

Control Statements in Java

(Part - 1)

Control Statements

Alter the flow of execution of the programs

(1) Decision-making/ Conditional Statements/(Branching and Selection)

(a) if statement

(b) if-else statement

(c) switch statement

(2) Loop statements:

(a) for statement

(b) while statement

(c) do-while **statement**

(3) Breaking control statements :

(a) break statement

(b) continue statement

(c) goto statement

Decision-making or Conditional Statements (Branching and Selection)

1. Simple if with single statement
2. Simple if with Multiple statements
3. The if-else statement with single statement
4. The if-else statement with Multiple statements
5. Nested if statement
6. Nested if-else statement

1. Simple if with single statement

- Branches the control based on Condition
- If the condition is True, then control is shifted from the current location to an another location
- Executes a Statement when condition is True

Syntax:

```
if      (condition)  
        statement;
```

Example

```
class Test1
{
    public static void main(String args[ ])
    {
        int age;
        age = 10;
        if ( age < 12 )
            System.out.println("Child");
    }
}
```

2. Simple if with Multiple statements

➤ When the Condition is True, it executes a set of statements/
a group of statements/ a bunch of statements

Syntax

```
if      (condition)  
{  
        statement-block;  
}
```

Example

```
class Test2
{
    public static void main( String args[ ] )
    {
        int rollno;
        String name;
        int marks;
        rollno = 100;
        name = "Senthil"
        marks = 75;
        if ( marks > 50 )
        {
            System.out.println("Roll No : " + rollno);
            System.out.println("Name : " + name);
            System.out.println("Marks : " + marks);
        }
    }
}
```

3. The if-else statement with single statement

- When the Condition is True, it executes the statement available in if block.
- Otherwise, it executes the statement available in else block.

Syntax

```
if (condition)  
  
    true - statement;  
  
else  
  
    false - statement;
```


Example

```
class Test3
{
    public static void main(String args[])
    {
        int number, remainder;
        number = 35;
        remainder = number % 2 ;
        if (remainder == 0)
            System.out.println("The number is Even");
        else
            System.out.println("The number is Odd");
    }
}
```

4. The if-else statement with Multiple statements

➤ If condition is True
Statements in if block
is executed.

➤ Otherwise,
Statements in Else
block is executed.

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

Example

```
class Test4
{
    public static void main(String args[ ])
    {
        int number, remainder;
        number = 35;
        remainder = number % 2 ;
        if ( remainder == 0 )
        {
            System.out.println("The given number is: "+ number);
            System.out.println("It is Even");
        }
        else
        {
            System.out.println("The given number is: "+ number);
            System.out.println("It is Odd");
        }
    }
}
```

5. Nested if statement

An if statement may have another if statement

Syntax

if (condition 1)

if (condition 2)

if (condition 3)

statement;

Example

```
class Test5
{
    public static void main(String args[])
    {
        int no ;
        no = 15;
        if ( no % 3 == 0 )
            if ( no % 5 == 0 )
                System.out.println("Divisible by 3 and 5");
    }
}
```

6. Nested if-else statement

➤ The if block or else block may contain another if/ if...else statement

```
if (condition)
{
    if (condition)
    {
        statement;
    }
    else {
        statement;
    }
}
else
{
    if (condition)
    {
        statement;
    }
    else {
        statement;
    }
}
```

Example

```
class Test6
{
    public static void main(String args[])
    {
        int marks = 83; String grade;
        if ( marks > 79 )
            grade = "Honours";
        else
            if ( marks > 59)
                grade = "First division";
            else
                if ( marks > 49)
                    grade = "Second division";
                else
                    if (marks > 39)
                        grade = "Third division";
                    else
                        grade = "Fail";
        System.out.println("Marks : "+marks+"\t Grade : "+grade);
    }
}
```

Thank you