OPERATORS AND LOOPS ASSIGNMENT

**1. What are the Conditional Operators in Java?**

Ans - In Java, conditional operators check the condition and decides the desired result on the basis of both conditions. Types of Conditional Operator

There are three types of the conditional operator in Java:

a. Conditional AND

b. Conditional OR

c. Ternary Operator

a. Conditional AND

The operator is applied between two Boolean expressions. It is denoted by the two AND operators (&&). It returns true if and only if both expressions are true, else returns false.

b. Conditional OR

The operator is applied between two Boolean expressions. It is denoted by the two OR operator (||). It returns true if any of the expression is true, else returns false.

c. Ternary Operator

The meaning of ternary is composed of three parts. The ternary operator (? :) consists of three operands. It is used to evaluate Boolean expressions. The operator decides which value will be assigned to the variable. It is the only conditional operator that accepts three operands. It can be used instead of the if-else statement. It makes the code much more easy, readable, and shorter.

**2. What are the types of operators based on the number of operands?**

Ans- Operators in programming languages can be categorized based on the number of operands they work with. Here are the main types of operators based on the number of operands:

a. Unary Operators:

* Operate on a single operand.
* Examples: -a (negation), ++x (pre-increment), --y (pre-decrement).

b. Binary Operators:

* Operate on two operands.
* Examples: a + b (addition), c \* d (multiplication), e == f (equality check).

c. Ternary Operator:

* Also known as the conditional operator.
* Operates on three operands.
* Example: result = (condition) ? expr1 : expr2;

**3. What is the use of Switch case in Java programming?**

Ans:  Switch statement

The switch case in java is used to select one of many code blocks for execution.

**Break keyword:** As Java reaches a break keyword, the control breaks out of the switch block. The execution of code stops on encountering this keyword, and the case testing inside the block ends as the match is found. A lot of execution time can be saved because it ignores the rest of the code's execution when there is a break. Default keyword: The keyword is used to specify the code executed when the expression does not match any test case.

The switch case in Java works like an if-else ladder, i.e., multiple conditions can be checked at once. Switch is provided with an expression that can be a constant or literal expression that can be evaluated. The value of the expression is matched with each test case till a match is found. If there is no match, the default keyword, if specified- the associated code executes. Otherwise, the code specified for the matched test case is executed.

**4. What are the priority levels of arithmetic operation in Java?**

**Ans:** There are two priority levels of arithmetic operation in Java. They are as follows:

* High priority \* / %
* Low priority + —

**5. What are the conditional Statements and use of conditional statements in Java?**

**Ans -**

* if to specify a block of code to be executed, if a specified condition is true
* else to specify a block of code to be executed, if the same condition is false
* else if to specify a new condition to test, if the first condition is false
* switch to specify many alternative blocks of code to be executed

**6. What is the syntax of if else statements?**

Ans - if (condition) {

// code to be executed if the condition is true

} else {

// code to be executed if the condition is false

}

**7. What are the 3 types of iterative statements in java?**

**Ans -**

3 types of iterative statements in java

* + for loop
  + while loop
  + do-while loop

8. **Difference between for loop and do while loop**

Ans - For Loop:

1. Initialization, Condition, and Iteration:

* The for loop has three components: initialization, condition, and iteration.
* Syntax: for (initialization; condition; iteration) { /\* code to be executed \*/ }
* The initialization is executed only once at the beginning.
* The condition is checked before each iteration, and if it evaluates to true, the loop continues.
* The iteration is executed after each iteration of the loop.

1. Control over Loop Variables:

* The loop control variables are typically managed within the for loop header.
* It provides a clear structure for managing loop control variables and their updates.

Do-While Loop:

1. Condition Checked After Execution:

* The do-while loop has the condition checked after the execution of the loop body.
* Syntax: do { /\* code to be executed \*/ } while (condition);
* This guarantees that the loop body is executed at least once.

1. Control over Loop Variables:

* The loop control variables are typically managed within the loop body.
* The condition is checked only after the first execution.

**9. Write a program to print numbers from 1 to 10.**

Ans- public class PrintNumbers {

public static void main(String[] args) {

for (int i = 1; i <= 10; i++) {

System.out.println(i);

}

}

}