

## **What are the advantages of using classes and objects? What types of programming languages use classes and objects?**

Classes and objects provide a way to modularize programming code and encapsulating functionality. One of my favorite dimensions to OOP is the habit of “Black Boxing” programming functionality. By making methods and properties private, programmers are able to bundle programming code up into a module that other programmers don’t have to know anything about. They simply have to know what services the object offers and how to access them.

Another important dimension of OOP is “loose coupling.” Well-written classes make it so that it is possible to easily replace portions of programming code without impacting the rest of the system. In a well-written OOP architecture, you can switch databases without having to touch the code in your control or view layers.

VBScript went strongly OOP with .NET, and PHP went mostly OOP with its version 5 release. JavaScript, I have recently discovered, can be written in OOP fashion. Although these languages support OOP, using an OO methodology is still up to the programmer. “You can lead a horse to water but...”

Christina,

Thanks for posting this classic example. I appreciate the use of metaphors in communicating complex information technology concepts; however, I've always disliked this particular example. I think it's because I had a fellow programmer use it in a meeting once, years ago, when trying to explain OOP to me. He told me to think of the car as an object, the tires as a property of the car, but the tires were an object also.

The problem was that we were talking about physical objects, and often in programming the objects we are dealing with are much more abstract. When I asked him what the objects were concerning a person who has taken training, he could not quite figure it out. We had a person object, with its properties, and a training object, with its properties, but when you combined a person with their training, you had a whole new set of properties. After several days of argument, the obvious came to us, we needed a third object: person's training.

It seems so obvious now, but the way we were thinking about objects made it so incredibly difficult at the time. : )