

CS113 - Program Design and Algorithms

Lab Assignment #2

Summer 2002

The purpose of this exercise is to allow you to use your knowledge of C++ data types (especially arrays and structs). The exercise should further reinforce what you know about files.

You did such a good job with the first part of computerizing the inventory of *Joe's Auto Parts* store that he would like you to now work on phase two. This time, you are to input the parts inventory information, apply the day's transactions to that database, and then generate some output reports - the current inventory list (after the transactions have been applied), a list of backordered items, and a reorder report.

This program will use **two** input files. The first file is the previous inventory file. The second file is a "transaction" file. Each line has the following form:

Part No.	Transaction type	Number involved in transaction
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The possible transaction types are:

- **A** - add. Add the number specified to the number in stock.
- **S** - sale. Subtract the number specified from the number in stock.
- **P** - price change. Change the price of the item in inventory.

The output from the program should consist of three different parts -

- A current inventory report, which shows the *updated* inventory status (i.e., after all transactions have been applied). In this report, the quantity in stock should **not** show less than zero, even if an item is backordered (see below).
- A reorder report, which lists all the items which should be reordered (i.e., those items whose current stock falls below the reorder level, as in your first program), and the number to reorder. The number to reorder should be a multiple of the reorder quantity. Enough should be reordered to bring the current number in stock to a level that is above the reorder level, after any current sales and backordered amounts have been satisfied.
- A backorder report, which lists all those items for which the current number in stock cannot satisfy current sales (i.e., those items which would have a *negative* quantity in stock if all the transactions had been applied.)

Sample output (NOTE: This output does not necessarily show correct program results, but rather the format of the output!):

Joe's Auto Store - Inventory Status

Current Inventory Report:

Part No.	Description	No. in Stock	Value Each	Total Value
2027	Wing Nut	10	1.27	12.70
2030	Rocker Panel	5	137.85	689.25
2035	Wheel Rim	0	14.64	29.28
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.
.
2974	Headlight - LoB	.	.	.
Total Inventory Value				\$ xxxx.xx

Reorder list:

Part No.	Description	Reorder Qty.	Reorder Cost
2035	Wheel Rim	6	87.84
.	.	.	.
.	.	.	.
Total Reorder Cost			\$ xxxx.xx

Backorder list:

Part No.	Description	Backorder Qty.
2035	Wheel Rim	3
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