

# What is Inheritance?

In this lesson, you will be introduced to Inheritance, a powerful concept of Object-Oriented Programming.

## WE'LL COVER THE FOLLOWING ^

- Definition
- The *IS A* Relationship
- The Java Object class

Now that you have got familiar with the concepts of *objects* and *classes*, let's discuss **inheritance** which is another key concept in the *Object-Oriented Programming*.

## Definition #

**Inheritance** provides a way to create a new class from an existing class. The new class is a specialized version of the existing class such that it inherits all the *non-private* fields (*variables*) and *methods* of the existing class. The existing class is used as a starting point or as a *base* to create the new class.

## The *IS A* Relationship #

After reading the above definition, the next question that comes to your mind is *What is the use case of inheritance?* Well, the answer is that wherever we come across an **IS A** relationship between objects, we can use inheritance.



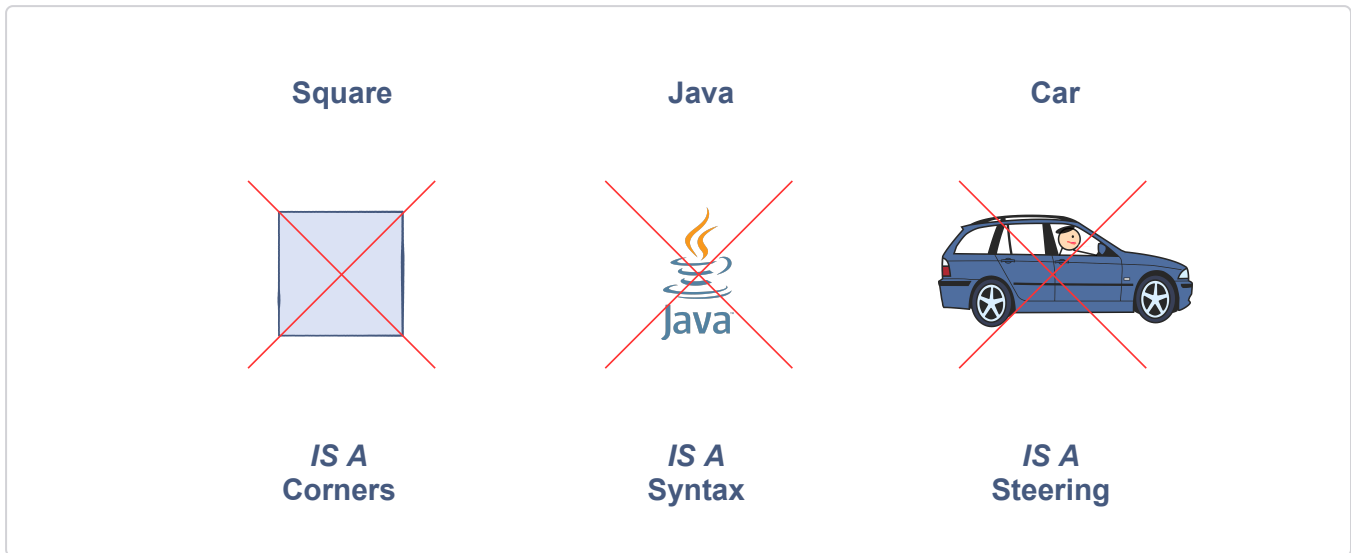
In the above illustration, we can see there are three objects having an **IS A** relationship between them. We can write it as:

- A square **IS A** shape
- Java **IS A** programming language
- Car **IS A** vehicle

So from the above descriptions regarding *inheritance*, we can conclude that we can build new classes by depending on the *existing classes*. We can build some new *classes*.

Existing Class	Derived Class
Shape	Square
Programming Language	Java
Vehicle	Car

Let's find out where an **IS A** relationship doesn't exist.



In the above illustration, it's obvious that we cannot use *inheritance* as an **IS A** relationship doesn't exist between the objects.

## The Java Object class #

The basic purpose of object-oriented programming is to enable a programmer to model the *real world objects* using a programming language. In Java whenever we create a **class**, it inherits all the **non-private methods** and *fields* from the builtin Java **Object class** by default which makes it a very good example of inheritance in Java. The methods defined in the **Object class** come in very handy when you create *new classes*. To find out more about the Java Object class and its functionalities, you can visit [here](#).

---

Things are getting interesting? So, let's move to the next lesson in which we will discuss the syntax and terminologies related to inheritance.