

## Answer on Question#37575 - Programming, C++

1. Create a program that would convert one number system to another. Press A for decimal, B for binary to other, C for oct to other, and D for hex to other.

### Solution.

```
#include <iostream>
#include <cmath>
#include <string>

using namespace std;

int bin(int value);
int oct(int value);
string hex(int value);
int main(int argc, char* argv[])
{
    int value;
    char ch;

    cout<<"Enter a decimal number:"<<endl;
    cin>>value;
    cout<<"To convert to a decimal, press \"A\"!"<<endl;
    cout<<"To convert to a binary, press \"B\"!"<<endl;
    cout<<"To convert to a octal, press \"C\"!"<<endl;
    cout<<"To convert to a hexadecimal, press \"D\"!"<<endl;
    cin>>ch;

    if(ch=='A'){cout<<dec<<value;}
    if(ch=='B'){cout<<bin(value);}
    if(ch=='C'){cout<<oct(value);}
    if(ch=='D'){cout<<hex(value);}
    cout<<endl;

    system("pause");
    return 0;
}

int bin(int value)
{
    int bin=0;

    for(int j=0; value>0; j++)
    {
        bin+=(value%2)*powf(10.0,j);
        value/=2;
    }

    return bin;
}

int oct(int value)
```

```

{
    int oct=0;

    for(int j=0; value>0; j++)
    {
        oct+=(value%8)*powf(10.0,j);
        value/=8;
    }

    return oct;
}

string hex(int value)
{

    string hex;
    int c,r;
    char result[128] = {0};
    char* head = result;
    do {
        c = value / 16;
        r = value % 16;
        value = c;
        *head++ = "0123456789ABCDEF"[r];
    } while( value );

    while( head-- != result)
    {
        hex+=*head;
    }

    return hex;
}

```

The screenshot shows a Windows command prompt window titled "D:\Projects\Q\Debug\Q.exe". The prompt displays the following text:

```

Enter a decimal number:
125
To convert to a decimal, press "A"?
To convert to a binary, press "B"?
To convert to a octal, press "C"?
To convert to a hexadecimal, press "D"?
B
1111101

```