Define Operator? List and explain different operators available in Java?

Solution: An operator in Java is a special symbol that is used to perform specific operations involving one or more operands. For example, + is an operator used for addition, and - is an operator used for subtraction.

Java supports several types of operators, some of which are listed below:

1. Arithmetic Operators: These are used to perform basic mathematical operations. They include + (addition), - (subtraction), * (multiplication), / (division), and % (modulus).

2. Assignment Operators: These are used to assign values to variables. They include = (assign), += (add and assign), -= (subtract and assign), *= (multiply and assign), /=

(divide and assign), and %= (modulus and assign).

3. Relational Operators: These are used to compare two values. They include == (equal to), != (not equal to), < (less than), > (greater than), <= (less than or equal to), and >= (greater than or equal to).

4. Logical Operators: These are used to form more complex conditions by combining boolean expressions. They include && (logical AND), || (logical OR), and ! (logical

NOT).

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5. Unary Operators: These are used to perform various operations such as incrementing/decrementing a value by one, negating an expression, or inverting the value of a boolean. They include ++ (increment), -- (decrement), - (negate), and ! (logical complement).

6. Bitwise Operators: These are used to perform operations at the bit level. They include & (bitwise AND), | (bitwise OR), ^ (bitwise XOR), ~ (bitwise complement),

<< (left shift), >> (signed right shift), and >>> (unsigned right shift).

7. **Ternary Operator**: Also known as the conditional operator, this is used to make a decision based on two different conditions. The operator is ? :. It's a shorthand for ifelse statement.

8. InstanceOf Operator: This is used to check whether an object is an instance of a specific class or an interface. The operator is instanceof.

Here are a few examples:

int a = 10, b = 20; // Assigning values using assignment operator

int c = a + b; // Arithmetic operator

boolean d = a > b; // Relational operator

boolean e = (a > 5) && (b > 5); // Logical operator

a++; // Unary operator

int f = a & b; // Bitwise operator

int g = (a > b)? a : b; // Ternary operator

String str = "Hello, World!";

boolean h = str instanceof String; // InstanceOf operator

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