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Individual Homework 2 (Class Diagrams):

Chapter 7: Exercise 11:

- Errors in Figure 7-E-1

  1. In the attributes compartment of Shopper, the syntax of the attributes is incorrect. The syntax should be as follows: *name : type* [*multiplicity*] = *initial-value*, with the option of suppressing the "*type*", "*multiplicity*" and "*= initial-value*".
     - ***Correction(s):***
       - String name → name : String
       - int id→ id : int
  2. The association line between the three classes is incorrect.
     - ***Correction(s):***
       - The associations can be drawn in two ways. The first option (Figure 1) is to split the association having only binary associations between classes. The second option (Figure 2) is to use the small diamond as the nexus from which the associations pass through to the classes involved.
  3. The multiplicity of the Cart and Item are improperly formatted.
     - ***Correction(s):***
       - 1..0 → 0..1
       - 0-* → *
  4. The ordering of the compartments in the Cart class is incorrect.
     - ***Correction(s):***
       - The attributes compartment and operations compartment need to be switched. The proper ordering is the name compartment, the attributes compartment, the operations compartment, and then any other extraneous compartments, if necessary.
  5. The type of the parameter of the addItem operation in the Cart class is not specified. The type of a parameter cannot be suppressed.
     - ***Correction(s):***
       - addItem(item) → addItem(item : Item)
  6. The multiplicity of stuff, the list of Items, is not specified.
     - ***Correction(s):***
       - Since the multiplicity is not specified anywhere in the problem, I logically assumed that the multiplicity should be "0..capacity".

  __NOTE__: The lack of a type declaration of the cardNumber attribute of the Shopper is NOT an error. The type may be suppressed, but NetBeans forces a type declaration, which is why the type of cardNumber is int in both figures.
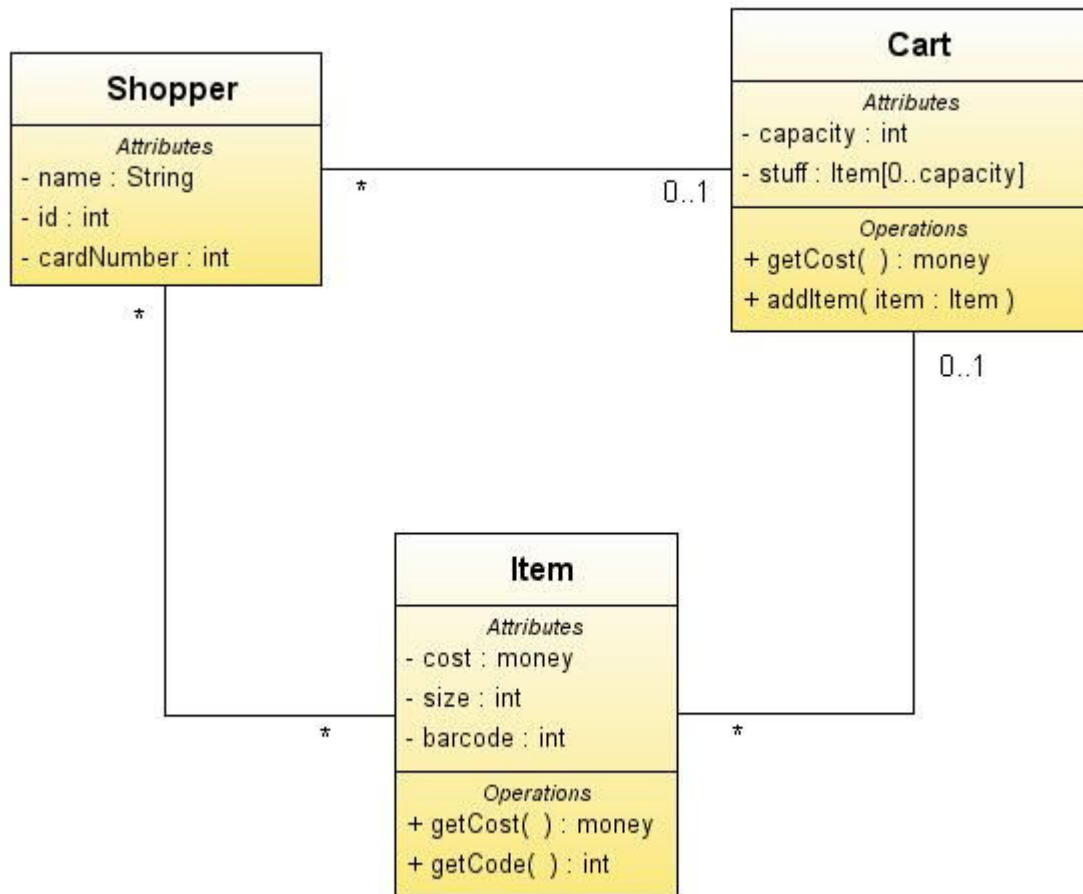
Figure 1:

Figure 2:

Shopper

Attributes
- name : String
- id : int
- cardNumber : int

*

0..1

Cart

Attributes
- capacity : int
- stuff : Item[0..capacity]

Operations
+ getCost( ) : money
+ addItem(item : Item)

*

Item

Attributes
- cost : money
- size : int
- barcode : int

Operations
+ getCost( ) : money
+ getCode( ) : int