

**2.1 Write a program to print the sum of two numbers without using + operator. Other operators can be used.**

## 2.2 Code with Comments

```
package assignments;

import java.util.Scanner;

public class SumOfTwoNosWithoutUsingPlusOperator {

    public static void main(String[] args) {
        //To get to 2 numbers as input
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter the 1st Number");
        int a=scan.nextInt();
        System.out.println("Enter the 2nd Number");
        int b=scan.nextInt();

        while(b!=0) //Using While loop to execute until the condition
becomes false
        {
            int carry=a&b;// carry contains common bits of a and b
            a=a^b;//Using XOR operator sum of bits of a and b where at
least one of the bits are not set
            b=carry<<1;//Carry is shifted by one so that adding it to a
gives the required sum
        }
        System.out.println("Sum of 2 numbers =" +a);//Printing the
sum of 2 numbers
    }

}
```

## 2.3 Explanation of the code

Getting 2 inputs using scanner class and using while loop to check the condition. Taking one variable as carry to store the values of a and b. Using XOR operator sum of bits of a and b where at least one of the bits are not set, Carry is shifted by one so that adding it to a gives the required sum. Then printing the sum of 2 numbers.

## 2.4 Output

Entering 1<sup>st</sup> input as 10 then 2<sup>nd</sup> as 20 and getting sum of 2 numbers.

```

3 package assignments;
4
5 import java.util.Scanner;
6
7 public class SumOfTwoNosWithoutUsingPlusOperator {
8
9     public static void main(String[] args) {
10         //To get to 2 numbers as input
11         Scanner scan=new Scanner(System.in);
12         System.out.println("Enter the 1st Number");
13         int a=scan.nextInt();
14         System.out.println("Enter the 2nd Number");
15         int b=scan.nextInt();
16
17         while(b!=0) //Using While loop to execute until the condition becomes false
18         {
19             int carry=a&b;// carry contains common bits of a and b
20             a=a^b;//Using XOR operator sum of bits of a and b where at least one of the bits are not set
21             b=carry<<1;//Carry is shifted by one so that adding it to a gives the required sum
22         }
23         System.out.println("Sum of 2 numbers =" +a);//Printing the sum of 2 numbers
24     }
25
26 }

```

Console

<terminated> SumOfTwoNosWithoutUsingPlusOperator (1) [Java Application] C:\Program Files\Java\jre-10.0.1\bin\javaw.exe (21-Nov-2018, 4:09:46 PM)

Enter the 1st Number

10

Enter the 2nd Number

20

Sum of 2 numbers =30