### ****3. Local and Instance Variables****

* **Local Variables**:
  + A **local variable** is declared within a method and is only accessible within that method. It exists only for the duration of the method's execution.
  + **Example**:

public void myMethod() {

int localVar = 10;   
// localVar is only accessible inside myMethod

}

* **Instance Variables**:
  + An **instance variable** is a variable declared inside a class but outside of any methods. It is tied to an instance of the class, meaning each object of the class has its own copy.
  + **Example**:

class MyClass {

int instanceVar; // instance variable

public MyClass(int value) {

this.instanceVar = value;

}

}

MyClass obj = new MyClass(10); // obj.instanceVar is 10

* **Difference**:
  + **Local variables** exist only within a method and are destroyed once the method finishes executing. **Instance variables** exist as long as the object they belong to exists and can be accessed throughout the object's lifetime.