

## BIT MANIPULATION:

**A - Check bit** <https://vjudge.net/problem/HackerRank-si-basic-check-bit>

### Source Code:

```
#include <iostream>

using namespace std;

int main()
{
    int N,i,k;
    cin>>N>>i;
    k=N&(1<<i);
    if(k!=0)
        cout<<"true";
    else
        cout<<"false";
    return 0;
}
```

**B - Check Power of Two** <https://vjudge.net/problem/HackerRank-si-check-power-of-two>

### Source code:

```
#include <iostream>

using namespace std;

int main()
{
    long int T;
    cin>>T;
    while(T--){
        long int N;
```

```

cin>>N;
int c=N&(N-1);
if(c==0)
    cout<<"True"<<endl;
else
    cout<<"False"<<endl;
}
return 0;
}

```

[C - Finding Missing Number](https://vjudge.net/problem/HackerRank-si-finding-missing-number) <https://vjudge.net/problem/HackerRank-si-finding-missing-number>

### Source code :

```

#include <iostream>
using namespace std;
int main(){
    int T;
    cin>>T;
    while(T--){
        int N,i;
        cin>>N;
        int s=0,ar;
        for(i=1;i<=N;i++){
            cin>>ar;
            s=s^ar^i;
        }
        cout<<(s^(N+1))<<endl;
    }
}

```

```
}  
return 0;  
}
```

**D - Flip Bits** <https://vjudge.net/problem/HackerRank-si-flip-bits>

**Source code:**

```
#include <iostream>  
using namespace std;  
int main()  
{  
    long int T;  
    cin>>T;  
    while(T--){  
        long int A,B;  
        cin>>A>>B;  
        int c=A^B,count=0;  
        while(c!=0){  
            int x=c&1;  
            if(x!=0)  
                count++;  
            c=c>>1;  
        }  
        cout<<count<<endl;;  
    }  
    return 0;  
}
```

**E - Reverse Bits** <https://vjudge.net/problem/HackerRank-si-reverse-bits>

**Source code:**

```
#include<iostream>

using namespace std;

int main()
{
    int T;

    cin>>T;
    while(T--){
        int N;

        cin>>N;

        unsigned r;

        for(int i=0;i<32;i++){
            r=(r<<1)|(N&1);

            N=N>>1;
        }

        cout<<r<<endl;
    }
}
```

**F - Swap Bits** <https://vjudge.net/problem/HackerRank-si-swap-bits>

**Source code:**

```
#include <iostream>

using namespace std;

int main()
{
    int T;

    cin>>T;

    while(T--){
```

```

long N;

cin>>N;

long mask_odd=0xAAAAAAAAAAAAAAAAAL;

long mask_even=0x5555555555555555L;

unsigned long A=(N&mask_odd)>>1;

unsigned long B=(N&mask_even)<<1;

cout<<(A|B)<<endl;

}

}

```

**G - Compute a power b** <https://vjudge.net/problem/HackerRank-si-compute-a-power-b>

#### Source code:

```

#include <iostream>

using namespace std;

int main()
{
    int T;

    cin>>T;

    while(T--){

        long int a,b;

        cin>>a>>b;

        long long r=1;

        while(b>0){

            if(b%2==1)

                r=(r*a)%1000000007;

            a=(a*a)%1000000007;

            b/=2;

        }

    }
}

```

```
        cout<<r<<endl;
    }
    return 0;
}
```