

# LinksPlatform's Platform.RegularExpressions.Transformer Class Library

## 1.1 ./csharp/Platform.RegularExpressions.Transformer/FileTransformer.cs

```
1  using System;
2  using System.Collections.Generic;
3  using System.Diagnostics;
4  using System.IO;
5  using System.Runtime.CompilerServices;
6  using System.Text;
7  using System.Threading.Tasks;
8
9  #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
10
11 namespace Platform.RegularExpressions.Transformer
12 {
13     public class FileTransformer : IFileTransformer
14     {
15         protected readonly ITextTransformer _textTransformer;
16
17         public string SourceFileExtension
18         {
19             [MethodImpl(MethodImplOptions.AggressiveInlining)]
20             get;
21             [MethodImpl(MethodImplOptions.AggressiveInlining)]
22             private set;
23         }
24
25         public string TargetFileExtension
26         {
27             [MethodImpl(MethodImplOptions.AggressiveInlining)]
28             get;
29             [MethodImpl(MethodImplOptions.AggressiveInlining)]
30             private set;
31         }
32
33         public IList<ISubstitutionRule> Rules
34         {
35             [MethodImpl(MethodImplOptions.AggressiveInlining)]
36             get => _textTransformer.Rules;
37         }
38
39         [MethodImpl(MethodImplOptions.AggressiveInlining)]
40         public FileTransformer(ITextTransformer textTransformer, string sourceFileExtension,
41             → string targetFileExtension)
42         {
43             _textTransformer = textTransformer;
44             SourceFileExtension = sourceFileExtension;
45             TargetFileExtension = targetFileExtension;
46         }
47
48         [MethodImpl(MethodImplOptions.AggressiveInlining)]
49         public void Transform(string sourcePath, string targetPath)
50         {
51             var sourceDirectoryExists = DirectoryExists(sourcePath);
52             var sourceDirectoryPath = LooksLikeDirectoryPath(sourcePath);
53             var sourceIsDirectory = sourceDirectoryExists || sourceDirectoryPath;
54             var targetDirectoryExists = DirectoryExists(targetPath);
55             var targetDirectoryPath = LooksLikeDirectoryPath(targetPath);
56             var targetIsDirectory = targetDirectoryExists || targetDirectoryPath;
57             if (sourceIsDirectory && targetIsDirectory)
58             {
59                 // Folder -> Folder
60                 if (!sourceDirectoryExists)
61                 {
62                     return;
63                 }
64                 TransformFolder(sourcePath, targetPath);
65             }
66             else if (!(sourceIsDirectory || targetIsDirectory))
67             {
68                 // File -> File
69                 EnsureSourceFileExists(sourcePath);
70                 EnsureTargetFileDirectoryExists(targetPath);
71                 TransformFile(sourcePath, targetPath);
72             }
73             else if (targetIsDirectory)
74             {
75                 // File -> Folder
76                 EnsureSourceFileExists(sourcePath);
77                 EnsureTargetDirectoryExists(targetPath, targetDirectoryExists);
78                 TransformFile(sourcePath, GetTargetFileName(sourcePath, targetPath));
79             }
80         }
81     }
82 }
```

```

78     }
79     else
80     {
81         // Folder -> File
82         throw new NotSupportedException();
83     }
84 }
85
86 [MethodImpl(MethodImplOptions.AggressiveInlining)]
87 protected virtual void TransformFolder(string sourcePath, string targetPath)
88 {
89     if (CountFilesRecursively(sourcePath, SourceFileExtension) == 0)
90     {
91         return;
92     }
93     EnsureTargetDirectoryExists(targetPath);
94     var directories = Directory.GetDirectories(sourcePath);
95     for (var i = 0; i < directories.Length; i++)
96     {
97         var relativePath = GetRelativePath(sourcePath, directories[i]);
98         var newTargetPath = Path.Combine(targetPath, relativePath);
99         TransformFolder(directories[i], newTargetPath);
100     }
101     var files = Directory.GetFiles(sourcePath);
102     Parallel.For(0, files.Length, i =>
103     {
104         var file = files[i];
105         if (FileExtensionMatches(file, SourceFileExtension))
106         {
107             TransformFile(file, GetTargetFileName(file, targetPath));
108         }
109     });
110 }
111
112 [MethodImpl(MethodImplOptions.AggressiveInlining)]
113 protected virtual void TransformFile(string sourcePath, string targetPath)
114 {
115     if (File.Exists(targetPath))
116     {
117         var applicationPath = Process.GetCurrentProcess().MainModule.FileName;
118         var targetFileLastUpdateDateTime = new FileInfo(targetPath).LastWriteTimeUtc;
119         if (new FileInfo(sourcePath).LastWriteTimeUtc < targetFileLastUpdateDateTime &&
120             ↪ new FileInfo(applicationPath).LastWriteTimeUtc <
121             ↪ targetFileLastUpdateDateTime)
122         {
123             return;
124         }
125     }
126     var sourceText = File.ReadAllText(sourcePath, Encoding.UTF8);
127     var targetText = _textTransformer.Transform(sourceText);
128     File.WriteAllText(targetPath, targetText, Encoding.UTF8);
129 }
130
131 [MethodImpl(MethodImplOptions.AggressiveInlining)]
132 protected string GetTargetFileName(string sourcePath, string targetDirectory) =>
133     ↪ Path.ChangeExtension(Path.Combine(targetDirectory, Path.GetFileName(sourcePath)),
134     ↪ TargetFileExtension);
135
136 [MethodImpl(MethodImplOptions.AggressiveInlining)]
137 private static long CountFilesRecursively(string path, string extension)
138 {
139     var files = Directory.GetFiles(path);
140     var directories = Directory.GetDirectories(path);
141     var result = 0L;
142     for (var i = 0; i < directories.Length; i++)
143     {
144         result += CountFilesRecursively(directories[i], extension);
145     }
146     for (var i = 0; i < files.Length; i++)
147     {
148         if (FileExtensionMatches(files[i], extension))
149         {
150             result++;
151         }
152     }
153     return result;
154 }

```

```

152 [MethodImpl(MethodImplOptions.AggressiveInlining)]
153 private static bool FileExtensionMatches(string file, string extension) =>
    ↳ file.EndsWith(extension, StringComparison.OrdinalIgnoreCase);
154
155 [MethodImpl(MethodImplOptions.AggressiveInlining)]
156 private static void EnsureTargetFileDirectoryExists(string targetPath)
157 {
158     if (!File.Exists(targetPath))
159     {
160         EnsureDirectoryIsCreated(targetPath);
161     }
162 }
163
164 [MethodImpl(MethodImplOptions.AggressiveInlining)]
165 private static void EnsureTargetDirectoryExists(string targetPath) =>
    ↳ EnsureTargetDirectoryExists(targetPath, DirectoryExists(targetPath));
166
167 [MethodImpl(MethodImplOptions.AggressiveInlining)]
168 private static void EnsureTargetDirectoryExists(string targetPath, bool
    ↳ targetDirectoryExists)
169 {
170     if (!targetDirectoryExists)
171     {
172         Directory.CreateDirectory(targetPath);
173     }
174 }
175
176 [MethodImpl(MethodImplOptions.AggressiveInlining)]
177 private static void EnsureSourceFileExists(string sourcePath)
178 {
179     if (!File.Exists(sourcePath))
180     {
181         throw new FileNotFoundException("Source file does not exists.", sourcePath);
182     }
183 }
184
185 [MethodImpl(MethodImplOptions.AggressiveInlining)]
186 private static string NormalizePath(string path) => Path.GetFullPath(path).TrimEnd(new[]
    ↳ { Path.DirectorySeparatorChar, Path.AltDirectorySeparatorChar });
187
188 [MethodImpl(MethodImplOptions.AggressiveInlining)]
189 private static string GetRelativePath(string rootPath, string fullPath)
190 {
191     rootPath = NormalizePath(rootPath);
192     fullPath = NormalizePath(fullPath);
193     if (!fullPath.StartsWith(rootPath))
194     {
195         throw new Exception("Could not find rootPath in fullPath when calculating
            ↳ relative path.");
196     }
197     return fullPath.Substring(rootPath.Length + 1);
198 }
199
200 [MethodImpl(MethodImplOptions.AggressiveInlining)]
201 private static void EnsureDirectoryIsCreated(string targetPath) =>
    ↳ Directory.CreateDirectory(Path.GetDirectoryName(targetPath));
202
203 [MethodImpl(MethodImplOptions.AggressiveInlining)]
204 private static bool DirectoryExists(string path) => Directory.Exists(path) &&
    ↳ File.GetAttributes(path).HasFlag(FileAttributes.Directory);
205
206 [MethodImpl(MethodImplOptions.AggressiveInlining)]
207 private static bool LooksLikeDirectoryPath(string path) =>
    ↳ path.EndsWith(Path.DirectorySeparatorChar.ToString()) ||
    ↳ path.EndsWith(Path.AltDirectorySeparatorChar.ToString());
208 }
209 }

```

## 1.2 ./csharp/Platform.RegularExpressions.Transformer/IFileTransformer.cs

```

1 using System.Runtime.CompilerServices;
2
3 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
4
5 namespace Platform.RegularExpressions.Transformer
6 {
7     public interface IFileTransformer : ITransformer
8     {
9         string SourceFileExtension

```

```

10     {
11         [MethodImpl(MethodImplOptions.AggressiveInlining)]
12         get;
13     }
14
15     string TargetFileExtension
16     {
17         [MethodImpl(MethodImplOptions.AggressiveInlining)]
18         get;
19     }
20
21     [MethodImpl(MethodImplOptions.AggressiveInlining)]
22     void Transform(string sourcePath, string targetPath);
23 }
24 }

```

### 1.3 ./csharp/Platform.RegularExpressions.Transformer/ISubstitutionRule.cs

```

1 using System.Runtime.CompilerServices;
2 using System.Text.RegularExpressions;
3
4 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
5
6 namespace Platform.RegularExpressions.Transformer
7 {
8     public interface ISubstitutionRule
9     {
10         Regex MatchPattern
11         {
12             [MethodImpl(MethodImplOptions.AggressiveInlining)]
13             get;
14         }
15
16         string SubstitutionPattern
17         {
18             [MethodImpl(MethodImplOptions.AggressiveInlining)]
19             get;
20         }
21
22         int MaximumRepeatCount
23         {
24             [MethodImpl(MethodImplOptions.AggressiveInlining)]
25             get;
26         }
27     }
28 }

```

### 1.4 ./csharp/Platform.RegularExpressions.Transformer/ITextTransformer.cs

```

1 using System.Runtime.CompilerServices;
2
3 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
4
5 namespace Platform.RegularExpressions.Transformer
6 {
7     public interface ITextTransformer : ITransformer
8     {
9         [MethodImpl(MethodImplOptions.AggressiveInlining)]
10         string Transform(string sourceText);
11     }
12 }

```

### 1.5 ./csharp/Platform.RegularExpressions.Transformer/ITextTransformerExtensions.cs

```

1 using System.Collections.Generic;
2 using System.Linq;
3 using System.Runtime.CompilerServices;
4
5 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
6
7 namespace Platform.RegularExpressions.Transformer
8 {
9     public static class ITextTransformerExtensions
10     {
11         [MethodImpl(MethodImplOptions.AggressiveInlining)]
12         public static IList<ITextTransformer> GenerateTransformersForEachRule(this
13             ↳ ITextTransformer transformer)
14         {
15             var transformers = new List<ITextTransformer>();
16             for (int i = 1; i <= transformer.Rules.Count; i++)
17             {
18                 transformers.Add(new TextTransformer(transformer.Rules.Take(i).ToList()));
19             }
20         }
21     }
22 }

```

```

18     }
19     return transformers;
20 }
21
22 [MethodImpl(MethodImplOptions.AggressiveInlining)]
23 public static List<string> GetSteps(this ITextTransformer transformer, string
    ↪ sourceText) =>
    ↪ transformer.GenerateTransformersForEachRule().TransformWithAll(sourceText);
24
25 [MethodImpl(MethodImplOptions.AggressiveInlining)]
26 public static void WriteStepsToFiles(this ITextTransformer transformer, string
    ↪ sourceText, string targetPath, bool skipFilesWithNoChanges) =>
    ↪ transformer.GenerateTransformersForEachRule().TransformWithAllToFiles(sourceText,
    ↪ targetPath, skipFilesWithNoChanges);
27 }
28 }

```

## 1.6 ./csharp/Platform.RegularExpressions.Transformer/ITextTransformersListExtensions.cs

```

1 using System.IO;
2 using System.Collections.Generic;
3 using System.Text;
4 using System.Runtime.CompilerServices;
5
6 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
7
8 namespace Platform.RegularExpressions.Transformer
9 {
10     public static class ITextTransformersListExtensions
11     {
12         [MethodImpl(MethodImplOptions.AggressiveInlining)]
13         public static List<string> TransformWithAll(this IList<ITextTransformer> transformers,
14             ↪ string source)
15         {
16             var strings = new List<string>();
17             if (transformers.Count > 0)
18             {
19                 for (int i = 0; i < transformers.Count; i++)
20                 {
21                     strings.Add(transformers[i].Transform(source));
22                 }
23             }
24             return strings;
25         }
26
27         [MethodImpl(MethodImplOptions.AggressiveInlining)]
28         public static void TransformWithAllToFiles(this IList<ITextTransformer> transformers,
29             ↪ string sourceText, string targetPath, bool skipFilesWithNoChanges)
30         {
31             if (transformers.Count > 0)
32             {
33                 var directoryName = Path.GetDirectoryName(targetPath);
34                 var targetFilename = Path.GetFileNameWithoutExtension(targetPath);
35                 var targetExtension = Path.GetExtension(targetPath);
36                 var lastText = "";
37                 for (int i = 0; i < transformers.Count; i++)
38                 {
39                     var transformationOutput = transformers[i].Transform(sourceText);
40                     if (!(skipFilesWithNoChanges && string.Equals(lastText,
41                         ↪ transformationOutput)))
42                     {
43                         lastText = transformationOutput;
44                         File.WriteAllText(Path.Combine(directoryName,
45                             ↪ $"{targetFilename}.{i}{targetExtension}"), transformationOutput,
46                             ↪ Encoding.UTF8);
47                     }
48                 }
49             }
50         }
51     }
52 }

```

## 1.7 ./csharp/Platform.RegularExpressions.Transformer/ITransformer.cs

```

1 using System.Collections.Generic;
2 using System.Runtime.CompilerServices;
3
4 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
5
6 namespace Platform.RegularExpressions.Transformer

```

```

7 {
8     public interface ITransformer
9     {
10         IList<ISubstitutionRule> Rules
11         {
12             [MethodImpl(MethodImplOptions.AggressiveInlining)]
13             get;
14         }
15     }
16 }

```

#### 1.8 ./csharp/Platform.RegularExpressions.Transformer/LoggingFileTransformer.cs

```

1 using System.IO;
2 using System.Runtime.CompilerServices;
3 using System.Text;
4
5 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
6
7 namespace Platform.RegularExpressions.Transformer
8 {
9     public class LoggingFileTransformer : FileTransformer
10     {
11         [MethodImpl(MethodImplOptions.AggressiveInlining)]
12         public LoggingFileTransformer(ITextTransformer textTransformer, string
13             ↪ sourceFileExtension, string targetFileExtension) : base(textTransformer,
14             ↪ sourceFileExtension, targetFileExtension) { }
15
16         [MethodImpl(MethodImplOptions.AggressiveInlining)]
17         protected override void TransformFile(string sourcePath, string targetPath)
18         {
19             base.TransformFile(sourcePath, targetPath);
20             // Logging
21             var sourceText = File.ReadAllText(sourcePath, Encoding.UTF8);
22             _textTransformer.WriteStepsToFiles(sourceText, targetPath, skipFilesWithNoChanges:
23             ↪ true);
24         }
25     }
26 }

```

#### 1.9 ./csharp/Platform.RegularExpressions.Transformer/RegexExtensions.cs

```

1 using System;
2 using System.Runtime.CompilerServices;
3 using System.Text.RegularExpressions;
4
5 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
6
7 namespace Platform.RegularExpressions.Transformer
8 {
9     public static class RegexExtensions
10     {
11         [MethodImpl(MethodImplOptions.AggressiveInlining)]
12         public static Regex OverrideOptions(this Regex regex, RegexOptions options, TimeSpan
13             ↪ matchTimeout)
14         {
15             if (regex == null)
16             {
17                 return null;
18             }
19             return new Regex(regex.ToString(), options, matchTimeout);
20         }
21     }
22 }

```

#### 1.10 ./csharp/Platform.RegularExpressions.Transformer/SubstitutionRule.cs

```

1 using System;
2 using System.Runtime.CompilerServices;
3 using System.Text;
4 using System.Text.RegularExpressions;
5
6 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
7
8 namespace Platform.RegularExpressions.Transformer
9 {
10     public class SubstitutionRule : ISubstitutionRule
11     {
12         public static readonly TimeSpan DefaultMatchTimeout = TimeSpan.FromMinutes(5);
13         public static readonly RegexOptions DefaultMatchPatternRegexOptions =
14             ↪ RegexOptions.Compiled | RegexOptions.Multiline;
15     }
16 }

```

```

15 public Regex MatchPattern
16 {
17     [MethodImpl(MethodImplOptions.AggressiveInlining)]
18     get;
19     [MethodImpl(MethodImplOptions.AggressiveInlining)]
20     set;
21 }
22
23 public string SubstitutionPattern
24 {
25     [MethodImpl(MethodImplOptions.AggressiveInlining)]
26     get;
27     [MethodImpl(MethodImplOptions.AggressiveInlining)]
28     set;
29 }
30
31 public Regex PathPattern
32 {
33     [MethodImpl(MethodImplOptions.AggressiveInlining)]
34     get;
35     [MethodImpl(MethodImplOptions.AggressiveInlining)]
36     set;
37 }
38
39 public int MaximumRepeatCount
40 {
41     [MethodImpl(MethodImplOptions.AggressiveInlining)]
42     get;
43     [MethodImpl(MethodImplOptions.AggressiveInlining)]
44     set;
45 }
46
47 [MethodImpl(MethodImplOptions.AggressiveInlining)]
48 public SubstitutionRule(Regex matchPattern, string substitutionPattern, int
    ↳ maximumRepeatCount, RegexOptions? matchPatternOptions, TimeSpan? matchTimeout)
49 {
50     MatchPattern = matchPattern;
51     SubstitutionPattern = substitutionPattern;
52     MaximumRepeatCount = maximumRepeatCount;
53     OverrideMatchPatternOptions(matchPatternOptions ?? matchPattern.Options,
    ↳ matchTimeout ?? matchPattern.MatchTimeout);
54 }
55
56 [MethodImpl(MethodImplOptions.AggressiveInlining)]
57 public SubstitutionRule(Regex matchPattern, string substitutionPattern, int
    ↳ maximumRepeatCount, bool useDefaultOptions) : this(matchPattern,
    ↳ substitutionPattern, maximumRepeatCount, useDefaultOptions ?
    ↳ DefaultMatchPatternRegexOptions : (RegexOptions?)null, useDefaultOptions ?
    ↳ DefaultMatchTimeout : (TimeSpan?)null) { }
58
59 [MethodImpl(MethodImplOptions.AggressiveInlining)]
60 public SubstitutionRule(Regex matchPattern, string substitutionPattern, int
    ↳ maximumRepeatCount) : this(matchPattern, substitutionPattern, maximumRepeatCount,
    ↳ true) { }
61
62 [MethodImpl(MethodImplOptions.AggressiveInlining)]
63 public SubstitutionRule(Regex matchPattern, string substitutionPattern) :
    ↳ this(matchPattern, substitutionPattern, 0) { }
64
65 [MethodImpl(MethodImplOptions.AggressiveInlining)]
66 public static implicit operator SubstitutionRule(ValueTuple<string, string> tuple) =>
    ↳ new SubstitutionRule(new Regex(tuple.Item1), tuple.Item2);
67
68 [MethodImpl(MethodImplOptions.AggressiveInlining)]
69 public static implicit operator SubstitutionRule(ValueTuple<Regex, string> tuple) => new
    ↳ SubstitutionRule(tuple.Item1, tuple.Item2);
70
71 [MethodImpl(MethodImplOptions.AggressiveInlining)]
72 public static implicit operator SubstitutionRule(ValueTuple<string, string, int> tuple)
    ↳ => new SubstitutionRule(new Regex(tuple.Item1), tuple.Item2, tuple.Item3);
73
74 [MethodImpl(MethodImplOptions.AggressiveInlining)]
75 public static implicit operator SubstitutionRule(ValueTuple<Regex, string, int> tuple)
    ↳ => new SubstitutionRule(tuple.Item1, tuple.Item2, tuple.Item3);
76
77 [MethodImpl(MethodImplOptions.AggressiveInlining)]
78 public void OverrideMatchPatternOptions(RegexOptions options, TimeSpan matchTimeout) =>
    ↳ MatchPattern = MatchPattern.OverrideOptions(options, matchTimeout);
79

```

```

80 [MethodImpl(MethodImplOptions.AggressiveInlining)]
81 public void OverridePathPatternOptions(RegexOptions options, TimeSpan matchTimeout) =>
    ↳ PathPattern = PathPattern.OverrideOptions(options, matchTimeout);
82
83 [MethodImpl(MethodImplOptions.AggressiveInlining)]
84 public override string ToString()
85 {
86     var sb = new StringBuilder();
87     sb.Append('');
88     sb.Append(MatchPattern.ToString());
89     sb.Append('');
90     sb.Append(" -> ");
91     sb.Append('');
92     sb.Append(SubstitutionPattern);
93     sb.Append('');
94     if (PathPattern != null)
95     {
96         sb.Append(" on files ");
97         sb.Append('');
98         sb.Append(PathPattern.ToString());
99         sb.Append('');
100     }
101     if (MaximumRepeatCount > 0)
102     {
103         if (MaximumRepeatCount >= int.MaxValue)
104         {
105             sb.Append(" repeated forever");
106         }
107         else
108         {
109             sb.Append(" repeated up to ");
110             sb.Append(MaximumRepeatCount);
111             sb.Append(" times");
112         }
113     }
114     return sb.ToString();
115 }
116 }
117 }

```

## 1.11 ./csharp/Platform.RegularExpressions.Transformer/TextTransformer.cs

```

1 using System.Collections.Generic;
2 using System.Runtime.CompilerServices;
3
4 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
5
6 namespace Platform.RegularExpressions.Transformer
7 {
8     public class TextTransformer : ITextTransformer
9     {
10         public IList<ISubstitutionRule> Rules
11         {
12             [MethodImpl(MethodImplOptions.AggressiveInlining)]
13             get;
14             [MethodImpl(MethodImplOptions.AggressiveInlining)]
15             private set;
16         }
17
18         [MethodImpl(MethodImplOptions.AggressiveInlining)]
19         public TextTransformer(IList<ISubstitutionRule> substitutionRules) => Rules =
            ↳ substitutionRules;
20
21         [MethodImpl(MethodImplOptions.AggressiveInlining)]
22         public string Transform(string source)
23         {
24             var current = source;
25             for (var i = 0; i < Rules.Count; i++)
26             {
27                 var rule = Rules[i];
28                 var matchPattern = rule.MatchPattern;
29                 var substitutionPattern = rule.SubstitutionPattern;
30                 var maximumRepeatCount = rule.MaximumRepeatCount;
31                 var replaceCount = 0;
32                 do
33                 {
34                     current = matchPattern.Replace(current, substitutionPattern);
35                     replaceCount++;
36                     if (maximumRepeatCount < int.MaxValue && replaceCount > maximumRepeatCount)
37                     {

```



```

38         break;
39     }
40 }
41 while (matchPattern.IsMatch(current));
42 }
43 return current;
44 }
45 }
46 }

```

## 1.12 ./csharp/Platform.RegularExpressions.Transformer/TransformerCLI.cs

```

1 using System.Runtime.CompilerServices;
2 using Platform.Collections.Arrays;
3
4 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
5
6 namespace Platform.RegularExpressions.Transformer
7 {
8     public class TransformerCLI
9     {
10         private readonly IFileTransformer _transformer;
11
12         [MethodImpl(MethodImplOptions.AggressiveInlining)]
13         public TransformerCLI(IFileTransformer transformer) => _transformer = transformer;
14
15         [MethodImpl(MethodImplOptions.AggressiveInlining)]
16         public void Run(string[] args)
17         {
18             var sourcePath = args.GetElementOrDefault(0);
19             var targetPath = args.GetElementOrDefault(1);
20             _transformer.Transform(sourcePath, targetPath);
21         }
22     }
23 }

```

## 1.13 ./csharp/Platform.RegularExpressions.Transformer.Tests/FileTransformerTests.cs

```

1 using System.IO;
2 using Xunit;
3
4 namespace Platform.RegularExpressions.Transformer.Tests
5 {
6     public class FileTransformerTests
7     {
8         [Fact]
9         public void FolderToFolderTransformationTest()
10        {
11            var tempPath = Path.GetTempPath();
12            var sourceFolderPath = Path.Combine(tempPath,
13                ↪ "FileTransformerTestsFolderToFolderTransformationTestSourceFolder");
14            var targetFolderPath = Path.Combine(tempPath,
15                ↪ "FileTransformerTestsFolderToFolderTransformationTestTargetFolder");
16
17            var baseTransformer = new TextTransformer(new SubstitutionRule[]
18            {
19                ("a", "b"),
20                ("b", "c")
21            });
22            var fileTransformer = new FileTransformer(baseTransformer, ".cs", ".cpp");
23
24            // Delete before creation (if previous test failed)
25            if (Directory.Exists(sourceFolderPath))
26            {
27                Directory.Delete(sourceFolderPath, true);
28            }
29            if (Directory.Exists(targetFolderPath))
30            {
31                Directory.Delete(targetFolderPath, true);
32            }
33
34            Directory.CreateDirectory(sourceFolderPath);
35            Directory.CreateDirectory(targetFolderPath);
36
37            File.WriteAllText(Path.Combine(sourceFolderPath, "a.cs"), "a a a");
38            var aFolderPath = Path.Combine(sourceFolderPath, "A");
39            Directory.CreateDirectory(aFolderPath);
40            Directory.CreateDirectory(Path.Combine(sourceFolderPath, "B"));
41            File.WriteAllText(Path.Combine(aFolderPath, "b.cs"), "b b b");
42            File.WriteAllText(Path.Combine(sourceFolderPath, "x.txt"), "should not be
43                ↪ translated");

```

```

41     fileTransformer.Transform(sourceFolderPath,
42         ↪ $"{targetFolderPath}{Path.DirectorySeparatorChar}");
43
44     var aCppFile = Path.Combine(targetFolderPath, "a.cpp");
45     Assert.True(File.Exists(aCppFile));
46     Assert.Equal("c c c", File.ReadAllText(aCppFile));
47     Assert.True(Directory.Exists(Path.Combine(targetFolderPath, "A")));
48     Assert.False(Directory.Exists(Path.Combine(targetFolderPath, "B")));
49     var bCppFile = Path.Combine(targetFolderPath, "A", "b.cpp");
50     Assert.True(File.Exists(bCppFile));
51     Assert.Equal("c c c", File.ReadAllText(bCppFile));
52     Assert.False(File.Exists(Path.Combine(targetFolderPath, "x.txt")));
53     Assert.False(File.Exists(Path.Combine(targetFolderPath, "x.cpp")));
54
55     Directory.Delete(sourceFolderPath, true);
56     Directory.Delete(targetFolderPath, true);
57 }
58 }
59 }

```

#### 1.14 ./csharp/Platform.RegularExpressions.Transformer.Tests/MarkovAlgorithmsTests.cs

```

1  using System.Text.RegularExpressions;
2  using Xunit;
3
4  namespace Platform.RegularExpressions.Transformer.Tests
5  {
6      public class MarkovAlgorithmsTests
7      {
8          /// <remarks>
9          /// Example is from https://en.wikipedia.org/wiki/Markov_algorithm.
10         /// </remarks>
11         [Fact]
12         public void BinaryToUnaryNumbersTest()
13         {
14             var rules = new SubstitutionRule[]
15             {
16                 ("1", "0|", int.MaxValue), // "1" -> "0|" repeated forever
17                 // | symbol should be escaped for regular expression pattern, but not in the
18                 ↪ substitution pattern
19                 (@"\|0", "0||", int.MaxValue), // "\|0" -> "0||" repeated forever
20                 ("0", "", int.MaxValue), // "0" -> "" repeated forever
21             };
22             var transformer = new TextTransformer(rules);
23             var input = "101";
24             var expectedOutput = "|||||";
25             var output = transformer.Transform(input);
26             Assert.Equal(expectedOutput, output);
27         }
28     }

```

#### 1.15 ./csharp/Platform.RegularExpressions.Transformer.Tests/SubstitutionRuleTests.cs

```

1  using System.Text.RegularExpressions;
2  using Xunit;
3
4  namespace Platform.RegularExpressions.Transformer.Tests
5  {
6      public class SubstitutionRuleTests
7      {
8          [Fact]
9          public void OptionsOverrideTest()
10         {
11             SubstitutionRule rule = (new Regex(@"^s*?\#pragma[\sa-zA-Z0-9\./]+$"), "", 0);
12             Assert.Equal(RegexOptions.Compiled | RegexOptions.Multiline,
13                 ↪ rule.MatchPattern.Options);
14         }
15     }

```

#### 1.16 ./csharp/Platform.RegularExpressions.Transformer.Tests/TextTransformerTests.cs

```

1  using System.IO;
2  using System.Text;
3  using System.Text.RegularExpressions;
4  using Xunit;
5
6  namespace Platform.RegularExpressions.Transformer.Tests
7  {

```

```

8 public class TextTransformerTests
9 {
10     [Fact]
11     public void DebugOutputTest()
12     {
13         var sourceText = "aaaa";
14         var firstStepReferenceText = "bbbb";
15         var secondStepReferenceText = "cccc";
16
17         var transformer = new TextTransformer(new SubstitutionRule[] {
18             (new Regex("a"), "b"),
19             (new Regex("b"), "c")
20         });
21
22         var steps = transformer.GetSteps(sourceText);
23
24         Assert.Equal(2, steps.Count);
25         Assert.Equal(firstStepReferenceText, steps[0]);
26         Assert.Equal(secondStepReferenceText, steps[1]);
27     }
28
29     [Fact]
30     public void DebugFilesOutputTest()
31     {
32         var sourceText = "aaaa";
33         var firstStepReferenceText = "bbbb";
34         var secondStepReferenceText = "cccc";
35
36         var transformer = new TextTransformer(new SubstitutionRule[] {
37             (new Regex("a"), "b"),
38             (new Regex("b"), "c")
39         });
40
41         var targetFilename = Path.GetTempFileName();
42
43         transformer.WriteStepsToFiles(sourceText, $"{targetFilename}.txt",
44             ↪ skipFilesWithNoChanges: false);
45
46         var firstStepReferenceFilename = $"{targetFilename}.0.txt";
47         var secondStepReferenceFilename = $"{targetFilename}.1.txt";
48
49         Assert.True(File.Exists(firstStepReferenceFilename));
50         Assert.True(File.Exists(secondStepReferenceFilename));
51
52         Assert.Equal(firstStepReferenceText, File.ReadAllText(firstStepReferenceFilename,
53             ↪ Encoding.UTF8));
54         Assert.Equal(secondStepReferenceText, File.ReadAllText(secondStepReferenceFilename,
55             ↪ Encoding.UTF8));
56
57         File.Delete(firstStepReferenceFilename);
58         File.Delete(secondStepReferenceFilename);
59     }
60
61     [Fact]
62     public void FilesWithNoChangesSkippedTest()
63     {
64         var sourceText = "aaaa";
65         var firstStepReferenceText = "bbbb";
66         var thirdStepReferenceText = "cccc";
67
68         var transformer = new TextTransformer(new SubstitutionRule[] {
69             (new Regex("a"), "b"),
70             (new Regex("x"), "y"),
71             (new Regex("b"), "c")
72         });
73
74         var targetFilename = Path.GetTempFileName();
75
76         transformer.WriteStepsToFiles(sourceText, $"{targetFilename}.txt",
77             ↪ skipFilesWithNoChanges: true);
78
79         var firstStepReferenceFilename = $"{targetFilename}.0.txt";
80         var secondStepReferenceFilename = $"{targetFilename}.1.txt";
81         var thirdStepReferenceFilename = $"{targetFilename}.2.txt";
82
83         Assert.True(File.Exists(firstStepReferenceFilename));
84         Assert.False(File.Exists(secondStepReferenceFilename));
85         Assert.True(File.Exists(thirdStepReferenceFilename));

```

```
83     Assert.Equal(firstStepReferenceText, File.ReadAllText(firstStepReferenceFilename,
84         ↪ Encoding.UTF8));
85     Assert.Equal(thirdStepReferenceText, File.ReadAllText(thirdStepReferenceFilename,
86         ↪ Encoding.UTF8));
87
88     File.Delete(firstStepReferenceFilename);
89     File.Delete(secondStepReferenceFilename);
90     File.Delete(thirdStepReferenceFilename);
91 }
```

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