

## Background:

The local Kroger has self check-out lanes. The key to the self check-out is quick retrieval of information about a product, based on the products, UPC. This project will simulate reading one products UPC and computing the cost, including tax, of that product.

## Details:

For this project, you will read information from a file that contains information about a particular product. You will need to read the products UPC number, products unit price, the number of units purchased. You will compute the total purchase price, including tax, and print a summary statement into another file.

The input file will be called "Stock.in" and will have the following format: First line will be the product's UPC number. The second line will be the product's name. The third line will be the product's unit price. The fourth line will be the number of units purchased. The final line is the tax rate in a decimal form. Each line will be delimited from the data by a colon. An example follows:

UPC Number:	012-34230-6574
Product Name:	Chocolate Milk
Unit Price:	\$1.54
Units Purchased:	13
Tax Rate:	0.04

The output file will be called "Stock.out" and will have the following format. The first line give the product's UPC. The second line will give the product's name. The third line will be the unit price. The fourth line will be the number of units purchased. The fifth line will be the tax rate. The sixth line will be the subtotal on the purchase (i.e. not including tax). The seventh line will be the tax on the purchase, truncated to two decimal places. The eighth line will be the total purchased price (i.e. include tax). The format given below must be followed exactly. An example follows:

UPC Number:	012-34230-6574
Product Name:	Chocolate Milk
Unit Price:	\$1.54
Units Purchased:	13
Tax Rate:	0.04
Subtotal:	\$20.02
Tax:	\$00.80
Total:	\$20.82

## Programming Considerations:

When programming the solution to this problem, you want to use the stream functions discussed in class. Decide the most efficient way to read or parse the input file and produce the output file.

- You are only to use what we have discussed so far in class.
- You are not to use any other code or ideas that we haven't discussed.
- You should have a header comment identifying yourself, and describing what the program does.
- Every constant and variable you declare should have a comment explaining its logical significance in the program.
- Every major block of code should have a comment describing its purpose.
- Adopt a consistent indentation style and stick to it.
- Your implementation must also meet the following requirements:
  - Choose descriptive identifiers when you declare a variable or constant. Avoid choosing identifiers that are entirely lower-case.
  - Use C++ streams for input and output, not C-style constructs.
  - Use C++ string variables to hold character data, not C-style character pointers or arrays.
  - Note: you are explicitly forbidden to write any user-defined functions for this program. This will make the program somewhat repetitive, and physically longer than the alternative. To some extent, that's the reason for this restriction.

## Submitting your project

You will submit this assignment to the Curator System (read the *Student Guide*), and it will be graded automatically. Instructions for submitting, and a description of how the grading is done, are contained in the *Student Guide*.

You will be allowed up to five submissions for this assignment. Use them wisely. Test your program thoroughly before submitting it. Make sure that your program produces correct results for every sample input file posted on the course website. If you do not get a perfect score, analyze the problem carefully and test your fix with the input file returned as part of the Curator e-mail message, before submitting again. The highest score you achieve will be counted.

The *Student Guide* and submission link can be found at:

<http://www.cs.vt.edu/curator/>

## Pledge

Each of your program submissions must be pledged to conform to the Honor Code requirements for this course. Specifically, you **must** include the following pledge statement in the header comment for your program:

```
// On my honor:  
//  
// - I have not discussed the C++ language code in my program with  
// anyone other than my instructor or the teaching assistants  
// assigned to this course.  
//  
// - I have not used C++ language code obtained from another student,  
// or any other unauthorized source, either modified or unmodified.  
//  
// - If any C++ language code or documentation used in my program  
// was obtained from another source, such as a text book or course  
// notes, that has been clearly noted with a proper citation in  
// the comments of my program.  
//  
// - I have not designed this program in such a way as to defeat or  
// interfere with the normal operation of the Curator System.  
//  
// <Student Name>
```

**Failure to include this pledge in a submission is a violation of the Honor Code.**