Aufgabe 05ab: Composite Pattern (→ max. 4 points)

Write a C# program that can manage a list of items (e.g. books, cds, ...).

An item may again be a list of items, etc.

Use the Composite design pattern [1] to represent items and lists.

The program shall read an XML-file/string and build the required data structure.

The XML data is given below. Each item has a price.

The price of a list is considered to be the sum of all its items

(note that such an item may be a list again)!

The program shall take the name of an item as input from the user and output its price. E.g. input="L2" output="30"

Note: Implement Cds, Books, etc as different classes.

```
<list name="root">
 <book name="B1" price="30" isbn="123"/>
 <list name="L1">
  <book name="B2" price="20" isbn="234"/>
  <list name="L2">
   <cd name="C1" price="15"/>
   <cd name="C2" price="5"/>
   <book name="B3" price="10" isbn="345"/>
  </list>
  <cd name="C3" price="15"/>
  <book name="B4" price="60" isbn="456"/>
 </list>
</list>
```

Design note: XML should be handled at one single place in your implementation. It is not a good design to spread XML specific code in your model class(es). Use a good implementation for finding an item by name.

Work in teams of 2 (name both authors in all the source files)!

Deadline: Di, 01.11. 23:59 !!!!!!!!!!!!!!!!!!!!