DAY – 2

# JAVA:

## VARIABLE IN JAVA:

A Variable is a name given to a memory location where data is stored.

In java, every variable has,

A data type (defines what kind of data it can hold)

A name (identifier)

A value (data stored in it)

A memory location (allocated in RAM)

## TYPES:

**Local Variable:**

Defines inside a method, constructor and also it can be used inside it.

It doesn’t have a default value, so it must be initialized before use.

**Instance Variable:**

Declare inside a class but outside any method.

It has default values (Eg: ‘0’ for int, ‘null’ for objects)

**Static Variable:**

Declare using **static** keyword.

Shared among all objects of a class.

Stored in method area (not heap memory).

It can be accessed without creating an object.

## DATA TYPES IN JAVA:

A data type defines the “type of data” a variable can store in java.

It tells what type of value can be stored

How much memory will be allocated?

What operations can be performed on it?

**Primitive:**

It stores actual values.

Byte, short, long, float, double, char, Boolean.

**Non-Primitive:**

Non-primitive types are references types that store memory addresses, not actual values.

String, Arrays, Classes, Interfaces, Enums.

## ARRAYS IN JAVA:

An Array in java is a collection of elements of the same data type stored in contiguous memory locations.

Used for the storing the same type of elements in a certain variable.

In Java, Arrays have fixed-size.

**USES:**

Multiple values are can be stored easily.

Memory-efficient.

Faster access using index.

Sorting, Searching and Iteration simple.

Best for fixed size data storage.

**TYPES:**

Single-Dimensional:

int[] arr = {19,29,22,52};

Multi-Dimensional:

int[][] arr= { {1,2,3} , {4,5,6} };