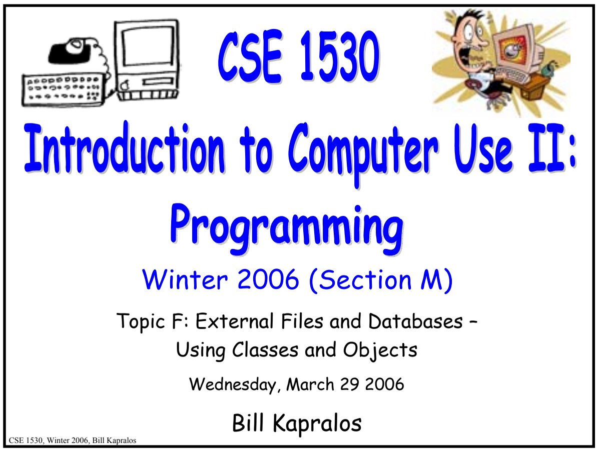

CSE 1530

Introduction to Computer Use II: Programming

Winter 2006 (Section M)

Topic F: External Files and Databases – Using Classes and Objects

Wednesday, March 29 2006

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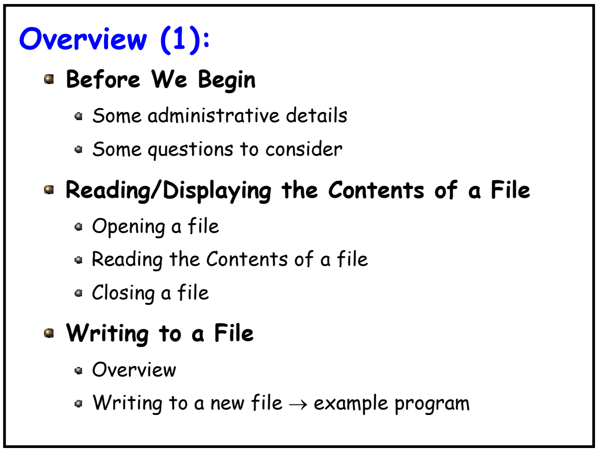


Overview (1):

- Before We Begin
  - Some administrative details
  - Some questions to consider
- Reading/Displaying the Contents of a File
  - Opening a file
  - Reading the Contents of a file
  - Closing a file
- Writing to a File
  - Overview
  - Writing to a new file → example program

Before We Begin

Administrative Details (1):

- **Exercise 7-6**
  - Due Monday, April 3 2006 before noon
  - I will be in the Glade Lab today
  - We will use a portion of Friday's lecture to go over the exercise in greater detail
- **Last Lecture is Monday, April 3**
  - Entire lecture will be review for exam

Some Questions to Consider (1):

- What is a reference ?
- What must we do to allow us to incorporate the required file-related references ?
- How can we create (instantiate) an object of some class (two steps) ?
- What are the two keywords required to create an object ?

Reading & Displaying the Contents of a File (cont.)

Recall (1):

- **The OpenTextFile Function**
  - Lets take a closer look at the description for the OpentextFile method

```
Function OpenTextFile(FileName As String, _
  [IOMode As IOMode = ForReading], _
  [Create As Boolean = False], _
  [Format As Tristate = TristateFalse]) _
  As TextStream
  Member of Scripting.FileSystemObject
  Open a file as a TextStream
```

Recall (2):

- **The OpenTextFile Function (cont.)**
  - Function description tells you how to use the method
    - Provides a description of the arguments and their type
    - The first argument is of type String and it denotes the name of the file you wish to open (e.g., the name of the file that was obtained using the Open File dialog)
    - Returns an object of type TextStream
    - Should be familiar with using the return value of a function → nothing new except the return value is an object!

Opening a File (1):

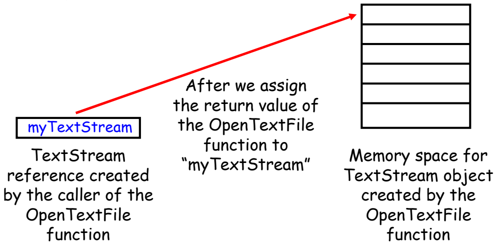
- **Using the OpenTextFile Function**
  - We can now use the function to open the desired file
    - We know the return type
    - We know the number of arguments and their type → we will pass the one required argument and leave the other three optional arguments to their default value
  - First thing to do is to define a reference (variable) of type TextStream → nothing new!
    - Dim myTextStream As textStream

Opening a File (2):

- Using the OpenTextFile Function (cont.)
  - Recall the two steps to creating (instantiating an object) → we have created the reference (name) and now we need to actually create the object (e.g., using the New keyword)
    - But, since we are assigning the return value of a function to the previously declared variable, there is no need to actually create the object → it has already been created by the function!
    - We are simply copying the object created by the function to our reference (name)

Opening a File (3):

- Using the OpenTextFile Function (cont.)
  - Graphical illustration



myTextStream

TextStream reference created by the caller of the OpenTextFile function

After we assign the return value of the OpenTextFile function to "myTextStream"

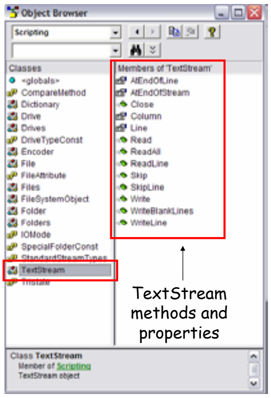
Memory space for TextStream object created by the OpenTextFile function

Opening a File (4):

- Now We Can Open a File and Obtain a TextStream Object
  - But how do we access (read) the contents of the file we just opened? → using the TextStream object!
  - The TextStream object contains various methods to access the file contents
    - Read, ReadAll, ReadLine, Write, WriteBlankLines and WriteLine
    - Once again, you can obtain information via the Object Browser

Opening a File (5):

- **TextStream Object**
  - Object Browser



Class TextStream
Member of Scripting
TextStream object

TextStream class

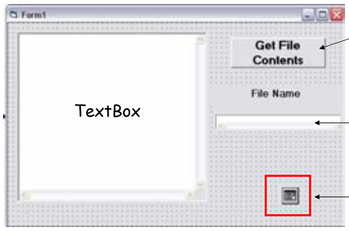
TextStream methods and properties

Reading the Contents of a File (1):

- **Example → Reading The Entire Contents of a File and Displaying it in a TextBox**
  - Add a TextBox to a Form
    - Set its MultiLine property to True
    - Set its ScrollBar property to Both
  - We will use the ReadAll method of the TextStream class to obtain the entire contents of the file
    - Return type of the function is String
    - Assign the return type of the function to the TextBox we just created → its that simple!

Reading the Contents of a File (2):

- **Putting it All Together**
  - Develop a program that displays contents of a user-specified file to a TextBox



TextBox

Once this button is pressed, the contents of the chosen file will be displayed

Once obtained, the name of the chosen file will be displayed here

Common dialog control

Form in design mode

Reading the Contents of a File (3):

- **Putting it All Together (cont.)**
  - Lets look at the Visual Basic code…

Closing a File (1):

- **All Files Should Be Closed**
  - Once we are done with the file (e.g., the file is no longer needed), it should always be closed
    - Once the file is closed, its contents can no longer be accessed
    - Closing the file ensures there is no un-intended changes made to it
  - A file can be closed by using the "Close" method of the TextStream class
    - FileContent.Close → FileContent is the name of the TextStream object we previously defined