

Operators and Loops

Assignment-6

1. What are the Conditional Operators in Java ?

Ans: In Java, the conditional operators are:

- a. `&&` (and)
- b. `||` (or)
- c. `? :` (ternary)

These operators are used to evaluate a condition and determine the flow of a program based on the result.

2. What are the Types of operators Based on the number of operands?

Ans: Based on the number of operands, there are two types of operators in programming:

- a. Unary operators: An operator which operates on a single operand. e.g., `++`, `--`, `!`.
- b. Binary operators: An operator which operates on two operands. e.g., `+`, `-`, `*`, `/`.

3. What is use of Switch case in java programming ?

Ans: The `switch` statement in Java is used to execute a block of code based on the value of a given expression, also known as the "switch value". The switch value is compared to the values specified in each `case` statement, and if a match is found, the code associated with that case is executed. If no match is found, the code specified in the optional `default` statement is executed.

The `switch` statement is often used as an alternative to a series of `if-else` statements, especially when the expression being evaluated has a limited

number of possible values. The `switch` statement provides a more concise and readable way to handle multiple conditional tests.

Syntax:

```
switch (expression) {  
    case value1:  
        // code to be executed if expression matches value1  
        break;  
    case value2:  
        // code to be executed if expression matches value2  
        break;  
    ...  
    default:  
        // code to be executed if expression does not match any of the values  
}
```

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

Ans: The priority levels of arithmetic operations in Java, from highest to lowest, are:

- Parentheses `()`
- Unary operators: `++`, `--`, `+`, `-` (when used as unary)
- Multiplicative operators: `*`, `/`, `%`
- Additive operators: `+`, `-`

Operations with higher priority are performed before operations with lower priority. Parentheses can be used to alter the order of evaluation, as expressions within parentheses are always evaluated first.

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

Ans : Conditional statements are used in programming to control the flow of execution based on conditions. In Java, there are three main types of conditional statements:

- i. **if** statement: An **if** statement is used to execute a block of code only if a specified condition is true.

Syntax:

```
if (condition) {  
  
    // code to be executed if the condition is true  
  
}
```

- ii. **if-else** statement: An **if-else** statement is used to execute one block of code if a condition is true and another block of code if the condition is false.

Syntax:

```
if (condition) {  
  
    // code to be executed if the condition is true  
  
} else {  
  
    // code to be executed if the condition is false  
  
}
```

- iii. **switch** statement: A **switch** statement is used to execute a block of code based on the value of a given expression, also known as the "switch value". The switch value is compared to the values specified in each **case** statement, and if a match is found, the code associated with that case is executed.

Conditional statements are useful in many programming scenarios, such as checking user inputs, processing data, and making decisions based on specific conditions. By using conditional statements,

6. What is the Syntax of if else Statements ?

Ans : The syntax of an **if-else** statement in Java is as follows:

```
if (condition) {  
    // code to be executed if the condition is true  
} else {  
    // code to be executed if the condition is false  
}
```

Here, condition is any expression that returns a boolean value of either true or false. If the condition is true, the code

within the first set of curly braces { } is executed. If the condition is false, the code within the second set of curly braces { } is executed.

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

Ans : There are three main types of iterative statements:

A.) for loop: A **for** loop is used to repeat a block of code a specified number of times. The **for** loop has a counter variable that is incremented (or decremented) on each iteration until the specified condition is met.

Syntax:

```
for (initialization; condition; increment/decrement) {  
  
    // code to be executed repeatedly  
}
```

B.) while loop: A **while** loop is used to repeat a block of code as long as a specified condition is true. The condition is evaluated before each iteration of the loop, and if the condition is false, the loop is terminated.

Syntax:

```
while (condition) {  
  
    // code to be executed repeatedly  
}
```

c.) **do-while** loop: A **do-while** loop is similar to a **while** loop, but the condition is evaluated after each iteration of the loop. This means that the code within the loop is always executed at least once, regardless of the value of the condition.

Syntax:

```
do {  
    // code to be executed repeatedly  
} while (condition);
```

8. What are the difference b/w for loop and Do-while loop ?

Ans: The main difference between a for loop and a do-while loop is the order in which their statements are executed.

In a for loop, the initialization, condition, and iteration statements are executed before the loop body. The loop continues to execute as long as the condition is true.

In a do-while loop, the loop body is executed first, and then the condition is evaluated. The loop continues to execute as long as the condition is true. In other words, the body of a do-while loop is guaranteed to execute at least once, whereas the body of a for loop may not execute at all if the condition is false from the start.

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

Ans:

```
public class Main {  
    public static void main (String [] args) {  
        for (int i = 1; i <= 10; i++) {  
            System.out.println(i);  
        }  
    }  
}
```