

Java Loop Examples

Java has **three main types of loops**: for, while, and do-while. There is also an **enhanced for loop** for arrays and collections.

1. for Loop

Syntax

```
for (initialization; condition; update) {  
    // statements  
}
```

Example

```
public class Main {  
    public static void main(String[] args) {  
        for (int i = 1; i <= 5; i++) {  
            System.out.println(i);  
        }  
    }  
}
```

Output

```
1  
2  
3  
4  
5
```

2. while Loop

Syntax

```
while (condition) {  
    // statements  
}
```

Example

```
public class Main {  
    public static void main(String[] args) {  
        int i = 1;  
  
        while (i <= 5) {  
            System.out.println(i);  
            i++;  
        }  
    }  
}
```

Output

```
1  
2  
3  
4  
5
```

3. do-while Loop

A do-while loop executes the code **at least once**, even if the condition is false.

Syntax

```
do {  
    // statements  
} while (condition);
```

Example

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

Output

```
1  
2  
3  
4  
5
```

4. Enhanced for Loop

Used mainly for arrays and collections.

Syntax

```
for (dataType variable : array) {  
    // statements  
}
```

Example

```
public class Main {  
    public static void main(String[] args) {  
        int[] numbers = {10, 20, 30, 40};  
  
        for (int number : numbers) {  
            System.out.println(number);  
        }  
    }  
}
```

Output

```
10  
20  
30  
40
```

Quick Comparison

Loop	Best used when
for	Number of iterations is known
while	Condition controls how long to loop
do-while	Code must execute at least once
Enhanced for	Iterating through arrays/collections