# **Java If-else Statement**

The [Java](https://www.javatpoint.com/java-tutorial) if statement is used to test the condition. It checks [boolean](https://www.javatpoint.com/boolean-keyword-in-java) condition: true or false. There are various types of if statement in Java.

* if statement
* if-else statement
* if-else-if ladder
* nested if statement

## **Java if Statement**

The Java if statement tests the condition. It executes the if block if condition is true.

**Syntax:**

**if**(condition){

//code to be executed

}



**Example:**

//Java Program to demonstate the use of if statement.

**public** **class** IfExample {

**public** **static** **void** main(String[] args) {

    //defining an 'age' variable

    **int** age=20;

    //checking the age

    **if**(age>18){

        System.out.print("Age is greater than 18");

    }

}

}

[**Test it Now**](https://compiler.javatpoint.com/opr/test.jsp?filename=IfExample)

Output:

Age is greater than 18

## **Java if-else Statement**

The Java if-else statement also tests the condition. It executes the if block if condition is true otherwise else block is executed.

**Syntax:**

**if**(condition){

//code if condition is true

}**else**{

//code if condition is false

}



**Example:**

//A Java Program to demonstrate the use of if-else statement.

//It is a program of odd and even number.

**public** **class** IfElseExample {

**public** **static** **void** main(String[] args) {

    //defining a variable

    **int** number=13;

    //Check if the number is divisible by 2 or not

    **if**(number%2==0){

        System.out.println("even number");

    }**else**{

       System.out.println("odd number");

    }

}

}

Output:

odd number

**Leap Year Example:**

A year is leap, if it is divisible by 4 and 400. But, not by 100.

**public** **class** LeapYearExample {

**public** **static** **void** main(String[] args) {

    **int** year=2020;

    **if**(((year % 4 ==0) && (year % 100 !=0)) || (year % 400==0)){

        System.out.println("LEAP YEAR");

    }

    **else**{

        System.out.println("COMMON YEAR");

 }

}

}

Output:

LEAP YEAR

## **Using Ternary Operator**

We can also use ternary operator (? :) to perform the task of if...else statement. It is a shorthand way to check the condition. If the condition is true, the result of ? is returned. But, if the condition is false, the result of : is returned.

**Example:**

**public** **class** IfElseTernaryExample {

**public** **static** **void** main(String[] args) {

    **int** number=13;

    //Using ternary operator

    String output=(number%2==0)?"even number":"odd number";

    System.out.println(output);

}

}

Output:

odd number

## **Java if-else-if ladder Statement**

The if-else-if ladder statement executes one condition from multiple statements.

**Syntax:**

**if**(condition1){

//code to be executed if condition1 is true

}**else** **if**(condition2){

//code to be executed if condition2 is true

}

**else** **if**(condition3){

//code to be executed if condition3 is true

}

...

**else**{

//code to be executed if all the conditions are false

}



**Example:**

//Java Program to demonstrate the use of If else-if ladder.

//It is a program of grading system for fail, D grade, C grade, B grade, A grade and A+.

**public** **class** IfElseIfExample {

**public** **static** **void** main(Strin[] args) {

    **int** marks=65;

    **if**(marks<50){

        System.out.println("fail");

    }

    **else** **if**(marks>=50 && marks<60){

        System.out.println("D grade");

    }

    **else** **if**(marks>=60 && marks<70){

        System.out.println("C grade");

    }

    **else** **if**(marks>=70 && marks<80){

        System.out.println("B grade");

    }

    **else** **if**(marks>=80 && marks<90){

        System.out.println("A grade");

    }**else** **if**(marks>=90 && marks<100){

        System.out.println("A+ grade");

    }**else**{

        System.out.println("Invalid!");

    }

}

}

Output:

C grade

**Program to check POSITIVE, NEGATIVE or ZERO:**

**public** **class** PositiveNegativeExample {

**public** **static** **void** main(String[] args) {

    **int** number=-13;

    **if**(number>0){

    System.out.println("POSITIVE");

    }**else** **if**(number<0){

    System.out.println("NEGATIVE");

    }**else**{

    System.out.println("ZERO");

   }

}

}

Output:

NEGATIVE

## **Java Nested if statement**

The nested if statement represents the if block within another if block. Here, the inner if block condition executes only when outer if block condition is true.

**Syntax:**

**if**(condition){

     //code to be executed

          **if**(condition){

             //code to be executed

    }

}



**Example:**

//Java Program to demonstrate the use of Nested If Statement.

**public** **class** JavaNestedIfExample {

**public** **static** **void** main(String[] args) {

    //Creating two variables for age and weight

    **int** age=20;

  **int** weight=80;

    //applying condition on age and weight

    **if**(age>=18){

        **if**(weight>50){

            System.out.println("You are eligible to donate blood");

        }

    }

}}

Output:

You are eligible to donate blood

**Example 2:**

//Java Program to demonstrate the use of Nested If Statement.

**public** **class** JavaNestedIfExample2 {

**public** **static** **void** main(String[] args) {

    //Creating two variables for age and weight

    **int** age=25;

    **int** weight=48;

    //applying condition on age and weight

    **if**(age>=18){

        **if**(weight>50){

            System.out.println("You are eligible to donate blood");

        } **else**{

            System.out.println("You are not eligible to donate blood");

        }

    } **else**{

      System.out.println("Age must be greater than 18");

    }

}  }

# **Java Switch Statement**

The Java switch statement executes one statement from multiple conditions. It is like [if-else-if](https://www.javatpoint.com/java-if-else) ladder statement. The switch statement works with byte, short, int, long, enum types, String and some wrapper types like Byte, Short, Int, and Long. Since Java 7, you can use [strings](https://www.javatpoint.com/java-string) in the switch statement.

In other words, the switch statement tests the equality of a variable against multiple values.

#### **Points to Remember**

* There can be one or N number of case values for a switch expression.
* The case value must be of switch expression type only. The case value must be literal or constant. It doesn't allow [variables](https://www.javatpoint.com/java-variables).
* The case values must be unique. In case of duplicate value, it renders compile-time error.
* The Java switch expression must be of byte, short, int, long (with its Wrapper type), *[enums](https://www.javatpoint.com/java-switch)* and string.
* Each case statement can have a break statement which is optional. When control reaches to the [break statement](https://www.javatpoint.com/java-break), it jumps the control after the switch expression. If a break statement is not found, it executes the next case.
* The case value can have a default label which is optional.

**Syntax:**

**switch**(expression){

**case** value1:

 //code to be executed;

 **break**;  //optional

**case** value2:

//code to be executed;

 **break**;  //optional

......

**default**:

 code to be executed **if** all cases are not matched;

}



**Example:**

**public** **class** SwitchExample {

**public** **static** **void** main(String[] args) {

    //Declaring a variable for switch expression

    **int** number=20;

    //Switch expression

    **switch**(number){

    //Case statements

    **case** 10: System.out.println("10");

    **break**;

    **case** 20: System.out.println("20");

    **break**;

    **case** 30: System.out.println("30");

    **break**;

    //Default case statement

    **default**:System.out.println("Not in 10, 20 or 30");

    }

}

}

Output:

20

**Finding Month Example:**

//Java Program to demonstrate the example of Switch statement

//where we are printing month name for the given number

**public** **class** SwitchMonthExample {

**public** **static** **void** main(String[] args) {

    //Specifying month number

    **int** month=7;

    String monthString="";

    //Switch statement

    **switch**(month){

    //case statements within the switch block

    **case** 1: monthString="1 - January";

    **break**;

    **case** 2: monthString="2 - February";

    **break**;

    **case** 3: monthString="3 - March";

    **break**;

    **case** 4: monthString="4 - April";

    **break**;

    **case** 5: monthString="5 - May";

    **break**;

    **case** 6: monthString="6 - June";

    **break**;

    **case** 7: monthString="7 - July";

    **break**;

    **case** 8: monthString="8 - August";

    **break**;

    **case** 9: monthString="9 - September";

    **break**;

    **case** 10: monthString="10 - October";

    **break**;

    **case** 11: monthString="11 - November";

    **break**;

    **case** 12: monthString="12 - December";

    **break**;

    **default**:System.out.println("Invalid Month!");

    }

    //Printing month of the given number

    System.out.println(monthString);

}

}

Output:

7 - July

**Program to check Vowel or Consonant:**

If the character is A, E, I, O, or U, it is vowel otherwise consonant. It is not case-sensitive.

**public** **class** SwitchVowelExample {

**public** **static** **void** main(String[] args) {

    **char** ch='O';

    **switch**(ch)

    {

        **case** 'a':

            System.out.println("Vowel");

            **break**;

        **case** 'e':

            System.out.println("Vowel");

            **break**;

        **case** 'i':

            System.out.println("Vowel");

            **break**;

        **case** 'o':

            System.out.println("Vowel");

            **break**;

        **case** 'u':

            System.out.println("Vowel");

            **break**;

        **case** 'A':

            System.out.println("Vowel");

            **break**;

        **case** 'E':

            System.out.println("Vowel");

            **break**;

        **case** 'I':

            System.out.println("Vowel");

            **break**;

        **case** 'O':

            System.out.println("Vowel");

            **break**;

        **case** 'U':

            System.out.println("Vowel");

            **break**;

        **default**:

            System.out.println("Consonant");

    }

}

}

Output:

Vowel