

```
1 using LINQ.Models;
2 using System;
3 using System.Collections.Generic;
4 using System.Linq;
5 using System.Xml.Linq;
6
7 namespace LINQ
8 {
9     public class DataLoader
10     {
11         private static List<Product> _productList;
12
13         private static List<Customer> _customerList;
14
15         public static List<Product> LoadProducts()
16         {
17             if (_productList == null)
18             {
19                 _productList =
20                     new List<Product>
21                     {
22 #region "Lots of instantiation"
23                     new Product
24                     {
25                         ProductID = 1,
26                         ProductName = "Chai",
27                         Category = "Beverages",
28                         UnitPrice = 18.0000M,
29                         UnitsInStock = 39
30                     },
31                     new Product
32                     {
33                         ProductID = 2,
34                         ProductName = "Chang",
35                         Category = "Beverages",
36                         UnitPrice = 19.0000M,
37                         UnitsInStock = 17
38                     },
39                     new Product
40                     {
41                         ProductID = 3,
42                         ProductName = "Aniseed Syrup",
43                         Category = "Condiments",
44                         UnitPrice = 10.0000M,
45                         UnitsInStock = 13
46                     },
47                     new Product
48                     {
49                         ProductID = 4,
50                         ProductName = "Chef Anton's Cajun Seasoning",
51                         Category = "Condiments",
52                         UnitPrice = 22.0000M,
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53         UnitsInStock = 53
54     },
55     new Product
56     {
57         ProductID = 5,
58         ProductName = "Chef Anton's Gumbo Mix",
59         Category = "Condiments",
60         UnitPrice = 21.3500M,
61         UnitsInStock = 0
62     },
63     new Product
64     {
65         ProductID = 6,
66         ProductName = "Grandma's Boysenberry Spread",
67         Category = "Condiments",
68         UnitPrice = 25.0000M,
69         UnitsInStock = 120
70     },
71     new Product
72     {
73         ProductID = 7,
74         ProductName = "Uncle Bob's Organic Dried Pears",
75         Category = "Produce",
76         UnitPrice = 30.0000M,
77         UnitsInStock = 15
78     },
79     new Product
80     {
81         ProductID = 8,
82         ProductName = "Northwoods Cranberry Sauce",
83         Category = "Condiments",
84         UnitPrice = 40.0000M,
85         UnitsInStock = 6
86     },
87     new Product
88     {
89         ProductID = 9,
90         ProductName = "Mishi Kobe Niku",
91         Category = "Meat/Poultry",
92         UnitPrice = 97.0000M,
93         UnitsInStock = 29
94     },
95     new Product
96     {
97         ProductID = 10,
98         ProductName = "Ikura",
99         Category = "Seafood",
100        UnitPrice = 31.0000M,
101        UnitsInStock = 31
102    },
103    new Product
104    {
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```
105         ProductID = 11,
106         ProductName = "Queso Cabrales",
107         Category = "Dairy Products",
108         UnitPrice = 21.0000M,
109         UnitsInStock = 22
110     },
111     new Product
112     {
113         ProductID = 12,
114         ProductName = "Queso Manchego La Pastora",
115         Category = "Dairy Products",
116         UnitPrice = 38.0000M,
117         UnitsInStock = 86
118     },
119     new Product
120     {
121         ProductID = 13,
122         ProductName = "Konbu",
123         Category = "Seafood",
124         UnitPrice = 6.0000M,
125         UnitsInStock = 24
126     },
127     new Product
128     {
129         ProductID = 14,
130         ProductName = "Tofu",
131         Category = "Produce",
132         UnitPrice = 23.2500M,
133         UnitsInStock = 35
134     },
135     new Product
136     {
137         ProductID = 15,
138         ProductName = "Genen Shouyu",
139         Category = "Condiments",
140         UnitPrice = 15.5000M,
141         UnitsInStock = 39
142     },
143     new Product
144     {
145         ProductID = 16,
146         ProductName = "Pavlova",
147         Category = "Confections",
148         UnitPrice = 17.4500M,
149         UnitsInStock = 29
150     },
151     new Product
152     {
153         ProductID = 17,
154         ProductName = "Alice Mutton",
155         Category = "Meat/Poultry",
156         UnitPrice = 39.0000M,
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157         UnitsInStock = 0
158     },
159     new Product
160     {
161         ProductID = 18,
162         ProductName = "Carnarvon Tigers",
163         Category = "Seafood",
164         UnitPrice = 62.5000M,
165         UnitsInStock = 42
166     },
167     new Product
168     {
169         ProductID = 19,
170         ProductName = "Teatime Chocolate Biscuits",
171         Category = "Confections",
172         UnitPrice = 9.2000M,
173         UnitsInStock = 25
174     },
175     new Product
176     {
177         ProductID = 20,
178         ProductName = "Sir Rodney's Marmalade",
179         Category = "Confections",
180         UnitPrice = 81.0000M,
181         UnitsInStock = 40
182     },
183     new Product
184     {
185         ProductID = 21,
186         ProductName = "Sir Rodney's Scones",
187         Category = "Confections",
188         UnitPrice = 10.0000M,
189         UnitsInStock = 3
190     },
191     new Product
192     {
193         ProductID = 22,
194         ProductName = "Gustaf's Knäckebröd",
195         Category = "Grains/Cereals",
196         UnitPrice = 21.0000M,
197         UnitsInStock = 104
198     },
199     new Product
200     {
201         ProductID = 23,
202         ProductName = "Tunnbröd",
203         Category = "Grains/Cereals",
204         UnitPrice = 9.0000M,
205         UnitsInStock = 61
206     },
207     new Product
208     {
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209         ProductID = 24,
210         ProductName = "Guaraná Fantástica",
211         Category = "Beverages",
212         UnitPrice = 4.5000M,
213         UnitsInStock = 20
214     },
215     new Product
216     {
217         ProductID = 25,
218         ProductName = "NuNuCa Nuß-Nougat-Creme",
219         Category = "Confections",
220         UnitPrice = 14.0000M,
221         UnitsInStock = 76
222     },
223     new Product
224     {
225         ProductID = 26,
226         ProductName = "Gumbär Gummibärchen",
227         Category = "Confections",
228         UnitPrice = 31.2300M,
229         UnitsInStock = 15
230     },
231     new Product
232     {
233         ProductID = 27,
234         ProductName = "Schoggi Schokolade",
235         Category = "Confections",
236         UnitPrice = 43.9000M,
237         UnitsInStock = 49
238     },
239     new Product
240     {
241         ProductID = 28,
242         ProductName = "Rössle Sauerkraut",
243         Category = "Produce",
244         UnitPrice = 45.6000M,
245         UnitsInStock = 26
246     },
247     new Product
248     {
249         ProductID = 29,
250         ProductName = "Thüringer Rostbratwurst",
251         Category = "Meat/Poultry",
252         UnitPrice = 123.7900M,
253         UnitsInStock = 0
254     },
255     new Product
256     {
257         ProductID = 30,
258         ProductName = "Nord-Ost Matjeshering",
259         Category = "Seafood",
260         UnitPrice = 25.8900M,
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261         UnitsInStock = 10
262     },
263     new Product
264     {
265         ProductID = 31,
266         ProductName = "Gorgonzola Telino",
267         Category = "Dairy Products",
268         UnitPrice = 12.5000M,
269         UnitsInStock = 0
270     },
271     new Product
272     {
273         ProductID = 32,
274         ProductName = "Mascarpone Fabioli",
275         Category = "Dairy Products",
276         UnitPrice = 32.0000M,
277         UnitsInStock = 9
278     },
279     new Product
280     {
281         ProductID = 33,
282         ProductName = "Geitost",
283         Category = "Dairy Products",
284         UnitPrice = 2.5000M,
285         UnitsInStock = 112
286     },
287     new Product
288     {
289         ProductID = 34,
290         ProductName = "Sasquatch Ale",
291         Category = "Beverages",
292         UnitPrice = 14.0000M,
293         UnitsInStock = 111
294     },
295     new Product
296     {
297         ProductID = 35,
298         ProductName = "Steeleye Stout",
299         Category = "Beverages",
300         UnitPrice = 18.0000M,
301         UnitsInStock = 20
302     },
303     new Product
304     {
305         ProductID = 36,
306         ProductName = "Inlagd Sill",
307         Category = "Seafood",
308         UnitPrice = 19.0000M,
309         UnitsInStock = 112
310     },
311     new Product
312     {
```

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313         ProductID = 37,
314         ProductName = "Gravad lax",
315         Category = "Seafood",
316         UnitPrice = 26.0000M,
317         UnitsInStock = 11
318     },
319     new Product
320     {
321         ProductID = 38,
322         ProductName = "Côte de Blaye",
323         Category = "Beverages",
324         UnitPrice = 263.5000M,
325         UnitsInStock = 17
326     },
327     new Product
328     {
329         ProductID = 39,
330         ProductName = "Chartreuse verte",
331         Category = "Beverages",
332         UnitPrice = 18.0000M,
333         UnitsInStock = 69
334     },
335     new Product
336     {
337         ProductID = 40,
338         ProductName = "Boston Crab Meat",
339         Category = "Seafood",
340         UnitPrice = 18.4000M,
341         UnitsInStock = 123
342     },
343     new Product
344     {
345         ProductID = 41,
346         ProductName = "Jack's New England Clam Chowder",
347         Category = "Seafood",
348         UnitPrice = 9.6500M,
349         UnitsInStock = 85
350     },
351     new Product
352     {
353         ProductID = 42,
354         ProductName = "Singaporean Hokkien Fried Mee",
355         Category = "Grains/Cereals",
356         UnitPrice = 14.0000M,
357         UnitsInStock = 26
358     },
359     new Product
360     {
361         ProductID = 43,
362         ProductName = "Ipoh Coffee",
363         Category = "Beverages",
364         UnitPrice = 46.0000M,
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365         UnitsInStock = 17
366     },
367     new Product
368     {
369         ProductID = 44,
370         ProductName = "Gula Malacca",
371         Category = "Condiments",
372         UnitPrice = 19.4500M,
373         UnitsInStock = 27
374     },
375     new Product
376     {
377         ProductID = 45,
378         ProductName = "Rogede sild",
379         Category = "Seafood",
380         UnitPrice = 9.5000M,
381         UnitsInStock = 5
382     },
383     new Product
384     {
385         ProductID = 46,
386         ProductName = "Spegesild",
387         Category = "Seafood",
388         UnitPrice = 12.0000M,
389         UnitsInStock = 95
390     },
391     new Product
392     {
393         ProductID = 47,
394         ProductName = "Zaanse koeken",
395         Category = "Confections",
396         UnitPrice = 9.5000M,
397         UnitsInStock = 36
398     },
399     new Product
400     {
401         ProductID = 48,
402         ProductName = "Chocolade",
403         Category = "Confections",
404         UnitPrice = 12.7500M,
405         UnitsInStock = 15
406     },
407     new Product
408     {
409         ProductID = 49,
410         ProductName = "Maxilaku",
411         Category = "Confections",
412         UnitPrice = 20.0000M,
413         UnitsInStock = 10
414     },
415     new Product
416     {
```



```
417         ProductID = 50,
418         ProductName = "Valkoinen suklaa",
419         Category = "Confections",
420         UnitPrice = 16.2500M,
421         UnitsInStock = 65
422     },
423     new Product
424     {
425         ProductID = 51,
426         ProductName = "Manjimup Dried Apples",
427         Category = "Produce",
428         UnitPrice = 53.0000M,
429         UnitsInStock = 20
430     },
431     new Product
432     {
433         ProductID = 52,
434         ProductName = "Filo Mix",
435         Category = "Grains/Cereals",
436         UnitPrice = 7.0000M,
437         UnitsInStock = 38
438     },
439     new Product
440     {
441         ProductID = 53,
442         ProductName = "Perth Pasties",
443         Category = "Meat/Poultry",
444         UnitPrice = 32.8000M,
445         UnitsInStock = 0
446     },
447     new Product
448     {
449         ProductID = 54,
450         ProductName = "Tourtière",
451         Category = "Meat/Poultry",
452         UnitPrice = 7.4500M,
453         UnitsInStock = 21
454     },
455     new Product
456     {
457         ProductID = 55,
458         ProductName = "Pâté chinois",
459         Category = "Meat/Poultry",
460         UnitPrice = 24.0000M,
461         UnitsInStock = 115
462     },
463     new Product
464     {
465         ProductID = 56,
466         ProductName = "Gnocchi di nonna Alice",
467         Category = "Grains/Cereals",
468         UnitPrice = 38.0000M,
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469         UnitsInStock = 21
470     },
471     new Product
472     {
473         ProductID = 57,
474         ProductName = "Ravioli Angelo",
475         Category = "Grains/Cereals",
476         UnitPrice = 19.5000M,
477         UnitsInStock = 36
478     },
479     new Product
480     {
481         ProductID = 58,
482         ProductName = "Escargots de Bourgogne",
483         Category = "Seafood",
484         UnitPrice = 13.2500M,
485         UnitsInStock = 62
486     },
487     new Product
488     {
489         ProductID = 59,
490         ProductName = "Raclette Courdavault",
491         Category = "Dairy Products",
492         UnitPrice = 55.0000M,
493         UnitsInStock = 79
494     },
495     new Product
496     {
497         ProductID = 60,
498         ProductName = "Camembert Pierrot",
499         Category = "Dairy Products",
500         UnitPrice = 34.0000M,
501         UnitsInStock = 19
502     },
503     new Product
504     {
505         ProductID = 61,
506         ProductName = "Sirop d'érable",
507         Category = "Condiments",
508         UnitPrice = 28.5000M,
509         UnitsInStock = 113
510     },
511     new Product
512     {
513         ProductID = 62,
514         ProductName = "Tarte au sucre",
515         Category = "Confections",
516         UnitPrice = 49.3000M,
517         UnitsInStock = 17
518     },
519     new Product
520     {
```

```
521         ProductID = 63,
522         ProductName = "Veggie-spread",
523         Category = "Condiments",
524         UnitPrice = 43.9000M,
525         UnitsInStock = 24
526     },
527     new Product
528     {
529         ProductID = 64,
530         ProductName = "Wimmers gute Semmelknödel",
531         Category = "Grains/Cereals",
532         UnitPrice = 33.2500M,
533         UnitsInStock = 22
534     },
535     new Product
536     {
537         ProductID = 65,
538         ProductName = "Louisiana Fiery Hot Pepper Sauce",
539         Category = "Condiments",
540         UnitPrice = 21.0500M,
541         UnitsInStock = 76
542     },
543     new Product
544     {
545         ProductID = 66,
546         ProductName = "Louisiana Hot Spiced Okra",
547         Category = "Condiments",
548         UnitPrice = 17.0000M,
549         UnitsInStock = 4
550     },
551     new Product
552     {
553         ProductID = 67,
554         ProductName = "Laughing Lumberjack Lager",
555         Category = "Beverages",
556         UnitPrice = 14.0000M,
557         UnitsInStock = 52
558     },
559     new Product
560     {
561         ProductID = 68,
562         ProductName = "Scottish Longbreads",
563         Category = "Confections",
564         UnitPrice = 12.5000M,
565         UnitsInStock = 6
566     },
567     new Product
568     {
569         ProductID = 69,
570         ProductName = "Gudbrandsdalsost",
571         Category = "Dairy Products",
572         UnitPrice = 36.0000M,
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573         UnitsInStock = 26
574     },
575     new Product
576     {
577         ProductID = 70,
578         ProductName = "Outback Lager",
579         Category = "Beverages",
580         UnitPrice = 15.0000M,
581         UnitsInStock = 15
582     },
583     new Product
584     {
585         ProductID = 71,
586         ProductName = "Flotemysost",
587         Category = "Dairy Products",
588         UnitPrice = 21.5000M,
589         UnitsInStock = 26
590     },
591     new Product
592     {
593         ProductID = 72,
594         ProductName = "Mozzarella di Giovanni",
595         Category = "Dairy Products",
596         UnitPrice = 34.8000M,
597         UnitsInStock = 14
598     },
599     new Product
600     {
601         ProductID = 73,
602         ProductName = "Röd Kaviar",
603         Category = "Seafood",
604         UnitPrice = 15.0000M,
605         UnitsInStock = 101
606     },
607     new Product
608     {
609         ProductID = 74,
610         ProductName = "Longlife Tofu",
611         Category = "Produce",
612         UnitPrice = 10.0000M,
613         UnitsInStock = 4
614     },
615     new Product
616     {
617         ProductID = 75,
618         ProductName = "Rhönbräu Klosterbier",
619         Category = "Beverages",
620         UnitPrice = 7.7500M,
621         UnitsInStock = 125
622     },
623     new Product
624     {
```

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625         ProductID = 76,
626         ProductName = "Lakkalikööri",
627         Category = "Beverages",
628         UnitPrice = 18.0000M,
629         UnitsInStock = 57
630     },
631     new Product
632     {
633         ProductID = 77,
634         ProductName = "Original Frankfurter grüne Soße",
635         Category = "Condiments",
636         UnitPrice = 13.0000M,
637         UnitsInStock = 32
638     }
639 #endregion
640     };
641 }
642 return _productList;
643 }
644
645 public static List<Customer> LoadCustomers()
646 {
647     if (_customerList == null)
648     {
649         // Customer/Order data read into memory from XML file using XLinq:
650         _customerList = (
651             from e in XDocument.Load("Customers.xml").
652                 Root.Elements("customer")
653             select new Customer
654             {
655                 CustomerID = (string)e.Element("id"),
656                 CompanyName = (string)e.Element("name"),
657                 Address = (string)e.Element("address"),
658                 City = (string)e.Element("city"),
659                 Region = (string)e.Element("region"),
660                 PostalCode = (string)e.Element("postalcode"),
661                 Country = (string)e.Element("country"),
662                 Phone = (string)e.Element("phone"),
663                 Fax = (string)e.Element("fax"),
664                 Orders = (
665                     from o in e.Elements("orders").Elements("order")
666                     select new Order
667                     {
668                         OrderID = (int)o.Element("id"),
669                         OrderDate = (DateTime)o.Element("orderdate"),
670                         Total = (decimal)o.Element("total")
671                     })
672                     .ToArray()
673                 })
674             .ToList();
675     }

```

```
676
677         return _customerList;
678     }
679
680     public static int[] NumbersA = { 0, 2, 4, 5, 6, 8, 9 };
681     public static int[] NumbersB = { 1, 3, 5, 7, 8 };
682     public static int[] NumbersC = { 5, 4, 1, 3, 9, 8, 6, 7, 2, 0 };
683 }
684 }
685
686
687
688
689
690
```