**19/03/2024**

**Relational Operators**

#include <stdio.h>

void main(){

int a,b,c,d;

scanf("%d%d",&a,&b);

c=a+b;

d=a\*b;

printf("c=%d\nd=%d\n",c,d);

if(c==d){

printf("c is equal to d");

}

else if(c<d){

printf("c is less than d");

}

else if(c>d){

printf("c is greater than d");

}

}

**Bitwise operator**

#include<stdio.h>

void main(){

unsigned char a=5,b=9;

printf("a&b = %d\n",a&b);

printf("a|b = %d\n",a|b);

printf("a^b = %d\n",a^b);

printf("a<<1 = %d\n",a<<1);

printf("a>>1 = %d\n",a>>1);

printf("b<<1 = %d\n",b<<1);

printf("b>>1 = %d\n",b>>1);

printf("~a = %d\n",a=~a);

printf("~b = %d\n",b=~b);

}

**SET A BIT**

#include<stdio.h>

void main(){

int a,b,result;

scanf("%d%d",&a,&b);

result=(1<<b)|a;

printf("result=%d\n",result);

}

**CLEAR A BIT**

#include<stdio.h>

void main(){

int a,b,result;

scanf("%d%d",&a,&b);

result=a& ~(1<<b);

printf("result=%d\n",result);

}

**TOGGLE A BIT**

#include<stdio.h>

void main(){

int a,b,result;

scanf("%d%d",&a,&b);

result=a^(1<<b);

printf("result=%d\n",result);

}

**Check if a BIT IS SET OR NOT**

#include<stdio.h>

void main(){

int a,b,c,count;

scanf("%d",&a);

result=(1<<b)|a;

if(c==a){

printf("The bit is already set :%d\n",a);

}

else{

printf("The bit is not set :%d\n",result);

}

}

**Count the number bit set**

#include<stdio.h>

void main(){

int a,b,c,count=0;

scanf("%d",&a);

for(b=0;b<=8;b++){

c=(1<<b)|a;

if(a==c){

count++;

}

}

printf("The number of set bits is :%d\n",count);

}

**BIT ROTATION**

#include<stdio.h>

#include<stdlib.h>

void main(){

int number,n,num1,num2;

scanf("%d%d",&number,&n);

num1=(number<<n)|(number>>(32-n));

printf("After Left rotation the value is = %d\n",num1);

num2=(number>>n)|~(number<<(32-n));

printf("After Right rotation the value is = %d",num2);

}

**POWER OF 2**

#include<stdio.h>

#include<stdlib.h>

void main(){

int a;

scanf("%d",&a);

if((a&(a-1))==0){

printf("%d is a power of 2",a);

}

else{

printf("%d is not a power of 2",a);

}

}