Assignment 6

FIND TOTAL OF A GROCERY CART INCLUDING TAXES USING LAMBDA EXPRESSION

CODE:

```java
package Assignment6;
import java.math.BigDecimal;
import java.util.HashMap;
import java.util.InputMismatchException;
import java.util.Map;
import java.util.Scanner;
public class CartCheckout {
    public static String billGenerator(Map<String, BigDecimal> cart, Double taxPercent) throws InputMismatchException{ 1 usage
        if (cart.isEmpty()) {
            return "The cart Map is empty";
        }
        if (taxPercent == null) {
            throw new InputMismatchException("The taxPercent cannot be null");
        } else if (taxPercent < 0) {
            return "The taxPercent cannot be negative";
        }
        BigDecimal totalCost = cart.values().stream()
                .reduce(BigDecimal.ZERO, BigDecimal::add);
        BigDecimal taxAmount = totalCost.multiply(BigDecimal.valueOf(taxPercent / 100));
        BigDecimal totalPrice = totalCost.add(taxAmount);
        return totalPrice.toString();
    }
```

```java
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        Map<String, BigDecimal> cart = new HashMap<>();
        System.out.println("Enter the number of items in the cart:");
        int numItems = scanner.nextInt();
        scanner.nextLine(); // Consume newline
        for (int i = 0; i < numItems; i++) {
            System.out.print("Enter item name: ");
            String itemName = scanner.nextLine().trim();
            System.out.print("Enter item price: ");
            BigDecimal itemPrice = scanner.nextBigDecimal();
            cart.put(itemName, itemPrice);
            scanner.nextLine(); // Consume newline
        }
        System.out.println(cart);
        try {
            System.out.print("Enter the tax percent: ");
            Double taxPercent = scanner.nextDouble();
            String totalCost = billGenerator(cart, taxPercent);
            System.out.println(totalCost);
        }
        catch (Exception e) {
            System.out.println("The tax percent cannot be null");
        }
        scanner.close();
    }
}
```

Output1:

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61594:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\b
Enter the number of items in the cart:
4
Enter item name: Pineapple
Enter item price: 56
Enter item name: Strawberry
Enter item price: 65.5
Enter item name: Papaya
Enter item price: 26.76
Enter item name: MAngo
Enter item price: 30.25
{Papaya=26.76, Strawberry=65.5, Pineapple=56, MAngo=30.25}
Enter the tax percent: 10.52
197.289252

Process finished with exit code 0
```

Output2:

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61606:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\b
Enter the number of items in the cart:
0
{}
Enter the tax percent: 20
The cart Map is empty

Process finished with exit code 0
```

Output3:

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61621:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\b
Enter the number of items in the cart:
2
Enter item name: Apple
Enter item price: 20.5
Enter item name: Watermelon
Enter item price: 30.25
{Apple=20.5, Watermelon=30.25}
Enter the tax percent: -25.5
The taxPercent cannot be negative

Process finished with exit code 0
```

Output4:

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61624:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\b
Enter the number of items in the cart:
2
Enter item name: papaya
Enter item price: 25.5
Enter item name: grapes
Enter item price: 20.25
{papaya=25.5, grapes=20.25}
Enter the tax percent: null
The tax percent cannot be null

Process finished with exit code 0
```