

### 1.Problem Statement:

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

### 2. code with comments:

```
import java.lang.*;
import java.util.*;
import java.io.*;

class Add
{
    public static int add(int a, int b){

        while (b != 0){
            int carry = (a & b) ; //CARRY is AND of two bits

            a = a ^b; //SUM of two bits is A XOR B

            b = carry << 1; //shifts carry to 1 bit to calculate sum
        }
        return a;
    }
    public static void main(String args[])
    {
        System.out.println(add(15, 32));
    }
}
```

3. Explanation of the code: we are calculating carry and keeping it in a separate variable, than we are storing sum of two numbers into variable a, and shifts carry to 1 bit by using signed left shift operator, In order to add into sum.

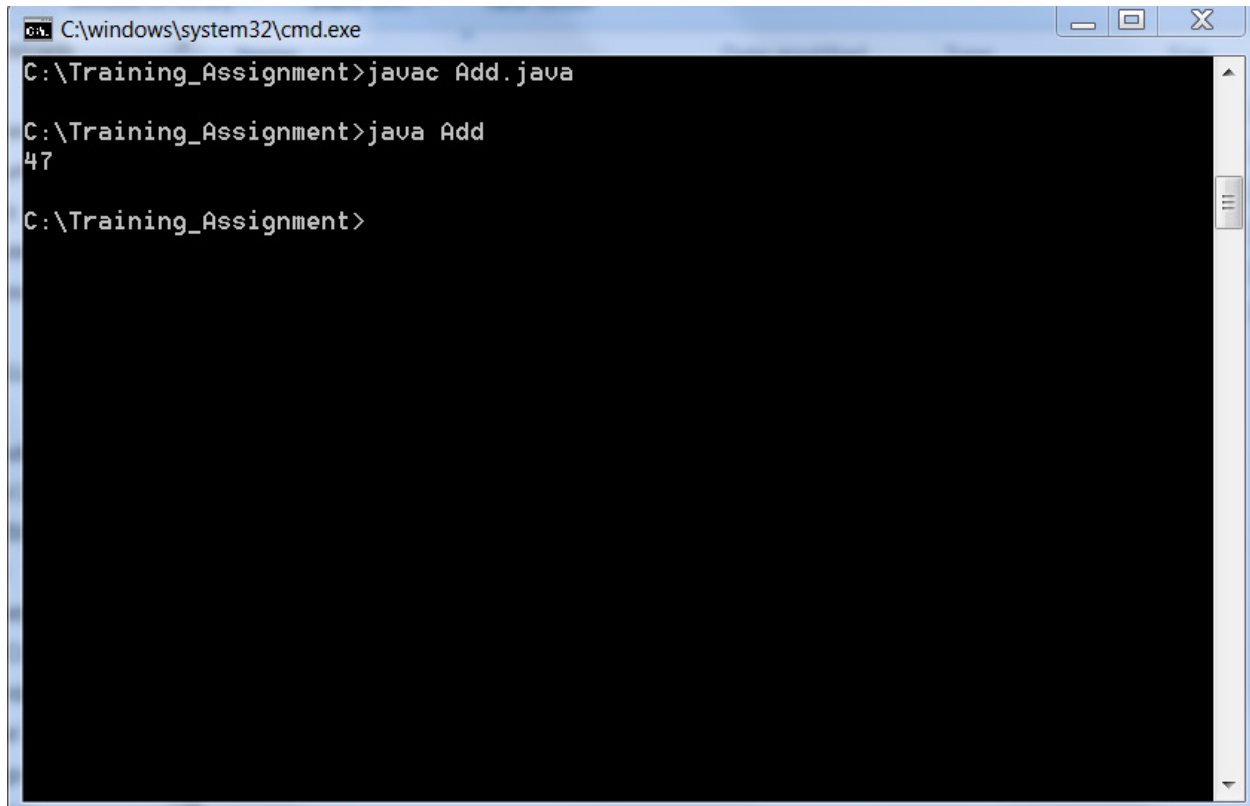
### 4. Result flow in detail:

Binary AND Operator copies a bit to the result if it exists in both operands.

Binary XOR Operator copies the bit if it is set in one operand but not both.

Binary Left Shift Operator. The left operands value is moved left by the number of bits specified by the right operand.

5. Output screenshot:



```
C:\windows\system32\cmd.exe
C:\Training_Assignment>javac Add.java
C:\Training_Assignment>java Add
47
C:\Training_Assignment>
```

The screenshot shows a Windows command prompt window titled "C:\windows\system32\cmd.exe". The window has a standard Windows interface with minimize, maximize, and close buttons in the top right corner. The command prompt shows the following sequence of commands and output:

- The prompt is at `C:\Training_Assignment>`.
- The user enters `javac Add.java`, and the prompt returns to `C:\Training_Assignment>`.
- The user enters `java Add`, and the output `47` is displayed.
- The prompt returns to `C:\Training_Assignment>`.