

IO Operations, Serialization and Exception Handling Lab Exercise

Suppose you were hired to develop a Point of Sales (POS) system for the Super-Saving supermarket chain. The cashier enters the item code to add a grocery item to the bill. Given the item code, information such as price, weight/size of the product, date of manufacturing and expiry, and manufacturer name is fetched from the database (You do not have to implement a database connection for this but can simply hardcode for this exercise). In addition, from time to time, each item is given a discount which varies from 0-75%. The bill produced by this POS system should contain the cashier's name, branch, customer name (if a registered customer), item list (unit price, quantity, discount, net price), total discount, total price, date, and time. The date and time should indicate when the bill was printed.

In addition to the typical functionalities, this POS system is required to handle pending bills. For example, suppose a customer brings a cart full of groceries to the cashier but forgets to weigh some vegetables and fruits. He realizes this only after the cashier has entered half of the items into the system. While this customer goes and weighs the vegetables and fruits he purchased, the cashier wants to keep his bill as a pending one and deal with the billing for other customers. Suppose you decided to use serialization to develop this POS system.

Implement the Java code for the POS system for the Super-Saving supermarket chain. Ensure your code is readable with comments and proper class names, variables and methods.

Further, sometimes cashiers may mistakenly enter the wrong item code. To handle such situations, you decided to create your own exception called `ItemCodeNotFound`. Suppose the `getItemDetails()` method in `POS` class is as follows. How can you change the `getItemDetails()` method to **handle** the `ItemCodeNotFound` exception by allowing the cashier to re-enter the item code? Include the modified `getItemDetails()` in your `POS` class.

```
class POS {

    public GroceryItem getItemDetails() {

        try {
            InputStreamReader r = new InputStreamReader(System.in);
            BufferedReader br = new BufferedReader(r);
            item_code = br.readLine();

            GroceryItem item = null;
            // Fetch item details from the database

            br.close();
            r.close();

        } catch (ItemCodeNotFound e) {}
        Return item;
    }
}
```

}

Include your Java code in a PDF file, rename it with your index number (e.g., 211234A), and upload it to the given link. THIS IS A TURNITIN ASSIGNMENT, AND CODE PLAGIARISM WILL BE CHECKED AUTOMATICALLY.