

Encapsulation

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How do we achieve encapsulation in java?

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**Tripti Mishra**, A wannabe programmer.

Answered April 1, 2016



Encapsulation is the ability to package data, related behavior in an object bundle and control/restrict access to them (both data and function) from other objects.

Encapsulation in java is achieved by using private members and public methods.

- Make members of a class as **private**.
- Define public setter and getter methods to modify and view the variables' values and access them outside the class only through getters and setters.

```
1 //save as Employee.java
3 public class Employee
4 {
5     private String name;
6
7     public String getName()
```

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```
10 }
11 public void setName(String name)
12 {
13     this.name=name
14 }
15 }
```

```
1 //save as EncapTest.java
3 class EncapTest
4 {
5     public static void main(String[] args)
6     {
```

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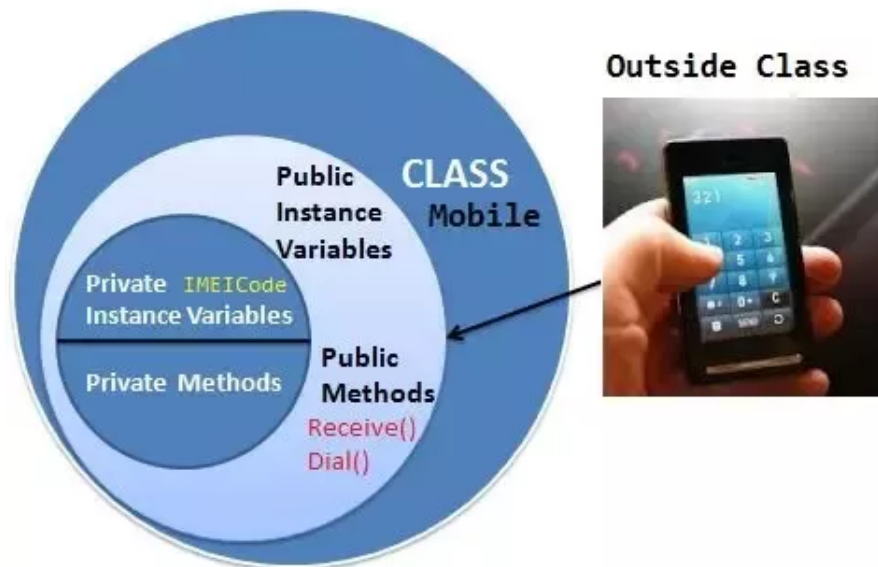
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```
10 }
11 }
```

A lesser degree of encapsulation can also be achieved by making the members public or protected.



2 comments from Praneeth Dheram

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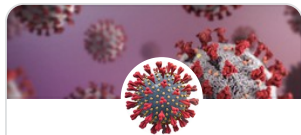
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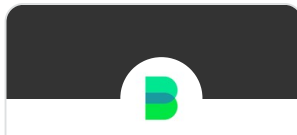
Encapsulation is wrapping of data member and member function. It insulate the data from direct access by the program. To achieve encapsulation we have to make all the data member as private and make all the method as public or use getter and setter.

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1 comment from Vishal Kadam

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Answered Jan 3

Encapsulation is defined as the wrapping up of data under a single unit. It is the mechanism that binds together code and the data it manipulates. Other way to think about encapsulation is, it is a protective shield that prevents the data from being accessed by the code outside this shield.

- Technically in encapsulation, the variables or data of a class is hidden from any other class and can be accessed only through any member function of own class in which they are declared.
- As in encapsulation, the data in a class is hidden from other classes, so it is also known as **data-hiding**.
- Encapsulation can

... (more)



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What are some real world example of encapsulation and abstraction and how are they different, yet related?

What is the difference between abstraction and encapsulation?

What is encapsulation in Java?



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Answered February 21, 2018

Encapsulation is the process of binding/encapsulating the data and code together. It is used to hide the implementation details. The encapsulation can be achieved by the use of 3 keywords in java.

- private
 - The variables or methods that have been declared as private will not be accessible outside the class in which they have been declared. But, an outer class cannot be made private.
- protected
 - The variable or methods that have been declared as private will be accessible inside the class in which they have been defined and in the classes which **extends** this class. Also, an outer cannot be made protecte

... [\(more\)](#)



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form of an object.

This is as simple as that. Its often confused with Data hiding. It would be over-generalizing if someone said that encapsulation is Data Hiding.

Its true that, due to encapsulation now that the members are part of an object, they now become protected/private if you apply the access modifiers, and now you are able to implement Data Hiding using Encapsulation. **But in the first place, Encapsulation was achieved using cla ...** [\(more\)](#)



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Encapsulation in java, it can be achieved by making, the members of the class **private** or **hidden** from the other classes. And it can be access only through the methods of that class.

We declared the **public setter and getter methods** to make changes to the members of the class.

2.1K views · Answer requested by Dheeraj Kushwaha



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Encapsulation is nothing just only wrapping of all related data in a block having more secure feature which we know as Class in java. for ex.

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```
private int a;  
public float b;
```

```
void show()  
{  
    System.out.println(this.a+" --- "+this.b);  
}
```

```
{  
    System.out.println(this.a+" --- "+this.b);  
}
```

```
System.out.println(this.a+" --- "+this.b);  
}
```

```
}
```

```
public static void main(String s[])  
{  
    Test t= new Test();  
    t.a=20;  
    t.b=10.f;  
    t.show();  
}
```

```
{  
    Test t= new Test();  
    t.a=20;  
    t.b=10.f;  
    t.show();  
}
```

```
Test t= new Test();  
t.a=20;  
t.b=10.f;  
t.show();  
}
```

```
t.a=20;  
t.b=10.f;  
t.show();  
}
```

```
t.b=10.f;  
t.show();  
}
```

```
t.show();  
}
```

```
}
```

```
}
```

It's upto you whether you make your data members public or protected or private.

273 views



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be accomplished by making the data private because private data is accessible only inside a class not by the outside world.

2.3K views



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One of the important principle of object-oriented design is encapsulation; different components of a software system should not reveal the internal details of their respective implementations. One of the main advantages of encapsulation is that it gives one programmer freedom to implement the details of a component, without concern that other programmers will be writing code that intricately depends on those internal decisions. The only constraint on the programmer of a component is to maintain the public interface for the component, as other programmers will be writing code that depends on th ... [\(more\)](#)



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Reference : [Decodejava.com](https://www.decodejava.com) presenting simple and easy Java tutorial.

Encapsulation - The key advantage of using an *Object Oriented Programming* language like Java is that it provides your code - **security**, **flexibility** and its **easy maintainability** through *encapsulation*.



- **Encapsulation** is also useful in **hiding** the **data**(*instance variables*) of a class from an *illegal direct access*.
- **Encapsulation** also helps us to make a **flexible code** which is easy to *change and maintain*.

... [\(more\)](#)



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```
class SimpleGetterAndSetter {  
  
    private int num;  
  
    public void setNumber(int n) {  
  
        this.num=n;  
  
    }  
  
    public int getNumber() {  
  
        return this.num;  
  
    }  
}  
  
class SimpleExample {  
  
    public static void main(String[] args) {  
  
        SimpleGetterAndSetter obj= new SimpleGetterAndSetter();
```

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```
System.out.print(n);
```

```
}
```

```
}
```

853 views



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This is most frequently asked question for Engineering students at college or at interview level.

Encapsulation is also known as Data Hiding.

The answer to this question is-It is achieved with the help of public getter() and setter() methods.

The advantage of Encapsulation is we can access private data members of a class outside of a class with the help of those two methods.

Another advantage is we need not to change value of variables everywhere in code if it is [desired, it](#)  can be changed at one place and changes are reflected everywhere in code.

2.8K views



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Answered Dec 18

- By providing only a setter or getter method, **you** can make the class read-only or write-only. In other words,
- **you** can skip the getter or setter methods. **It** is a way to achieve data hiding in **Java** because other class will not be able to access the data through the private data members.

you can read it from here: [Encapsulation in Java - Javatpoint](#) ^[1]

Footnotes

^[1] [Encapsulation in Java - Javatpoint](#)

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Answered October 5, 2019

There is Encapsulation in simple hello world program.

In simple words, Encapsulation means put thing in a box.

I assume that you have knowledge about getter and setter method and it's benefits in program. it is an encapsulation.

You can refer my Blog about the same

Here is link ^[1]

Footnotes



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Encapsulation in general terms means enclosing something. Java encapsulates members(variables and methods) into a single unit called class.

I would suggest you to go through this link [Java Encapsulation](#) and clarify the topic with the examples given.

1.2K views · Answer requested by Kavi Arasu



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9 Answers Collapsed (Why?)

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is composition a form of encapsulation.

Is there any rules for encapsulation (Java)?

What is abstraction and encapsulation in Java?

What is proper encapsulation in Java?

What is the use of encapsulation in Java language?

By making the variables protected, can we achieve encapsulation?

Why do we need polymorphism? When, where and how can we use it in a real world problem?

How does Java achieve encapsulation?

Why are we using encapsulation when they are used?