

# LinksPlatform's Platform.Communication.Protocol.Lino Class Library

## 1.1 ./Platform.Communication.Protocol.Lino/IListExtensions.cs

```
1 using Platform.Collections;
2 using System;
3 using System.Collections.Generic;
4 using System.Linq;
5 using System.Runtime.CompilerServices;
6
7 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
8
9 namespace Platform.Communication.Protocol.Lino
10 {
11     public static class IListExtensions
12     {
13         [MethodImpl(MethodImplOptions.AggressiveInlining)]
14         public static string Format(this IList<Link> links) => string.Join(Environment.NewLine,
15             ↪ links.Select(l => l.ToString()));
16
17         [MethodImpl(MethodImplOptions.AggressiveInlining)]
18         public static string Format(this IList<Link> links, bool lessParentheses)
19         {
20             if (lessParentheses == false)
21             {
22                 return links.Format();
23             }
24             else
25             {
26                 return string.Join(Environment.NewLine, links.Select(l =>
27                     ↪ l.ToString().TrimSingle('(').TrimSingle(')')));
28             }
29         }
30     }
31 }
```

## 1.2 ./Platform.Communication.Protocol.Lino/Link.cs

```
1 using System;
2 using System.Collections.Generic;
3 using System.Runtime.CompilerServices;
4 using System.Text;
5 using Platform.Collections;
6 using Platform.Collections.Lists;
7
8 #pragma warning disable CS1591 // Missing XML comment for publicly visible type or member
9
10 namespace Platform.Communication.Protocol.Lino
11 {
12     public struct Link : IEquatable<Link>
13     {
14         public string Id
15         {
16             [MethodImpl(MethodImplOptions.AggressiveInlining)]
17             get;
18             [MethodImpl(MethodImplOptions.AggressiveInlining)]
19             set;
20         }
21
22         public IList<Link> Values
23         {
24             [MethodImpl(MethodImplOptions.AggressiveInlining)]
25             get;
26             [MethodImpl(MethodImplOptions.AggressiveInlining)]
27             set;
28         }
29
30         [MethodImpl(MethodImplOptions.AggressiveInlining)]
31         public Link(string id, IList<Link> values) => (Id, Values) = (id, values);
32
33         [MethodImpl(MethodImplOptions.AggressiveInlining)]
34         public Link(IList<Link> values) : this(null, values) { }
35
36         [MethodImpl(MethodImplOptions.AggressiveInlining)]
37         public Link(string id) : this(id, null) { }
38
39         [MethodImpl(MethodImplOptions.AggressiveInlining)]
40         public override string ToString() => Values.IsNullOrEmpty() ? $"{Id}" :
41             ↪ GetLinkValuesString();
42
43         [MethodImpl(MethodImplOptions.AggressiveInlining)]
44         private string GetLinkValuesString() => Id == null ? $"{GetValuesString()}" :
45             ↪ $"{Id}: {GetValuesString()}";
46     }
47 }
```

```

44 [MethodImpl(MethodImplOptions.AggressiveInlining)]
45 public string GetValuesString()
46 {
47     var sb = new StringBuilder();
48     for (int i = 0; i < Values.Count; i++)
49     {
50         if (i > 0)
51         {
52             sb.Append(' ');
53         }
54         sb.Append(GetValueString(Values[i]));
55     }
56     return sb.ToString();
57 }
58
59 [MethodImpl(MethodImplOptions.AggressiveInlining)]
60 public static string GetValueString(Link value) => value.ToLinkOrIdString();
61
62 [MethodImpl(MethodImplOptions.AggressiveInlining)]
63 public string ToLinkOrIdString() => Values.IsNullOrEmpty() ? Id : ToString();
64
65 [MethodImpl(MethodImplOptions.AggressiveInlining)]
66 public static implicit operator Link(string value) => new Link(value);
67
68 [MethodImpl(MethodImplOptions.AggressiveInlining)]
69 public static implicit operator Link(ValueTuple<string, IList<Link>> value) => new
70     ↪ Link(value.Item1, value.Item2);
71
72 [MethodImpl(MethodImplOptions.AggressiveInlining)]
73 public override bool Equals(object obj) => obj is Link link ? Equals(link) : false;
74
75 [MethodImpl(MethodImplOptions.AggressiveInlining)]
76 public override int GetHashCode() => (Id, Values.GenerateHashCode()).GetHashCode();
77
78 [MethodImpl(MethodImplOptions.AggressiveInlining)]
79 public bool Equals(Link other) => Id == other.Id && Values.EqualTo(other.Values);
80
81 [MethodImpl(MethodImplOptions.AggressiveInlining)]
82 public static bool operator ==(Link left, Link right) => left.Equals(right);
83
84 [MethodImpl(MethodImplOptions.AggressiveInlining)]
85 public static bool operator !=(Link left, Link right) => !(left == right);
86 }
87 }

```

### 1.3 ./Platform.Communication.Protocol.Lino.Tests/ParserTests.cs

```

1 using Xunit;
2
3 namespace Platform.Communication.Protocol.Lino.Tests
4 {
5     public static class ParserTests
6     {
7         [Fact]
8         public static void ParseAndStringifyTest()
9         {
10             var source = @"(papa (lovesMama: loves mama))
11 (son lovesMama)
12 (daughter lovesMama)
13 (all (love mama))";
14             var parser = new Parser();
15             var links = parser.Parse(source);
16             var target = links.Format();
17             Assert.Equal(source, target);
18         }
19
20         [Fact]
21         public static void ParseAndStringifyWithLessParenthesesTest()
22         {
23             var source = @"lovesMama: loves mama
24 papa lovesMama
25 son lovesMama
26 daughter lovesMama
27 all (love mama)";
28             var parser = new Parser();
29             var links = parser.Parse(source);
30             var target = links.Format(lessParentheses: true);
31             Assert.Equal(source, target);
32         }
33     }
34 }

```

```
33
34     [Fact]
35     public static void SignificantWhitespaceTest()
36     {
37         var source = @"
38 users
39     user1
40         id
41             43
42         name
43             first
44                 John
45             last
46                 Williams
47         location
48             New York
49         age
50             23
51     user2
52         id
53             56
54         name
55             first
56                 Igor
57             middle
58                 Petrovich
59             last
60                 Ivanov
61         location
62             Moscow
63         age
64             20";
65
66
67     }
68 }
69
70 }
```

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