Online Store Orders - FinalExam

Create a computer program in **JAVA** that reads the content of files, creates class instances, and outputs reports based on processed collections.

1. Create class FileProcessor that accepts a filename in the constructor and has a read() method for reading line by line. (5 marks)

2. Create an **abstract class** Order that stores general information about orders (orderId, customerName, date). Provide getters and setters. (5 marks)

3. Create class ElectronicsOrder extending Order with attributes price and warrantyYears. (5 marks)

4. Create class ClothingOrder extending Order with attributes price and size. (5 marks)

5. Create class FoodOrder extending Order with attributes price and expiryDate. (5 marks)

6. Create interface IOrderStatistics with method totalCost() returning a double. Implement in all subclasses:

   o Electronics → price * 1.2 (20% tax)

   o Clothing → price (no tax)

   o Food → price * 0.9 (10% discount) (5 marks)

Main Program:

- Process electronics.txt, clothing.txt, and food.txt. Store in a Map<String, ArrayList<Order>>. (5 marks)

1. Calculate average cost per category, output to separate files + one combined. (15 marks)

2. Find top 5 most expensive orders per category, save to file. (10 marks)

3. Find all orders from 2024 above $500, save to file. (10 marks)

4. Use **Factory design pattern** to create new orders dynamically. (10 marks)

5. Find the order with the highest cost across all categories.

   o (i) Without threads (10 marks)

   o (ii) With threads (20 marks)