Training materials

- The Java Tutorials. Lesson: Exceptions.
- **Course on learn.epam.com Java.Errors & Exceptions.**
- И. Блинов. Глава 8.
- Дж. Блох, издание 2. Статьи 58, 60.
- И. Блинов. Глава 10, динамический массив (стр. 255-259).

Code Exercise

Create the package named **by.epam.lab** for entities classes. Define the class PurchaseList that represents a list of objects of two types (see task inheritance1):

– the immutable superclass Purchase for a product purchase,

– the immutable subclass PriceDiscountPurchase for a purchase with a price discount.

The file of csv format represents a series of text lines. Every line contains a set of values separated by a semicolon and corresponds to a single object of a superclass or a subclass depending on the number of values in the line. Lines with incorrect content must be skipped.

Constructor:

– constructor with the parameter – csv–filename, loading elements into a list from a csv–file. Create an empty list if the FileNotFoundException is caught. Output wrong lines into System.err stream.

The necessary class field is a list itself. Also other fields may be included into this class and added in the parameterized constructor.

Implement following operations with the list:

– inserting a purchase into the list at the index position. If the index value is wrong then the object has to be inserted at the nearest end of the list;

– deleting a subsequence of elements from the index from to the index to (>= from and < to). No action is required if any of indices is wrong;

– calculating the total cost of all purchases;

– string representation of the list in csv-format;

– sorting the list by an internal criterion with the method Collections.sort( ). It is forbidden to change a sorting criterion during the app lifecycle;

– searching an element in the list by the same criterion with the method Collections.binarySearch( ).

Define the TestRunner class in the default package and test the class PurchaseList functionality.

The example of the file in.csv:

```
bread;155;1;2
candy;0;2
candy;-100;-2
candy;100;2;0
milk;131;2
bread;154;3
candy
;100;2
beer;;1
candy;100;2;500
candy;100;2;100
water;15;4;0.1;cold
water;70;5;-1
bread;145;5
;;
potato;180;2;10
butter;370;1
water;ok;4
water;70;4;0.5
water;70.5;1
butter;341;1;1
meat;1100;2;80
```

Замечания и ограничения к задаче

– Информационные классы покупок, созданные в задаче 1 темы inheritance, являются мутабельными. Их нужно редактировать.

– Диапазона int гарантированно достаточно для вычисления стоимости как отдельной покупки, так и суммарной стоимости всех покупок.