

Distributed Systems

Exercise Sheet 3, Monday, 11:45

Klingemann, SS 2022

Preliminary Java-Exercise (assessment only in combination with subsequent tasks)

Realize a simple system for the management of shopping baskets. Implement two classes for this purpose: One class for shopping baskets and one class for shopping items. Each shopping basket has two private attributes: a name and a set of item objects. This set should represent the shopping items that are in the basket. (Note that it is a set of objects and not just a number!) Each shopping item has three private attributes: a unique name, a price and a quantity.

A shopping basket should have methods with the following functionality:

- Search for an item with a particular name. You can assume that there exists at most one. The method returns the corresponding shopping item object.
- Add a new item to a shopping basket. The method has three parameters: the name of the item, the price and the quantity. A corresponding shopping item object is created and added to the set of items of the shopping basket.
- Return the set of all item objects of the shopping basket. (The return value has to be a collection of item objects and not just a number!)
- Return the name of the shopping basket.

A shopping item should have methods with the following functionality:

- Return the name
- Return the price
- Return the quantity
- Change the quantity

Implement the two classes and a main-function to test them. You should in particular be able to calculate within your main-function based on the methods above the total value of all shopping items of a shopping basket.