Name: Chandrahasa B

Student code: AF0336567

Batch Code: ANP-C6315

Lab Assignment – 2

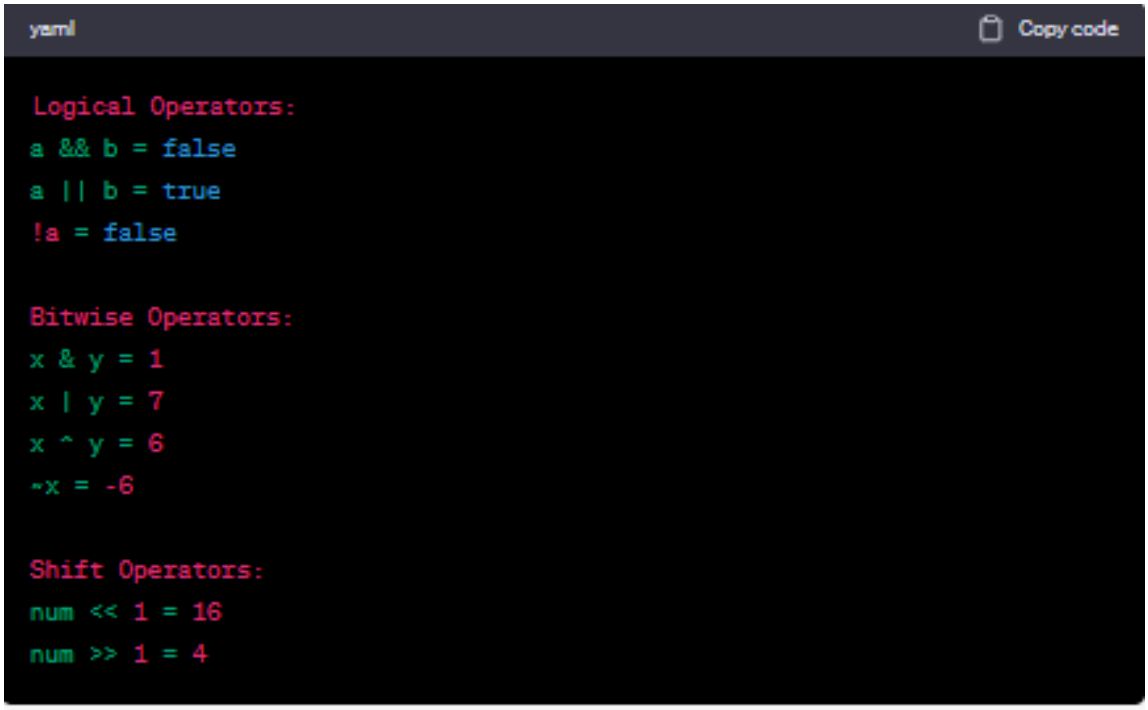
Question 1: Write a program to show the difference between logical and bitwise operator.

INPUT:

java Copy code

```java
public class OperatorDemo {
    public static void main(String[] args) {
        // Logical Operators
        boolean a = true;
        boolean b = false;

        System.out.println("Logical Operators:");
        System.out.println("a && b = " + (a && b)); // Logical AND
        System.out.println("a || b = " + (a || b)); // Logical OR
        System.out.println("!a = " + (!a)); // Logical NOT

        // Bitwise Operators
        int x = 5; // 0101 in binary
        int y = 3; // 0011 in binary

        System.out.println("\nBitwise Operators:");
        System.out.println("x & y = " + (x & y)); // Bitwise AND
        System.out.println("x | y = " + (x | y)); // Bitwise OR
        System.out.println("x ^ y = " + (x ^ y)); // Bitwise XOR
        System.out.println("~x = " + (~x)); // Bitwise NOT

        // Shift Operators
        int num = 8; // 1000 in binary

        System.out.println("\nShift Operators:");
        System.out.println("num << 1 = " + (num << 1)); // Left shift by 1 b
        System.out.println("num >> 1 = " + (num >> 1)); // Right shift by 1
    }
}
```

OUTPUT:



Question 2: Write a program to display all operations from assignment operator.

```
public class AssignmentOperatorsDemo {
    public static void main(String[] args) {
        int num1 = 10;
        int num2 = 5;
        System.out.println("Initial Values:");
        System.out.println("num1 = " + num1);
        System.out.println("num2 = " + num2);
        // Assignment Operators
        // 1. =
        num1 = num2;
        System.out.println("\nUsing '=' Operator:");
        System.out.println("num1 = num2 -> num1 = " + num1);
        // 2. +=
        num1 += num2;
```

```
System.out.println("\nUsing '+=' Operator:");
System.out.println("num1 += num2 -> num1 = " + num1);
// 3. -=
num1 -= num2;
System.out.println("\nUsing '-=' Operator:");
System.out.println("num1 -= num2 -> num1 = " + num1);
 // 4. *=
num1 *= num2;
System.out.println("\nUsing '*=' Operator:");
System.out.println("num1 *= num2 -> num1 = " + num1);
// 5. /=
num1 /= num2;
System.out.println("\nUsing '/=' Operator:");
System.out.println("num1 /= num2 -> num1 = " + num1);
 // 6. %=
num1 %= num2;
System.out.println("\nUsing '%=' Operator:");
System.out.println("num1 %= num2 -> num1 = " + num1);
// 7. &=
num1 &= num2;
System.out.println("\nUsing '&=' Operator:");
System.out.println("num1 &= num2 -> num1 = " + num1);
// 8. |=
num1 |= num2;
System.out.println("\nUsing '|=' Operator:");
System.out.println("num1 |= num2 -> num1 = " + num1);
  // 9. ^=
```

```
        num1 ^= num2;
        System.out.println("\nUsing '^=' Operator:");
        System.out.println("num1 ^= num2 -> num1 = " + num1);
         // 10. <<=
        num1 <<= 2;
        System.out.println("\nUsing '<<=' Operator:");
        System.out.println("num1 <<= 2 -> num1 = " + num1);
        // 11. >>=
        num1 >>= 1;
        System.out.println("\nUsing '>>=' Operator:");
        System.out.println("num1 >>= 1 -> num1 = " + num1);
    }
}
```

OUTPUT:

```
Initial Values:
num1 = 10
num2 = 5
Using '=' Operator:
num1 = num2 -> num1 = 5
Using '+=' Operator:
num1 += num2 -> num1 = 10
Using '-=' Operator:
num1 -= num2 -> num1 = 5
Using '*=' Operator:
num1 *= num2 -> num1 = 25
Using '/=' Operator:
num1 /= num2 -> num1 = 5
```

Using '%=' Operator:

num1 %= num2 -> num1 = 0

Using '&=' Operator:

num1 &= num2 -> num1 = 0

Using '|=' Operator:

num1 |= num2 -> num1 = 5

Using '^=' Operator:

num1 ^= num2 -> num1 = 0

Using '<<=' Operator:

num1 <<= 2 -> num1 = 0

Using '>>=' Operator:

num1 >>= 1 -> num1 = 0