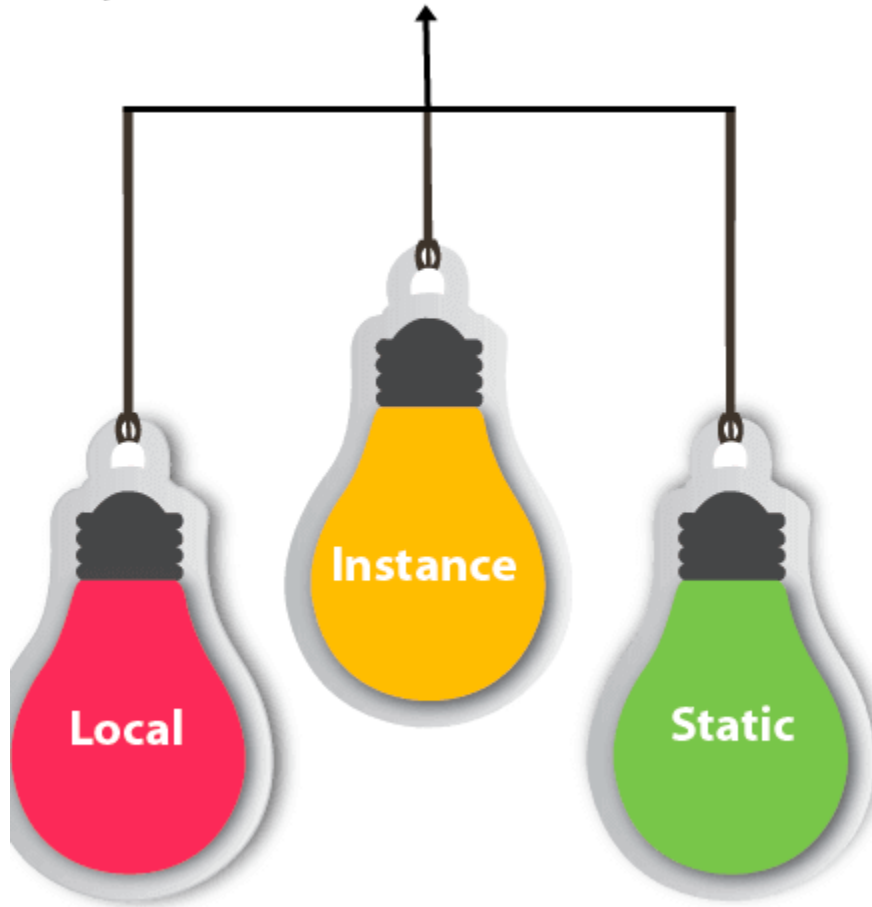


2.1 JAVA VARIABLES

- It is a combination of "vary + able" which means its value can be changed.
- A variable is a container which holds the value while the **Java program** is executed (which means temporarily). A variable is assigned with a data type.
- There are three types of variables in java: local, instance and static

Types of Variables



1. LOCAL VARIABLE

- A variable declared inside the body of the method is called local variable. You can use this variable only within that method and the other methods in the class aren't even aware that the variable exists (local to a particular method only).
- A local variable cannot be defined with "static" keyword.
- It is necessary to initialize local variable before using it.

2. Non- static/instance Variable

- A variable declared inside the class but outside the method's body is called an instance variable. It is not declared as **static**.
- It is called an instance variable because its value is instance-specific (belongs to object) and is not shared among instances (i.e. separate copy of initialization takes place for each instance/object when created).

3. Static Variable

- A variable that is declared as static is called a static variable. It cannot be local.
- Static variables belongs to class so, single copy of the static variable is shared it among all the instances/objects of the class.
- Memory allocation for static variables happens only once when the class is loaded in the memory.

Example to understand variable types

```
3 public class Test {  
4  
5     static int a = 12; //static var  
6     int b = 67; //non static var  
7  
8  
9     public static void main(String[] args) { //static method  
0         int x = 10; //local variable  
1     }  
2  
3 }
```

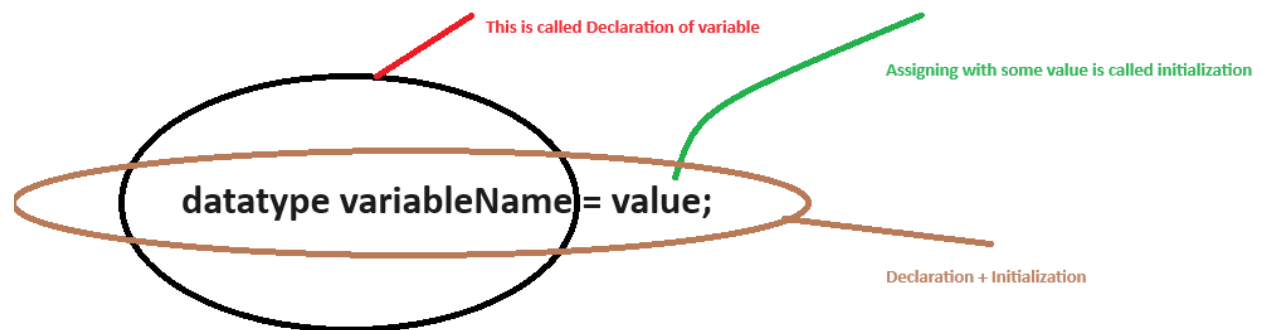
RULES TO DECLARE JAVA VARIABLES

- A variable name can consist of Capital letters **A-Z**, lowercase letters **a-z** digits **0-9**, and two special characters such as **_** underscore and **\$** dollar sign.
- The first character must not be a digit.
- Blank spaces cannot be used in variable names.
- Java keywords cannot be used as variable names.
- Variable names are case-sensitive.
- There is no limit on the length of a variable name but by convention, it should be between 4 to 15 chars.

- Variable names always should exist on the left-hand side of assignment operators (= is called assignment operator).

Variable Syntax

dataType *variableName* = value;



eg.

int x = 10;

we can write it as another way also

int x; //declaration

x = 10; //initialization