CS 102 – Homework 01

ÖZYEĞİN ÜNİVERSİTESİ

The deadline for this homework is Monday 22nd of March 23:59:00.

In this assignment you will implement an AppleStore class. Please also read the submission instructions at the end of this document very carefully. There will be no exception to these rules.

- An AppleStore sells only MacBook therefore the AppleStore class has the following fields: *storeName*, *exchangeRate*, *macCost*, *macPrice* and *soldMacCount*. (Use this ordering of fields in your function calls if you need to use multiple function arguments).
- *storeName* is the name of the store. An example can be "Zorlu Apple Store".
- This AppleStore class will be used in Apple Stores in Turkey. An AppleStore has its prices in US Dollars. For example, *macCost* is the manufacturing cost of a MacBook including all necessary taxes. mac*Price* is the customer price of a MacBook. Both macCost and macPrice is in US dollars. Difference between these two is the earned profit of a MacBook.
- Apple Stores in Turkey only accepts credit card (no cash) and all their earnings are kept in Turkish banks in Turkish Liras. Therefore, the amount to be earned will be converted to Turkish Liras by using the current exchange rate which is kept in *exchangeRate* field as soon as the customer's credit card is swiped in order to complete the sale.
- *soldMacCount* is the number of macs sold.
- Implement a constructor for this class. Initially the *soldMacCount* is 0 and the exchange rate is also set to 7.5 Turkish Liras for 1 US Dollars. Therefore, no need to get an initial value for these fields from the user. As customers visit the store and buy macs *soldMacCount* will increase. The constructor does not output anything to the console.
- Implement a *sellMacs* function which takes the number of macs sold to a customer as a function argument. This function outputs a line "`NumberOfMacsSold macs sold`". An example is shown below.
- Implement a *setExchangeRate* function to update the exchange rate from US Dollars to Turkish Liras. This function takes the TL equivalent of a US Dollar. This function also outputs 2 lines in the following format.
  ```
  The exchange rate has been changed!
  The exchange rate: 1 USD = NewRate TL
  ```
- You will only use these above methods to modify the *exchangeRate* and *soldMacCount*. Think about what other type of set functions you may need and implement them.
- Implement a *getRevenue* function which returns the total revenue of the store. Revenue is the gross income. Revenue of just one MacBook is its price. This function does not print any output.
- Implement a *getProfit* function which returns the total profit of the store. Profit is the remaining amount after subtracting the costs from the income. This function does not print any output.

- Implement a *toString* method for printing all the information about an AppleStore object. An example output of a *toString* method is as shown below.
  ```
  Apple Store Name: Zorlu Apple Store
  The cost of a MacBook: 1200.0 USD
  The price of a MacBook: 1500.0 USD
  The exchange rate: 1 USD = 7.5 TL
  ```
- Implement a *printStoreFinancials* method for printing all the financial information of an AppleStore object. This function does not return anything. An example output of the *printStoreFinancials* method is as shown below.
  ```
  Total number of macs sold: 10
  Total revenue: 112500.0 TL
  Total profit: 22500.0 TL
  ```
- Feel free to add any useful class instance (member variable) to your class and/or implement any needed functions.
- An example output of the program is provided below. In this program
  - o   An AppleStore object is created.
  - o   The object is printed to the console.
  - o   *sellMacs* function is called twice with parameters 10 and 5.
  - o   *printStoreFinancials* function is called.
  - o   *setExchangeRate* function is called with parameter 5.

```
Apple Store Name: Zorlu Apple Store
The cost of a Macbook: 1200.0 USD
The price of a MacBook: 1500.0 USD
The exchange rate: 1 USD = 7.5 TL
10 macs sold
5 macs sold
Total number of macs sold: 15
Total revenue: 168750.0 TL
Total profit: 33750.0 TL
The exchange rate has been changed!
The exchange rate: 1 USD = 8.0 TL
```

Submission Instructions:

- Create a branch called "homework01" in your repository. Do not work on master branch.
- Commit solutions to each of the steps to your homework01 branch.
- Once you're finished, please create a merge request and ask for a review from Berkay Bayram.
- You have to submit the link to your merge request via LMS in order to complete the assignment.