

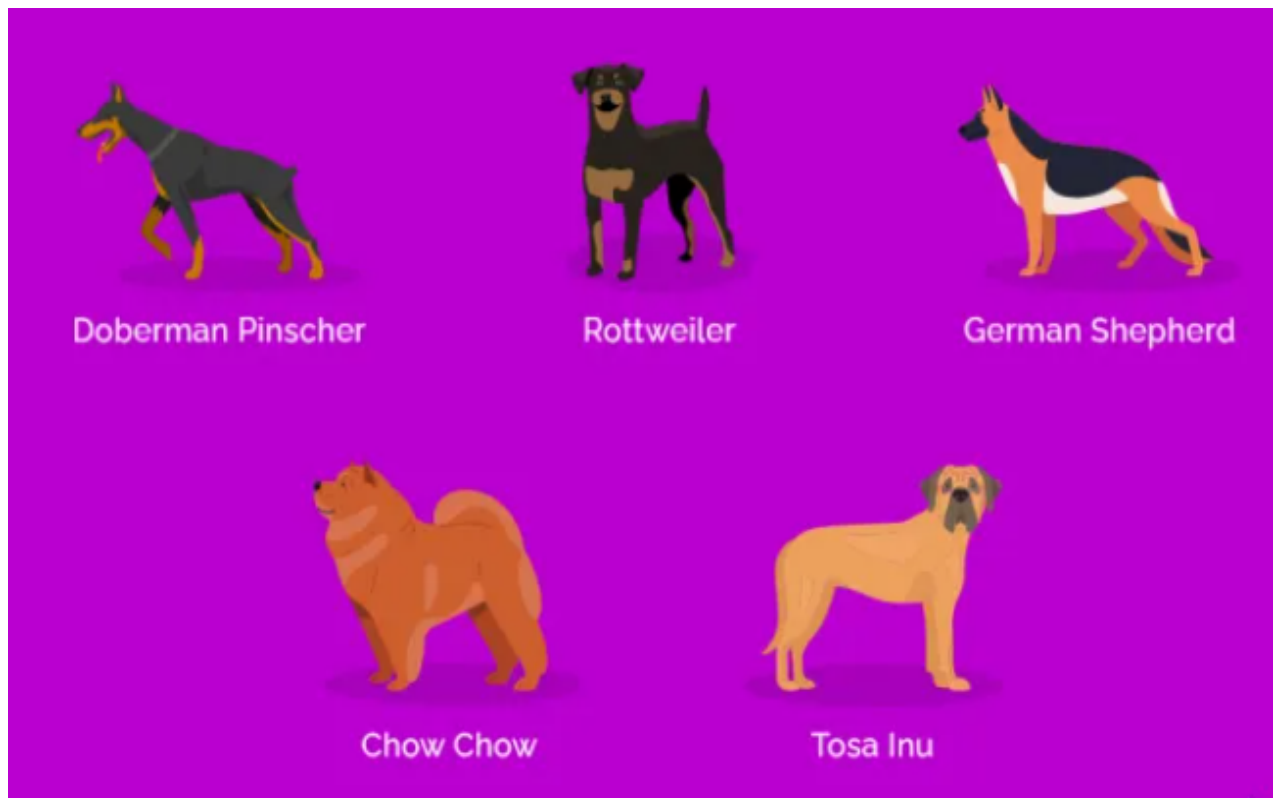
# Real-world class modeling

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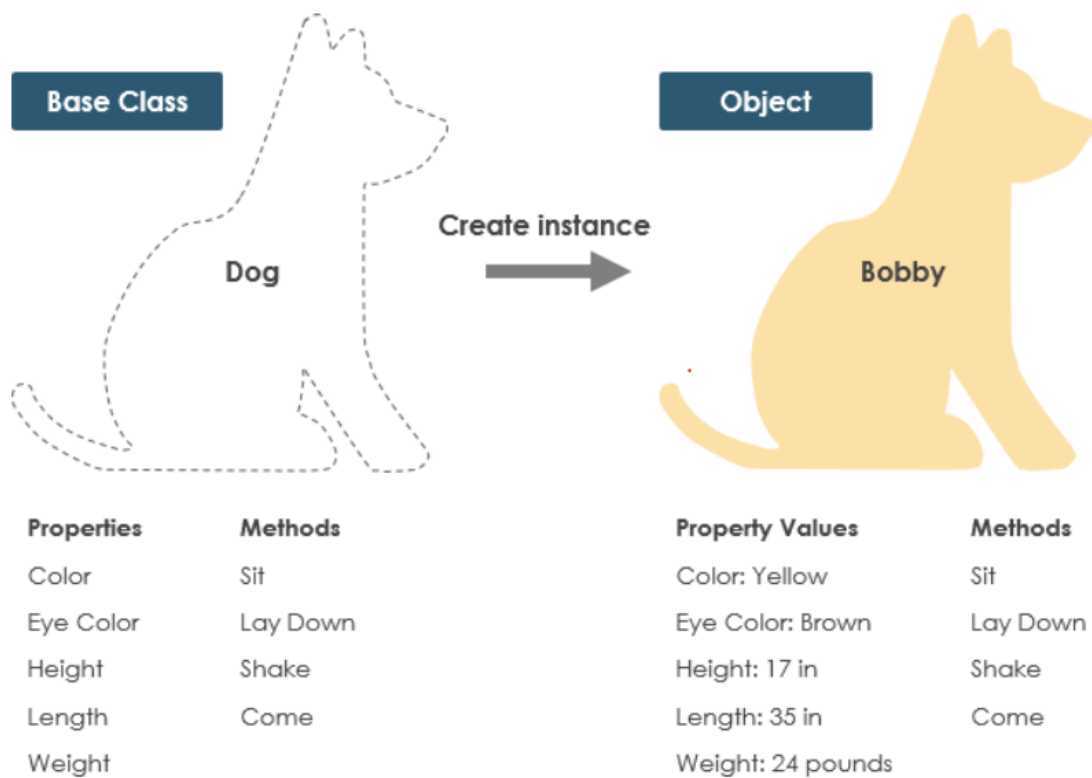
## What is Real-world class modeling?

Real-world Object-oriented class modeling designs and prepares the model's code and structure similar to the real-world entity. During the programming phase of construction, the modeling is implemented by using a programming language that supports the object-oriented programming model.

Let us take the example of a dog. In our day to day life, we see dogs of various breeds having different colors, height, length, weight, eye color, etc.:-



So you can see here that different dog breeds are there depending upon the height, color, tail, etc., so we can create a real-world class simulating all the dog species depending upon the properties and methods of the class.



Let's model these real-world entities into the program.

### Dog.java

```
class Dog{
    //properties of dog
    String name;
    String color;
    double height;
    double weight;
    double length;
    String eyeColor;

    // methods/functions that the dog performs
    public void bark(){
        System.out.println(this.name+" bow-wow");
    }

    public void eat(){
        System.out.println(this.name +" is eating");
    }
}
```

## Main.java

```
public class Main
{
    public static void main(String[] args) {
        //create the Doberman object
        Dog Doberman=new Dog();
        Doberman.name="Doberman";
        Doberman.color="brown";
        Doberman.height=3;
        Doberman.length=5;
        Doberman.eyeColor="black";
        Doberman.bark();
        Doberman.eat();
        //create the Rottweiler object
        Dog Rottweiler=new Dog();
        Rottweiler.name="Rottweiler";
        Rottweiler.color="Black";
        Rottweiler.height=3;
        Rottweiler.length=5;
        Rottweiler.eyeColor="brown";
        Rottweiler.bark();
        Rottweiler.eat();
        //create the Germanshepherd object;
        Dog Germanshepherd =new Dog();
        Germanshepherd.name="Germanshepherd";
        Germanshepherd.color="brown";
        Germanshepherd.height=2;
        Germanshepherd.length=4;
        Germanshepherd.eyeColor="lightBrown";
        Germanshepherd.bark();
        Germanshepherd.eat();

        //similarly in the same manner you can create the objects
        // and set the properties of the object
    }
}
```

## The output of the above-written program

```
Doberman bow-wow
Doberman is eating
Rottweiler bow-wow
Rottweiler is eating
Germanshepherd bow-wow
Germanshepherd is eating
...Program finished with exit code 0
```

## Why do we need Real-world object-oriented Class modeling?

- ❖ To make the development and **maintenance** of projects more effortless.
- ❖ To provide the feature of **data hiding** that is good for security concerns.
- ❖ We can **solve real-world problems** by using object-oriented programming.
- ❖ It ensures **code reusability**.
- ❖ It lets us write **generic code**: which will work with a range of data, so we don't have to write basic stuff over and over again.