

Static class in Java

Can a class be static in Java ?

The answer is YES, we can have static class in java. In java, we have **static instance variables** as well as **static methods** and also **static block**. Classes can also be made static in Java.

Java allows us to define a class within another class. Such a class is called a nested class. The class which enclosed nested class is known as Outer class. In java, we can't make Top level class static. **Only nested classes can be static.**

What are the differences between static and non-static nested classes?

Following are major differences between static nested class and non-static nested class. Non-static nested class is also called Inner Class.

- 1) Nested static class doesn't need reference of Outer class, but Non-static nested class or Inner class requires Outer class reference.
- 2) Inner class(or non-static nested class) can access both static and non-static members of Outer class. A static class cannot access non-static members of the Outer class. It can access only static members of Outer class.
- 3) An instance of Inner class cannot be created without an instance of outer class and an Inner class can reference data and methods defined in Outer class in which it nests, so we don't need to pass reference of an object to the constructor of the Inner class. For this reason Inner classes can make program simple and concise.

```
/* Java program to demonstrate how to implement static and non-static
   classes in a java program. */
class OuterClass{
    private static String msg = "GeeksForGeeks";
```

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```
// Static nested class
public static class NestedStaticClass{

    // Only static members of Outer class is directly accessible in
    // static class
    public void printMessage() {

        // Try making 'message' a non-static variable, there will be
        // compiler error
        System.out.println("Message from nested static class: " + msg
    }

}

// non-static nested class - also called Inner class
public class InnerClass{

    // Both static and non-static members of Outer class are access
    // this Inner class
    public void display(){
        System.out.println("Message from non-static nested class: "+
    }

}

class Main
{
    // How to create instance of static and non static nested class?
    public static void main(String args[]){

        // create instance of nested Static class
        OuterClass.NestedStaticClass printer = new OuterClass.NestedSta

        // call non static method of nested static class
        printer.printMessage();

        // In order to create instance of Inner class we need an Outer
        // instance. Let us create Outer class instance for creating
        // non-static nested class
        OuterClass outer = new OuterClass();
        OuterClass.InnerClass inner = outer.new InnerClass();

        // calling non-static method of Inner class
        inner.display();

        // we can also combine above steps in one step to create instan
        // Inner class
        OuterClass.InnerClass innerObject = new OuterClass().new InnerC
```

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```

        // similarly we can now call Inner class method
        innerObject.display();
    }
}

```

Output:

```

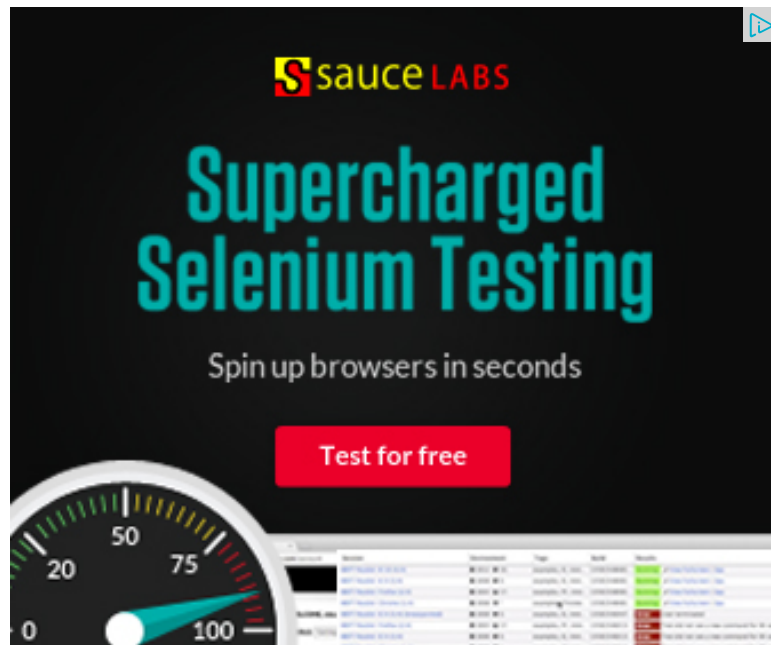
Message from nested static class: GeeksForGeeks
Message from non-static nested class: GeeksForGeeks
Message from non-static nested class: GeeksForGeeks

```

Reference Book:

Introduction To Java Programming by Y. DANIEL LIANG

This article is contributed by **Chandra Prakash**. Please write comments if you find anything incorrect, or you want to share more information about the topic discussed above



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static inner class is like static member of enclosing class with only static method that static inner class as top level class

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we can create static class inside the class.

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I Don't think we have static classes in java.

You are confusing inner classes which are static members of a class.

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I think what we are looking for is a non-instantiable class that forces all doesn't seem to exist. The closest thing I can come up with is a final al

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