FileHandling

- C# performs file handling through streams.
- A Stream is nothing but group of bytes or chars.
- Stream is Required when we Transfer the data over Network or persist data into hard disk
- Types of Streams.
- Character Stream: read and write the data in the form of Character stream
- Byte Stream: read and write the data in the form of Byte stream.

Classes in System.IO

- To work with Streams C# defines both byte and stream classes. With Stream classes we can
  - All the Stream classes are defined from System.IO namespace.

Char Stream classes
TextReader
TextWriter
StreamReader
StreamWriter

Byte Stream classes
Stream
FileStream
BinaryReader
BinaryWriter
MemoryStream

StreamReader

- StreamReader: This class is used to read the data from the specified file.
- StreamReader class Inherited with TextReader Class
- public **StreamReader(string path);**
- **When given path is not exist it raises *"FilenotFoundException"***

Methods:

- Readline()-Reads a line of characters from the current stream and returns the data as a string.

  Or

  it reads only one line of text
- ReadtoEnd()-Reads the stream from the current position to the end of the stream.

  or

  it reads all the text of the given file
- Close()-close the StreamReader object
- Dispose()-to dispose the object.

Stream Write

- Stream Writer: This class is used to write the data to the specified file.
- StreamWriter class Inherited with TextWriter Class
- public **StreamWriter(string path):**
- If Given path is not exist it will create a new file instead of rise exception

  Methods:
  - Write(string **value):** It writes the text on same line
  - Write(char value):
  - WriteLine(string **value):** It writes the text on new line every time.
  - Buffer(): Clears all buffers for the current writer

Stream class

- Stream is a abstract class
- Methods:
  - ReadByte()/WriteByte():read and write a single byte
  - Flush() :send any pending output to the device
  - Seek():move the read/write pointer inside the stream
  - Close() :frees resources associated with the stream

FileStream class

- FileStream implemented with stream class
- FileStream is having following constructors
  - FileStream(string **path, FileMode mode);**
  - FileStream(string **path, FileMode mode, FileAccess access):**
  - FileStream(string **path, FileMode mode, FileAccess access, FileShare share)**

FileMode Description

File Mode	Description
Create	Creates a new file or truncates the existing file.
CreateNew	Creates a new file. If the file already exists, throws a **System.IO.IOException**.
Open	Opens an existing file. Throws a **System.IO.FileNotFoundException** if the file does not exist.
OpenOrCreate	Opens an existing file or creates a new one. The difference between this mode and the Create mode is that it does not truncate the file.
Append	Opens the file and seeks to the end. A new file is created if the file does not exist.
Truncate	Opens an existing file and truncates its content so that the file size becomes zero. Attempting to read in this mode throws an exception.

File share & File Access

Member name	Description
Read	Read access to the file. Data can be read from the file. Combine with **Write** for read/write access.
Write	Write access to the file. Data can be written to the file. Combine with **Read** for read/write access.
ReadWrite	Read and write access to the file. Data can be written to and read from the file.

FileShare Mode	Description
Read	Allows other handles to read from the file.
Write	Allows other handles to write to the file.
Delete	Allows subsequent deleting of the file.
Inheritable	Makes the file handle inheritable to child processes.
None	Declines sharing of file. No other process can open the file until it is closed.

Class Name	Description
FileStream	Is used to read from and write to any location within a file.
BinaryReader	Is used to read primitive data types in the form of binary data from the stream.
StreamReader	Is used to read characters from a byte stream.
StringReader	Is used to read data from a string buffer.
BinaryWriter	Is used to write primitive data types in the form of binary data to the stream.
StreamWriter	Is used to write characters to a byte stream.
StringWriter	Is used to write data to a string buffer.
BinaryReader	Is used to read primitive data types in the form of binary data from the file stream.
StreamReader	Is used to read characters from the a byte stream.
DirectoryInfo	Is used to perform operations on directories.
FileInfo	Is used to perform operations on files.