**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:

