Design Overview for Product Sales Enquiry

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Overview

This program assists sales people at a store such as JB Hi-Fi, determine the correct selling prices and availability, with a required level of profit, for products within the store.

It allows sales people some discretion in terms of giving a discount off a recommended selling price, e.g. to price match with a competitor, while still maintaining the required level of profit set by the store.

The program will allow the user to choose a "sales calculator" to calculate and display relevant information and there will also be a number of reports than can be sorted and filtered in various ways.

The program will make use of a Product class to encapsulate the properties and behaviours of a Products in the store. The user will also be able to add, change and delete Products. To simplify the program design, and reduce the amount of coding required in the time available, an ENUM will be used for the broad Product category the Product belongs to.

Products will be uniquely identified by a SKU and a representative sample of real world Products and Categories will be obtained from the JB-Hi Fi website.

7.4DN Custom Program

The DN level program will facilitate the creation of Products using Arrays and provide the "sales calculator" and some reports. Further reports will be added in 7.5HD when the data is persisted.

Real world data will be obtained from the JB-Hi Fi Website and entered into a spreadsheet to make data entry easier for 7.5HD when files will be used to persist the data.

Some of this data will be used for 7.4DN and manually entered.

The program will include a "sales calculator" which is basically an enquiry option that will display information helpful for a person selling the product.
It will also allow the user to change any of the entered Product details and redisplay the calculated values based on the changes.

The calculated values helpful for Sales People include the Gross Profit in dollars and the Gross Profit as a percentage (i.e. the proportion of the sale that is profit) and the gross

markup % (i.e. the selling price compared to the cost price expressed as a percentage). Note these are all real world values used in product sales.

The "sales calculator" will include the ability for a Sales Person to enter a net Selling price or a discount off the stored selling price and display the calculated information with appropriate warnings if it exceeds the maximum discount or the minimum markup on cost.

These figures are all exclusive of any local taxes, e.g. GST, as this would be normally calculated based on the relevant tax (e.g. GST or VAT) percentage or amount at both the selling and buying stages of the Product. Handling GST or local taxes is beyond the scope of this project.

Reports will include:
1. A Product master list – Display the details of all the Products
2. A Product by Category list – Displays each Category and the Products within it. One or more Categories may be chosen to filter the report. A sort will be performed to put products in Category/Product order.

7.5HD Improved Custom Program

The key improvements will be the ability to persist the data using .csv files and two additional, and more sophisticated reports.

In addition to researching how to work with files in Java I will also research how to output a report in .PDF format using a relevant library. Depending on the time available and complexity in implementing this I will modify the reports to output to a .PDF file rather than just to the console.

While the data structure would lend itself to a RDBMS or ODBMS, since Categories and Products are related, I have no idea how to use these in Java and believe researching this will be beyond the time left in this course.

7.5HD will include the ability to persist the Products and Categories by storing them in files with the ability to add, change, or delete items from the files. There would be additional Properties added to the Product class at this time, e.g. creation date, last modified date, (using the Java Date() class), and the user identifier of the person who created or changed the Product, etc.

The two additional reports will be:
1. A Product Profit report – Displays the Products (filtered by Category) sorted by highest or lowest profit based on the default sales values
2. A Minimum Margin report – Displays Products (filtered by Category) that fall below an entered minimum margin and highlighting any products that are below the accepted minimum margin (as stored on the Product)

Required Data Types

Table 1: Product details

Property	Type	Notes
iD	Int	Unique identifier
category	Category	Broad product category
sku	Int	Stock Keeping Unit code
description	String	Product description
sellPrice	Double	Recommended selling price
cost	Double	Cost price
productSize	Size	Product size
packSize	Size	Required Packaging size
maxDiscountPercent	Double	Max discount % off selling price
minMarkupPercent	Double	Min allowed markup on cost
grossProfitAmount	Double	Gross Profit Margin in $
grossProfitPercent	Double	Gross Profit Margin as a %
grossCostAmount	Double	Gross markup in $
grossCostPercent	Double	Gross markup % on cost

Table 2: Size ENUM, declared in Product class

Value	
SMALL	
MEDIUM	
LARGE	
EXTRA LARGE	

Table 3: Category ENUM, declared in Product class

Value	
Computers & Tablets	
TVs	
Gaming	
Mobile Phones	
Home Appliances	
Cameras	
Drones & Robotics	

Overview of Program Structure

See 7.3CR Structure Chart

Will put into a table once I have discussed this design with the Tutor.

Overview of Program Structure