

Binary to Decimal

Given a binary number as input, we need to write a program to convert the given binary number into an equivalent decimal number.

Examples :

Input : 111

Output : 7

Input : 1010

Output : 10

Input: 100001

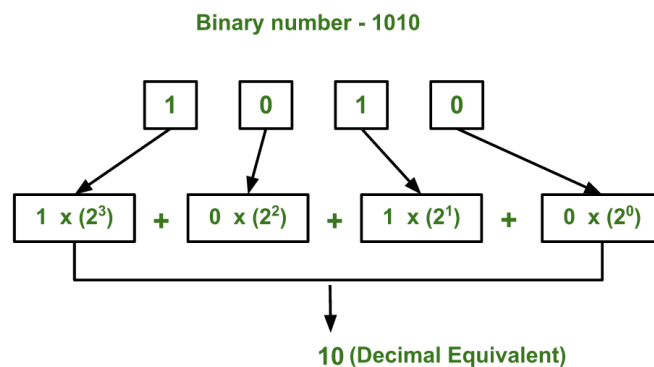
Output:33

The idea is to extract the digits of a given binary number starting from the rightmost digit and keep a variable `dec_value`. At the time of extracting digits from the binary number, multiply the digit with the proper base (Power of 2) and add it to the variable `dec_value`. In the end, the variable `dec_value` will store the required decimal number.

For Example:

If the binary number is 111.

$$\text{dec_value} = 1 \times (2^2) + 1 \times (2^1) + 1 \times (2^0) = 7$$



```
#include<iostream>
using namespace std;
```

```
int main()
{
    int n, val = 0 , base = 1;
    cin >> n;
    while(n > 0)
    {
        int lastDigit = n%10;
        val += (lastDigit*base);
        n /= 10;
        base *= 2;
    }
    cout << val;
    return 0;
}
```

INPUT :

1010

OUTPUT :

10