

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         #if NETSTANDARD2_1
98             var relativePath = Path.GetRelativePath(sourcePath, directories[i]);
99         #else
100             var relativePath = directories[i].Replace(sourcePath.TrimEnd('\\') + "\\ ", "");
101         #endif
102         var newTargetPath = Path.Combine(targetPath, relativePath);
103         TransformFolder(directories[i], newTargetPath);
104     }
105     var files = Directory.GetFiles(sourcePath);
106     Parallel.For(0, files.Length, i =>
107     {
108         var file = files[i];
109         if (FileExtensionMatches(file, SourceFileExtension))
110         {
111             TransformFile(file, GetTargetFileName(file, targetPath));
112         }
113     });
114 }
115
116 [MethodImpl(MethodImplOptions.AggressiveInlining)]
117 protected virtual void TransformFile(string sourcePath, string targetPath)
118 {
119     if (File.Exists(targetPath))
120     {
121         var applicationPath = Process.GetCurrentProcess().MainModule.FileName;
122         var targetFileLastUpdateDateTime = new FileInfo(targetPath).LastWriteTimeUtc;
123         if (new FileInfo(sourcePath).LastWriteTimeUtc < targetFileLastUpdateDateTime &&
124             ↪ new FileInfo(applicationPath).LastWriteTimeUtc <
125             ↪ targetFileLastUpdateDateTime)
126         {
127             return;
128         }
129     }
130     var sourceText = File.ReadAllText(sourcePath, Encoding.UTF8);
131     var targetText = _textTransformer.Transform(sourceText);
132     File.WriteAllText(targetPath, targetText, Encoding.UTF8);
133 }
134
135 [MethodImpl(MethodImplOptions.AggressiveInlining)]
136 protected string GetTargetFileName(string sourcePath, string targetDirectory) =>
137     ↪ Path.ChangeExtension(Path.Combine(targetDirectory, Path.GetFileName(sourcePath)),
138     ↪ TargetFileExtension);
139
140 [MethodImpl(MethodImplOptions.AggressiveInlining)]
141 private static long CountFilesRecursively(string path, string extension)
142 {
143     var files = Directory.GetFiles(path);
144     var directories = Directory.GetDirectories(path);
145     var result = 0L;
146     for (var i = 0; i < directories.Length; i++)
147     {
148         result += CountFilesRecursively(directories[i], extension);
149     }
150     for (var i = 0; i < files.Length; i++)
151     {
152         if (FileExtensionMatches(files[i], extension))
153         {
154             result++;
155         }
156     }
157 }

```

```

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

```

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 }

```

```
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;
2 using System.Collections.Generic;
3 using System.Linq;
4 using System.Runtime.CompilerServices;
5 using Platform.Collections;
6
7 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
8
9 namespace Platform.RegularExpressions.Transformer
10 {
11     public static class ITextTransformerExtensions
12     {
13         [MethodImpl(MethodImplOptions.AggressiveInlining)]
14         public static IList<ITextTransformer> GenerateTransformersForEachRule(this
15             ↪ ITextTransformer transformer)
16         {
17             var transformers = new List<ITextTransformer>();
18             for (int i = 1; i <= transformer.Rules.Count; i++)
19             {
20                 transformers.Add(new TextTransformer(transformer.Rules.Take(i).ToList()));
21             }
22             return transformers;
23         }
24
25         [MethodImpl(MethodImplOptions.AggressiveInlining)]
26         public static IList<string> GetSteps(this ITextTransformer transformer, string
27             ↪ sourceText)
28         {
29             if (transformer != null && !transformer.Rules.IsNullOrEmpty())
30             {
31                 var steps = new List<string>();
32                 var steppedTransformer = new TextSteppedTransformer(transformer.Rules,
33                     ↪ sourceText);
```

```

31         while (steppedTransformer.Next())
32         {
33             steps.Add(steppedTransformer.Text);
34         }
35         return steps;
36     }
37     else
38     {
39         return Array.Empty<string>();
40     }
41 }
42
43 [MethodImpl(MethodImplOptions.AggressiveInlining)]
44 public static void WriteStepsToFiles(this ITextTransformer transformer, string
    ↪ sourceText, string targetPath, bool skipFilesWithNoChanges)
45 {
46     if(transformer != null && !transformer.Rules.IsNullOrEmpty())
47     {
48         targetPath.GetPathParts(out var directoryName, out var targetFilename, out var
    ↪ targetExtension);
49         var lastText = "";
50         var steppedTransformer = new TextSteppedTransformer(transformer.Rules,
    ↪ sourceText);
51         while (steppedTransformer.Next())
52         {
53             var newText = steppedTransformer.Text;
54             if (!(skipFilesWithNoChanges && string.Equals(lastText, newText)))
55             {
56                 lastText = newText;
57                 newText.WriteStepToFile(directoryName, targetFilename, targetExtension,
    ↪ steppedTransformer.Current);
58             }
59         }
60     }
61 }
62 }
63 }

```

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

```

1  using System;
2  using System.Collections.Generic;
3  using System.Runtime.CompilerServices;
4  using Platform.Collections;
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 IList<string> TransformWithAll(this IList<ITextTransformer> transformers,
    ↪ string source)
14         {
15             if (!transformers.IsNullOrEmpty())
16             {
17                 var steps = new List<string>();
18                 for (int i = 0; i < transformers.Count; i++)
19                 {
20                     steps.Add(transformers[i].Transform(source));
21                 }
22                 return steps;
23             }
24             else
25             {
26                 return Array.Empty<string>();
27             }
28         }
29
30         [MethodImpl(MethodImplOptions.AggressiveInlining)]
31         public static void TransformWithAllToFiles(this IList<ITextTransformer> transformers,
    ↪ string sourceText, string targetPath, bool skipFilesWithNoChanges)
32         {
33             if (!transformers.IsNullOrEmpty())
34             {
35                 targetPath.GetPathParts(out var directoryName, out var targetFilename, out var
    ↪ targetExtension);
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                 transformationOutput.WriteStepToFile(directoryName, targetFilename,
45                     ↪ targetExtension, i);
46             }
47         }
48     }
49 }

```

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             {

```

```

16         return null;
17     }
18     return new Regex(regex.ToString(), options, matchTimeout);
19 }
20 }
21 }

```

1.10 ./csharp/Platform.RegularExpressions.Transformer/StringExtensions.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     internal static class StringExtensions
10     {
11         [MethodImpl(MethodImplOptions.AggressiveInlining)]
12         public static void GetPathParts(this string path, out string directoryName, out string
            ↳ targetFilename, out string targetExtension) => (directoryName, targetFilename,
            ↳ targetExtension) = (Path.GetDirectoryName(path),
            ↳ Path.GetFileNameWithoutExtension(path), Path.GetExtension(path));
13
14         [MethodImpl(MethodImplOptions.AggressiveInlining)]
15         public static void WriteStepToFile(this string text, string directoryName, string
            ↳ targetFilename, string targetExtension, int currentStep) =>
            ↳ File.WriteAllText(Path.Combine(directoryName,
            ↳ $"{targetFilename}.{currentStep}{targetExtension}"), text, Encoding.UTF8);
16     }
17 }

```

1.11 ./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 =
            ↳ RegexOptions.Compiled | RegexOptions.Multiline;
14
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 }

```

1.12 ./csharp/Platform.RegularExpressions.Transformer/TextSteppedTransformer.cs

```

1 using System;
2 using System.Collections.Generic;
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 class TextSteppedTransformer : ITransformer
10     {
11         public IList<ISubstitutionRule> Rules
12         {
13             [MethodImpl(MethodImplOptions.AggressiveInlining)]
14             get;
15             [MethodImpl(MethodImplOptions.AggressiveInlining)]
16             set;
17         }
18
19         public string Text
20         {
21             [MethodImpl(MethodImplOptions.AggressiveInlining)]
22             get;
23             [MethodImpl(MethodImplOptions.AggressiveInlining)]
24             set;
25         }
26
27         public int Current
28         {
29             [MethodImpl(MethodImplOptions.AggressiveInlining)]
30             get;
31             [MethodImpl(MethodImplOptions.AggressiveInlining)]
32             set;
33         }
34
35         [MethodImpl(MethodImplOptions.AggressiveInlining)]
36         public TextSteppedTransformer(IList<ISubstitutionRule> rules, string text, int current)
37             => Reset(rules, text, current);
38
39         [MethodImpl(MethodImplOptions.AggressiveInlining)]
40         public TextSteppedTransformer(IList<ISubstitutionRule> rules, string text) =>
41             => Reset(rules, text);
42
43         [MethodImpl(MethodImplOptions.AggressiveInlining)]
44         public TextSteppedTransformer(IList<ISubstitutionRule> rules) => Reset(rules);
45
46         [MethodImpl(MethodImplOptions.AggressiveInlining)]
47         public TextSteppedTransformer() => Reset();
48
49         [MethodImpl(MethodImplOptions.AggressiveInlining)]
50         public void Reset(IList<ISubstitutionRule> rules, string text, int current)
51         {
52             Rules = rules;
53             Text = text;
54             Current = current;
55         }
56
57         [MethodImpl(MethodImplOptions.AggressiveInlining)]
58         public void Reset(IList<ISubstitutionRule> rules, string text) => Reset(rules, text, -1);
59
60         [MethodImpl(MethodImplOptions.AggressiveInlining)]
61         public void Reset(IList<ISubstitutionRule> rules) => Reset(rules, "", -1);
62
63         [MethodImpl(MethodImplOptions.AggressiveInlining)]
64         public void Reset(string text) => Reset(Rules, text, -1);
65
66         [MethodImpl(MethodImplOptions.AggressiveInlining)]
67         public void Reset() => Reset(Array.Empty<ISubstitutionRule>(), "", -1);
68
69         [MethodImpl(MethodImplOptions.AggressiveInlining)]
70         public bool Next()

```

```

69     {
70         var current = Current + 1;
71         if (current >= Rules.Count)
72         {
73             return false;
74         }
75         var rule = Rules[current];
76         var matchPattern = rule.MatchPattern;
77         var substitutionPattern = rule.SubstitutionPattern;
78         var maximumRepeatCount = rule.MaximumRepeatCount;
79         var replaceCount = 0;
80         var text = Text;
81         do
82         {
83             text = matchPattern.Replace(text, substitutionPattern);
84             replaceCount++;
85         }
86         while ((maximumRepeatCount == int.MaxValue || replaceCount <= maximumRepeatCount) &&
87             ↪ matchPattern.IsMatch(text));
88         Text = text;
89         Current = current;
90         return true;
91     }
92 }

```

1.13 ./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)
20         {
21             Rules = substitutionRules;
22         }
23
24         [MethodImpl(MethodImplOptions.AggressiveInlining)]
25         public string Transform(string source)
26         {
27             var baseTrasformer = new TextSteppedTransformer(Rules);
28             baseTrasformer.Reset(source);
29             while (baseTrasformer.Next());
30             return baseTrasformer.Text;
31         }
32     }
33 }

```

1.14 ./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 }

```

1.15 ./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");
44
45             fileTransformer.Transform(sourceFolderPath,
46                 ↪ $"{targetFolderPath}{Path.DirectorySeparatorChar}");
47
48             var aCppFile = Path.Combine(targetFolderPath, "a.cpp");
49             Assert.True(File.Exists(aCppFile));
50             Assert.Equal("c c c", File.ReadAllText(aCppFile));
51             Assert.True(Directory.Exists(Path.Combine(targetFolderPath, "A")));
52             Assert.False(Directory.Exists(Path.Combine(targetFolderPath, "B")));
53             var bCppFile = Path.Combine(targetFolderPath, "A", "b.cpp");
54             Assert.True(File.Exists(bCppFile));
55             Assert.Equal("c c c", File.ReadAllText(bCppFile));
56             Assert.False(File.Exists(Path.Combine(targetFolderPath, "x.txt")));
57             Assert.False(File.Exists(Path.Combine(targetFolderPath, "x.cpp")));
58
59             Directory.Delete(sourceFolderPath, true);
60             Directory.Delete(targetFolderPath, true);
61         }
62     }
63 }

```

1.16 ./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", "", int.MaxValue), // "0" -> "" repeated forever
20        };
21        var transformer = new TextTransformer(rules);
22        var input = "101";
23        var expectedOutput = "||||";
24        var output = transformer.Transform(input);
25        Assert.Equal(expectedOutput, output);
26    }
27 }
28 }

```

1.17 ./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    }
16 }

```

1.18 ./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));
86
87     Assert.Equal(firstStepReferenceText, File.ReadAllText(firstStepReferenceFilename,
88         ↪ Encoding.UTF8));
89     Assert.Equal(thirdStepReferenceText, File.ReadAllText(thirdStepReferenceFilename,
90         ↪ Encoding.UTF8));
91
92     File.Delete(firstStepReferenceFilename);
93     File.Delete(secondStepReferenceFilename);
94     File.Delete(thirdStepReferenceFilename);
95 }
96
97 [Fact]
98 public void DebugOutputUsingTransformersGenerationTest()
99 {
100     var sourceText = "aaaa";
101     var firstStepReferenceText = "bbbb";
102     var secondStepReferenceText = "cccc";
103
104     var transformer = new TextTransformer(new SubstitutionRule[] {
105         (new Regex("a"), "b"),
106         (new Regex("b"), "c")
107     });
108
109     var steps =
110         ↪ transformer.GenerateTransformersForEachRule().TransformWithAll(sourceText);
111
112     Assert.Equal(2, steps.Count);
113     Assert.Equal(firstStepReferenceText, steps[0]);
114     Assert.Equal(secondStepReferenceText, steps[1]);
115 }

```

```

109 [Fact]
110 public void DebugFilesOutputUsingTransformersGenerationTest()
111 {
112     var sourceText = "aaaa";
113     var firstStepReferenceText = "bbbb";
114     var secondStepReferenceText = "cccc";
115
116     var transformer = new TextTransformer(new SubstitutionRule[] {
117         (new Regex("a"), "b"),
118         (new Regex("b"), "c")
119     });
120
121     var targetFilename = Path.GetTempFileName();
122
123     transformer.GenerateTransformersForEachRule().TransformWithAllToFiles(sourceText,
124         ↪ $"{targetFilename}.txt", skipFilesWithNoChanges: false);
125
126     var firstStepReferenceFilename = $"{targetFilename}.0.txt";
127     var secondStepReferenceFilename = $"{targetFilename}.1.txt";
128
129     Assert.True(File.Exists(firstStepReferenceFilename));
130     Assert.True(File.Exists(secondStepReferenceFilename));
131
132     Assert.Equal(firstStepReferenceText, File.ReadAllText(firstStepReferenceFilename,
133         ↪ Encoding.UTF8));
134     Assert.Equal(secondStepReferenceText, File.ReadAllText(secondStepReferenceFilename,
135         ↪ Encoding.UTF8));
136
137     File.Delete(firstStepReferenceFilename);
138     File.Delete(secondStepReferenceFilename);
139 }
140 [Fact]
141 public void FilesWithNoChangesSkippedWhenUsingTransformersGenerationTest()
142 {
143     var sourceText = "aaaa";
144     var firstStepReferenceText = "bbbb";
145     var thirdStepReferenceText = "cccc";
146
147     var transformer = new TextTransformer(new SubstitutionRule[] {
148         (new Regex("a"), "b"),
149         (new Regex("x"), "y"),
150         (new Regex("b"), "c")
151     });
152
153     var targetFilename = Path.GetTempFileName();
154
155     transformer.GenerateTransformersForEachRule().TransformWithAllToFiles(sourceText,
156         ↪ $"{targetFilename}.txt", skipFilesWithNoChanges: true);
157
158     var firstStepReferenceFilename = $"{targetFilename}.0.txt";
159     var secondStepReferenceFilename = $"{targetFilename}.1.txt";
160     var thirdStepReferenceFilename = $"{targetFilename}.2.txt";
161
162     Assert.True(File.Exists(firstStepReferenceFilename));
163     Assert.False(File.Exists(secondStepReferenceFilename));
164     Assert.True(File.Exists(thirdStepReferenceFilename));
165
166     Assert.Equal(firstStepReferenceText, File.ReadAllText(firstStepReferenceFilename,
167         ↪ Encoding.UTF8));
168     Assert.Equal(thirdStepReferenceText, File.ReadAllText(thirdStepReferenceFilename,
169         ↪ Encoding.UTF8));
170
171     File.Delete(firstStepReferenceFilename);
172     File.Delete(secondStepReferenceFilename);
173     File.Delete(thirdStepReferenceFilename);
174 }
175 }

```

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