# Variables

**Identifier**:

A name in java program is called as Identifier. It may be class name, method name, variable name or label name.

**Rules to define Java identifier:**

1. Allowed characters: [a-z, A-Z, 0-9, \_, $]
2. Usage of other characters will throw compilation errors. Eg: abc% -- invalid, ab$ -- valid
3. Should not start with numbers. Eg : 012A – invalid, ab12 – valid
4. Identifiers are case sensitive. Eg : Abc is different from abc
5. No length limit of identifier but 15 characters is recommended.
6. Reserved characters should not be used.
7. All predefined class / interface names can be used as identifiers but not a good practice to use

**Variable:**

* A variable is a container which holds the value while the java program is executed, and it’s assigned with a data type.
* Simply a name of memory location.
* Java defines the following kinds of variables:
  + Instance Variables (non-static)
    - Field value which varies for different instances.
    - Eg: class A { int id; }
  + Class Variables (static)
    - A class variable is a field which is declared with static modifier.
    - Field value which is same across instances.
    - Eg: class A { static int count = 0; }
  + Local variables
    - Method will often store its temporary data in local variable
    - Eg: class A { void main() {int a = 0;} }
  + Parameters
    - Method may get data from callers. To store that data, we use parameters.
    - Eg: class A { void inc(int value) {value++;} }

**Naming of variable:**

* Case sensitive. Eg: Speed is different from speed.
* Unlimited-length sequence of Unicode letters, digits, underscore (\_) and dollar sign ($).
* Recommended to begin variable with letter and not with \_ / $.
* Try avoiding usage of $ symbol at all.
* Should not start with numbers.
* White space is not permitted in variable name.
* Use full names instead of cryptic abbrevations.

Eg: Avoid using *s* instead of *speed.*

* If name consists of a single word, keep it in all small case letters. If it’s having multiple words, then start the remaining words with capital letter. (camelCase).

Eg: speed, numberOfBooks

* If variable is a constant, then capitalize every letter and subsequent word is seprated by ‘\_’.

Eg: COUNT, BOOK\_STORE

* Variable name should never be a reserved keyword.

class A{

int marks=50;//instance variable

static int count=100;//static variable

void method(){

int temp=90;//local variable

}

}//end of class