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Literals & Operators in Java

=> Tokens :-

-> Tokens are the smallest unit or say small building blocks of java program that are meaningful to the java compiler

-> For example :`System.out.println("hello");`

Tokens are : `System`, `.`, `out`, `println`, `(`, `)`, `hello`, `;`

-> Our java program converts into tokens and then java compiler converts these tokens into java bytecode

-> Different types of tokens are :-

1. Literals
2. Operators
3. Separators
4. Punctuators
5. Comments
6. Keywords/Reserved Words
7. Identifiers

1. Literals :

-> Any constant value assigned to the variable is known as literal

-> For example :-

```
int a=10;    //10 is literal
```

```
char c='x';  //x is literal
```

```
String name="deepak"; //deepak is literal
```

```
boolean b=true;
```

-> Types of literals :-

1. Integral Literals (byte, short, int, long)
2. Floating-Point Literals (float, double)
3. Character Literals (Single Quotes [']), Char literal in Integer literal, unicode representation, escape character)
4. String Literals
5. Boolean Literals

2. Operators :-

-> Operators are the special symbols which are used to perform any operation on one or more operands

-> For example :-

$c=a+b$; (+ is operator and a,b are operands)

-> Types of operators :-

1. Arithmetic Operators

+, -, *, /, %

2. Unary Operators

posfix : no++, no--

prefix : ++no, --no, +no, -no, ~no, !no

3. Assignment Operators

=, +=, -=, *=, /=, &=, ^=, |=, <<=, >>=,

>>>=

4. Relational Operators

==, !=, <, >, <=, >=, instanceof

(provides the output in true or false)

5. Bitwise Operators

-> Binary Bitwise Operators

1. Bitwise Logical Operators

& (bitwise AND), |(bitwise OR),
^(bitwise exclusive OR)

2. Shift Operators

>> (right shift), << (left shift),
>>> (zero fill right shift)

Bitwise Operator Table

no1	no2	no1 & no2	no1 no2	no1 ^ no2
0	0	0	0	0
1	0	0	1	1
0	1	0	1	1
1	1	1	1	0

-> Unary Bitwise Operators

One's compliment Operator

6. Logical Operators

&& (logical AND), || (logical OR)

7. Ternary Operator

?: (variable = condition ? expression 1 :
expression2)

if condition is true

variable = **condition** ? expression1 : expression2

if condition is false

Interview Questions :-

1. What is instanceof operator ?

-> This is used to verify if the specified object is the instance of specified class

2. What is difference between & and && operator?

-> & - Bitwise AND

&& - Logical AND

-> & - Operates on bit values

&& - Operates on boolean values

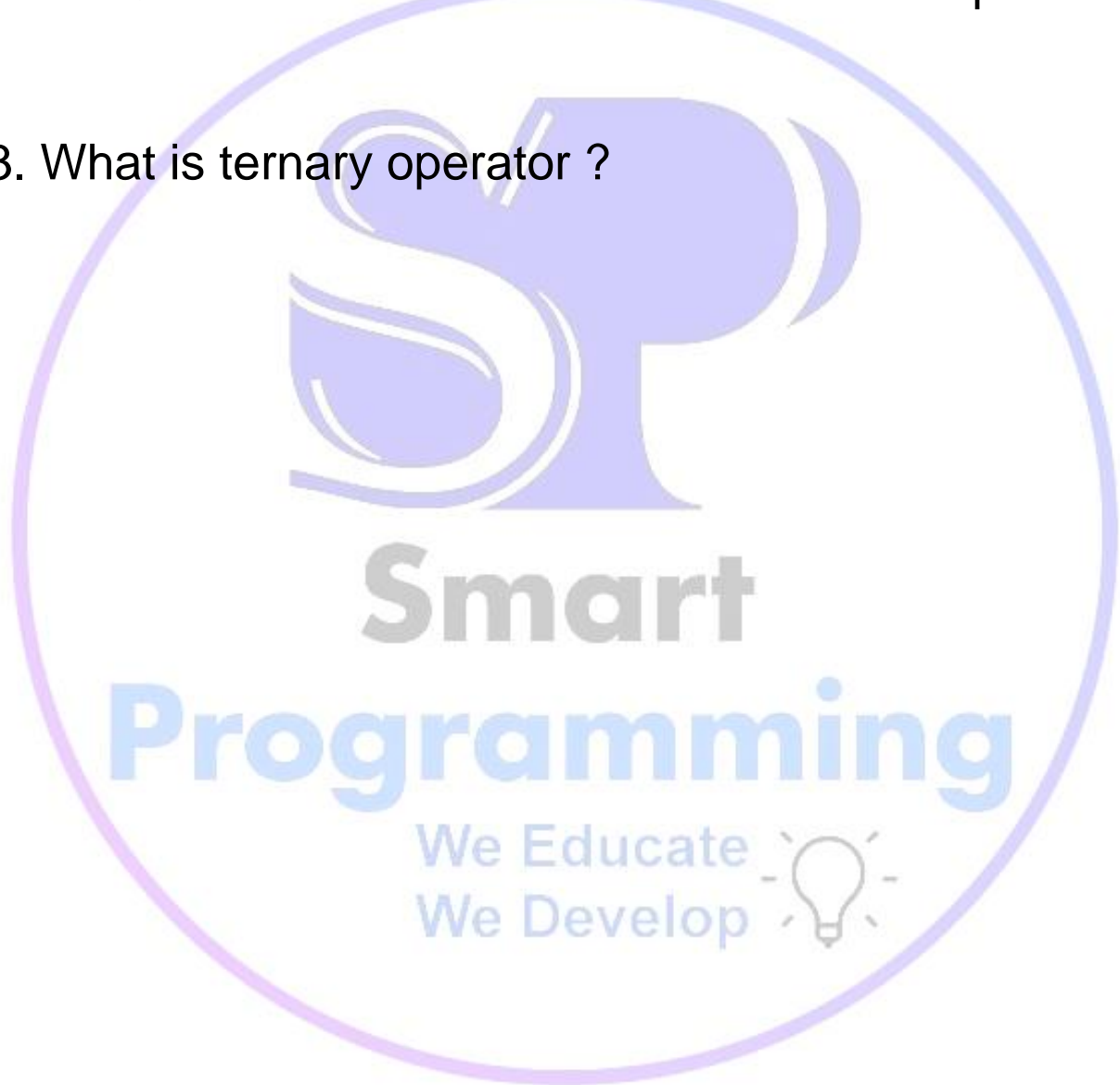
-> & - In this case both sides will get evaluated because there is no true or false case here

&& - In this case if first expression is false, then it will not evaluate the second condition and it will return false directly

-> & - Used in bit manipulation

&& - Used in conditional statements and loops

3. What is ternary operator ?



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