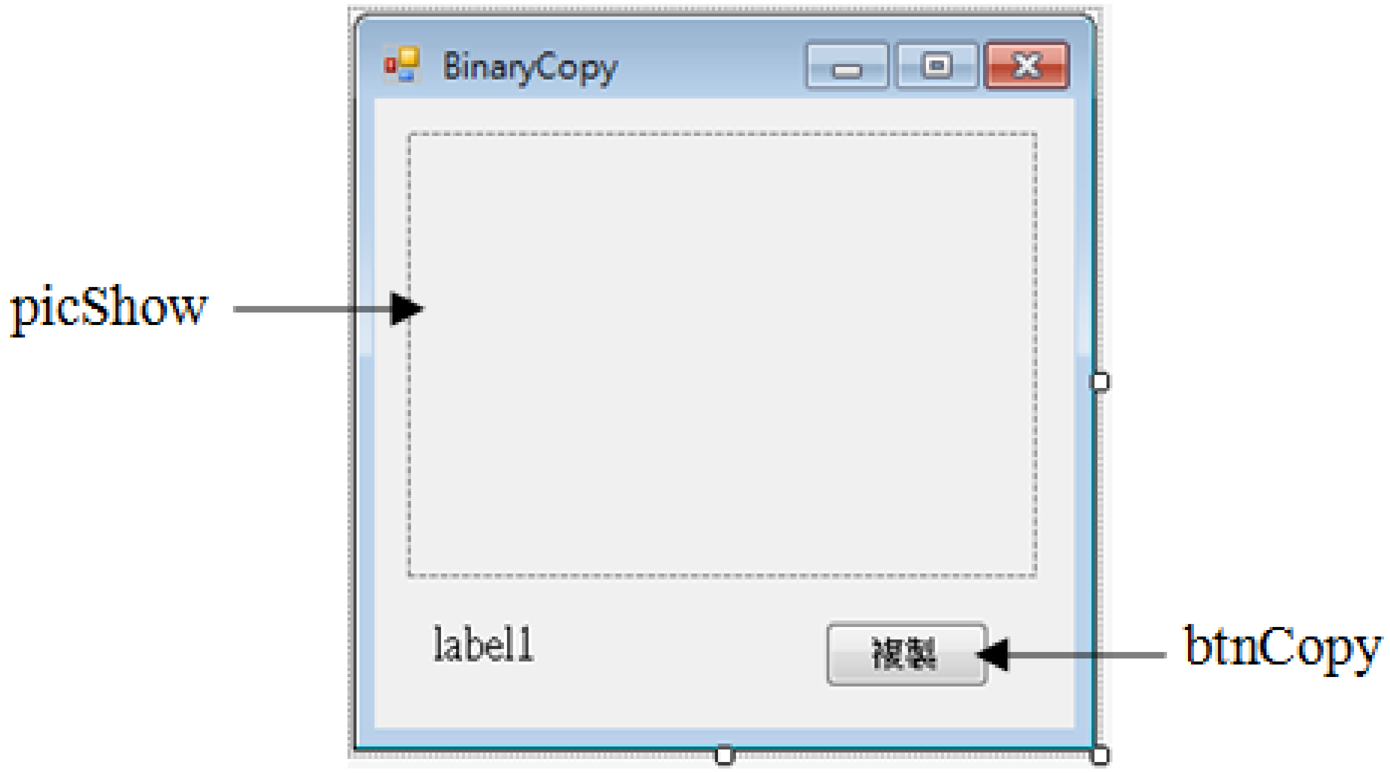
Example(BinaryCopy):

Use binary stream to load the designated image file and show the file in the picture box control item. Press “複製” button to copy the file in the same directory and rename it.





Design User Interface



13-7 Play Sound

- Common file format: .wav
- C# program can play .wav file, System.Media namespace is required:

  using System.Media;

- System.Media Classes

Class	Description
SystemSounds	Get effect sound configuration of Windows OS
SoundPlayer	Control play of .wav file

SystemSounds Class

- Get event-related effect sounds of Windows operating system. This class cannot be inherited

1. SystemSounds Properties

Property	Description
Asterisk	Get current sound related to Asterisk program event in Windows sound configuration
Beep	Get current sound related Beep program event in Windows sound configuration
Exclamation	Get current sound related to Exclamation program event in Windows sound configuration
Hand	Get current sound related to Hand program event in Windows sound configuration
Question	Get current sound related to Question program event in Windows sound configuration

Play() Method

- **Play Windows-defined sounds to hint users**
- **Ex: play question sound**

```
SystemSounds.Question.Play();
```

SoundPlayer Class

- **Create a SoundPlayer object to load sound, play sound and stop playing sound**

1. SoundPlayer Constructor

① SoundPlayer()

create SoundPlayer object, then use SoundLocation property to link the full path of sound file

```
String filename = @"D:\media\XMAS.wav";
SoundPlayer player = new SoundPlayer();
player.SoundLocation = filename;
```

② SoundPlayer(String)

- When creating SoundPlayer object, link to the full path of target sound file
- Ex:
  String filename = @"D:\media\XMAS.wav";
  SoundPlayer player = new SoundPlayer(filename);

③ SoundPlayer (Stream)

- **Establish player category SoundPlayer object; meanwhile, attach .waz file to the designated file stream.**
- **Ex:**

```
String filename = @"D:\media\XMAS.wav";
FileStream fin = new FileStream(filename,
FileMode.Open);
SoundPlayer player = new SoundPlayer(fin);
```

SoundPlayer Methods

① Load()
to load the designated sound file to main memory for playing

② Play()
to play the loaded sound file, play only once. When play the sound file, the system automatically loads the sound file if the file is not be loaded

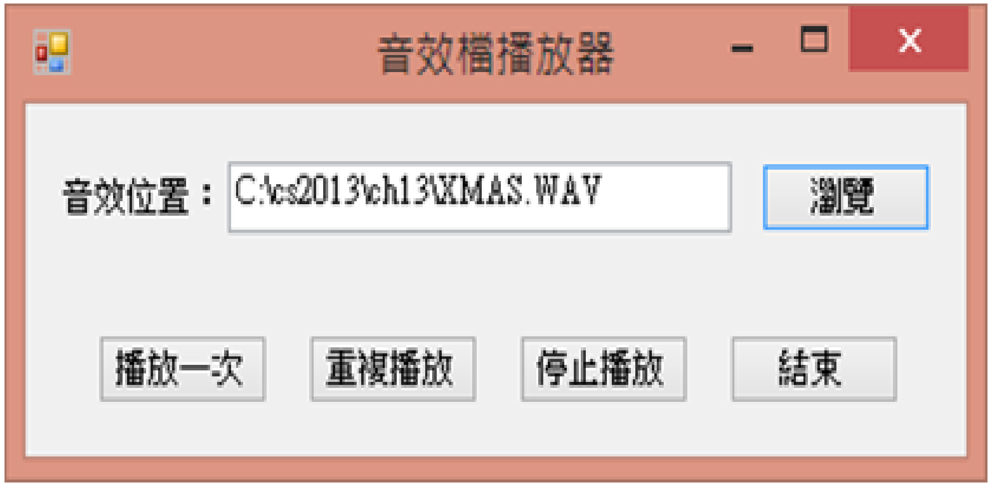
```
player.Load();        player.Play();
```

③ Stop()
to stop playing sound

④ PlayLooping()
play sound repeatedly, until Stop() is executed

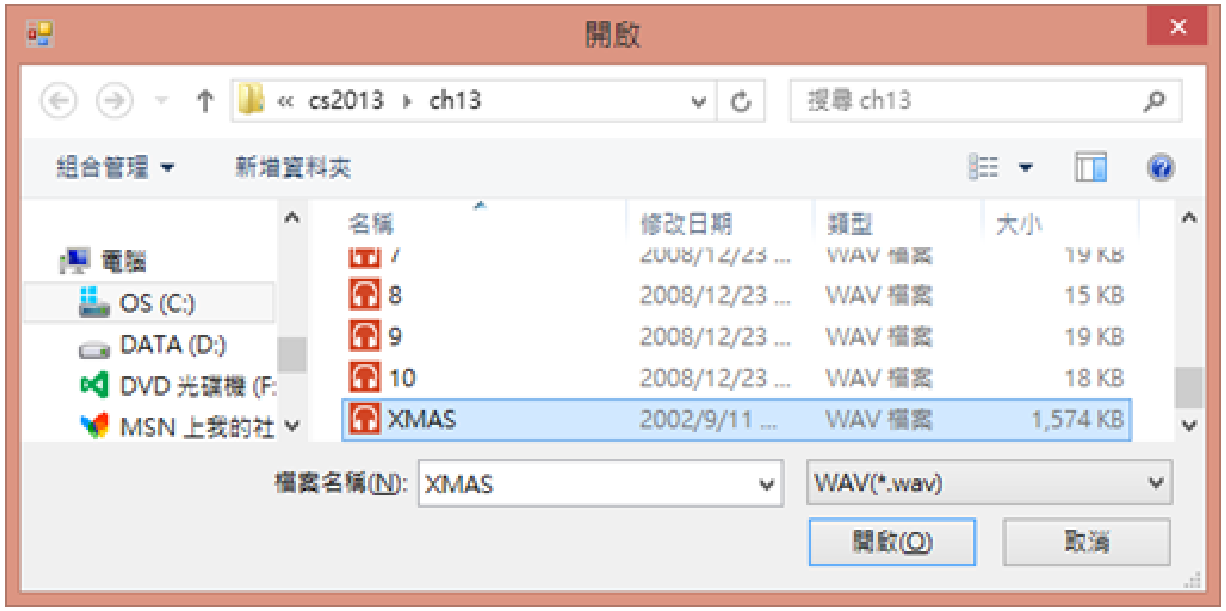
Example(WavPlayer):

Design a sound player which can browse files, play the file once, play the file repeatedly, stop playing and exit. Requirements:



C:\cs2013\ch13\XMAS.WAV

1. When the program starts, the text box used for sound file path is blank. Press “瀏覽” button to open dialog to choose the path of sound file.

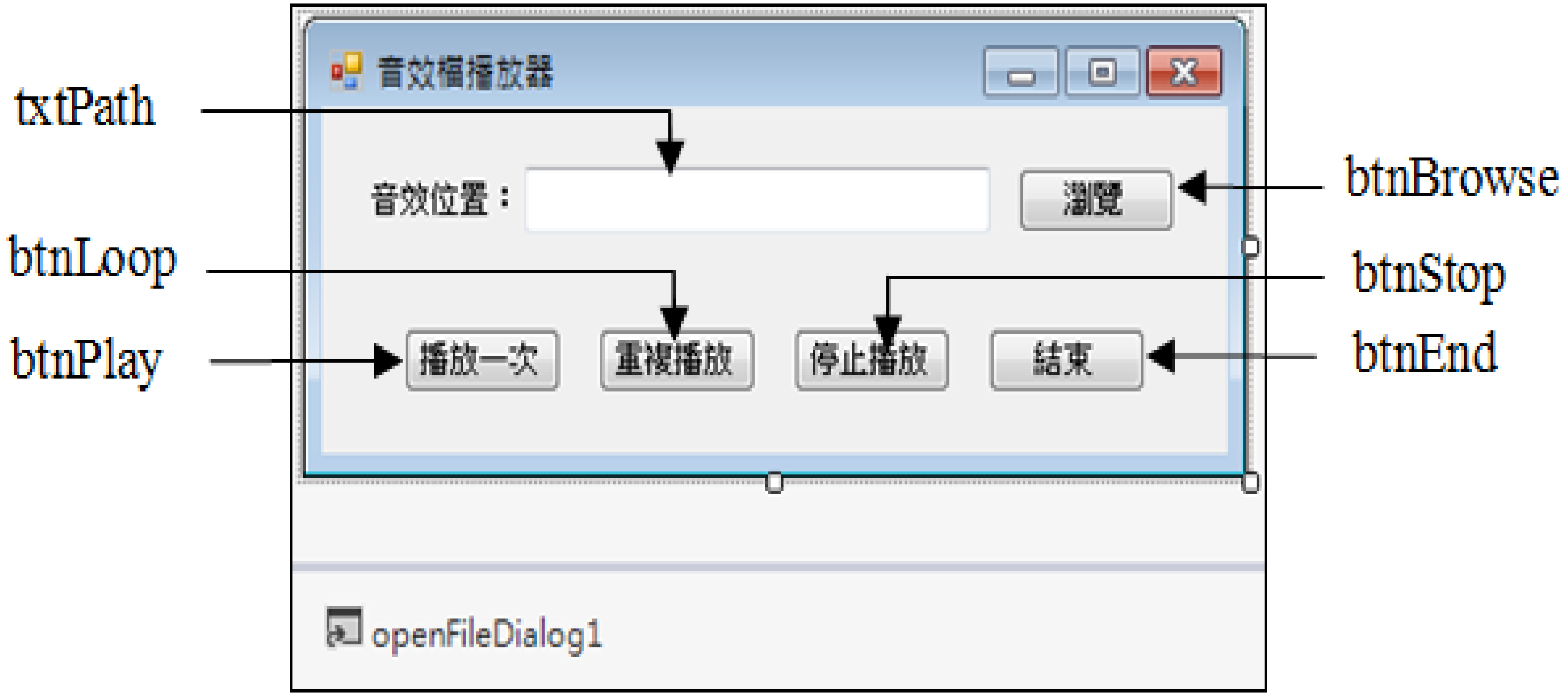


名稱	修改日期	類型	大小
7	2008/12/23 ...	WAV 檔案	19 KB
8	2008/12/23 ...	WAV 檔案	15 KB
9	2008/12/23 ...	WAV 檔案	19 KB
10	2008/12/23 ...	WAV 檔案	18 KB
XMAS	2002/9/11 ...	WAV 檔案	1,574 KB

檔案名稱(N): XMAS
WAV(*.wav)

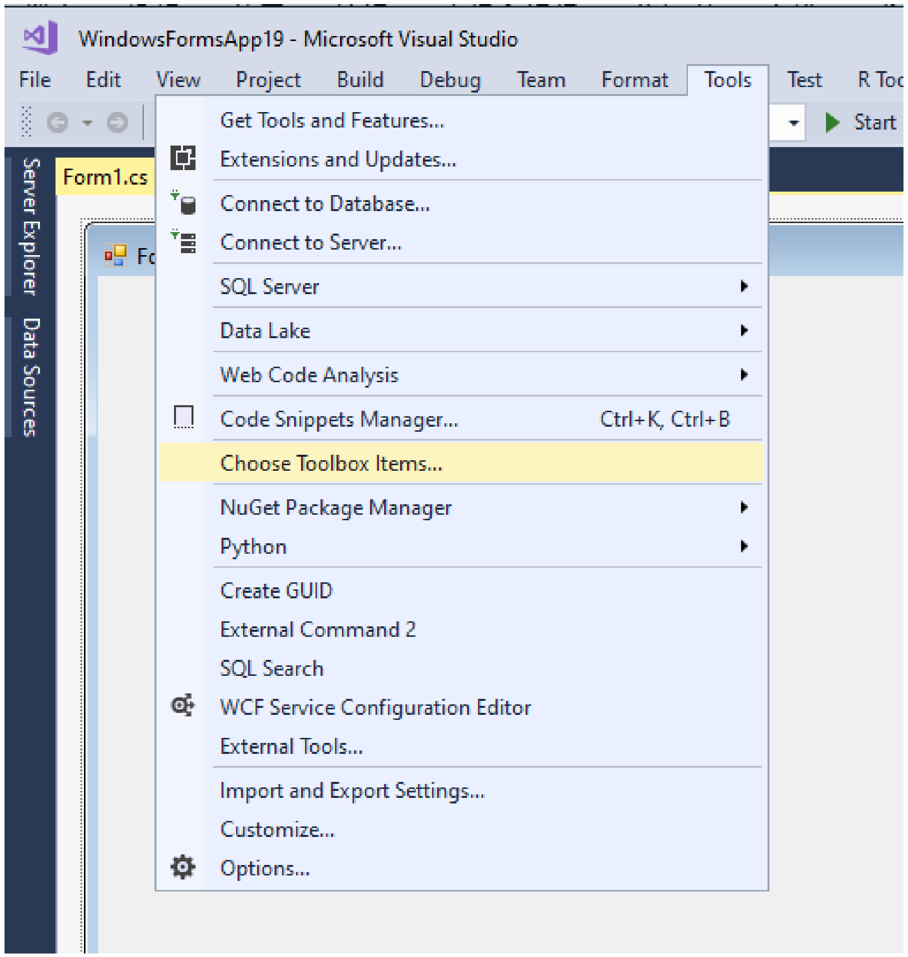
2. Press “播放一次” button to play sound file once
3. Press “重複播放” button to play sound file repeatedly
4. Press “停止播放” button to stop playing
5. Press “結束” button to exit the program

Design User Interface

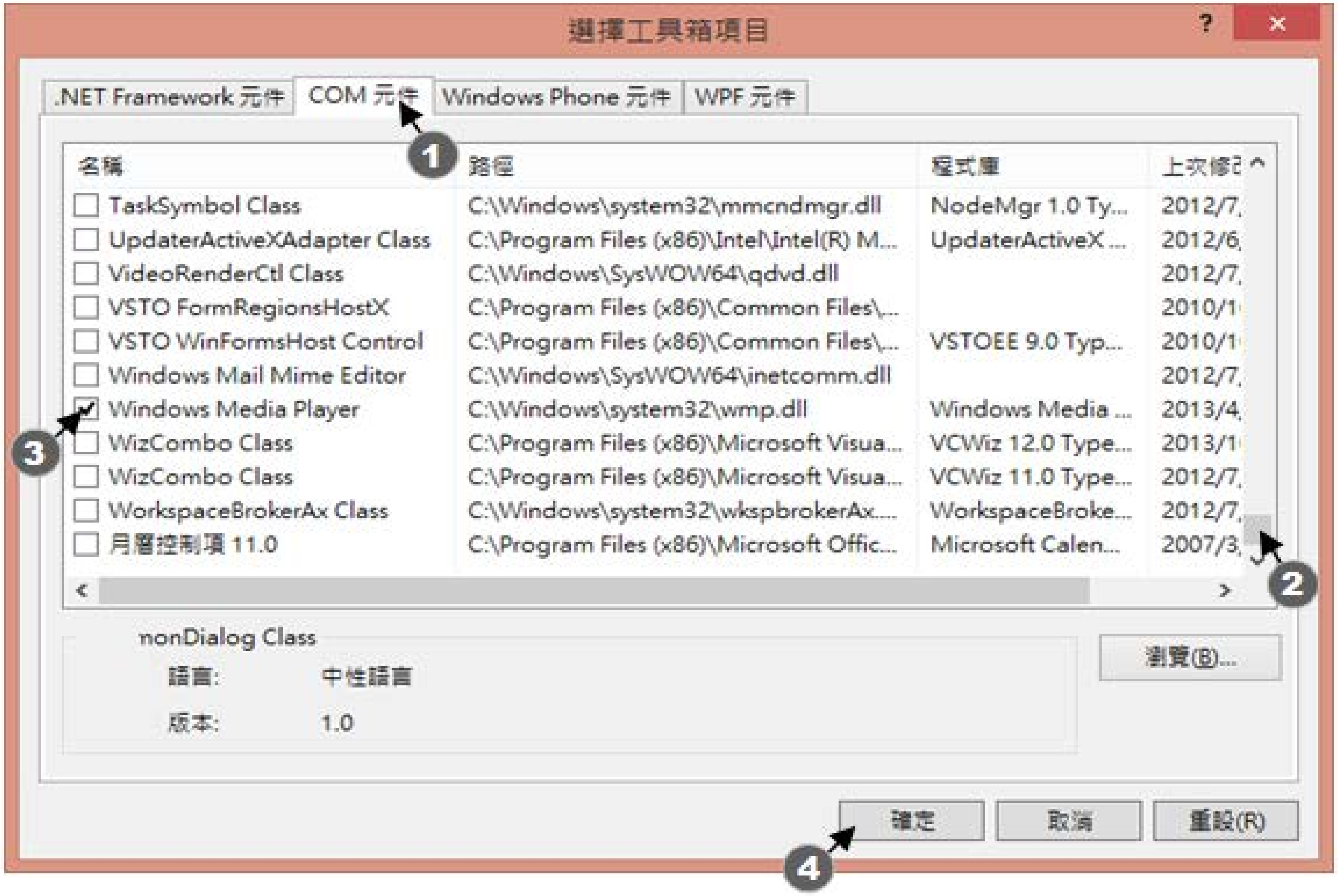


13-8 Multimedia Play

Import Windows Media Player components



Check on Windows Media Player component



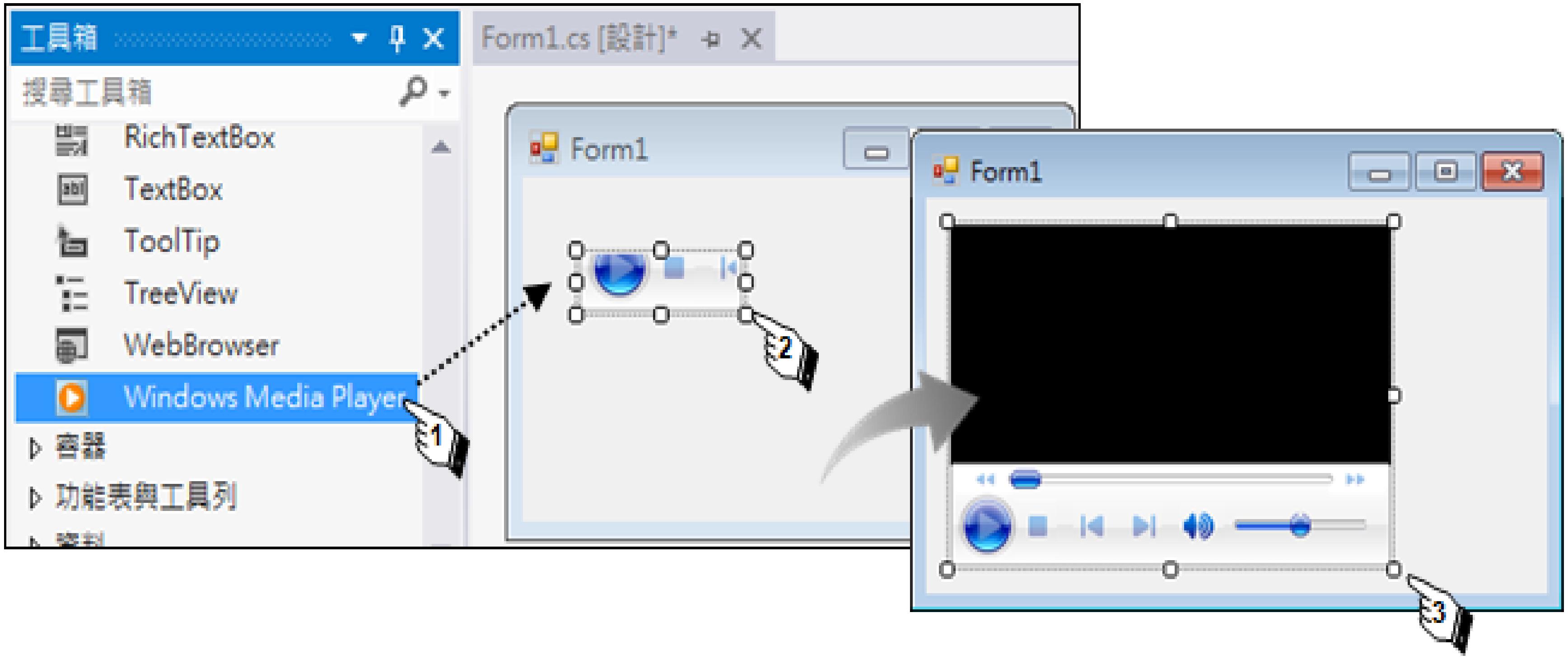
	名稱	路徑	程式庫	上次修改
☐	TaskSymbol Class	C:\Windows\system32\mmcndmgr.dll	NodeMgr 1.0 Ty...	2012/7,
☐	UpdaterActiveXAdapter Class	C:\Program Files (x86)\Intel\Intel(R) M...	UpdaterActiveX ...	2012/6,
☐	VideoRenderCtl Class	C:\Windows\SysWOW64\qdvd.dll		2012/7,
☐	VSTO FormRegionsHostX	C:\Program Files (x86)\Common Files\...		2010/1
☐	VSTO WinFormsHost Control	C:\Program Files (x86)\Common Files\...	VSTOEE 9.0 Typ...	2010/1
☐	Windows Mail Mime Editor	C:\Windows\SysWOW64\inetcomm.dll		2012/7,
✓	Windows Media Player	C:\Windows\system32\wmp.dll	Windows Media ...	2013/4,
☐	WizCombo Class	C:\Program Files (x86)\Microsoft Visua...	VCWiz 12.0 Type...	2013/1
☐	WizCombo Class	C:\Program Files (x86)\Microsoft Visua...	VCWiz 11.0 Type...	2012/7,
☐	WorkspaceBrokerAx Class	C:\Windows\system32\wkspbrokerAx....	WorkspaceBroke...	2012/7,
☐	月曆控制項 11.0	C:\Program Files (x86)\Microsoft Offic...	Microsoft Calen...	2007/3,

nonDialog Class

語言: 中性語言

版本: 1.0

Create “Windows Media Player” Control Item



Windows Media Player Properties

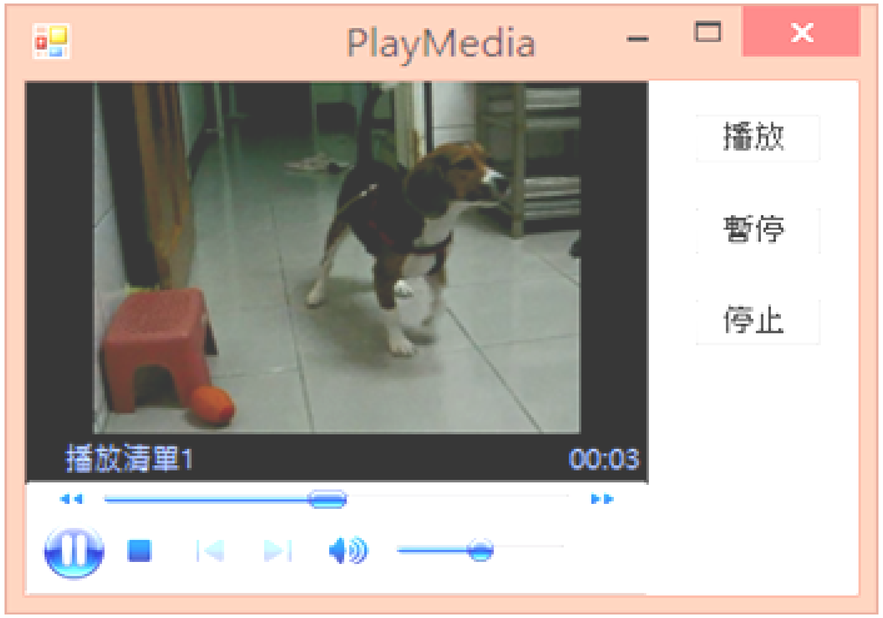
Property	Description
Name	Object name of Windows Media Player control item, default: axWindowsMediaPlayer1
URL	Get or set the full path of multimedia file to play
uiMode	User interface mode: 1. full(default): full control bar, ex: status window, play, stop, mute, volume, fast forward, reverse, next, previous and so on 2. none: only the frame of video, no control bar 3. mini: only status window, play, stop, mute, volume 4. invisible: hide the frame
fullScreen	Display in full screen or not, default: False. The URL has to be assigned if to set fullScreen True

Property	Description
Dock	Set the relation between border of control item and border of container. Top, Bottom, Left, Right, Fill and None(default)
stretchToFit	Auto resize window, default: False
Ctlcontrols	To operate control item when playing: 1. Play axWindowsMediaPlayer1.Ctlcontrols.play() 2. Pause axWindowsMediaPlayer1.Ctlcontrols.pause() 3. Stop axWindowsMediaPlayer1.Ctlcontrols.stop() 4. Go to previous axWindowsMediaPlayer1.Ctlcontrols.previous() 5. Go to next axWindowsMediaPlayer1.Ctlcontrols.next()

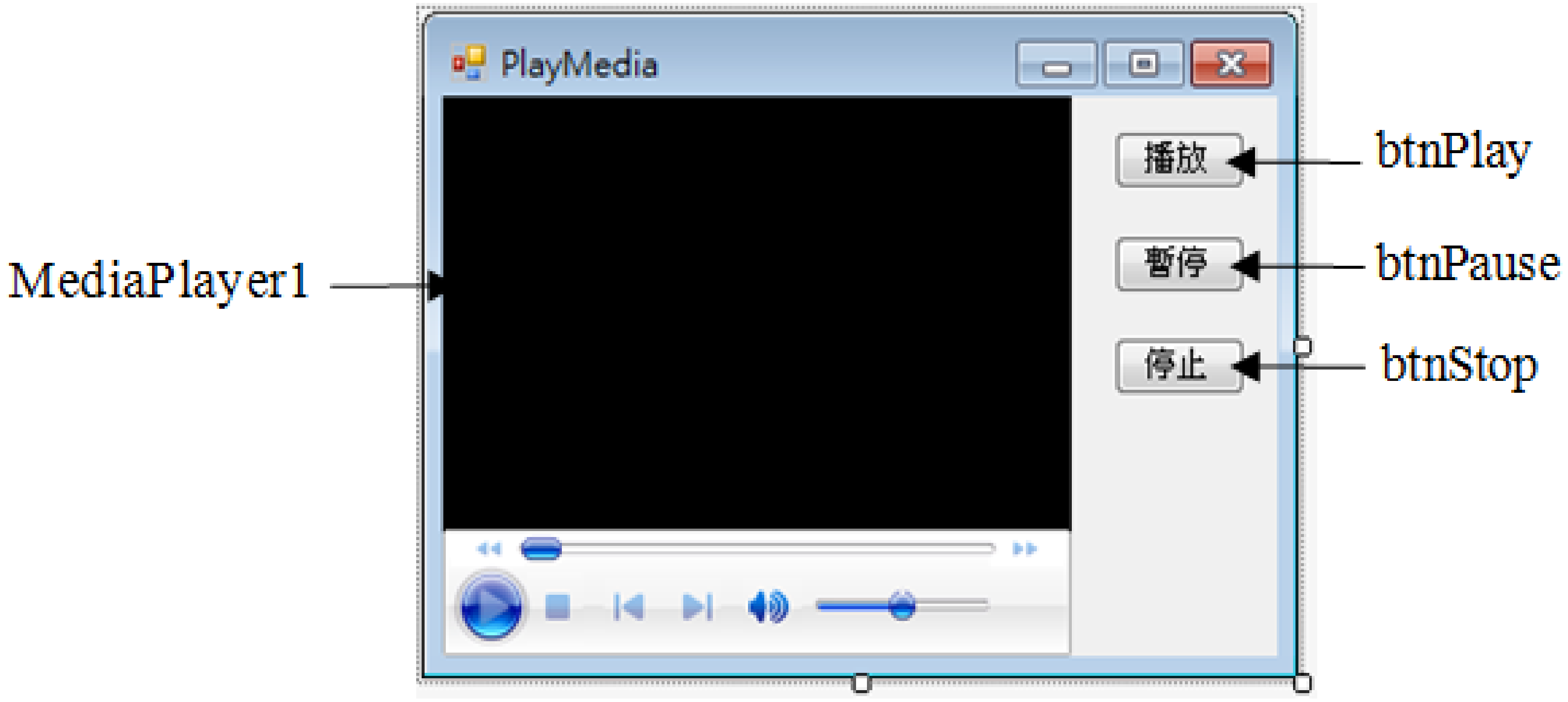
Example(PlayMedia):

Design a multimedia player program, which includes 3 buttons called “Play”, “Pause” and “Stop”. The program loads video “C:\ch13\Dog.wmv” when starting.

Result:



Design User Interface



Practice(video)

- Play the attach video by media player you made.

The End

Take a Break …..