جامعة بيرزيت

BIRZEIT UNIVERSITY

Faculty of Engineering and Information Technology

Computer Science Department

Comp 2310 Project Phase I

Individual work Project	**Due Date: 26/1/2023 by 10:00 pm on Ritaj**

Write a complete Java program that creates the following classes:

1- class **PizzaOrder** which implements the ***Comparable*** interface and contains the following attributes and member methods:
   - customerName (String)
   - dateOrdered (Date)
   - pizzaSize (final static int SMALL=1, MEDIUM=2, LARGE=3)
   - numberOfToppings (int)
   - toppingPrice (double)
   - Appropriate constructors (default and non default) as well as the appropriate setter and getter methods.
   - A toString( ) method.
   - Method calculateOrderPrice() which calculates the price of the pizza order as follows:

     (numberOfToppings * toppingPrice) * pizzaSize
   - Method printOrderInfo () which prints only the customer’s name and the calculated order price on one line to the screen.

2- class **Delivery** which extends **PizzaOrder** and contains the following attribute and methods:
   - tripRate (double)
   - zone (int 1-4)
   - Appropriate constructors (default and non default) as well as the appropriate setter and getter methods.
   - toString() method that overrides the method in **PizzaOrder.**
   - A calculateOrderPrice() method which overrides the method in **PizzaOrder** and adds the (tripRate/100 * totalprice * zone) to the price.

3- class **ToGo** which extends **PizzaOrder.**

4- Class **Seated** which extends **PizzaOrder** and contains the following attribute and methods:
   - serviceCharge (double)
   - numberOfPeople (int)
   - toString() method that overrides the method in **PizzaOrder.**
   - A calculateOrderPrice() method which overrides the method in **PizzaOrder** and adds the (serviceCharge * numberOfPeople) to the price.

5- A **Driver** class which includes the following methods:

- main method that does the following:
    - creates an ArrayList called ***orders*** of type **PizzaOrder** and adds five different orders to it (two **Delivery**, one **ToGo**, and two **Seated**).

      You must NOT ask the user to enter the attributes but you should fill them up directly in the main method. MAKE SURE YOUR CONSTRUCTORS FOLLOW THE SAME ORDER OF ATTRIBUTES AS SPECIFIED ABOVE AS FOLLOWS:

PizzaOrder (customerName, pizzaSize, numberOfToppings, toppingPrice)

Delivery (customerName, pizzaSize, numberOfToppings, toppingPrice, tripRate, zone)

ToGo (customerName, pizzaSize, numberOfToppings, toppingPrice)

Seated (customerName, pizzaSize, numberOfToppings, toppingPrice, serviceCharge, numberOfPeople)

Asking the user to enter the attributes or not following the constructor order as above will result in your assignment not getting graded and you will receive a zero grade.

    - Sorts the orders based on their calculated order price.
    - Prints the sorted orders customer names and prices.
    - Prints the total sum of all order prices.
    - Prints a report (all properties and order price) for the second **Delivery** order (***orders.get(1)***).
- Method ***sortOrders*** which takes an ArrayList of type **PizzaOrder** as an argument and sorts it. You may use the **java.util.Collections.sort** method to do the actual sorting.
- Method ***calculateTotalOrdersPrice*** which takes an ArrayList of type **PizzaOrder** as an argument and returns the total price of all the orders in that ArrayList.

Please note the Following:

1. Your program should be well commented based on Java formal documentation.
2. **Due Date: 26/1/2023 by 10:00 pm** as a reply for this message via Ritaj.

What you need to turn in:

1- Your project folder (containing all your project .java files) should be compressed (.rar) and saved as ***proj_I_youridnumber_yourLabsectionnumber.rar*** (for example if your student id number is 1211234 and your lab **section** is section 9 then the project folder should be called ***proj_I_1211234_s9.rar***). Turn in your project by ***replying to the course coordinator's message*** on Ritaj and attaching your code .rar file (***proj_I_youridnumber_yourLabsection.rar***).

2- You must include your full name, student id number, and lab section number in a comment at the beginning of each of your class code files.

Late Projects (even one minute late) will NOT be accepted for any reason.