CMPT 120 - Program 6
Program Due: Thursday, October 24, before 1:30 p.m. (Submitted & Printed)
Bring hardcopy to class to turn in

The purpose of this program is to learn about functions and to continue to master conditional statements and loops. This program will track pay-per-view movies based on the following rules.

The **main()** function will ask for the following (**in this order!**):

* Customer ID – integer between 25000 and 99999, inclusive
  Customer Name – String,
* Number of Movies ordered – positive integer

* means that you must validate the input. If invalid input is given, ask for it again (until it is valid).

main() will then use the following functions to complete its work.

The function **`chooseMovies()`** accepts as a parameter the number of movies ordered. This function will ask the user to enter information about ***each*** of the movies she wants:

* movieLength, which is an integer (between 1 and 240, inclusive) indicating number of minutes, and
* rating, which is a character used to help determine the cost of the movie,
  G for G-rated (3.9 cents per minute),
  P for PG-rated (5.4 cents per minute),
  R for R-rated (6.8 cents per minute),
  X for X-rated (27.3 cents per minute),
  O for Other (4.0 cents per minute).

Both of these values must be validated. The cost for each movie is the number of minutes times the cost per minute. This function will return the total cost of ***all*** of the movies chosen by the user.

The function **`calcServiceCharge()`** accepts as parameters the number of movies purchased and the total cost of the movies and returns the service charge, based on the following table:

1 to 3 movies	18% of the total cost
4 to 7 movies	15% of the total cost
8 to 11 movies	11% of the total cost
over 11 movies	5% of the total cost

The function **`calcTotalDue()`** accepts as parameters the cost of the movies and the service charge, and returns the total amount due, which is the sum of the two, plus tax (which is 7% of the total).

The function **`outputResults()`** accepts as parameters the Customer Name, Customer ID, number of movies purchased, total cost of the movies, service charge and total amount due. It prints out this information, neatly formatted and properly labeled. This function returns nothing.

Remember to use mnemonic variable names, to prompt the user for input, and to properly label and format the output (use a dollar sign, 2 digits after the decimal point, etc., on output). Be sure to document your entire program, including the functions.

You **must** use functions – do not do all of the work in main().

[Do this part after you have completed the stuff on the front page!]

Now, you once again get to add a "big" loop, which will allow your program to work for multiple customers. This "big" loop will have as its body the code you wrote, plus a bit more. Your program will allow the user to enter download data for multiple customers. You'll still print out information about each individual customer. Your program will continue to run until she enters the value 0 (zero) for a customer ID. (Inputting the number zero for the customer ID will terminate the loop.) You will want to keep track of the following values:

- the **number of customers** processed,
- the **highest amount charged to a customer,**
- the **customer ID of the highest amount,**
- the **lowest amount charged to a customer,**
- the **customer ID of the lowest amount,**
- the **total amount of <u>all</u> downloads purchased,** and
- the **average of all purchase amounts.**

(**HINT**: Which of these can you determine *inside* the big loop and which of these must you wait until *after* the big loop is finished?)

The program then prints a summary including the **number of customers** processed, the **highest amount,** the **customer ID of the highest amount,** the **lowest amount,** the **customer ID of the lowest amount,** the **total amount of downloads purchased,** and the **average purchase amount.** Of course, you'll want to label and properly format these, too! ☺