CS150 Assignment 5
Amazin! Online

Date: Wednesday, October 25, 2006
Date Due: Wednesday, November 8, 2006
Total Points: 50

You've just been hired by "Amazin!", an online company that sells books, DVDs, and CDs, to generate invoices for their customers.

Order File

Someone else has created the online ordering forms that customers use to place orders. The output from these online forms is a data file of the following format:

- 1st line; account name.
- Next lines: item information. These include:
    - Item number
    - Item type
    - Item title
    - Item author
    - Quantity
    - Price per item.

This file should be input to your program. The following is an example of a data file. Notice that any product description that has multiple words uses a "_" to separate words (*hint: this way you can use a single string to hold the description*).

```
Gloria Gaynor
54356 book Coming_Out Danielle_Steel 1 13.00
56132 book Can't_Wait_to_Get_to_Heaven Fannie_Flagg 1 17.13
32684 dvd Pirates_of_the_Caribbean Walt_Disney_Video 3 21.87
12548 cd The_Open_Door Evanescence 5 9.88
23156 book Angels_Fall Nora_Roberts 1 17.13
89456 dvd The_Da_Vinci_Code Sony_Pictures 10 29.96
45856 cd Continuum John_Mayer 9 9.72
```

Invoice File

Your program is to create an invoice file based on the order file. The invoice must calculate the total price of all the items according to a few rules as dictated by the Internet specials that "Amazin!" is running.

1. First, if a customer buys more than one of them same item, and that item costs more than $5 each, then each subsequent item of the same type will be discounted by $1. For example, if a customer purchased more than one item that cost $6.99, the price would be $6.99 for the first item and $5.99 for any additional number of items purchased of the same type.

2. Second, if the total amount of the purchase is over $500.00, then the cheapest item (before any discount) is free.

Notes:
- You may assume that the most expensive item sold on the site is $9999.99.
- The title will never exceed 30 characters.

The following invoice is an example of what your program should generate. You must duplicate the format exactly. It is a bit difficult to fit onto one line, but you should be able to without it wrapping.

```
Amazin! Invoice
Account Name: Gloria Gaynor


  Item                        Title   Quantity  Price  SubTotal  Discount     Total
-------------------------------------------------------------------------------
  54356                  Coming_Out          1  13.00     13.00      0.00     13.00
  56132  Can't_Wait_to_Get_to_Heaven        1  17.13     17.13      0.00     17.13
  32684     Pirates_of_the_Caribbean        3  21.87     65.61     -2.00     63.61
  12548              The_Open_Door           5   9.88     49.40     -4.00     45.40
  23156               Angels_Fall           1  17.13     17.13      0.00     17.13
  89456            The_Da_Vinci_Code        10  29.96    299.60     -9.00    290.60
  45856               Continuum             9   9.72     87.48     -8.00     79.48
-------------------------------------------------------------------------------
SubTotal:                                                                    526.35
Discount: Continuum                                                           -9.72
Total:                                                                       516.63
Thank you for ordering from Amazin!
```

Screen Output

As well as saving the invoice to the file, you should also display it onto the screen. Your output should look exactly like the following:

```
******************************************************************
                  Amazin! Online
******************************************************************

Hello Gloria Gaynor. Welcome to Amazin! Online
Here is the invoice for your order:

  Item                        Title   Quantity  Price  SubTotal  Discount     Total
-------------------------------------------------------------------------------
  54356                  Coming_Out          1     13        13         0        13
  56132  Can't_Wait_to_Get_to_Heaven        1  17.13     17.13         0     17.13
  32684     Pirates_of_the_Caribbean        3  21.87     65.61        -2     63.61
  12548              The_Open_Door           5   9.88      49.4        -4      45.4
  23156               Angels_Fall           1  17.13     17.13         0     17.13
  89456            The_Da_Vinci_Code        10  29.96     299.6        -9     290.6
  45856               Continuum             9   9.72     87.48        -8     79.48
-------------------------------------------------------------------------------
SubTotal:                                                                    526.35
Discount: Continuum                                                           -9.72
Total:                                                                       516.63
Thank you for ordering from Amazin!


Press any key to continue . . .
```

To complete this assignment you must

1. Create a new C++ project in Visual Studio. Name your project "05Invoicexxxxxxxx", where xxxxxxxx should be replaced by your PU Net Id. As an example, my project would be called "05Invoicekhoj0332". It is vital that you name your project correctly!
2. Type the solution (fully documented/commented) to the problem into your project.
3. Make sure that your program compiles and runs correctly. If you get any errors, double check that you typed everything correctly. Be aware that C++ is case-sensitive.
4. Don't forget to use the debugger!!
5. Once you are sure that the program works correctly it is time to submit your program. You do this by logging on to Turing and placing your complete project folder in the CS150-01 drop folder. Make sure that you copy your program folder and don't move it. If you move it, then you will not have your own copy!
6. You must submit a stapled, hard copy of your program. You must also submit a hard copy of the invoice files for the test cases that we will provide you with next week.

Notes

1. You must follow the coding standards.
2. You must check that the files opened correctly. If not, then you should exit the program.
3. You must use constants when possible. Note that file names cannot be stored as strings, so it is okay to hardcode these in the open function. For example: `inFile.open("in.txt");`
4. Your program will be graded on efficiency. In other words, you will be marked down for repeating code statements unnecessarily.
5. You may only use the C++ programming concepts covered thus far in class. Do not use any more advanced concepts that we have not covered or any other programming concepts that you have had experience with.
6. Your output must look exactly like the sample given.
7. You must comment your code appropriately.
8. Refer to the syllabus for what constitutes plagiarism, and the consequences for plagiarizing.

To receive full credit for this assignment, your project must be in the drop box by 1pm on the day that it is due. Anything later will be considered late. Further, you must bring a hard copy of your program to class and place it on the instructor's desk by 1pm.

Good luck! And remember, if you have any problems, come and see me straight away.

START EARLY!!