1. **Difference between switch and if-else .**

* If statement selects the execution of the statements based upon the evaluation of the expression in if statements.
* If else is good for variable conditions that results into a Boolean.
* The switch statements selects the execution of the statement often based on a keyboard commands.
* Switch statements are good for fixed data values.

1. **What are the datatypes supported by switch in java. Whether it support Boolean, float and double.**

Switch supports byte , short , char , int primitive data types, enumerated types , the String class, and a few special classes that wrap certain primitive types: Character , Byte , Short , and Integer .

Java does not support Boolean, float and double due to imprecise calculation.

1. **What are signed integers and unsigned integers?**

* Unsigned can hold a larger positive value, and no negative value.
* Unsigned uses the leading bit as a part of the value, while the signed version uses the left-most-bit to identify if the number is positive or negative.
* Signed integers can hold both positive and negative numbers.

1. **What are shift operators and its uses?**

A shift operator performs bit manipulation on data by shifting the bits of its first operand right or left.

<< - (operator1<<operator2) - Shift bits of operator1 left by distance operato2; fills with zero bits on the right-hand side.

>> - (operator1<<operator2) - Shift bits of operator1 right by distance operator2; fills with highest (sign) bit on the left-hand.

>>> - (operator1>>>operator2) - Shift bits of operator1 right by distance operator2; fills with zero bits on the left-hand side.

**5.How to find largest of two numbers without using relation operators.**

Use the below formula:

a\*(bool)(a/b)+b\*(bool)(b/a)

The expression a / b will give 1 if a > b and 0 if a < b. Hence, the answer will be of the form either a + 0 or 0 + b depending upon which one is greater.

**6. What will be the output a&b, a|b, a!b, a^b.**

These are binary operator a&b : If both bits are 1, then it gives 1, otherwise 0.

a|b : If either of the bits is 1, it gives 1, else it gives 0.

a^b : If corresponding bits are different, it gives 1, else it gives 0.

a!b :

**7.Check whether an alphabet is vowel or not?**

class Vowel {

    public static void main(String[] args) {

        char ch = 'A';

        switch (ch) {

            case 'a':

            case 'e':

            case 'i':

            case 'o':

            case 'u':

            case 'A':

            case 'E':

            case 'I':

            case 'O':

            case 'U':

                System.out.println(ch + " is vowel");

                break;

            default:

                System.out.println(ch + " is consonant");

        }

    }

}

Result =>

A is vowel

**8.What is unsigned and signed integer ?**

Unsigned: It consists of only non-negative values i.e

0 to 255.

Signed: It consist of both negative and positive values but in different formats like

* 1. 0 to +127
  2. -1 to -128

 And this is about the 8-bit number system.

## 9.Shift operator in java ?

## << (Left shift) :-

## The operator that shifts the bits of number towards left by n number of bit positions is called left shift operator in Java. This operator is represented by a symbol <<, read as double less than. if we write x << n, it means that the bits of x will be shifted towards left by n positions.

## Let us take an example to understand the concept of the left shift operator. If int x = 20. Calculate x value if x << 3. The value of x is 20 = 0 0 0 1  0 1 0 0 (binary format). Now x << 3 will shift the bits of x towards left by 3 positions. Due to which leftmost 3 bits will be lost. Hence, after shifting, bits of x is 1 0 1 0  0 0 0 0 that is 160 in decimal form.

## Right Shift Operator in Java

## If we write x >> n, it means that the bits of x will be shifted towards right by n positions. There are two types of right shift operators in java: a. Signed right shift operator (>>) b. Unsigned right shift operator (>>>).

## 

## Signed Right Shift Operator in Java

The signed right shift operator >> shifts bits of the number towards the right and also reserve sign bit, which is leftmost bit. A sign bit represents the sign of a number. If the sign bit is 0 then it represents a positive number. If sign bit is 1, it represents a negative number.

## If the number is positive, the leftmost position is filled with 0. If the number is negative, the leftmost position is filled with 1. The signed shift operator uses the same sign as used in the number before shifting of bits.

## 

## Unsigned Right Shift Operator in Java

The unsigned right shift operator in java performs nearly the same operation as the signed right shift operator in java. The unsigned right shift operator is represented by a symbol >>>, read as triple greater than.

The unsigned right shift operator always fills the leftmost position with 0s because the value is not signed. Since it always stores 0 in the sign bit, it is also called zero fill right shift operator in java.

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