# JAVA:

## OPRERAND:

An Operand is a value.  
Types of operands:

* Numeric
* String
* Variables
* Expression

## OPERATOR:

It is a Symbol to perform Operations. There are 7 types:

* Arithmetic
* Relational
* Logical
* Bitwise
* Assignment
* Unary
* Ternary

## MATH CLASS IN JAVA:

* In Java, the math class is a built-in class, and it is part of the java.lang package.
* All the methods are static, so we can call them without creating an object.
* It contains constants Math.PI & Math.E for Mathematical Calculations.

Eg:

Math.abs(-10) => 10

Math.max(10,20) => 20

Math.min(10,20) =>10

Math.pow(2,3) => 8.0

Math.sqrt(25) => 5.0

## TYPES OF EXPRESSIONS IN JAVA:

* In Java, An Expression is a combination of variables, operators, literals, and methos calls that produce a single value.
* Expressions are evaluated based on Java’s data types & operator precedence.

1. Arithmetic => int a=10, b=5

double division = (double) a/b; // 20

1. Relational (Comparision) => int a=10, b=5

boolean result = a>b; // true

1. Logical => boolean a= true, b=false;

boolean result = a&&b; // false,

a||b; //true

! a; //false

1. Bitwise
2. Assignment
3. Ternary

* Instance of Expressions checks whether an object is an instance of a particular class.

String name= “NANI”;

System.out.println(name instanceOf String); // true

* Expressions always return a single value.

## JAVA MEMORY MODEL:

* JMM defines how Java handles memory & synchronization between threads.
* It ensures that threads interact safely with shared memory while maintaining performance.
* It has 3 types. They are:
* Heap Memory
* Stack Memory
* Method Area