CS 102 – Homework 01

Due Date: October 14, 23:55

In this assignment you will implement a Bakery class. Your assignment can be graded automatically therefore it is your responsibility to implement your code as exactly as possible to the details given below. These details should be enough, in case you encounter any ambiguous part, feel free to email to the instructor. Please also read the submission instructions at the end of this document very carefully. There will be no exception to these rules.

- A bakery sells only bread therefore the bakery class has the following fields: *bakeryName*, *breadCost*, *breadPrice* and *soldBreadCount*. (Use this ordering of fields in your function calls if you need to use multiple function arguments).
- *bakeryName* is the name of the bakery.
- *breadCost* is the cost of cooking a bread to the bakery. This cost may include the cost of floor, oil, salt or any other ingredients needed together with the utility cost to cook it. You don't need to think about these individual costs. Just keep the total cost of the bread.
- *breadPrice* is the price of the bread that is used to sell the breads to customers. *soldBreadCount* is the number of breads sold.
- Implement a constructor for this class. Initially the *soldBreadCount* is 0. Therefore, no need to get an initial value for this field from the user. As customers visit the bakery and buy breads this count will increase.
- Implement a *sellBreads* function which takes the number of breads sold to a customer as a function argument.
- Implement a *applyInflationRate* function which takes a ratio as a function argument and applies this to either increase or decrease the price of the bread and as well as the cost of the bread. (Yes inflation rate can be negative sometimes which results in decrease in prices.) If inflation rate is positive (like 0.02), then the prices will increase by 2%. Similarly, if it is negative (like -0.05), then the prices will decrease by 5%. Inflation rate applies to everything at the same time. The cost of ingredients and utility increases at the same rate as the price of the bread.
- You will only use these above methods to modify the *breadCost, breadPrice* and *soldBreadCount.*
- 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 bakery. Revenue is the gross income. It is the number of items sold multiplied by the price of the item.
- Implement a *getProfit* function which returns the total profit of the bakery. Profit is the remaining amount after subtracting the costs from the income.
- The above 4 methods can be accessible from the test class.

- Implement a *toString* method for printing all the information about a Bakery object. The *toString* method is expected to return an output as shown below.
- Feel free to add any useful class instance to your class and/or implement any helper functions.

```
Bakery name: Simit Sarayi
Current bread cost: 7.5
Current bread price: 8.5
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10 breads sold
Total revenue: 85.0
Total profit: 10.0
```

Submission Instructions:

- Please **DO NOT** include a main method in your homework. If you have a main method in one of the class please remove it before you submit your homework. You are allowed to test your classes by writing a main for your homework, but make sure to remove them before submission. We have our own Test class to test and grade your homework.
- You will submit this homework via the LMS system. You should follow the file-naming conventions and guidelines below. In case you don't your assignment can fail the automatic grading tools and so you may lose significant points in your grade.
- You should submit your source files as a **ZIP** archive file (**NOT** RAR or other formats). The name of the file should be in format "**<USER-ID>_hw<HOMEWORK-NR>.zip**". For example, if your username is un1234, then the name of the submitted file should be "un1234_hw01.zip". Pay attention that all the letters are in lower-case. ZIP archive is supposed to contain **just the java files**, no folders are allowed by any means.
- Late submissions, missing submissions and source files that do not compile are **not** accepted and will receive 0 as the grade. After submission, download your assignment file to a location different than where your original assignment codes are. Make sure that the downloaded files contain everything to compile/build your assignment.
- You can resubmit your homework (until the deadline) if you need to.

Final Controls Before Submission:

- Do not upload *.class files. These files can't be graded and you will get 0.
- Only use zip format. (rar, 7z, tar, vs. not allowed)
- Do not zip the whole Eclipse project.
- Do not zip src folder. Select the java files and zip them directly.
- Name your classes "exactly" the same as stated above. Capitalization of letters are important, too. (Do the same for the methods if stated in the pdf)
- Do not upload a main class.