Local Inner Class
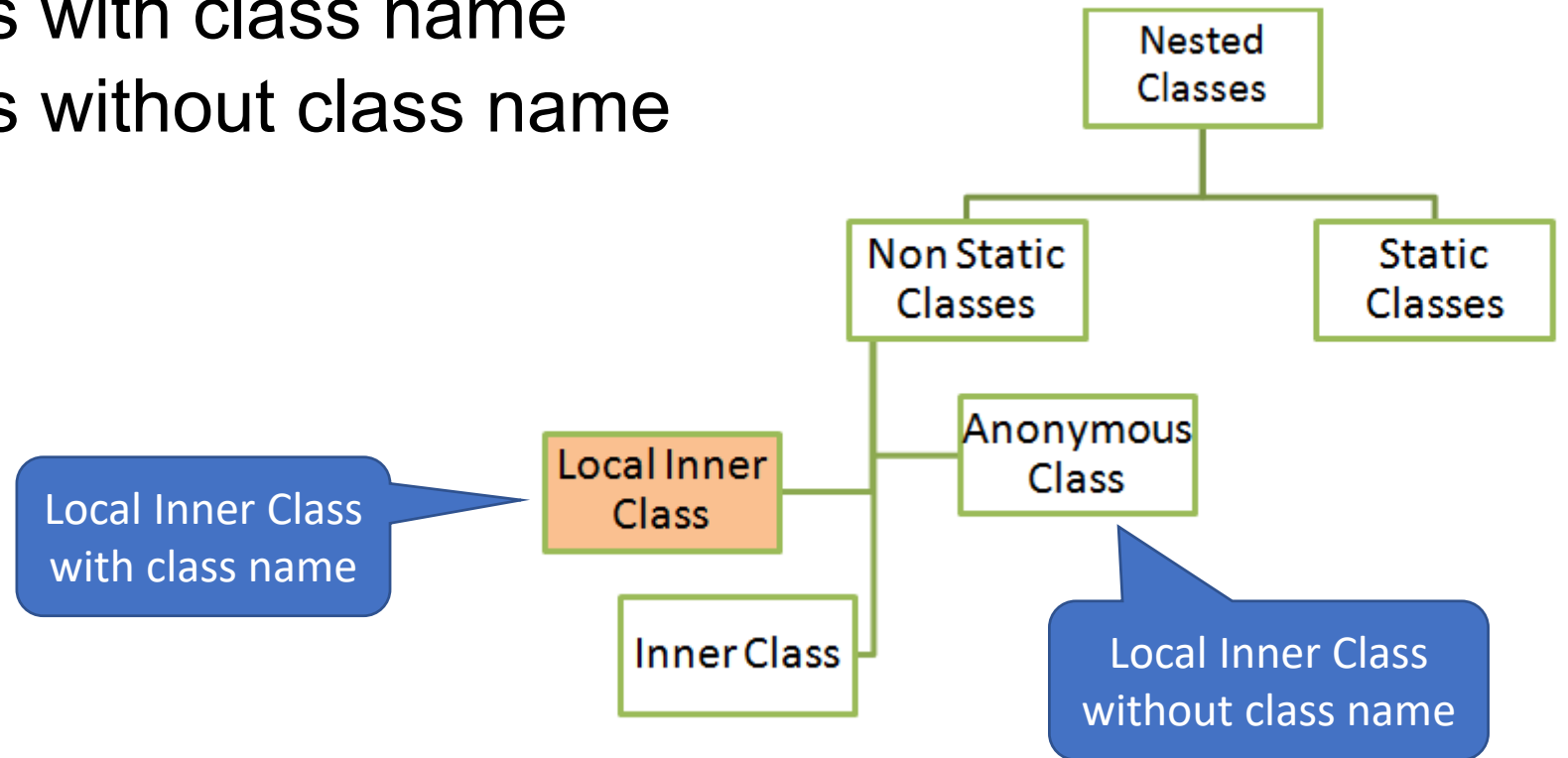
Sungchul Lee

Learning Object

➢Two type of Local Inner class
  ❑Local Inner Class with class name
  ❑Local Inner Class without class name

Type of Nested Class

➢Four type of nested class

❑Classes are inside of another class

1. Inner Class
   ❖ Increasing efficient to manage class
2. Static Inner Class
   ❖ static member
3. **Local Inner Class**
   ❖ **Class in Method**
4. Anonymous Inner Class

```
class Outer
{
    statement 1
    method(){
        class Inner
        {
            statement 1-1
        };
    }
}
```

Local Inner Class

➤ The inner classes that are defined inside a block.
   ❑Cannot create the object outside a block
   ❑Working on only in the method

➤Not a member of any enclosing classes

➤Cannot have any access modifiers

   ❑JDK 7- Local inner class can access only final local variable of the **enclosing block**

   ❑JDK 8- it is possible to access the non-final local variable of enclosing block in local inner class.

Generate Object (Local Inner)

➢Declare and initialize
  ❑Only work inside the method
  ❑Cannot use other class
  ❑Syntax:
    Inner innerName =new Inner(); // in method after Local inner
  ❑Append/Extend '$' symbol for Local inner class

By Compiler

	main$1Inner$1AnotherInner.class	11/8/2018 12:09 PM	CLASS File
	main$1Inner.class	11/8/2018 12:09 PM	CLASS File
	main.class	11/8/2018 12:09 PM	CLASS File

Practice

1. Make a new project (Reference: Create Project and Class File)
   ❑Project name: Local_Inner

2. Create a new Class File
   ❑Class name: Main

3. Coding:

Practice – Code (Main)

```java
public class Main {
public static void main(String[] args) {
int x = 100;
        class Local_Inner { // private is not allowed
            int y = 200;
            public void display(){
            System.out.println("Local Inner class");
            System.out.println("x : " + x);
            System.out.println("y : " + y);
            class AnotherInner{
                int z = 200;
                public void display(){
                    System.out.println("Local Inner class in Local inner class ");
                    System.out.println("x : " + x);
                        System.out.println("y : " + y);
                        System.out.println("z : " + z);
                }
            }
```

Practice – Code (Main) – cont.

```
        AnotherInner in = new AnotherInner();
        in.display();
    }
}

Local_Inner in = new Local_Inner(); //Local_Inner is defined
System.out.println("x : " + x);
System.out.println("y : " + in.y);

in.display();
    }
}
```

Practice – Code and Result

```java
public class Main {
    public static void main(String[] args) {
        int x = 100;
        //Local_Inner in = new Local_Inner(); //Error Local_Inner not defined
        class Local_Inner { // private is not allowed
            int y = 200;
            public void display(){
                System.out.println("Local Inner class");
                System.out.println("x : " + x);
                System.out.println("y : " + y);
//              AnotherInner in = new AnotherInner(); //compile error
                class AnotherInner{
                    int z = 200;
                    public void display(){
                        System.out.println("Local Inner class in Local inner class ");
                        System.out.println("x : " + x);
                        System.out.println("y : " + y);
                        System.out.println("z : " + z);
                    }
                }
                AnotherInner in = new AnotherInner();
                in.display();
            }
        }

        Local_Inner in = new Local_Inner(); //Local_Inner is defined
        System.out.println("x : " + x);
        System.out.println("y : " + in.y);
        //Inner.AnotherInner in = in.new AnotherInner(); //Cannot create object
        in.display();
    }
}
```

Problems · Javadoc · Declaration · Console

```
<terminated> Main (7) [Java Application] C:\P
x : 100
y : 200
Inner class
x : 100
y : 200
Inner class in inner class
x : 100
y : 200
z : 200
```

Result

Summary

➢Local Inner Class
  ❑Inner Class in method
  ❑Work in the block/method

```java
public static void main(String[] args) {
    int x = 100;
    //Local_Inner in = new Local_Inner(); //Error Local_Inner not defined
    class Local_Inner { // private is not allowed
        int y = 200;
        public void display(){
            System.out.println("Local Inner class");
            System.out.println("x : " + x);
            System.out.println("y : " + y);
            AnotherInner in = new AnotherInner(); //compile error
            class AnotherInner{
                int z = 200;
                public void display(){
                    System.out.println("Local Inner class in Local inner class ");
                    System.out.println("x : " + x);
                    System.out.println("y : " + y);
                    System.out.println("z : " + z);
                }
            }
            AnotherInner in = new AnotherInner();
            in.display();
        }
    }

    Local_Inner in = new Local_Inner(); //Local_Inner is defined
    System.out.println("x : " + x);
    System.out.println("y : " + in.y);
    //Inner.AnotherInner in = in.new AnotherInner(); //Cannot create object
    in.display();
}
```