

In Java, loops are used to execute a block of code repeatedly based on a condition.

There are three main types of loops in Java:

- **For loop**
- **While loop**
- **Do-while loop**

1. For loop: -

The for loop is used when you know in advance how many times you want to execute a statement or a block of statements.

Syntax:

```
for (initialization; condition; update) {  
    // Code to be executed  
}
```

Example:

```
public class ForLoopExample {  
    public static void main(String[] args) {  
        // Print numbers from 1 to 5  
        for (int i = 1; i <= 5; i++) {  
            System.out.println(i);  
        }  
    }  
}
```

2. while loop: -

The while loop is used when you want to repeat a block of code as long as a condition is true. The condition is checked before executing the loop body.

Syntax:

```
while (condition) {  
    // Code to be executed  
}
```

Example:

```
public class WhileLoopExample {  
    public static void main(String[] args) {  
        int i = 1;  
        // Print numbers from 1 to 5  
        while (i <= 5) {  
            System.out.println(i);  
            i++;  
        }  
    }  
}
```

3. Do-while loop: -

The do-while loop is similar to the while loop, but the condition is checked after the loop body has been executed. This guarantees that the loop body is executed at least once.

Syntax:

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

Example:

```
public class DoWhileLoopExample {  
    public static void main(String[] args) {  
        int i = 1;  
        // Print numbers from 1 to 5  
        do {  
            System.out.println(i);  
            i++;  
        } while (i <= 5);  
    }  
}
```

Example of All Three Loops:

```
public class LoopExamples {  
    public static void main(String[] args) {  
        // for loop  
        System.out.println("For Loop:");  
        for (int i = 1; i <= 5; i++) {  
            System.out.println(i);  
        }  
  
        // while loop  
        System.out.println("\nWhile Loop:");  
        int j = 1;  
        while (j <= 5) {  
            System.out.println(j);  
            j++;  
        }  
  
        // do-while loop  
        System.out.println("\nDo-While Loop:");  
        int k = 1;  
        do {  
            System.out.println(k);  
            k++;  
        } while (k <= 5);  
    }  
}
```

Output:

vbnet

For Loop:

1
2
3
4
5

While Loop:

1
2
3
4
5

Do-While Loop:

1
2
3
4
5

Key Points:

The for loop is commonly used when the number of iterations is known.

The while loop is used when the number of iterations is not known beforehand.

The do-while loop guarantees that the loop executes at least once.

These loops help make the code more efficient by allowing repetitive tasks to be executed automatically without rewriting the same code multiple times.