

## LinksPlatform's Platform.IO Class Library

### ./ConsoleCancellationHandler.cs

```
1  using System;
2  using System.Threading;
3  using Platform.Disposables;
4  using Platform.Threading;
5
6  #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
7
8  namespace Platform.IO
9  {
10     public class ConsoleCancellationHandler : DisposableBase
11     {
12         public CancellationTokenSource Source { get; }
13
14         public CancellationToken Token { get; }
15
16         public bool IsCancellationRequested => Source.IsCancellationRequested;
17
18         public bool NoCancellationRequested => !Source.IsCancellationRequested;
19
20         public ConsoleCancellationHandler(bool showDefaultIntroMessage)
21         {
22             if (showDefaultIntroMessage)
23             {
24                 Console.WriteLine("Press CTRL+C to stop.");
25             }
26             Source = new CancellationTokenSource();
27             Token = Source.Token;
28             Console.CancelKeyPress += OnCancelKeyPress;
29         }
30
31         public ConsoleCancellationHandler() : this(true) { }
32
33         public void ForceCancellation() => Source.Cancel();
34
35         private void OnCancelKeyPress(object sender, ConsoleCancelEventArgs e)
36         {
37             e.Cancel = true;
38             if (NoCancellationRequested)
39             {
40                 Source.Cancel();
41                 Console.WriteLine("Stopping...");
42             }
43         }
44
45         public void Wait()
46         {
47             while (NoCancellationRequested)
48             {
49                 ThreadHelpers.Sleep();
50             }
51         }
52
53         protected override void Dispose(bool manual, bool wasDisposed)
54         {
55             if (!wasDisposed)
56             {
57                 Console.CancelKeyPress -= OnCancelKeyPress;
58                 Source.DisposeIfPossible();
59             }
60         }
61     }
62 }
```

### ./ConsoleHelpers.cs

```
1  using System;
2  using System.Diagnostics;
3  using Platform.Collections;
4
5  #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
6
7  namespace Platform.IO
8  {
9     public static class ConsoleHelpers
10     {
11         public static void PressAnyKeyToContinue()
12         {
13             Console.WriteLine("Press any key to continue.");
14             Console.ReadKey();
15         }
16     }
17 }
```

```

15     }
16
17     public static string GetOrReadArgument(int index, params string[] args) =>
18     ↪ GetOrReadArgument(index, $"{index + 1} argument", args);
19
20     public static string GetOrReadArgument(int index, string readMessage, params string[]
21     ↪ args)
22     {
23         string result;
24         if (args != null && args.Length > index)
25         {
26             result = args[index];
27         }
28         else
29         {
30             Console.WriteLine($"{readMessage}: ");
31             result = Console.ReadLine();
32         }
33         result = (result ?? "").Trim().TrimSingle(' ').Trim();
34         return result;
35     }
36
37     [Conditional("DEBUG")]
38     public static void Debug(string format, params object[] args) =>
39     ↪ Console.WriteLine(format, args);
40 }

```

./FileHelpers.cs

```

1  using System;
2  using System.IO;
3  using Platform.Unsafe;
4
5  #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
6
7  namespace Platform.IO
8  {
9      public static class FileHelpers
10     {
11         public static char[] ReadAllChars(string path) => File.ReadAllText(path).ToCharArray();
12
13         public static T[] ReadAll<T>(string path)
14             where T : struct
15         {
16             using (var reader = File.OpenRead(path))
17             {
18                 return reader.ReadAll<T>();
19             }
20         }
21
22         public static T ReadFirstOrDefault<T>(string path)
23             where T : struct
24         {
25             using (var fileStream = GetValidFileStreamOrDefault<T>(path))
26             {
27                 return fileStream?.ReadOrDefault<T>() ?? default;
28             }
29         }
30
31         private static FileStream GetValidFileStreamOrDefault<TStruct>(string path) where
32         ↪ TStruct : struct => GetValidFileStreamOrDefault(path, Structure<TStruct>.Size);
33
34         private static FileStream GetValidFileStreamOrDefault(string path, int elementSize)
35         {
36             if (!File.Exists(path))
37             {
38                 return null;
39             }
40             var fileSize = GetSize(path);
41             if (fileSize % elementSize != 0)
42             {
43                 throw new InvalidOperationException($"{File is not aligned to elements with size
44                 ↪ {elementSize}.");
45             }
46             return fileSize > 0 ? File.OpenRead(path) : null;
47         }
48
49         public static T ReadLastOrDefault<T>(string path)
50             where T : struct

```

```

49 {
50     var elementSize = Structure<T>.Size;
51     using (var reader = GetValidFileStreamOrDefault(path, elementSize))
52     {
53         if (reader == null)
54         {
55             return default;
56         }
57         var totalElements = reader.Length / elementSize;
58         reader.Position = (totalElements - 1) * elementSize; // Set to last element
59         return reader.ReadOrDefault<T>();
60     }
61 }
62
63 public static void WriteFirst<T>(string path, T value)
64     where T : struct
65 {
66     using (var writer = File.OpenWrite(path))
67     {
68         writer.Position = 0;
69         writer.Write(value);
70     }
71 }
72
73 public static FileStream Append(string path) => File.Open(path, FileMode.Append,
74     ↪ FileAccess.Write);
75
76 public static long GetSize(string path) => File.Exists(path) ? new FileInfo(path).Length
77     ↪ : 0;
78
79 public static void SetSize(string path, long size)
80 {
81     using (var fileStream = File.Open(path, FileMode.OpenOrCreate))
82     {
83         if (fileStream.Length != size)
84         {
85             fileStream.SetLength(size);
86         }
87     }
88 }

```

# ./StreamExtensions.cs

```

1  using System.IO;
2  using Platform.Unsafe;
3
4  #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
5
6  namespace Platform.IO
7  {
8      public static class StreamExtensions
9      {
10         public static void Write<T>(this Stream stream, T value)
11             where T : struct
12         {
13             var bytes = value.ToBytes();
14             stream.Write(bytes, 0, bytes.Length);
15         }
16
17         public static T ReadOrDefault<T>(this Stream stream)
18             where T : struct
19         {
20             var size = Structure<T>.Size;
21             var buffer = new byte[size];
22             return stream.Read(buffer, 0, size) == size ? buffer.ToStructure<T>() : default;
23         }
24
25         public static T[] ReadAll<T>(this Stream stream)
26             where T : struct
27         {
28             var size = Structure<T>.Size;
29             var buffer = new byte[size];
30             var elementsLength = stream.Length / size;
31             var elements = new T[elementsLength];
32             for (var i = 0; i < elementsLength; i++)
33             {
34                 stream.Read(buffer, 0, size);
35                 elements[i] = buffer.ToStructure<T>();
36             }
37         }
38     }
39 }

```

```
36         }
37         return elements;
38     }
39 }
40 }
```

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