CS150 Assignment 2
A Currency Converter

Date assigned: Wednesday, September 14, 2011
Program due: Friday, September 23, 2011, 9:15am (25 points)

You have just been hired by a European travel agency to write a currency conversion program. The agency has many European travelers going to the US who would like to know how many American dollars they should expect to get for their currency. The two currencies that the travel agency handles are British Pounds and Euros.

The agency also wants the program you write to show how the American dollar amount will translate to the number of different bills and coins. Now, there are many different ways to split a particular dollar amount into bills and coins, but the travelers want to have as many high denomination bills and coins as possible.

Assume that the highest denomination bill that they would receive is a $20 dollar bill and that they will not receive any half dollar coins. For example, $62.30 would be split into 3-$20 bills, 0-$10 dollar bills, 0-$5 bill, 2-$1 bill, 1-quarters, 0 dimes, 1-nickel and 0-pennies. It would NOT be 0-$20 bills, 6-$10 bills, 0-$5 bills, 2-$1 bills, 0-quarters, 3-dimes, 0-nickels and 0-pennies.

The exchange rates you must use are:
- 1 Euro = 1.37 US Dollars
- 1 British Pound = 1.58 US Dollars

On the next page are two example runs of the program. The show exactly what your program is to output (asterisks and all), and example user input is in bold. The user must enter a P for British pounds or E for Euros. P and E must be capitalized.

```
***********************
* Currency Converter  *
***********************

Hello, traveler. Please enter your name: Claude

Welcome Claude! Select your currency ([P]ounds or [E]uros): E

1 Euro is equivalent to 1.37 US Dollars. Please enter the
number of Euros that you wish to convert to US dollars: 35

35 Euros are equivalent to $47.95, which is $47 in notes, and
95 cents in change.

That is:
2 $20 bills
0 $10 bills
1 $5 bills
2 $1 bills
3 quarters
2 dimes
0 nickels
0 pennies
```

```
***********************
* Currency Converter  *
***********************

Hello, traveler. Please enter your name: Jane

Welcome Jane! Select your currency ([P]ounds or [E]uros): P

1 British Pound is equivalent to 1.58 US Dollars.

Please enter the number of British Pounds that you wish to
convert to US dollars: 35

35 British Pounds are equivalent to $55.30, which is $55 in
notes, and 30 cents in change.

That is:
2 $20 bills
1 $10 bills
1 $5 bills
0 $1 bills
1 quarters
0 dimes
1 nickels
0 pennies
```

To complete this assignment you must submit the following:

1. **An electronic copy of your program on Turing**

   a. Add a new project named 02_Currency to your previously created assignment solution called PUNetIDAssignments. It is *vital* that you name your project correctly!

   b. Type your program (fully documented/commented) into the project. The comment block at the top of the program needs to contain your name, the date the assignment is due, the class name, assignment number and name, and a brief description of the program.

   c. Pay attention to the example output! Your program's output should look **exactly** like the example output! The spacing and newlines in your output must match exactly.

   d. 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.

   e. 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 solution folder in the **CS150-02 Drop** folder. This solution folder must contain two projects: 01_Fraction and 02_Currency.

   f. The program must be in the drop folder by 9:15am on the day that it is due. Anything submitted after that will be considered late.

2. **A hard copy of your program**

   a. The hard copy must be placed on the instructor's desk by 9:25am on the day that it is due.

   b. The hard copy must be printed in color, double-sided, and stapled if necessary. I do not bring a stapler to class.

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

   The printers in Marsh are slow. Do NOT expect to be able to print your code 10 minutes before class!