IO Operations and Serialization Lab Exercise

(This is a group task)

Suppose you were hired to develop a Point of Sales (POS) system for the Super-Saving supermarket chain. The cashier enters the item code and amounts to add the grocery item to the bill. Given the item code, the price, weight/size of the product, date of manufacturing and expiry, and manufacturer name are fetched from the database. In this lab, your database is a CSV file given with the lab description. In addition, from time to time, each item is given a discount which varies from 0-75%. The system processes the entered item list and produces the bill. The bill contains the cashier's name, branch, customer name (if a registered customer), item list (unit price, quantity, discount, net price), total discount, total cost, date, and time. The date and time should indicate when the bill was printed. The bill should be saved as a PDF file to be printed for the customer.

Further, 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 purchases, the cashier wants to keep his bill as a pending one and deal with the billing for other customers. Furthermore, the management requires the system to analyze bills and generate a total revenue report for a given date range. The generated report should be emailed to the supermarket sales team at salesteam@supersaving.lk.

Your Tasks:

1. Identify all the functional and non-functional requirements of the POS system for the Super-Saving supermarket chain.
2. Identify the best format to save bills for each requirement.
3. Design and implement the Java based system for the given scenario.
   a. You must use your knowledge of object-oriented programming to design the solution for this lab.
   b. You should include all the classes in your program in a single file. The class containing the main method should be named as "SuperSaverPOSGroup_<<Your Group Name>>". Please note that including all the classes in a single file is bad coding practice, but we do it in this lab to make the grading process easier.
   c. c. At the top of your file, you should include a Javadoc comment mentioning your identified requirements as a list and explaining the overall functionality of a program.
   d. Each class and method of the program should also be accompanied by a Javadoc comment explaining the functionality/functionalities and the parameters.
   e. Ensure your code is readable with comments and proper class names, variables and methods.

Save your Java code as a PDF file, rename it with your group name, and upload it to the link.

THIS IS A TURNITIN ASSIGNMENT, AND CODE PLAGIARISM WILL BE CHECKED AUTOMATICALLY. YOUR SIMILARITY SHOULD BE LESS THAN 20% AND IF NOT, YOUR SUBMISSION WILL NOT BE GRADED.