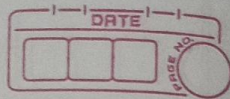# Java Nested (inner class)

> In java we can define a class within another class. Such class is known as nested class / inner class.

class A {
class B {}
}

```
class OuterClass {
    //....
    class InnerClass {
        //....
    }
}
```

	class files
	A.class
	A$B.class

> There are two types of nested classes can create in Java.
- Non-static nested class (inner class)
- Static nested class.

④ Inner class or Non-static nested class.

Outer class → class A {
Inner class ──→ class B { .... }
}

→ Inner class members have access to outer class members.
→ Anything static can't be kept in non-static nested class.
→ For accessing we have to make object of outer class then only we can access inner class. Then we have to create object of inner class.

```
A aO = new A();          //class A obj created.
A.B bO = new aO.new B();  //class B obj created
bO.hello();              //accessing method.
```

dot operator

or

```
A.B bO = new A().new B();  //simultaneously
                            creating both class objects
```

or

        new A().A new B().hello(); //This is also valid

local Inner Class.

> We can create class in method also or class in block ({ }) called as Local inner class in Java.

```
class Outer {
    private void getValue(){
        class Inner{
            public void innerMethod(){ .... }
        }
        Inner io = new Inner();
        io.innerMethod();
    }
}
```

Class files
Outer.class
Outer$1Inner.class

> Local classes are not members of any enclosing classes. Like Inner class is not member of outer class as given in above example.

> This class have/can access elements of the class which enclosing it.

> A local inner class can't be instantiated from outside the block where it is created in.

> A local inner classes can extend an abstract class or implemented and an interface.

> Local variable can't be accessed from local inner class. That variable should be final so we can access them.

> We can't declare any static method in inner class because we have to create an object of inner class and static method can accessed without object.

⊗ Anonymous Inner Class.

> Inner class without name.
> This is not frequently used.

```
A ao = new A(){
    public void hello(int x){
        //....
    }
};                    } Anonymous
                        Inner
                        class
ao.hello(10); // calling
```

class file ⇒ A$1.class // class don't have name