

Private and final methods in Java

When we use *final* specifier with a method, the method cannot be overridden in any of the inheriting classes. Methods are made final due to design reasons.

Since private methods are inaccessible, they are implicitly final in Java. So adding *final* specifier to a private method doesn't add any value. It may in-fact cause unnecessary confusion.

```
class Base {  
  
    private final void foo() {}  
  
    // The above method foo() is same as following. The keyword  
    // final is redundant in above declaration.  
  
    // private void foo() {}  
}
```

For example, both 'program 1' and 'program 2' below produce same compiler error "foo() has private access in Base".

Program 1

```
// file name: Main.java  
class Base {  
    private final void foo() {}  
}  
  
class Derived extends Base {  
    public void foo() {}  
}  
  
public class Main {  
    public static void main(String args[]) {  
        Base b = new Derived();  
    }  
}
```

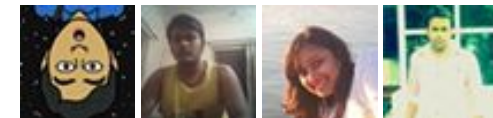
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```

        b.foo();
    }
}

```

Program 2

```

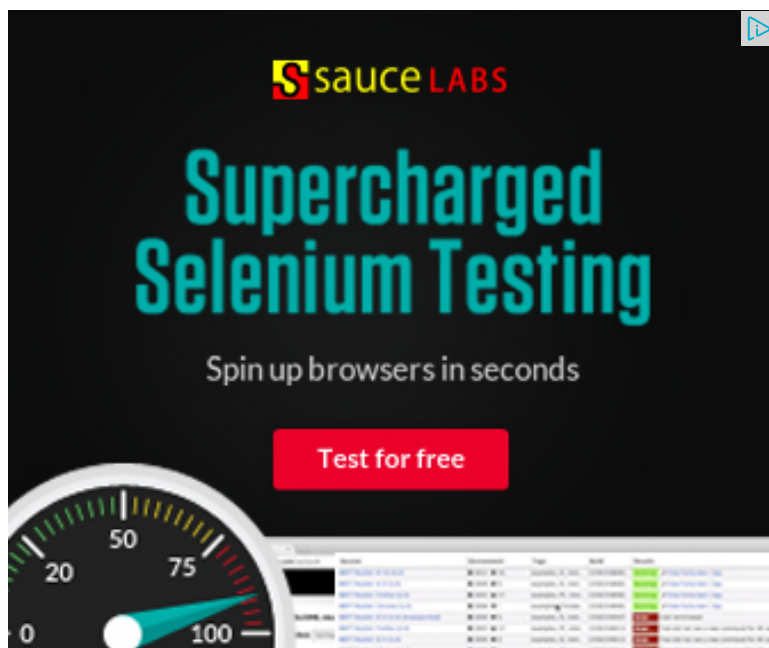
// file name: Main.java
class Base {
    private void foo() {}
}

class Derived extends Base {
    public void foo() {}
}

public class Main {
    public static void main(String args[]) {
        Base b = new Derived();
        b.foo();
    }
}

```

Please write comments if you find anything incorrect, or you want to share more information about the topic discussed above.



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shukun tokas • 7 months ago

Program 1

As the method in class base is private and final, it is not visible to the main class that method foo is not visible in the main class.

Program 2

Same compile time error, only difference here is that the method is not final, though it is either final or private or private final - in all the cases the exception will be same.

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Ramanan · a year ago

Can somebody explain how this compiles without error?

```
[sourcecode language="java"]
class Base {
    private void foo() {}
    public static void main(String args[]) {
        Base b = new Derived();
        b.foo();
    }
}

class Derived extends Base {
    public void foo() {}
}
/*
public class Main {
    public static void main(String args[]) {
        Base b = new Derived();
        b.foo();
    }
}
*/
```

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nagarjuna → Ramanan · 6 months ago

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Is your java file called Main.java or Base.java? It seems like you comm
above.

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zyfo2 • a year ago

so I think it's better to say you can't override the virtual function if using private.
virtual function

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vasu • a year ago

Private- final class member stops assigning to other Object

ex: Class Demo{

```
private final Integer i= new Integer(1);
```

```
public void changeValue(){  
i=new Integer(2); //not allowed bcz final  
}  
}
```

Please post ur reviews

```
/* Paste your code here (You may delete these lines if not writing c
```

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Setu Poddar • a year ago

When u declare final u cant redefine the functionality. But with private u can re
method.

^ | v • Reply • Share ›



When u declare final u cant redefine the functionality. But with private u can re method.

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Vikram • a year ago

Just an additional information.

Methods can be stopped from being overridden by using private keyword also, keyword.

reason being: final stops you by overriding, but still accessible to other member subclass. private methods are not.

Cheers :)

```
/* Paste your code here (You may delete these lines if not writing code)
```

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zyfo2 → Vikram • a year ago

but if you try `Derivedb = new Derived(); b.foo();`
it will work.

so what's the point here? it merely stops the virtual function?

```
/* Paste your code here (You may delete these lines if not writing code)
```

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parth → zyfo2 • 8 months ago

just wanted to know one thing that we are always using a superclass and then checking whether the method has been overridden and when we directly refer to a subclass with a superclass reference subclass.

what is the correct way to check whether the method is actual.

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zyfo2 → zyfo2 • a year ago

yeah, I believe it just stops overriding the virtual function. the code accessing the private function in a different class.

```
/* Paste your code here (You may delete these lines if
```

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surf • a year ago

I agree with you but your ans is a side of a coin .

Actually if we say public final method then we can use this method in other class also while this is not the case in private method.

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OP • a year ago

final keyword is used for efficiency also, can you please throw some light on

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GeeksforGeeks Mod → OP • a year ago

This is a misconception that final methods add to efficiency. In earlier versions, they could be made inline.

In recent versions of Java, the virtual machine can detect these situations and is now generally discouraged to use final to try to help the optimizer.

1 ^ | v • Reply • Share ›



OP → GeeksforGeeks • a year ago

thanks kartik

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