Draft: 20070208 (14:43)

Computer Programming

C Programming Assignment #1, 2007

Brief:

You are to write a program which enables the computer to function as a bar code reading cash register.

Summary:

The program will use two text arrays in parallel with one numeric array. One array will store the barcode, one the descriptions, one the prices. The program will repeatedly loop until instructed to exit. Valid commands are:

X – Exit
N – New Sale
A barcode
E – End of Sale
V – Void last Code

Remember that this program varies only in degree and detail from programs you have already created; essentially, it contains nothing new.

Sample data from the three arrays are saved in our file as shown here...

Array Element Number	Array 1 - Price	Array 2 - Code	Array 3 – Product Description
0	0.95	3068320014067	Evian 0.75L
1	0.99	4975769310331	700MB CD Single
2	2.25	5391511560462	Vanilla Candles
3	1.95	5099874080336	Small Sandwich Bags
...	...	...	...

...where the table columns represent the arrays.

You'll probably also want to create a pair of 'receipt' arrays to store the descriptions and prices of

scanned products in order to be able to generate a sales receipt. The arrays used should be able to accommodate up to 50 products in a sale. This is optional *for extra marks*; a simple total of the cost due will suffice if you choose.

Essentially the purpose of this assignment is to create a loop that continually reads bar codes and matches the code with a database entry. Each correctly recognised code will yield a description and price. (The description and price should be put in the 'receipt' arrays for later processing and printing).

The prices will be totalled so that at the end of the sale a Total Amount Due is available to charge the customer.

After a sale is complete, the program should print the receipt and total due before zeroing (initializing) all internal counters and remain waiting for another sale to commence.

At any point, if a bar code is read which is not in the database, the program should beep and display an error message on screen; no further action need be taken in the case of the unrecognised code, except to return to the waiting loop.

At any point keyboard input may be made as above:

X – Drop everything and terminate the program immediately.
E – End the barcode reading session, print a receipt with an amount due on it.
V – Remove the last product from the receipt, and it's price from the total due.

This methodology of accepting a barcode or a command code is the same as accepting a name or a 'q' to quit in previous programs: just with more options. Think about how (if at all) you use the *else*.

Database of products:

There will be a file containing a database of products. This is be pre-created enabling you to copy it in to your folder and use it. It is in this document as well as on the subject webpage. This is a flat file database,as you have dealt with previously.

Cancellation:

In the event of a last barcode being cancelled, reduce by one the counter that is tracking your progress in the sale (and subtract the last added value). This means that there is no real deletion, rather that unwanted data is overwritten.

Presentation:

Marks are awarded for attractive presentation both of the screen output and the source code. Code indentation is ***vital***.

Submission Mechanism:

By paper via the submission box in room 15, and by e-mail (**details to be announced**). Don't forget the 'My Own Work' form as a cover page. Ensure you have at least:

- Cover sheet ('My Own Work')
- Flow chart (Read the programming website for information).
- Source code (The perl program, printed)
- Sample data used (A screen capture of the program in operation)
- Other screen capture(s) as required
- (Photograph of you using the barcode scanner with your program, if possible)

Any other relevant supporting materials

Due Date:

20070126, 15:15 (Soft Deadline)

Sample Data:

Sample Data Used In Assignment 01
-available *in "/home/public/barcodes.dat "*

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0.95:3068320014067:Evian 0.75L
6.99:5016676012167:DVD-R 5's
1.95:5099874080336:Small Sandwich Bags
2.99:4005808820610:Hand Cream 75ml
3.59:5000158065284:Gaviscon 150ml
12.52:9780596000325:Perl Programming
8.75:7315880032267:Thorsman Cable Nail
2.25:5391511560462:Vanilla Candles
2.00:9770791688077:Sunday Independent
9.99:5703976138993:Popular Classics CD
4.49:8470006695494:Cod-Efferelgan
45.50:8713439143485:650W Power Supply
12.35:5099442003613:Glucosamine Tablets
5.48:5000158062191:CODIS
0.99:4975769310331:700MB CD Single
19.95:3253560670818:Screwdriver Set
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20060310 – Sample Barcodes, Assignment #1, 2007	
 50 Small Sandwich Bags	 650W Power Supply
 700MB CD.png	 Atrixo Hand Cream 75ml.png
 Codis	 DVD-R 5-pack
 Cod Efferelgan	 Evian 0.5L Mineral Water

 Gaviscon Anti-Acid 150ml.png	 Glucosamine Tablets
 Perl Programming Reference	 Popular Classics
 Screwdriver Set	 Sunday Independent
 Thorsman 2x25 Cable Nail	 Vanilla Candles