Draft: 20060426

Computer Programming

C Programming Assignment #2, 2006

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

NOTE: To more easily deal with reading strings the descriptions of products will use an underscore (_) instead of spaces if more than one word is included in the description. The spaces between the words would otherwise break the string.

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.

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 and a beep of the bell. 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 bar code reading session to commence.

At any point, if a bar code is read which is not in the database, the program should beep three times 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.

NOTE: Individual elements of the input array are addressible; to test for a code such as 'V' then the element with a subscript of [0] in the barcode read would have to be examined.

Database of products:

There will be a file containing a database of products. This will 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.

Cancellation:

In the event of a last barcode being cancelled reduce by one the counter that is tracking your progress in the number tracking your progress through the 'receipts' arrays. As in the last example, this means that there is no real deletion, rather 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:

Paper & online at the program submission link at on subject webpage. Don't forget the 'My Own Work' form as a cover page. Ensure you have at least:

- Cover sheet
- Flow chart
- Source code
- Sample data
- Screen capture(s) as required
- (Photograph of you using the barcode scanner with your program, if possible)

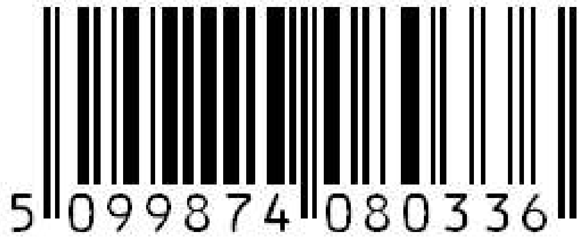
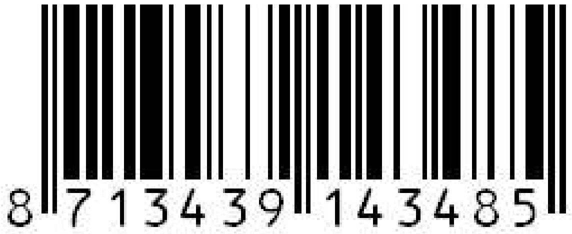
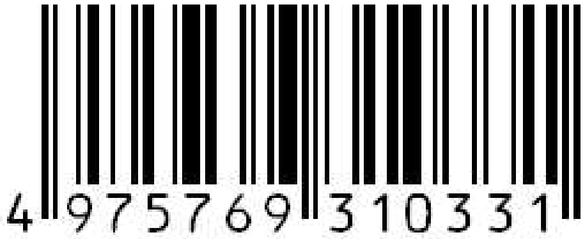
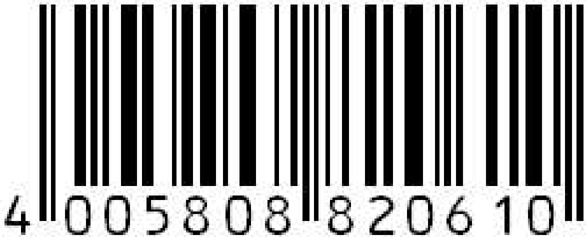
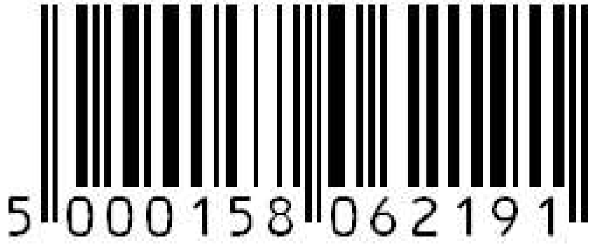
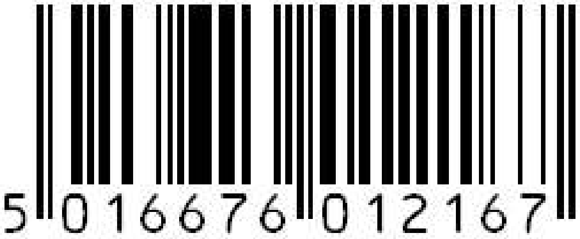
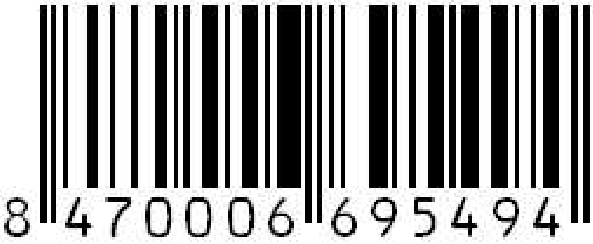
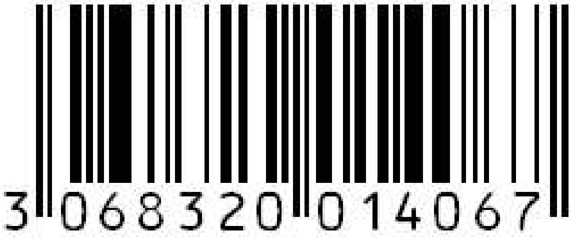
Any other relevant supporting materials

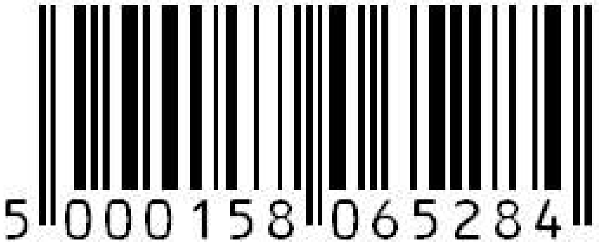
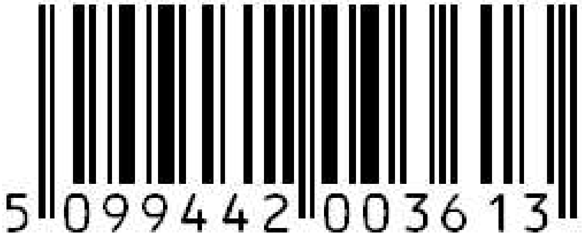
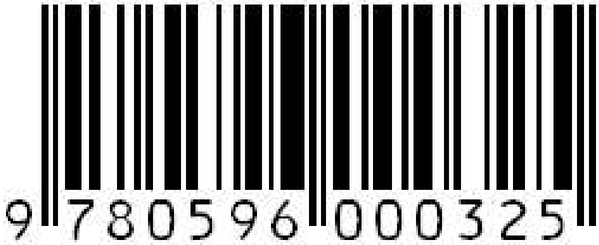
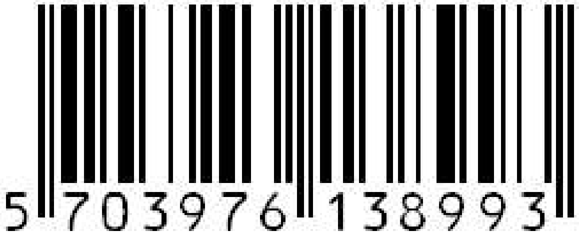
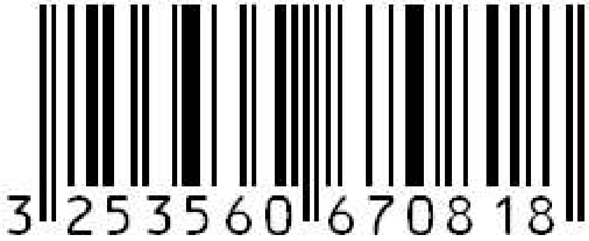
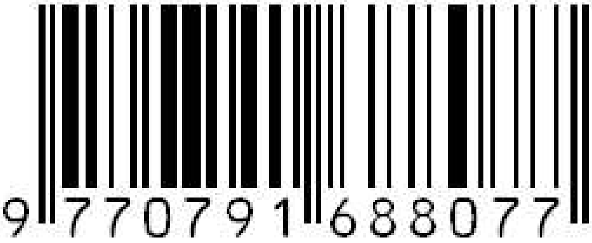
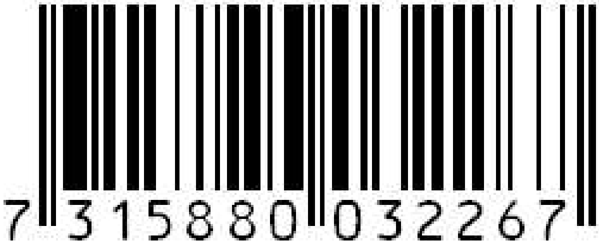
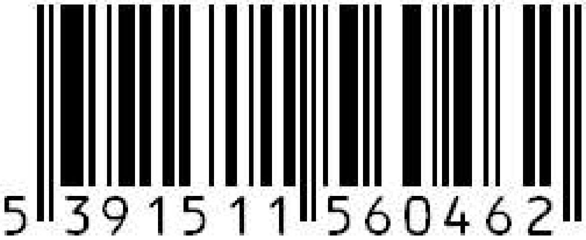
Due Date:

20060324, 15:15 (*will be subject to extension into 3rd term*)

Sample Data Used In Assignment – *in "barcodes.dat"*

```
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
```

20060310 – Sample Barcodes, Assignment #2, 2006	
 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

 5 000158 065284 Gaviscon Anti-Acid 150ml.png	 5 099442 003613 Glucosamine Tablets
 9 780596 000325 Perl Programming Reference	 5 703976 138993 Popular Classics
 3 253560 670818 Screwdriver Set	 9 770791 688077 Sunday Independent
 7 315880 032267 Thorsman 2x25 Cable Nail	 5 391511 560462 Vanilla Candles