Ch. 8 Text Files

- StreamReaders, StreamWriters
  - Section 8.2, p. 413 - 415

Reading Data from Text Files

- Data may be stored in text file
- Create file in Notepad
- One piece of data per line usually
- Sequential text files
- Put data file in bin → Debug folder
- Use StreamReader object to read data from file into your program variables

Sample File: Payroll.txt

Mike Jones ← Name
9.35 ← Hourly wage
35 ← Number of hours worked
John Smith
10.75
33

Steps to Use StreamReader

1. Declare StreamReader object

```
Dim sr As IO.StreamReader
```

2. Open file for input

```
sr = IO.File.OpenText("filename")
```

May combine these two steps into one

```
Dim sr As IO.StreamReader = IO.File.OpenText("filename")
```


Steps to Use StreamReader

3. Read data items in order, one at a time, from file with ReadLine method

```
variable = sr.ReadLine
```

- Reads data on current line and moves pointer to beginning of next line
- Assume one data item per line

4. After all data read from file, terminate (close) communications link

```
sr.Close()
```


Example using StreamReader

```
Dim empName As String
Dim hourlyRate, hoursWorked As Double
Dim grossPay As Double
Dim sr As IO.StreamReader
sr = IO.File.OpenText("Payroll.txt")
empName = sr.ReadLine
hourlyRate = sr.ReadLine
hoursWorked = sr.ReadLine
grossPay = hourlyRate * hoursWorked
lstBox.Items.Add(empName & ": " & grossPay)
```

OUTPUT: `Mike Jones: 327.25`

Reading to End of File

- OpenText sets pointer to first line in file
- ReadLine looks in file for data pointed to, reads it and assigns it to variable
- Pointer moved to next line
- sr.EndOfStream is False if there is more data to read
- After all lines read, sr.EndOfStream is True

Using EndOfStream

- To read until end of file

```
Do Until  sr.EndOfStream
    ' Read data item (or set of data)
    ' Process data item(or set of data)
Loop
```


Sample File: phoneList.txt

Mike Jones ← Name
419-352-1111 ← Phone number
John Smith
419-354-2222
Lena Spence
419-372-3333

sr.EndOfStream Example

```
Dim sr As IO.StreamReader
sr = IO.File.OpenText("phoneList.txt")
Dim name, phoneNum As String
lstNameNos.Items.Clear()
Do Until  sr.EndOfStream
  name = sr.ReadLine
  phoneNum = sr.ReadLine
  lstNameNos.Items.Add(name  & " " _
      & phoneNum)
Loop
sr.Close()
```


Processing Data from a File

- Write code to find the number of employees in the Payroll.txt file
- Add code to find the total hours worked by all employees
- Add code to find the total pay and the average pay for employees

Writing Reports to Text Files

- Report may also be stored in file
- Create report while running Visual Basic program
- Use StreamWriter object to write output from your program to file

Steps to Use StreamWriter

1. Declare StreamWriter object

```
Dim sw As IO.StreamWriter
```

2. Open file for output

```
sw = IO.File.CreateText("filename")
```

May combine these two steps into one

```
Dim sw As IO.StreamWriter = IO.File.CreateText("filename")
```

If no path given, file placed in bin --> Debug folder

Steps to Use StreamWriter

3. Place data items in file with WriteLine method

```
sw.WriteLine(item1 & item2 & ...)

sw.WriteLine("Staff Phone List")
sw.WriteLine(name & "  " & phoneNum)
```

4. After all data written to file, terminate (close) communications link

```
sw.Close()
```