**Day 4**

**Operators in Java**

Operators are used to perform operations on variables and values.

For example, + is an operator used for addition, while \* is also an operator used for multiplication.

Operators in Java can be classified into 8 types:

1. **Unary Operators:** Unary operators include ++ and --. Unary operators are used with only one operand. ++ is an increment unary operator that increases the value of a variable by 1. And – is a decrement unary operator that decreases the value of a variable by 1.
2. **Arithmetic Operators:** Arithmetic operators are used to perform arithmetic operations on variables and data. It includes +, - , \*, / and %.
3. **Shift Operators:** Shift Operators are used in Java for shifting values to right or left. It includes << (left shift) and >> (right shift).
4. **Relational Operators:** Relational operators are used to check the relationship between two operands. They are also known has comparision operators. In Java, <, >, <=,>=, ==, != is used for relational operators.
5. **Bitwise Operators:** Bitwise operators in Java are used to perform operations on individual bits. It includes &, ^, |
6. **Logical Operators:** Logical operators are used to check whether an expression is true or false. They are used in decision making. && (AND) and || (OR) is considered as logical operators.
7. **Ternary Operators:** The ternary operator (conditional operator) is shorthand for the if-then-else statement. The operator used is ?:
8. **Assignment Operators:** Assignment operators are used in Java to assign values to variables. In Java the assignment operators used are =, +=, -=, \*=, /= .

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**Control Statements in Java**

A control statement in java is used to controls the flow of a program. In Java we have 3 types of Control statements used. They are:

1. **Decision Making Statements:** We have 2 types of decision-making statements in Java. They are
2. If Statement
3. Switch Statement
4. **Loop Statements:** In Java, Loop Statements are used to executes a set of repeated statements if a specified condition remains true. This condition is generally known as loop control. There are 3 types of loop statements. They are:
5. for loop
6. do while loop
7. while loop
8. **Jump Statements:** Jump statements are used to change the flow of execution of a program by jumping to another piece of code in the program. There are 2 types of jump statements in Java. They are:
9. break
10. continue

**if Statement**

In Java, we have four types of if statements. They are:

1. **Simple if statement**
2. **if else**
3. **if else if**
4. **nested if**

**Simple if statement**

The Java if statement is the simplest decision-making statement. It is used to decide whether a certain statement or block of statements will be executed or not.

Syntax:

if(condition)

{

Statement1; // executed only if the condition is true.

}

**If-else statement**

Syntax:

if(condition)

{

Statement1; // executed only if the condition is true.

}

else

{

Statement2; // executed only if the condition is false.

}

**If-else if statement**

if statement followed by multiple else if statement.

Syntax:

if(condition1)

{

Statement1; // executed only if the condition1 is true.

}

else if(condition2)

{

Statement2; // executed only if the condition2 is true.

}

else

{

Statement3; // executes when all the conditions are false.

}

**nested if statement**

if statement followed by multiple else if statement.

Syntax:

if(condition1)

{

Statement1; // executed only if the condition1 is true.

}

if(condition2)

{

Statement2; // executed only if the condition2 is true.

}

else

{

Statement3; // executes when condition2 is false.

}