**Topic 1: File I/O**

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**Content**

**Reading**

[Reading](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286809_1)

File (I/O)

* + Microsoft:docs.microsoft.com
    - [File class](https://docs.microsoft.com/en-us/dotnet/api/system.io.file?view=netcore-3.1)
    - [How to Read text from a file](https://docs.microsoft.com/en-us/dotnet/standard/io/how-to-read-text-from-a-file)
    - [How to Write text to a file](https://docs.microsoft.com/en-us/dotnet/standard/io/how-to-write-text-to-a-file)
  + GeeksForGeeks: geeksforgeeks.com
    - [basics of file handling](https://www.geeksforgeeks.org/basics-of-file-handling-in-c-sharp/)
  + TutorialsPoint: tutorialspoint.com
    - [file I/O](https://www.tutorialspoint.com/csharp/csharp_file_io.htm)
  + W3Schools: w3schools.com
    - [working with files](https://www.w3schools.com/cs/cs_files.asp)

NOTES

* + [File Info](https://dmacc.blackboard.com/bbcswebdav/pid-7286818-dt-content-rid-101466171_1/xid-101466171_1) [File Info - Alternative Formats](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286809_1)
  + [Files](https://dmacc.blackboard.com/bbcswebdav/pid-7286818-dt-content-rid-101466172_1/xid-101466172_1) [Files - Alternative Formats](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286809_1)
  + [Streams](https://dmacc.blackboard.com/bbcswebdav/pid-7286818-dt-content-rid-101466173_1/xid-101466173_1) [Streams - Alternative Formats](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286809_1)

**C# Read File**

[C# Read File](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286809_1)

<https://youtu.be/8Ve0mJPCICc>

from docs.microsoft.com

using System;

using System.IO; // add directive

namespace FileIO

{

class Program

{

static void Main(string[] args)

{

// Open file read stream

try

{ // Open the text file using a stream reader.

using (StreamReader sr = new StreamReader("Characteristics.txt"))

{

// Read the stream to a string, and write the string to the console.

String line = sr.ReadToEnd();

Console.WriteLine(line);

}

}

catch (IOException e)

{

Console.WriteLine("The file could not be read:");

Console.WriteLine(e.Message);

}

}

}

}

**C# Write File**

[C# Write File](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286809_1)

https://youtu.be/SCZTu5E531M

from [docs.microsoft.com](https://docs.microsoft.com/en-us/dotnet/standard/io/how-to-write-text-to-a-file)

using System;

using System.IO;



class Program

{

static void Main(string[] args)

{

// Create a string array with the lines of text

string[] lines = { "First line", "Second line", "Third line" };

// Set a variable to the Documents path.

string docPath =

Environment.GetFolderPath(Environment.SpecialFolder.MyMusic);

// Write the string array to a new file named "WriteLines.txt".

using (StreamWriter outputFile = new StreamWriter(Path.Combine(docPath, "WriteLines.txt")))

{

foreach (string line in lines)

outputFile.WriteLine(line);

}

}

}

**Write File Options**

[Write File Options](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286809_1)

When you open a file for writing, you can start a new file or append (add on) to the file.

From [docs.microsoft.com](https://docs.microsoft.com/en-us/dotnet/standard/io/how-to-write-text-to-a-file):

using System;

using System.IO;

class Program

{

static void Main(string[] args)

{

// Create a string with a line of text.

string text = "First line" + Environment.NewLine;

// Set a variable to the Documents path.

string docPath = Environment.GetFolderPath(Environment.SpecialFolder.MyDocuments);

// Write the text to a new file named "WriteFile.txt".

File.WriteAllText(Path.Combine(docPath, "WriteFile.txt"), text);

// Create a string array with the additional lines of text

string[] lines = { "New line 1", "New line 2" };

// Append new lines of text to the file

File.AppendAllLines(Path.Combine(docPath, "WriteFile.txt"), lines);

}

}

Run the code and see!

[**ReadFileWriteFile Assignment**](https://dmacc.blackboard.com/webapps/assignment/uploadAssignment?content_id=_7286831_1&course_id=_102593_1&group_id=&mode=view)

If you do not store information to a database, another option is storing information to a file. During your internship at the DMV, you are working with sets of information stored in files. You are asked to format the files. Instead of opening each of the hundreds of files, you want to write a program to format the files for you. Your program name will be ReadWriteFile.cs.Use a variable name for the file so you can easily change it for each file. Later (not for this assignment) you could save all the file names in a file, open that file, foreach file you can open, format the names list. 

Write a Console App that does the following

* + Read the following file of names of cites: [cities](https://dmacc.blackboard.com/bbcswebdav/pid-7286831-dt-content-rid-101466165_1/xid-101466165_1)
    - Formats the cities to have a capitalized first letter
      * Uses a method that you write FormatName() that accepts a string and returns the formatted string
    - Write these to a new file, called citynames.
  + Open and append a new city, such as your hometown, to the file citynames.txt
  + Read the newly appended and print to the Console. (A way to double check your work as you go!)

Make sure to NOT hardcode the file name or specific a path, eg C:/User/yourusername/cities, as this will not work on a different machine or allow others to use your code. Also, do not use "MyEnvironment", this is also unique to your machine. Your file can be "cities.txt" and place it in your "\source\repos\Module7\bin\Debug\netcoreapp#.#" or "\source\repos\Module7\bin\Debug\net#.#" where #.# is the version of Visual Studio you are using (3.1, 5.0, etc). This is where citynames will be saved if you also do not specify a path.

Extra Credit: Handle two name cities (Des Moines) for up to 2 extra credit points.

Submit your ReadWriteFile.cs file with the Academic Honesty Header included.

This is 15 points.