**JAVA DATA TYPES and Properties**

| **DATA TYPE** | **WRAPPER CLASS NAME** | **SIZE** | **RANGE** |
| --- | --- | --- | --- |
| byte | Byte | 1 byte | -128 to 127 |
| short | Short | 2 bytes | -32768 to 32767 |
| int | Integer | 4 bytes | -2,147,483,648 to 2,147,483,647 |
| long | Long | 8 bytes | -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 |
| float | Float | 4 bytes | Stores fractional numbers upto 7 decimal digits |
| double | Double | 8 bytes | Stores fractional numbers upto 15 decimal digits |
| char | Character | 2 bytes | Stores single character |
| String | String | Depends on string size | Stores String values |
| bool | Boolean | 1 bit | Stores True or False value |

**STRINGS**

String class in Java represents character strings. Each string variable created in a Java program are instances of this class. Objects of Strings are constant and can’t be changed once created i.e immutable

Stack memory is used for static memory allocation and contains reference values of Strings that are stored in heap memory (i.e address of where the String is stored in heap)

Heap memory has no size limit and can be accessed from anywhere i.e has global access. Actual value of string literals are stored in heap memory

Creating/Declaring a String:

String str = “Java”;

String str = new String(“Java”);

**STRING POOL IN JAVA**

A string constant pool is a separate place in the heap memory where the values of all the strings which are defined in the program are stored.

When we declare a string, an object of type String is created in the stack memory, while an instance with the value of the string is created in the heap memory. If a string literal already exists in the string constant pool, a reference to the pooled instance is returned. If the string doesn’t already exist in the pool, a new String is initialized and placed in the pool.

String str = “Java”;

JVM creates a String object in stack memory and stores the value “Java” in the string constant pool and returns the reference to be stored in stack.

String str2 = “Java”;

JVM checks if string literal “Java” exists in the string constant pool. Now, it returns the same polled instance reference to be stored in str2.