**1. Check if a Number is a Power of 2**

import java.util.Scanner;

public class PowerOfTwo {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int a = sc.nextInt();

boolean ans = (a > 0 && (a & (a - 1)) == 0);

System.out.println(ans); // true if power of 2, false otherwise

sc.close();

}

}

**2. Count the Number of Set Bits**

import java.util.Scanner;

public class CountSetBits {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

int c = 0;

while (n != 0) {

c++;

n = n & (n - 1);

}

System.out.println(c);

sc.close();

}

}

**3. Check if the ith Bit is Set or Not**

import java.util.Scanner;

public class CheckIthBit {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

int i = sc.nextInt();

if ((n & (1 << i)) != 0) {

System.out.println("set");

} else {

System.out.println("unset");

}

sc.close();

}

}

**4. Set the ith Bit**

import java.util.Scanner;

public class SetIthBit {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

int i = sc.nextInt();

n = n | (1 << i);

System.out.println(n);

sc.close();

}

}

**5. Unset the ith Bit**

import java.util.Scanner;

public class UnsetIthBit {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

int i = sc.nextInt();

n = n & ~(1 << i); // to make it zero at that position

System.out.println(n);

sc.close();

}

}

**6. Swap Two Numbers Without Using a Temporary Variable**

import java.util.Scanner;

public class SwapNumbers {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int a = sc.nextInt();

int b = sc.nextInt();

a = a ^ b;

b = b ^ a;

a = a ^ b;

System.out.println(a + " " + b);

sc.close();

}

}

**7. Check if a Number is Odd or Even**

import java.util.Scanner;

public class OddOrEven {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

if ((n & 1) == 1) {

System.out.println("odd");

} else {

System.out.println("even");

}

sc.close();

}

}

**8. Convert Uppercase Character to Lowercase**

import java.util.Scanner;

public class UpperToLower {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

char c = sc.next().charAt(0);

c = (char) (c | (1 << 5));

System.out.println(c);

sc.close();

}

}

**9. Convert Lowercase Character to Uppercase**

import java.util.Scanner;

public class LowerToUpper {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

char c = sc.next().charAt(0);

c = (char) (c & ~(1 << 5));

System.out.println(c);

sc.close();

}

}

**10. Toggle the ith Bit**

import java.util.Scanner;

public class ToggleIthBit {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int c = sc.nextInt();

int i = sc.nextInt();

c = c ^ (1 << i);

System.out.println(c);

sc.close();

}

}