

Store Stock Calculator

Business Requirement Document

Group 02
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Functional Requirements

1. CSV File Import

1.1 The program should import a CSV file containing current stock details each day.

1.2 The CSV file shall have the following format:

```
"Item","Current Stock","Price per Item"  
Apple,"3","1.00" "Banana","4","2.50" "Orange","5","1.50"
```

1.3 The program should check if the file type is correct. (.csv)

1.4 The program should Ensure the CSV file has the required columns: "Item", "Current Stock", and "Price per Item".

1.5 The program should loop through the data and make sure the file is not empty.

1.6 The program should loop through the data and validate data types:

- "Current Stock" is an integer
- "Price per Item" is a float.
- Item is string

1.7 The program should ensure "Current Stock" is non-negative.

1.8 The program should ensure there are no duplicate items in the csv file imported.

1.9 The program should ensure that no null values are present in item and item price column in the csv file. EX: item Apple could have no value under price per item.

1.10 If current stock is empty the program will consider that as 0 stock item.

1.11 The program shall display an error message and terminate the import process if any of the validations fails.

2. Display Stock Information

2.1 The program shall display the stock information in a readable table format:

#	Item	Current Stock	Price Per Item
1	Apple	3	\$1.00
2	Banana	4	\$2.50
3	Orange	5	\$1.50

2.2 The table shall have columns for item number, item name, current stock, and price per item.

3. Input Sales & Lost Sales

3.1 The program shall prompt the cashier to enter items sold using a user prompt below:

- *Select a number (1-3) to indicate a sale, or 'e' to indicate end of day*

3.2 The program shall decrement the current stock of the selected item by 1 for each sale.

3.3 If the current stock of an item reaches 0, the program should not decrease the stock further.

3.4 Create a variable to record the sale as a 'lost sale'.

3.5 If the cashier enters a number outside the valid range (1-3), the program shall display an error message and re-prompt the cashier.

3.6 If the cashier enters a non-numeric value (other than 'e'), the program shall display an error message and re-prompt the cashier.

3.7 If no sales are recorded for the day, the program shall generate reports indicating zero sales and zero lost sales.

4. End of Day Reports

4.1 The program shall generate three reports at the end of the day when the cashier enters 'e':

- Total Sales Report
- Lost Sales Report
- Restock Report

4.2 **The Total Sales** Report shall summarize total sales for each item and the grand total:

Total Sales				
#	Item	Sales	Price per Item	Total
1	Apple	3	\$1.00	\$3.00
2	Banana	1	\$2.50	\$2.50
3	Orange	3	\$1.50	\$4.50
TOTAL				\$10.00

4.3 **The Lost Sales Report** shall list sales lost due to insufficient stock.

4.4 if there are 3 apples in stock and the user input 4 entries, the fourth entry should not decrement the stock further, as the stock has reached 0.

4.5 The program should record the fourth entry as a lost sale.

Lost Sales				
#	Item	Sales	Price per Item	Total
1	Apple	1	\$1.00	\$1.00
TOTAL				\$1.00

4.6 **The Restock Report** shall advise the manager on restocking requirements.

4.7 The report should calculate the total demand for each item based on sales recorded during the day.

4.8 The report should add an additional 20% to the total to account for variation in demand.

4.9 The 20% should be rounded to the nearest integer.

4.10 The report should include the following columns: Item, Demand, 20%, Total Demand, Current Stock, From Warehouse.

- if the demand for apples is 4, the report should add 20% (0.8), rounded to the nearest integer (1), making the total demand 5.

4.11 If the current stock is 0, the 'From Warehouse' value should be 5.

4.12 If the current stock is greater than or equal to the total demand for any item, then the 'From Warehouse' number should be zero.

- if the current stock of bananas is 3 and the total demand is 1, the 'From Warehouse' number should be 0.

Restock Sales						
#	Item	Demand	20%	Total Demand	Current Stock	From Warehouse
1	Apple	4	1	5	0	5
2	Banana	1	0	1	3	0
3	Orange	3	1	4	2	2

5. Export Updated CSV file

5.1 The program shall export a CSV file with updated current stock.

5.2 The current stock for each item in the CSV file should reflect the adjustments made throughout the day, including items brought in from the warehouse.

5.3 If there are no items brought in from the warehouse, the CSV file should still include all items with their current stock.

5.4 The CSV file should be saved in a specified location, with file name as 'updated stock'.

5.4 If there are errors during the export process program should display an appropriate error message and allow the user to retry or cancel the export.