Lab 2 – Intro to the Framework

# Purpose

* Create 2 console applications to perform the following tasks:
  1. Read and Write text files
  2. Create a directory crawler
* Familiarize yourself with C# and System.IO;

# Due Date

* This lab is due before the beginning of the Lab period (3:59:59pm) on January 25th

# Assessment

* This Lab is worth 2% of your total course mark.

# Estimated Time

* This Lab is estimated to take 4 hours.

This is only an estimate of the time required to complete this Lab. I would encourage you to work at your own pace and if at all possible obtain a laptop so that you can work on your assignments from anywhere

# Lab Supplies

To complete this lab you will require the following lab supplies:

* Visual Studio 2010
  + Available on MSDNAA
* Lecture notes
* Laptop or Caddy

# Summary of Tasks

1. Create an Application to: Read and Write text files
2. Create an Application to: Create a directory crawler
3. Demo

READ EVERY WORD BEFORE YOU START, your life will be so much easier!

# Task 1

Create a C# .NET console application that will:

1. Read the text file ‘input.txt’. Display its contents to the console.
2. Write a file called ‘output.txt’ to your desktop. This file will contain the text from the input file modified so that every other character is in upper case.
3. A menu should be presented to the user so they can decide which action to take when the application launches. This menu should continue to appear until the user wishes to exit.

Namespace(s):

* System
* System.IO;

Classes of interest:

* string
* Convert
* File
  + Static method File.Open()
  + File.Close()
* FileStream
* StreamReader
  + or TextReader (Personally I would use StreamReader)
  + StreamReader.Read(), ReadLine(), etc
* StreamWriter
  + or TextWriter (Personally I would use StreamWriter)
  + StreamWriter.Write(), WriteLine(), etc

NOTE: If you open a file/text stream Close() it when you are finished using it. You do not want random files all over the place that you can no longer access.

Mark value: 40

# Task 2

Create a C# .NET console application that will:

1. Crawl through the ‘Windows’ directory of your computer and display each file and directory.
   * The output should look like the following:

**Directory/File Name Path Size (KB)**

Directory System32 C:\Windows\System --

File ntbtlog.txt C:\Windows\ntbtlog.txt 165 KB

..

..

* + Continue this process until the entire Windows folder has been recursively documented.

1. As the crawling process is taking place track the total size of each file (FileInfo, Length property). When the crawling process is finished, display the total size of the Windows directory to the user in MB.

Namespace:

* System;
* System.IO;

Classes:

* string
* Directory
  + Static method Directory.GetDirectories()
  + Static method Directory.GetFiles()
* FileInfo
  + Contains information about a file using its path
  + FileInfo.Length
  + FileInfo.Name
* DirectoryInfo
  + Contains information about a directory using its path
  + DirectoryInfo.Name

NOTE: watch out for file system access issues while scanning directories and files:

**Try and Catch:**

* Allows the programming to ‘try’ to do something
* If the process being tried fails the exception is caught in the ‘catch’ section.
* ‘finally’ (Optional), used to any code clean up after fail or success.
  + Close Connections to databases, File streams, Sockets/etc

try

{

// do something

}

catch (Exception e)

{

// where e is the exception being thrown

// the code (Exception e) is optional

}

catch

{

// no specific exception is being trapped in this case

}

finally

{

// the finally section is optional

}

# Task 3

Demo to your lab professor.