

Program 4 - **Checks**
Comp 170
100 Points
Due 10/20/2005

Write a C++ program that converts dollar amounts from numeric form into its English equivalent, similar to what would be seen on a check. Your program should produce output *exactly* like the example below.

Amount? 143

One Hundred Forty Three Dollars and No Cents

Amount? 2.345

Two Dollars and 35 Cents

Amount? 0.1

No Dollars and 10 Cents

Amount? 1.01

One Dollar and 1 Cent

Amount? 123456789.12

One Hundred Twenty Three Million Four Hundred Fifty Six Thousand Seven Hundred Eighty Nine Dollars and 12 Cents

Amount? 0

Rules:

1. Input numbers will always be between 0 and one billion.
2. Stop asking for amounts when 0 is entered.
3. Capitalize as shown in the above example.
4. Put the dollars in words but the cents in numbers (except for No Cents).
5. Round all cents to the nearest penny.
6. Make sure the singulars and plurals are correct (Cent vs. cents, dollar vs. dollars).
7. Don't worry about text being too long for the screen- it's ok for a word to be split in half at the screen edge.

Turn in a printout of your documented program CHECKS.CPP, and submit it to the assignment submission system *before* class on the day it is due.

The first main purpose of this program is to get experience with functions. You will be penalized greatly for redundant code, so use functions when appropriate.

The other main purpose of this program is to get experience with c-strings.

Start with this code:

```
#include<iostream>
```

```

using namespace std;

const int MAX_LENGTH = 1000;

void convertMoneyToString( double money , char moneyString[] );

void main()
{
    double money;
    char moneyString[MAX_LENGTH];

    do
    {
        cout << "Amount? ";
        cin >> money;

        if( money > 0 )
        {
            convertMoneyToString( money , moneyString );
            cout << moneyString << endl;
        }
    }
    while( money > 0 );
}

void convertMoneyToString( double money , char moneyString[] )
{
}

```

Here is some help.

```

#include<iostream>
using namespace std;

void main()
{
    double money;
    int wholeMoney;
    int billions;
    int millions;
    int thousands;
    int hundreds;
    int cents;

    cin >> money;
    wholeMoney = (int) money;
    cents = (int) ((money - wholeMoney + .005 ) * 100);

    cout << "whole Money = " <<wholeMoney << endl;
    cout << "cents = " << cents << endl;

    billions = wholeMoney / 1000000000;
}

```

```
wholeMoney -= billions * 1000000000;  
  
millions = wholeMoney / 1000000;  
wholeMoney -= millions * 1000000;  
  
thousands = wholeMoney / 1000;  
wholeMoney -= thousands * 1000;  
  
hundreds = wholeMoney;  
  
cout << billions << endl;  
cout << millions << endl;  
cout << thousands << endl;  
cout << hundreds << endl;  
}
```