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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

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

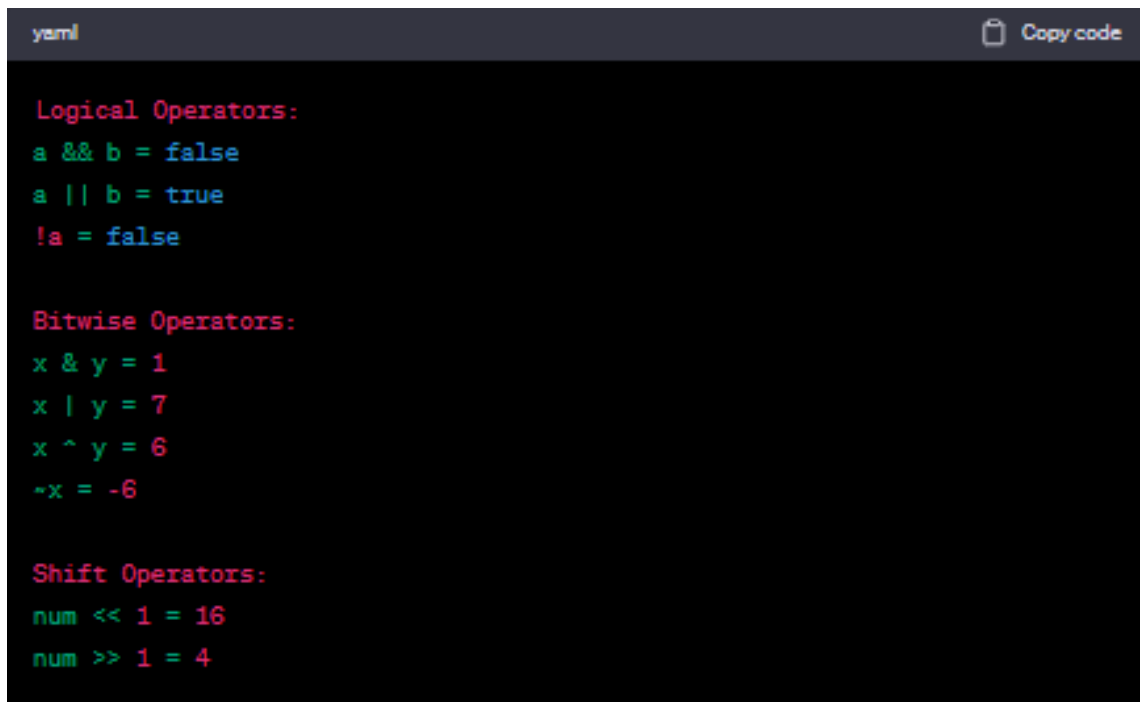
        // Bitwise Operators
        int x = 5; // 0101 in binary
        int y = 3; // 0011 in binary

        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 bit
        System.out.println("num >> 1 = " + (num >> 1)); // Right shift by 1 bit
    }
}
```

OUTPUT:

A screenshot of a code editor window with a dark background. The editor has a tab labeled 'yaml' and a 'Copy code' button in the top right corner. The code is written in a syntax-highlighted style with red for keywords, green for variables, and blue for literals. It is organized into three sections: 'Logical Operators:', 'Bitwise Operators:', and 'Shift Operators:'.

```
Logical Operators:
a && b = false
a || b = true
!a = false

Bitwise Operators:
x & y = 1
x | y = 7
x ^ y = 6
~x = -6

Shift Operators:
num << 1 = 16
num >> 1 = 4
```

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