Object-Oriented Programming Computer Programming

What do the 4 principles of OOP mean?

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3 Answers

Tom Borkowski, former Control Systems Designer at Boeing (1976-1980)
Updated Jan 31, 2017

I think it means that even software engineers are capable of believing in myths.

I never knew one competent software engineer who believes those principles. Instead, we old programmers believe that the *object* is just a great software mechanism which provides three extremely useful features to high-level programming languages:

#1 Objects allow programmers to define any type of variable that can be used as if the variable were native to the language. And a limited number of types of variables has always been a problem with high-level languages. I once needed a quaternion variable which was difficult to program because I didn't have the object mechanism. And the original BASIC language was developed just to provide a matrix variable.

#2 Objects allow programmers to organize all software as objects instead of the dozens of confusing module organizing and linking mechanisms that currently exist. In short, the object is a superior software organizing mechanism; it is the basis of Microsoft's .NET software system.

#3 Objects allow programmers to use all technologies and system services as a family of consistent objects instead of the dozens of confusing APIs that are currently in use.

Objects also offer is a new revolutionary (optional) architectural mechanism called *inheritance* that allows programmers to use old software in a manner never before seen in computer programming. Inheritance can be used to quickly create needed software from a library of standard objects such as Web pages, graphics, data base processing, user interfaces, and other complex technologies. For example, I can create an entire, fully functional Web page for my program by merely inheriting a standard Web page object from my library. I can create and use a fully functional database by merely inheriting a standard database object from my library.

Maybe I've become a Scrooge in my old age, who was overdue for retirement and should now keep quiet. Maybe some people need to believe in myths to inspire

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Mahesh Kandpal, Software Consultant at Knoldus Software LLP

Answered Jan 29, 2017

Four principles of OOP are encapsulation,data abstraction, data hiding and inheritance.

Encapsulation: In technical terms, it means wrapping up of data and code in to a single unit(i.e Class) and also protecting the data from outside world.

There is also another term related with encapsulation is data hiding. Data hiding means hiding the data from world. Data can not be accessed directly.

Data Abstraction: Abstraction means hiding unessential details from user. And providing only essential information.

Inheritance: Inheriting the properties of super class in subclass. Basically subclass is more specialized one and it provides re usability.

In layman terms: For eg Mobile phone which we use everyday. Everything is wrapped inside the body of the phone. No one can access the functionality of mobile directly. To access the stuff you need object(here object is mobile)

you can’t make a call without having mobile. Now what is data hiding?

Data hiding means giving access to mobile in control manner.

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nical terms: we use getter and setter methods. I

Password and pattern lock are the ways of providing data hiding. One who knows the password, only can access your phone(This is called data hiding)

Data hiding basically provides you security. Your phone is locked. Even if you are not having your phone nearby . you know that it is protected.

Data Abstraction: suppose you wanna make a call to your mom. What you need?

Just valid number!

To make a call, you never need to know the background details how calling is being done. (Like connecting to network whichever your mom is using either airtel or idea etc)

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with some new functionalities.

So, Lollypop version basically is specialized version of Kitkat.

There is another principle also: Polymorphism

It means having same name but different functionality. In technical terms, function overloading, function overriding etc

Now let see how polymorphism is implemented in your mobile.

Every mobile has inbuilt camera. But still there are another apps which let us take photos like Retrica.

Retrica which has different functionality but does the same work(clicking photos).

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Glenn Posadas, iOS Developer and Husband2be

Answered Jan 29, 2017

You probably mean, **FOUR PILLARS OF OOP.**

These are the **PIE-A.** That's my tip in memorizing those.

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1. **P**olymorphism.
2. **I**nheritance.
3. **E**ncapsulation.
4. **A**bstraction.

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