Vending machine

Implement a system to manage a dispenser selling canned beverages (using **Java Collections**). The system must meet the following requirements.

R1: Beverages

The vending machine can distribute several types of beverages. Each beverage is characterized by its unique *name* and the selling *price.* For instance:

Beverage name	Selling price
Coke	0.50
Water	0.30
Beer	1.00

Method **addBeverage()** of class **VendingMachine** let the administrator to add the description of a new beverage. To obtain the price of a beverage, the method **getPrice()** is provided. If a price is requested for a beverage name that does not exist, the method returns an error code (e.g., -1.0).

R2: Payment cards

The vending machine works by means of payment cards. Each card is characterized by a unique *ID* (integer number) and the available *credit.* For instance:

Card ID	Credit
12	5.5
21	10.0
99	0.75

Cards are recharged through the method **rechargeCard()** of class **VendingMachine.** If a non-existing ID is provided a new card is created, otherwise the existing card is recharged. Further, it is possible to query the available credit of a given card with method **getCredit()**. If a non-existing card ID is queried, the method returns an error code (e.g., -1.0).

R3: Machine refill

The vending machine is made by 4 columns, each containing cans of a particular type of beverage. Each column is characterized by the type of beverage and the number of cans currently available. The same beverage can be present in multiple columns (but each column contains only one type of cans). At start-up columns are empty. When the machine is refilled, each column is assigned with a beverage type and the quantity of available cans. To this aim method **refillColumn()** is provided. Columns are numbered starting at 1. For instance:

Column number	Beverage name	Number of cans
1	Coke	1
2	Beer	10
3	Coke	15
4	Water	20

Given the name of a beverage (e.g., "Coke") it is possible to obtain the total number of available cans for a given beverage by means of method **availableCans().** The method counts all columns containing cans of the given type of beverage.

R4: Selling

The vending machine sells a product by specifying the beverage name and the payment card ID in method **sell()**. The method returns the colum where the can was picked from. If codes are invalid (either beverage or card), the beverage ran out, or credit on payment card is not enough to buy the requested item, an error code is returned (e.g., -1). On normal behavior, the machine decrements the credit on payment card and the quantity of available cans for the selected column. Note that the machine selects the first column with available cans of the requested type.