Assignment 03

CSIS 2175 – Section 004

Assignment carries 20 marks. The assignment contributes 5% to the overall grades. Students are required to submit the assignment to blackboard not later than **March 25, 2020 15:30 PST**. **NO LATE SUBMISSION** will be accepted. You may submit your work multiple times, but only the last submission will be graded.

Assignment could undergo a similarity check. If plagiarism is detected or students are found to have copied from each other, marks would be deducted.

Grading:

- Correctness of the program: 80%
- Programming style/comments/clarity: 10%
- Correctness of output format: 10%

In the MS-Access database create a table 'Item' with fields

ItemId	ItemName	UnitPrice$
1	Shampoo	20
2	Tooth Paste	4.50
3	Shirt	8.99
4	Rice	10.15
5	Bread	3.75

Create an Interface named 'Item' which represents an item purchased at a departmental store. An item has associated with it an item id (the unique stock number for this item), an item name (a string name for the item), a quantity (the number of units of the item) and a unit price (the price of each unit of the item.)

The implementations of this interface should use their constructors to set the initial values of these attributes.

The interface should contain following abstract methods to

1. **Get Item Id :** Returns the stock number for this item.
2. Get Item Name: Returns the (non-unique) string name of this item.
3. Get Unit Price: Returns the price of this item.
4. Get TotalPrice: Returns the price of this item. This is simply the product of the (unit price) * (number of units) with applicable taxes added.
   So, TotalPrice
   For Ontario:
   unitPrice*quantity+(unitPrice*quantity*GST)+(unitPrice*quantity*PST)
   For Alberta:
   (unitPrice*quantity)+(unitPrice*quantity*GST)

5 Display using toString(): Returns this item in string form suitable for displaying

In Ontario, the taxes to be added to items include the provincial sales tax (PST) of 8%, together with the federal sales tax (GST) of 7%. In Alberta, there is no provincial sales tax, so prices include only the GST. Provide two implementations of the Item interface, one for Ontario (named Ontario.java) and one for Alberta (named Alberta.java).

Create a class BillMain, with main method asking user to

Press 1 to insert a new Item,------ 2 to generate Bill for Ontario,----- 3 to generate bill for Alberta Store

For Choice 1: Insert item in MS Access Item table as given below:

ItemName: Chocolate

UnitPrice: 3

For choice 2 and 3:

Enter number of items to be billed.

For each item enter the name to extract unit price of the item from database table 'Item'.

Enter quantity of the item purchased. Find out total price for an item depending on Alberta (GST) or Ontario(GST and PST). Calculate total bill thus generated.

```
Console
<terminated> BillMain3 [Java Application] C:\Program Files\Java\jdk-15.0.1\bin\javaw.exe  (11-Mar-2021, 10:21:39 pm – 10:22:15 pm)
Press 1 to insert a new Item,------ 2 to generate Bill for Ontario,----- 3 to generate bill for Alberta Store
2
How many items are there in the bill for Ontario
3
Enter name of Item purchased 1
Shirt
Enter quantity of Item 1
4
Shirt with unit price 8.99 and quantity 4 with GST and PST costed 41.354000000000006
Enter name of Item purchased 2
Bread
Enter quantity of Item 2
2
Bread with unit price 3.75 and quantity 2 with GST and PST costed 8.625
Enter name of Item purchased 3
Chocolate
Enter quantity of Item 3
3
Chocolate with unit price 3.0 and quantity 3 with GST and PST costed 10.350000000000001
================================
Total Bill: $60.32900000000001
```

Console

<terminated> BillMain3 [Java Application] C:\Program Files\Java\jdk-15.0.1\bin\javaw.exe (11-Mar-2021, 10:22:53 pm – 10:23:11 pm)

```
Press 1 to insert a new Item,------ 2 to generate Bill for Ontario,----- 3 to generate bill for Alberta Store
3
How many items are there in the bill for Alberta
3
Enter name of Item purchased 1
Shirt
Enter quantity of Item 1
4
Shirt with unit price 8.99 and quantity 4 with GST costed 38.4772
Enter name of Item purchased 2
Bread
Enter quantity of Item 2
2
Bread with unit price 3.75 and quantity 2 with GST costed 8.025
Enter name of Item purchased 3
Chocolate
Enter quantity of Item 3
3
Chocolate with unit price 3.0 and quantity 3 with GST costed 9.63
================================
Total Bill: $56.132200000000005
```