Primitive Data Types:-

Java is Statically-typed and Strongly-typed language. Statically-typed language means that all variables and expressions are knows at compile time (and) each variable is defined with specific data type before its using. Once one variable is defined, it can hold that particular data type.

Ex:- int a=10;

Here, int is primitive data type which can store integer values and its range is -231 to +231-1. ‘a’ is variable (name given to a memory block) and it holds data 10 in its memory block.

Java is case sensitive (ex:- int ,INT both are different. int is predefined variable whereas INT is normal variable).

Java provides eight primitive data types.

1. byte
2. short

Integer Data Types

1. int
2. long
3. float

Decimal Data Types

1. double

Single Character

1. char
2. Boolean ­­­­ true/false

byte:- Its memory size is 1Byte. It can store values from -128 to +127. It is signed data type. It is mainly used for memory management. If any variable value has this range, we can use “byte” data type.

short :- Its memory size is 2Bytes. It can store values from -32,768 to +32,767. It is also signed data type. It is mainly used for memory management. If any variable value above “byte” range and below “int” range, we can use “short” data type.

Int :- Its memory size is 4Bytes. It can store values from -231  to 231-1. it is signed data type till java SE7. From java SE8, by using Integer class we can store unsigned 32-bit integer which has minimum value is 0 and maximum value 232-1.

long :- its memory size is 8Bytes. It can store values from -263 to 263-1. It is also signed data type till java SE7. From java SE8, by using Integer class we can store unsigned 64-bit integer value which minimum value is 0 and maximum value is 264-1.

float :- float is single precision floating point. Its memory size is 4Bytes. It is used for memory management. It is not preferable for money related operations because its range is less.

double :- double is double precision floating point. Its memory size is 8Bytes. Its range is higher then float data type. Most of times we use double data type while working on business applications.

char :- char is used to store single character. It is 2Bytes Unicode character. char supports all most all languages. That is the reason for its size 2Bytes and defined as Unicode character. its minimum value is ‘\u0000’ and maximum value is ‘\uffff’. We define character between single quotes.

boolean :- boolean has only two values “true” or “false”. It represents one bit of information. It mostly used for conditions. It is known as conditional flag.

This is over all about the primitive data types. This primitive data types can hold only one value at any time.

If we want to save multiple values under one data type we have to go for Derived data types. The Default value for Derived data type is “null”.

“String” is a derived data type and it can store collection of characters under one variable. Here, the variable called as object. String object are immutable, once String value is defined it can’t be possible to change its value. String default value is “null”.

DEFAULT VALUES FOR PRIMITIVE DATA TYPES :-

It is not necessary every time to assign values while defining primitive data types. All this primitive data types have default values. If we define any primitive data type under method, we have to assign value to it. Those are called as local variables.

This default values only for global variables (Declared under class).

|  |  |
| --- | --- |
| Data Types | Default Values |
| byte | 0 |
| short | 0 |
| int | 0 |
| long | 0L |
| float | 0.0f |
| double | 0.0d |
| char | ‘\u0000’ |
| boolean | false |

Example Program :-

class ExPrimitiveDataTypes

{

static byte b;

static short s;

static int i;

static long l;

static float f;

static double d;

static char ch;

static boolean x;

public static void main(String[] args)

{

System.out.println("Byte :"+b);

System.out.println("short :"+s);

System.out.println("int :"+i);

System.out.println("long :"+l);

System.out.println("float :"+f);

System.out.println("double :"+d);

System.out.println("char :"+ch);

System.out.println("boolean :"+x);

}

}

Output :-

