

Session 1

Assignment

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

Program code:

```
/**This program uses bitwise and bitshift operator to calculate sum of two number without using + operator.
```

```
*/
```

```
import java.util.Scanner;

public class AddTwoNumbers {

    public static void main(String[] arg)

    {

        int x, y ;

        Scanner in = new Scanner(System.in);

        System.out.print("Input first number: ");

        x = in.nextInt();

        System.out.print("Input second number: ");

        y = in.nextInt();


        // Iterate till there is no carry

        while(y != 0)

        {

            int carry = x & y; //carry is AND of two bits

            x = x ^ y; //SUM of two bits is x XOR y


            y = carry << 1; //shifts carry to 1 bit to calculate sum


        }

    }

}
```

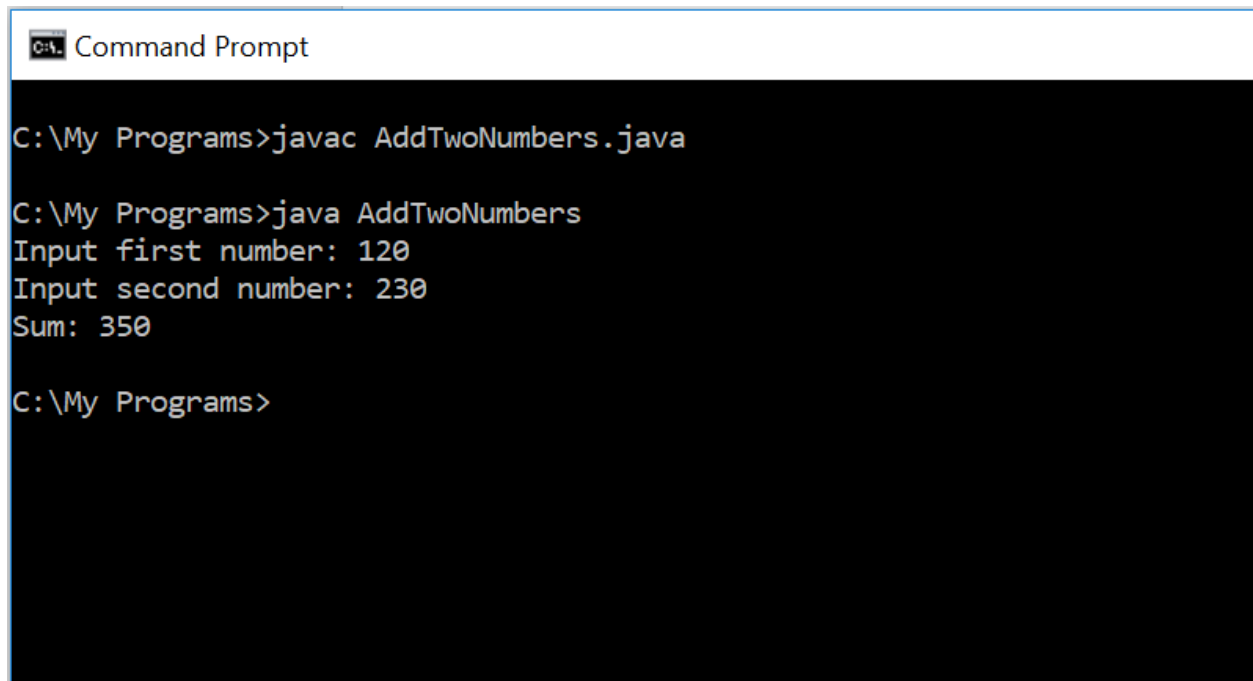
```
        System.out.print("Sum: "+x);  
        System.out.print("\n");  
    }  
}
```

/**This program uses bitwise and bitshift operator to calculate sum of two number without using + operator.

*/

```
import java.util.Scanner;  
  
public class AddTwoNumbers {  
    public static void main(String[] arg)  
    {  
        int x, y ;  
  
        Scanner in = new Scanner(System.in);  
  
        System.out.print("Input first number: ");  
  
        x = in.nextInt();  
  
        System.out.print("Input second number: ");  
  
        y = in.nextInt();  
  
  
        // Iterate till there is no carry  
        while(y != 0)  
        {  
            int carry = x & y; //carry is AND of two bits  
            x = x ^ y; //SUM of two bits is x XOR y  
  
  
            y = carry << 1; //shifts carry to 1 bit to calculate sum  
  
        }  
    }  
}
```

```
        System.out.print("Sum: "+x);  
        System.out.print("\n");  
    }  
}
```



The screenshot shows a Windows Command Prompt window with the title "Command Prompt". The command prompt is at the directory "C:\My Programs". The user has entered the command "javac AddTwoNumbers.java" to compile the program. Then, they entered "java AddTwoNumbers" to run the program. The program's output is displayed: "Input first number: 120", "Input second number: 230", and "Sum: 350". The prompt returns to "C:\My Programs>" after the execution.

2. Problem Statement: Write a program to print the result of the following expressions provided the integer variable

a is 20 and b is 10.

int b = a-- --a;

int c = a--;

int d = a>>2;

int e = a&b;

Program code:

```
/**This program prints the result of the given expressions  
*/
```

```
public class Assignment2 {
```

```
public static void main(String[] arg)
{
    int a =20;
    int b =10;

    b = a-- --a;
    System.out.print("b= "+b);
    System.out.print("\n");

    int c = a--;
    System.out.print("c= "+c);
    System.out.print("\n");

    int d = a>>2;
    System.out.print("d= "+d);
    System.out.print("\n");

    int e = a&b;
    System.out.print("e= "+e);
    System.out.print("\n");

}
}
```

Command Prompt

```
C:\My Programs>javac Assignment2.java
```

```
C:\My Programs>java Assignment2
```

```
b= 2
```

```
c= 18
```

```
d= 4
```

```
e= 0
```

```
C:\My Programs>
```