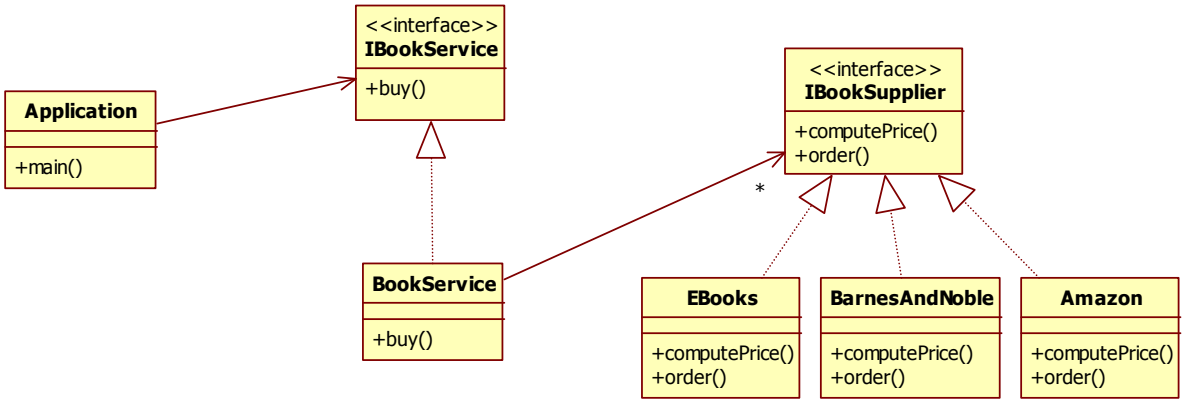
Exercise 11.3 – Dependency Injection using Lists

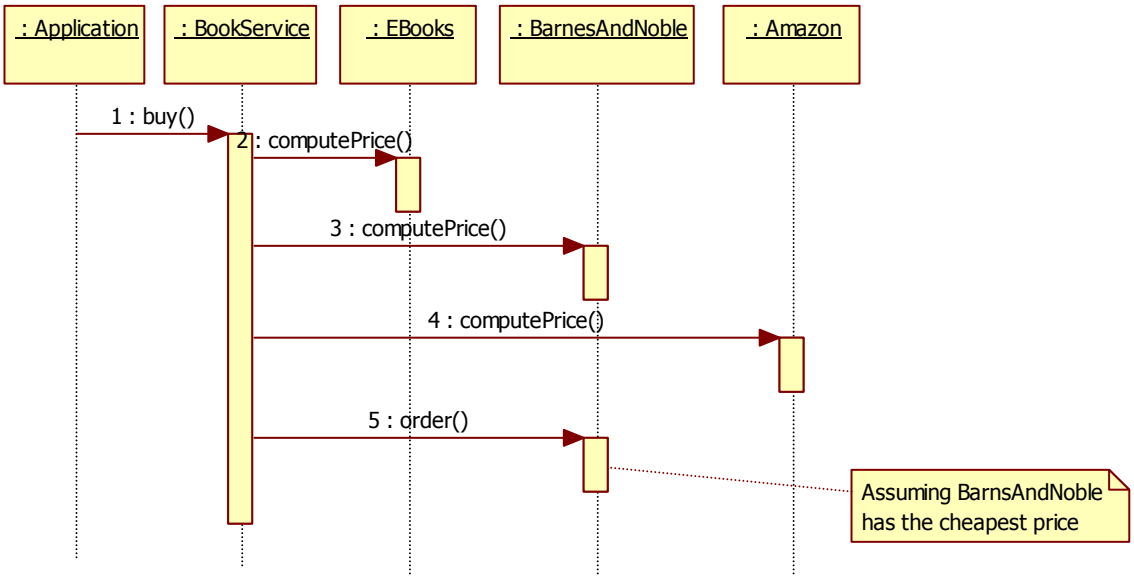
The Setup:

The purpose of this exercise is for you to use the more advanced list configuration feature of dependency injection. Start by opening the project at **C:\CS544\exercises\exercise11_3** and add the spring dependencies to the pom.xml file.

The Application:



Looking through the code, you will see that the application buys 3 books through the IBookService implemented by BookService. In the buy method, the BookService checks each of its IBookSuppliers, finding the cheapest one and ordering the book from there.



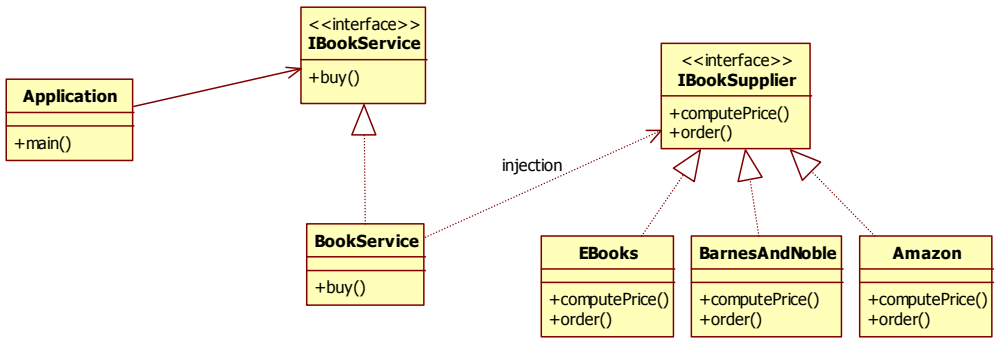
Running Application.java should produce the following (randomized) output:

```
Amazon charges $30.693970696674995 for book with isbn 123433267
Barnes&Noble charges $6.554986457356226 for book with isbn 123433267
EBooks charges $41.282876907999295 for book with isbn 123433267
Book with isbn = 123433267 is ordered from Barnes&Noble
Amazon charges $42.430314310592614 for book with isbn 888832678
Barnes&Noble charges $21.83991052230513 for book with isbn 888832678
EBooks charges $15.977769931887757 for book with isbn 888832678
Book with isbn = 888832678 is ordered from EBooks
Amazon charges $35.20968199800302 for book with isbn 999923156
Barnes&Noble charges $0.5630258200828281 for book with isbn 999923156
EBooks charges $10.151810464638245 for book with isbn 999923156
Book with isbn = 999923156 is ordered from Barnes&Noble
```

The downside of this application is that the BookService is hardcoded with Amazon, EBooks and Barnes & Noble as IBookSuppliers. If we should want to add another book supplier, we would have to go in and change the code.

The Exercise:

a) Change the application in such a way that the BookSuppliers are injected into the BookService using dependency injection, rather than being instantiated with ***new*** as they are now, and have the application retrieve the BookService from the Spring context.



b) Once this is done, add the **Borders** BookSupplier to the list without changing any of the existing Java code.