Check Protection

Introduction

Computers are frequently employed in check-writing systems such as payroll and accounts payable applications. Many strange stories circulate regarding weekly paychecks being printed (by mistake) for amounts in excess of $1 million. Weird amounts are printed by computerized check-writing systems because of human error and/or machine failure. Systems designers, of course, make every effort to build controls into their systems to prevent erroneous checks from being issued.

Another serious problem is the intentional alteration of a check amount by someone who intends to cash a check fraudulently. To prevent a dollar amount from being altered, most computerized check-writing systems employ a technique called *check protection*.

1. Checks designed for imprinting by computer contain a fixed number of spaces in which the computer may print an amount. Suppose a paycheck contains eight blank spaces in which the computer is supposed to print the amount of a weekly paycheck. If the amount is large, then all eight of those spaces will be filled, for example:

```
1,230.60    (check amount)
--------
12345678    (position numbers)
```

   On the other hand, if the amount is less than $1000, then several of the spaces would ordinarily be left blank. For example,

```
   99.87
--------
12345678
```

   contains three blank spaces. If a check is printed with blank spaces, it is easier for someone to alter the amount of the check. To prevent a check from being altered, many check-writing systems insert leading asterisks to protect the amount as follows:

```
***99.87
--------
12345678
```

2. Another common security method requires that the check amount be written both in numbers, and "spelled-out" in words as well. Even if someone is able to alter the numerical amount of the check, it is extremely difficult to change the amount in words. Many computerized check-writing systems do not print the amount of the check in words. Perhaps the main reason for this omission is the fact that most high-level languages used in commercial applications do not contain adequate string manipulation features. Another reason is that the logic of writing word equivalents of check amounts is somewhat involved.

Problem Statement

Write a program that inputs a dollar amount to be printed on a check, and then prints the amount in check-protected format with leading asterisks if necessary.

Input

The dollar amount will be greater than or equal to 1 dollar and less than one million dollars. The input will always consist of dollars and cents fields with the decimal point included. The dollar sign ($) is omitted. Examples of valid input values: 1.00 78.25 112.43 1782.89 999999.99

Output

Your program display the dollar amount read in check-protected format (that is, with leading asterisks if needed). Assume that nine spaces are available for printing an amount. Your program also writes the word equivalent of the amount. For example, if the dollar amount 112.43 is entered as input, your program should produce the following output:

***112.43
ONE HUNDRED TWELVE and 43/100

Processing Notes

Your program must allow the user to repeat processing until an invalid input value (you may use zero) is entered.

Deliverables

- The source code of your program renamed using the following naming convention:
  LastName-FristName-AssignmentNumber.cpp

Submission Instructions

- A listing of the source code of your program named as described above.
- Submit your deliverables as indicated above in the drop box dedicated for this assignment.