File Read and Write

Stream Important

A ***stream*** is an abstraction that either ***produces or consumes information***. A stream is linked to a physical device by the I/O system.Their are two type of Stream. Byte Streams and Character Streams.NET Framework defines several classes that convert a byte stream into a character stream, handling the translation of **byte-to-char** and **char-to-byte** automatically.

The Predefined Streams

A three tyep of Predefined Stream *Console.In*,*Console.Out*, and *Console.Error*, are available to all programs that use the **System** namespace.

Important Method for Stream

void Close( ) ---------- Closes the stream.
void Flush( )---------- Writes the contents of the stream to the physical device.
int ReadByte( )----------Returns an integer representation of the next available byte of input. Returns –1 when the end of the file is encountered.
void WriteByte(byte *b*)---------- Writes a single byte to an output stream

==========Char-Stream==========

void WriteLine(string *val*) ----------Writes a **string** followed by a newline.
string ReadLine( ) ---------- Reads the next line of text and returns it as a string.Null is returned if an attempt is made to read at endof-file.
string ReadToEnd( )---------- Reads all of the remaining characters in a streamand returns them as a string.

========== Stream_Class,s==========

StreamReader → Read characters from a byte stream. This class wraps a byte input stream.
StreamWriter → Write characters to a byte stream. This class wraps a byte output stream.

```
using System;
using System.IO;
namespace FileInput_Output
{
    class Program
    {
        public FileStream fout,fin;
        public String str;
        public StreamWriter writer;
        public StreamReader reader;

        //
        public void writeFile()
        {
            // create the file
            try
            {
                fout = new FileStream("E:\\Ok Concept of java\\student.txt", FileMode.Create);
            }
            catch (IOException exe)
            {
                Console.WriteLine("Cannot Opening File");
                Console.WriteLine(exe.Message);

            }
             writer = new StreamWriter(fout);
             //
             Console.WriteLine("Enter text ('Stop' to quit).");
             str = Console.ReadLine();
```

```
        //
        do
        {
            //
            if (str != "stop")
            {
                //
                str = str+"\r\n";
                try
                {
                    writer.Write(str);
                }
                catch (IOException exc)
                {
                    Console.WriteLine("Error Writing File");
                    Console.WriteLine(exc.Message);
                    break;
                }
            }
            Console.WriteLine("Enter text ('Stop' to quit).");
            str = Console.ReadLine();
        } while (str != "stop");
        // close the StreamWriter
        writer.Close();

    }

    public void readFile() {
        // create the file
        try
        {
            fin = new FileStream("E:\\Ok Concept of java\\student.txt", FileMode.Open);

        }
        catch (IOException exe)
        {
            Console.WriteLine("Error Opening File");
            Console.WriteLine(exe.Message);

        }
        reader = new StreamReader(fin);
        //
        try {
            // get the all line input by used of loop
            while (!reader.EndofStream) {
                Console.WriteLine(reader.ReadLine());
            }
        }
        catch(IOException exc){
            Console.WriteLine("Error Reading File");
            Console.WriteLine(exc.Message);
        }
        // close the StreamReader
        reader.Close();
        Console.ReadLine();

    }

    static void Main(string[] args)
    {
        Program p = new Program();
        p.writeFile();
        p.readFile();
    }
```

```
    }
}
```

```
using System;
using System.IO;
namespace FileInput_Output
{
    class Program
    {
        public String str,roll,name,adress;
        public StreamWriter writer;
        public StreamReader reader;

        //
        public void writeFile()
        {
            // used of the StreamWriter for write the text file
            writer = new StreamWriter("student.txt");
             //
             Console.WriteLine("Enter text ('Stop' to quit).");
             str = Console.ReadLine();
             //
             do
             {
                 //
                 if (str != "stop")
                 {
                     //
                     str = null;
                     Console.Write("Enter a Roll NO :- ");
                     roll = Console.ReadLine();
                     Console.Write("Enter a Name :- ");
                     name = Console.ReadLine();
                     Console.Write("Enter a Address :- ");
                     adress = Console.ReadLine();
                     // cancat the all data into single String
                     str = roll + "      " + name + "      " + adress + "      "+"\r\n";
                     try
                     {
                         writer.Write(str);
                     }
                     catch (IOException exc)
                     {
                         Console.WriteLine("Error Writing File");
                         Console.WriteLine(exc.Message);
                         break;
                     }
                 }
                 Console.WriteLine("Enter text ('stop' to quit or Enter for continu).");
                 str = Console.ReadLine();
             } while (str != "stop");
             // close the StreamWriter
             writer.Close();

        }

        public void readFile() {

            reader = new StreamReader("student.txt");
            //
            try {
```

```
                // get the all line input by used of loop
                while (!reader.EndOfStream) {
                    // used the method to get the stread and print on the console
                    Console.WriteLine(reader.ReadLine());
                }
            }
            catch(IOException exc){
                Console.WriteLine("Error Reading File");
                Console.WriteLine(exc.Message);
            }
            // close the file
            reader.Close();
            Console.ReadLine();

        }

        static void Main(string[] args)
        {
            Program p = new Program();
            p.writeFile();
            p.readFile();
        }
    }
}
```

File Read and Write In Byte

// method Statement for convert the String into the array and pass this array element into arrya by used of the byte

```
                str = Console.ReadLine();
                int a = str.Length;
                char[] ch = str.ToCharArray();
                //
                for (int i = 0; i < a; i++) {
                    fout.WriteByte((byte) ch[i]);
                }
```

==========Program==========

```
using System;
using System.IO;

namespace FileInput_Output_Byte
{
    class Program
    {
        public FileStream fout, fin;
        public String str;

        // method for read and write the file
        public void writeFile() {
            //
            try
            {
                // Create the file
                fout = new FileStream("Nabeel.txt", FileMode.Create);
                //
            }
            catch (Exception exe)
```

```
        {
            Console.WriteLine("File not Create");
            Console.WriteLine(exe.Message);

        }

        // used the anOther try catch block
        try
        {
            // get the String for the user
            Console.WriteLine("Enter a String ");
            str = Console.ReadLine();
            // convert the String into the array
            char[] ch = str.ToCharArray();
            // send char as byte into the file
            for (int i = 0; i < str.Length; i++) {
                // pass the byte into the file
                fout.WriteByte((byte) ch[i]);
            }
        }
        catch (Exception exe)
        {
            Console.WriteLine(exe.Message);
        }
        // close the file
        fout.Close();
    }
    //
    public void readFile() {
        //
        try
        {
            fin = new FileStream("Nabeel.txt", FileMode.Open);
            //
        }
        catch (Exception exe)
        {
            Console.WriteLine("File not Create");
            Console.WriteLine(exe.Message);

        }
        //
        // used the anOther try catch block
        try
        {
            int i = 0;
            // read the file
            do{
                // get the value of byte and give to the (i)
                try{

                    i = fin.ReadByte();
                    //
                    if(i != -1){
                        Console.Write((char)i);
                    }
                      }catch (Exception exe){
                        Console.Write(exe.Message);
                        }
            }while(i != -1);
```

```
            }
            catch (Exception exe)
            {
                Console.WriteLine(exe.Message);
            }
            // close the file
            fin.Close();

        }

        static void Main(string[] args)
        {
            Program program = new Program();
            program.writeFile();
            program.readFile();
            Console.Read();

        }

    }
}
```