

28th Jan'23 Operators and Loops Assignment-6

1. What are the conditional operators in java?

Ans: When a condition consists of multiple boolean expressions, they are used. Use conditional operators to combine two expressions, such as when we wish to print a number only if it is larger than 2 and less than 5, respectively.

We have 3 types of conditional operators -

- Logical-and Operator(&&)
- Logical-or Operator(||)
- Ternary operator(?:)

Logical-and operator (&&)

It is used when we want the condition to be true if both the expressions are true.

Syntax:

```
if(condition - 1 && condition - 2) {  
    statement;  
}
```

Example: Print the number if the input value is greater than 5 and less than 5

Code:

```
if (val > 5 && val < 10) {  
    System.out.print(val);  
}
```

Logical-or operator (||)

This operator is used when we are satisfied as long as any one of the boolean expressions is evaluated as true.

Syntax:

```
if(condition - 1 || condition - 2) {  
    statement;
```

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```
}
```

Example: Print the number if the input value is greater than 10 or less than 5.

Code:

```
if (val < 5 || val > 10) {  
    System.out.print(val);  
}
```

Ternary operator (?:)

is a smaller version for the if-else statement. If the condition is true then the statement - 1 is executed else the statement - 2 is executed.

Syntax: condition ? statement - 1 : statement - 2;

Example:

Without ternary operator

```
if (val % 2 == 1) {  
    System.out.println("Value entered is odd");  
} else {  
    System.out.println("Value entered is even");  
}
```

With ternary operator

```
val % 2 == 1 ? System.out.println("Value entered is odd) :  
System.out.println("Value entered is even);
```

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

Ans: The operators indicate what action or operation to perform. The operands indicate what items to apply the action to.

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An operator is called a **unary**, **binary**, or **ternary operator** based on the number of **operands**. If an **operator** takes **one operand**, it is called a **unary operator**; if it takes **two operands**, it is called a **binary operator**; if it takes **three operands**, it is called a **ternary operator**.

3. What is the use of switch case in java programming?

Ans: Let's say we have a variable. Now, we want to do multiple operations on it based upon what value it is storing. In such cases the switch statement comes into play.

It is like an if-else ladder with multiple conditions, where we check for equality of a variable with various values.

It works with byte, short, int, long, enum types, String and some wrapper types like Byte, Short, Int, and Long. Since Java 7, you can use strings in the switch statement.

Syntax:

```
switch (expression) {  
    case x:  
        // code  
    break;  
    case y:  
        // code  
    break;  
    .  
    .  
    .  
    default:  
        // code  
}
```

Note: The case value must be literal or constant, and must be unique.

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Example: Write a program using switch statements to check if the input lowercase character is vowel or consonant.

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

Ans: When there is more than one **arithmetic operator** in an expression, **multiplication, division, and modulo** are **calculated first**, followed by **subtraction** and **addition**. If all arithmetic operators in an expression have the same level of precedence, the order of execution is **left to right**.

5. What are the conditional statements and use of conditional statements in java?

Ans: Java follows suit by using conditional statements to manage the program's flow. This is crucial because at some time, in order to advance with our code, we must fulfill requirements. For example, the console's yes or no input will determine whether the programme is to be continued or canceled.

Java has the following conditional statements:

- If statement
- else statement
- If-else Ternary
- Nested if-else
- Switch statement

6. What is the syntax of if else statement?

Ans: Syntax:

```
if (condition) {  
    statement - 1  
} else {  
    statement - 2  
}
```

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

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Ans: Assume someone comes up to you and says “I want you to give me a program that can give me all the numbers between 1 and 10000” In such a situation writing all the numbers from 1 to 10000 isn't a feasible solution.

That's where loops come in. They help you perform a task repeatedly, until a certain condition is met.

In our example, the task would be to print the value of the number, and the condition would be till the time it is less than 10000 In Java, we have types of iterative statements.

1. The while loop
2. The for loop
3. The do-while loop

8. Write the difference between for loop and do-while loop?

Ans: Deciding which loop to use is a judgemental call. Each person has different preferences. However, generally a while loop is used whenever the total number of iterations to be made is unknown.

For Example:

1. Use a for loop when you are traversing a data structure like an array.
2. Use a for loop when you know that loop needs to run 'n' number of times.

Whereas,

1. Use a while loop when increment type is nonstandard like $i = i * 2$
2. Use a while loop when you are unsure till when the loop will continue, like while finding the first number divisible by both 5 and 7.

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

Ans:

```
package Fundamentals_Of_Java;  
public class For_Loop {  
    public static void main(String[] args) {
```

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```
for (int i = 1; i <= 10; i++) {  
    System.out.println(i);  
}  
}
```