```
LinksPlatform's Platform.IO Class Library
     ./csharp/Platform.IO/ConsoleCancellation.cs
   using System;
   using System.Runtime.CompilerServices;
2
   using System. Threading;
   using Platform.Disposables;
4
   using Platform. Threading;
   #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
   namespace Platform. IO
9
10
        public class ConsoleCancellation : DisposableBase
11
12
            public CancellationTokenSource Source
13
14
                [MethodImpl(MethodImplOptions.AggressiveInlining)]
15
17
            public CancellationToken Token
19
                 [MethodImpl(MethodImplOptions.AggressiveInlining)]
2.1
                get;
23
            public bool IsRequested
25
26
                 [MethodImpl(MethodImplOptions.AggressiveInlining)]
27
                get => Source.IsCancellationRequested;
28
30
            public bool NotRequested
31
32
                [MethodImpl(MethodImplOptions.AggressiveInlining)]
33
                get => !Source.IsCancellationRequested;
34
35
36
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
37
            public ConsoleCancellation()
38
39
                Source = new CancellationTokenSource();
40
                Token = Source.Token;
41
                Console.CancelKeyPress += OnCancelKeyPress;
42
43
44
45
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
46
            public void ForceCancellation() => Source.Cancel();
47
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
            public void Wait()
49
50
                while (NotRequested)
52
                     ThreadHelpers.Sleep();
53
                }
            }
56
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
            protected override void Dispose(bool manual, bool wasDisposed)
58
59
                if (!wasDisposed)
60
61
                     Console.CancelKeyPress -= OnCancelKeyPress;
62
                    Source.DisposeIfPossible();
63
                }
64
            }
65
66
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
67
            private void OnCancelKeyPress(object sender, ConsoleCancelEventArgs e)
68
                e.Cancel = true;
70
                if (NotRequested)
                {
72
                    Source.Cancel();
73
                }
74
            }
75
        }
76
   }
77
```

```
./csharp/Platform.IO/ConsoleHelpers.cs
   using System;
   using System Diagnostics;
   using System.Runtime.CompilerServices;
using Platform.Collections;
   using Platform.Collections.Arrays;
   #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
   namespace Platform. IO
9
10
        public static class ConsoleHelpers
11
12
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
13
            public static void PressAnyKeyToContinue()
14
15
                Console.WriteLine("Press any key to continue.");
16
                Console.ReadKey();
17
            }
18
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
20
            public static string GetOrReadArgument(int index, params string[] args) =>
21
                GetOrReadArgument(index, $\|\frac{\$}{\}\|\frac{1}{\text{argument}}\|\ \text{args});
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
23
24
            public static string GetOrReadArgument(int index, string readMessage, params string[]
                args)
25
                if (!args.TryGetElement(index, out string result))
26
27
                     Console.Write($\$"\{readMessage\}: ");
28
                     result = Console.ReadLine();
29
30
                if (string.IsNullOrEmpty(result))
31
32
                     return "";
33
                }
34
                else
                {
36
                     return result.Trim().TrimSingle('"').Trim();
37
                }
38
            }
39
40
            [Conditional("DEBUG")]
            public static void Debug(string @string) => Console.WriteLine(@string);
42
43
            [Conditional("DEBUG")]
44
            public static void Debug(string format, params object[] args) =>
45

→ Console.WriteLine(format, args);

        }
46
    ./csharp/Platform.IO/FileHelpers.cs
   using System;
   using System. IO;
2
   using System.Runtime.CompilerServices;
   using Platform.Unsafe;
4
   #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
   namespace Platform. IO
8
        public static class FileHelpers
10
11
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
12
            public static char[] ReadAllChars(string path) => File.ReadAllText(path).ToCharArray();
13
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
15
            public static T[] ReadAll<T>(string path)
16
                where T : struct
17
            ₹
18
19
                using var reader = File.OpenRead(path);
                return reader.ReadAll<T>();
20
21
22
            [MethodImpl(MethodImplOptions.AggressiveInlining)]
23
            public static T ReadFirstOrDefault<T>(string path)
24
                where T : struct
25
26
```

```
using var fileStream = GetValidFileStreamOrDefault<T>(path);
    return fileStream?.ReadOrDefault<T>() ?? default;
}
[MethodImpl(MethodImplOptions.AggressiveInlining)]
private static FileStream GetValidFileStreamOrDefault<TStruct>(string path) where
   TStruct : struct => GetValidFileStreamOrDefault(path, Structure<TStruct>.Size);
[MethodImpl(MethodImplOptions.AggressiveInlining)]
private static FileStream GetValidFileStreamOrDefault(string path, int elementSize)
    if (!File.Exists(path))
        return null;
    var fileSize = GetSize(path);
    if (fileSize % elementSize != 0)
        throw new InvalidOperationException($\B\"File is not aligned to elements with size
        return fileSize > 0 ? File.OpenRead(path) : null;
}
[MethodImpl(MethodImplOptions.AggressiveInlining)]
public static T ReadLastOrDefault<T>(string path)
    where T : struct
    var elementSize = Structure<T>.Size;
    using var reader = GetValidFileStreamOrDefault(path, elementSize);
    if (reader == null)
    {
        return default;
    }
    var totalElements = reader.Length / elementSize;
    reader.Position = (totalElements - 1) * elementSize; // Set to last element
    return reader.ReadOrDefault<T>();
}
[MethodImpl(MethodImplOptions.AggressiveInlining)]
public static void WriteFirst<T>(string path, T value)
    where T : struct
   using var writer = File.OpenWrite(path);
   writer.Position = 0;
    writer.Write(value);
}
[MethodImpl(MethodImplOptions.AggressiveInlining)]
public static FileStream Append(string path) => File.Open(path, FileMode.Append,
\hookrightarrow FileAccess.Write);
[MethodImpl(MethodImplOptions.AggressiveInlining)]
public static long GetSize(string path) => File.Exists(path) ? new FileInfo(path).Length
[MethodImpl(MethodImplOptions.AggressiveInlining)]
public static void SetSize(string path, long size)
    using var fileStream = File.Open(path, FileMode.OpenOrCreate);
    if (fileStream.Length != size)
    {
        fileStream.SetLength(size);
    }
}
[MethodImpl(MethodImplOptions.AggressiveInlining)]
public static void DeleteAll(string directory) => DeleteAll(directory, "*");
[MethodImpl(MethodImplOptions.AggressiveInlining)]
public static void DeleteAll(string directory, string searchPattern) =>
DeleteAll(directory, searchPattern, SearchOption.TopDirectoryOnly);
[MethodImpl(MethodImplOptions.AggressiveInlining)]
public static void DeleteAll(string directory, string searchPattern, SearchOption
   searchOption)
    foreach (var file in Directory.EnumerateFiles(directory, searchPattern,

    searchOption))
```

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```
File.Delete(file);
                 }
101
            }
102
        }
    }
104
     ./csharp/Platform.IO/StreamExtensions.cs
    using System.IO;
    using System.Runtime.CompilerServices;
 2
    using Platform.Unsafe;
 3
    #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
 6
    namespace Platform.IO
        public static class StreamExtensions
 9
1.0
             [MethodImpl(MethodImplOptions.AggressiveInlining)]
11
            public static void Write<T>(this Stream stream, T value)
12
                 where T : struct
13
                 var bytes = value.ToBytes();
15
                 stream.Write(bytes, 0, bytes.Length);
16
             }
17
18
             [MethodImpl(MethodImplOptions.AggressiveInlining)]
19
            public static T ReadOrDefault<T>(this Stream stream)
21
                 where T : struct
                 var size = Structure<T>.Size;
23
                 var buffer = new byte[size];
24
                 return stream.Read(buffer, 0, size) == size ? buffer.ToStructure<T>() : default;
             }
26
27
             [MethodImpl(MethodImplOptions.AggressiveInlining)]
28
            public static T[] ReadAll<T>(this Stream stream)
29
                 where T : struct
31
                 var size = Structure<T>.Size;
32
                 var buffer = new byte[size];
33
                 var elementsLength = stream.Length / size;
34
                 var elements = new T[elementsLength];
                 for (var i = 0; i < elementsLength; i++)</pre>
36
37
                     stream.Read(buffer, 0, size);
38
                     elements[i] = buffer.ToStructure<T>();
40
                 return elements;
             }
42
        }
43
    }
44
     ./csharp/Platform.IO.Tests/FileHelpersTests.cs
1.5
    using System.IO;
using Xunit;
 2
    namespace Platform.IO.Tests
 4
 5
        public class FileHelpersTests
 6
 7
             [Fact]
            public void WriteReadTest()
 9
10
                 var temporaryFile = Path.GetTempFileName();
11
                 var originalValue = 42UL;
12
                 FileHelpers.WriteFirst(temporaryFile, originalValue);
13
                 var readValue = FileHelpers.ReadFirstOrDefault<ulong>(temporaryFile);
                 Assert.Equal(readValue, originalValue);
15
                 File.Delete(temporaryFile);
16
             }
17
        }
18
    }
19
```

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