Day -20 of 101 days of coding challenge

----------Bit manipulation----------

⇨ Left Shift Operator:(a<<b)

Let's take **a=5**; which is **101** in Binary Form. Now, if "*a is left-shifted by 2*

a=a<<2 then **a** will become **a=a*(2^2)**. Thus, **a=5*(2^2)=20** which can be written

as **10100.**

⇨ Right Shift Operator: (a>>b)

let's take **a=5**; which is **101** in Binary Form. Now, if "*a is right-shifted by 2*" **i.e** **a=a>>2** then **a** will become **a=a/(2^2)**. Thus, **a=a/(2^2)=1** which can be written as **01**.

⇨ Checking ith value is 1 or 0 (a<<i):
Code:

```
#include<iostream>

using namespace std;

int main()
{
        // Left shift
        int a = 5;
        if(a & (1<<2) ==0) //101(5) & 100 (2 * 2^1)
                cout<<"In second position value is 0"<<endl;
        else
           cout<<"In second position value is 1"<<endl;
```

```
        if(a | (1<<2) ==0) //101(5) | 100 (2 * 2^1)
              cout<<"In second position value is 0"<<endl;
        else
           cout<<"In second position value is 1"<<endl;



        // Right shift
        cout<<"Right shift....."<<endl;
        if(a & (1>>2) ==0) //101(5) & 100 (2 * 2^1)
              cout<<"In second position value is 0"<<endl;
        else
           cout<<"In second position value is 1"<<endl;

        if(a | (1>>2) ==0) //101(5) | 100 (2 * 2^1)
              cout<<"In second position value is 0"<<endl;
        else
           cout<<"In second position value is 1"<<endl;

        return 0;
}
```

Output:

```
In second position value is 1
In second position value is 0
Right shift..............
In second position value is 0
In second position value is 0

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Process exited after 0.08847 seconds with return value 0
Press any key to continue . . .
```