JavaScript V: OOP

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مهارات المستقبل

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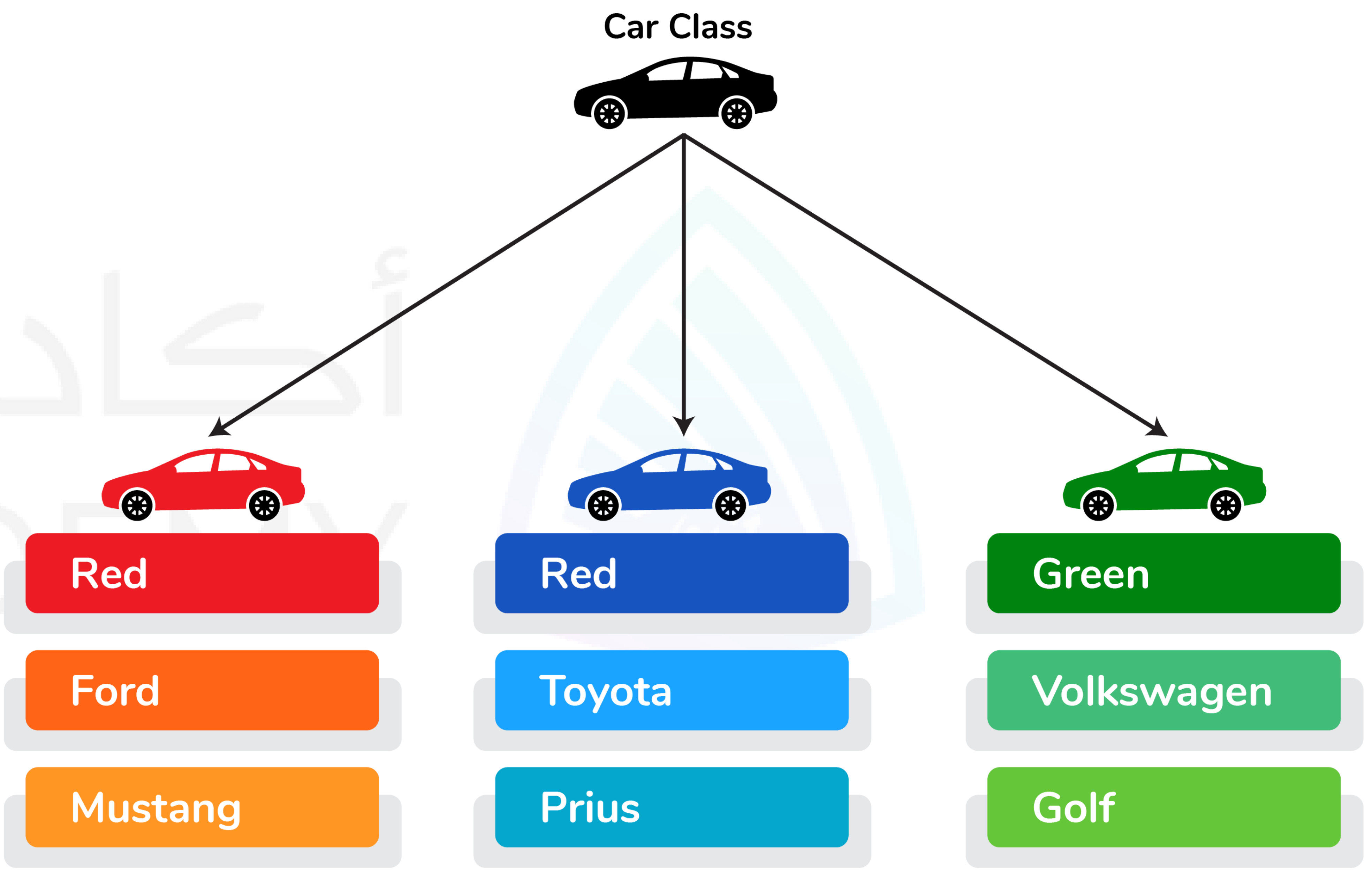
Objective

- What is Object Oriented Programming
- JavaScript Objects
- Procedural Programming vs. OOP
- How do we Design OO Systems
- Creating Defined Objects
- Function meets Object

What is Object Oriented Programming

- We as humans think in terms of objects.

- Object Oriented programming (OOP) is a programming paradigm that relies on the concept of **classes** and **objects.**



InterviewBit

JavaScript Objects

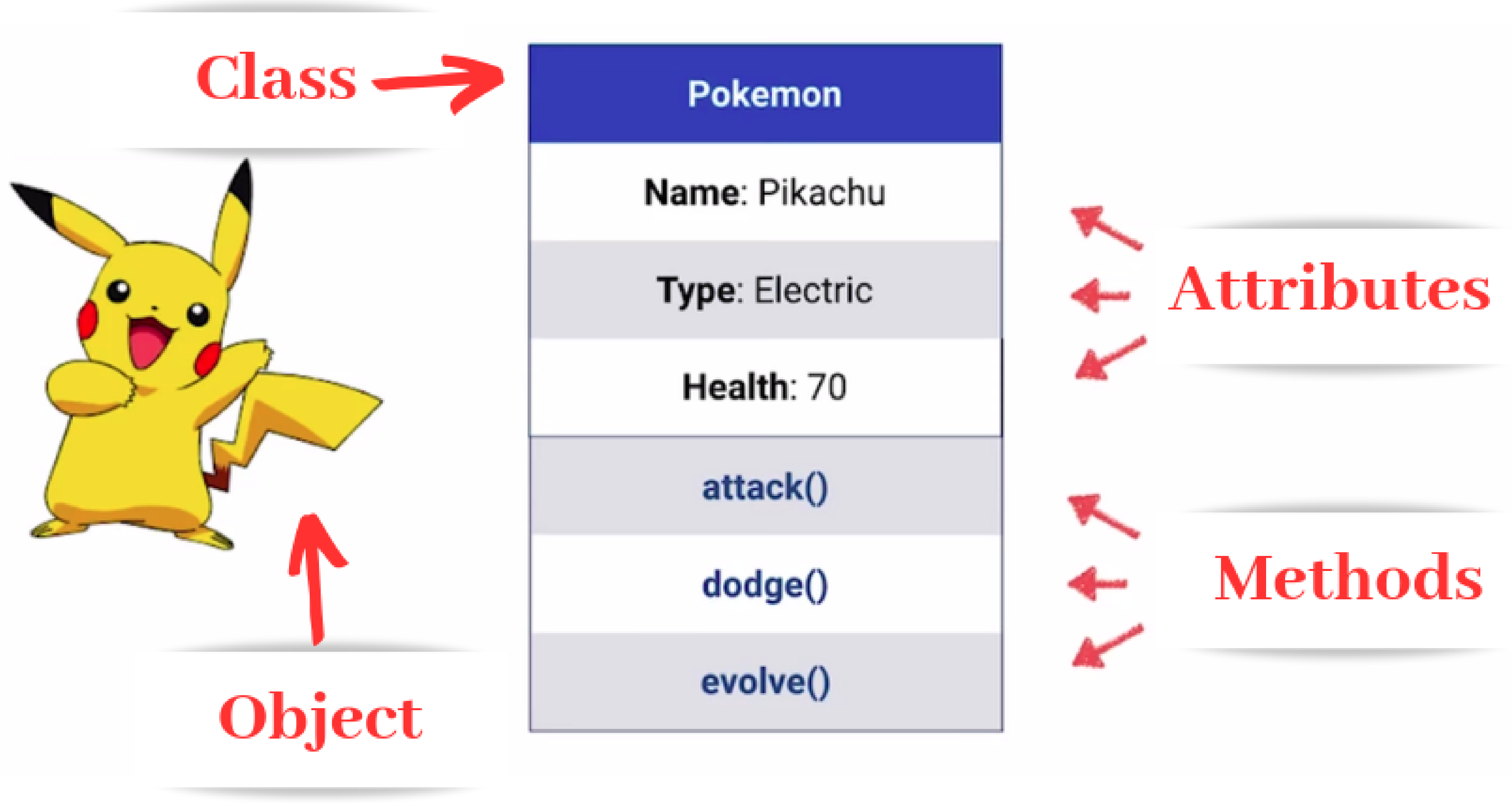
- JS is an object-based language
- OOP serves to allow the components of your code to be as modular as possible.
- Benefits:
  - Shorter development time
  - Easier debugging

Procedural Programming vs. OOP

Procedural Programming	OOP
Waterfall sequence	System is designed in terms of objects which communicate with each other to accomplish a given task
Data are separate from the code	Data and code are encapsulated into a single module. Data is passed to modules using methods

How do we Design OOP Systems?

- **Class:** blueprint from which objects are made and consists of data and the code that manipulates it
- **Attributes:** characteristics of an object
- **Methods:** a function related to an object



Class

Pokemon

Name: Pikachu

Type: Electric

Health: 70

attack()

dodge()

evolve()

Attributes

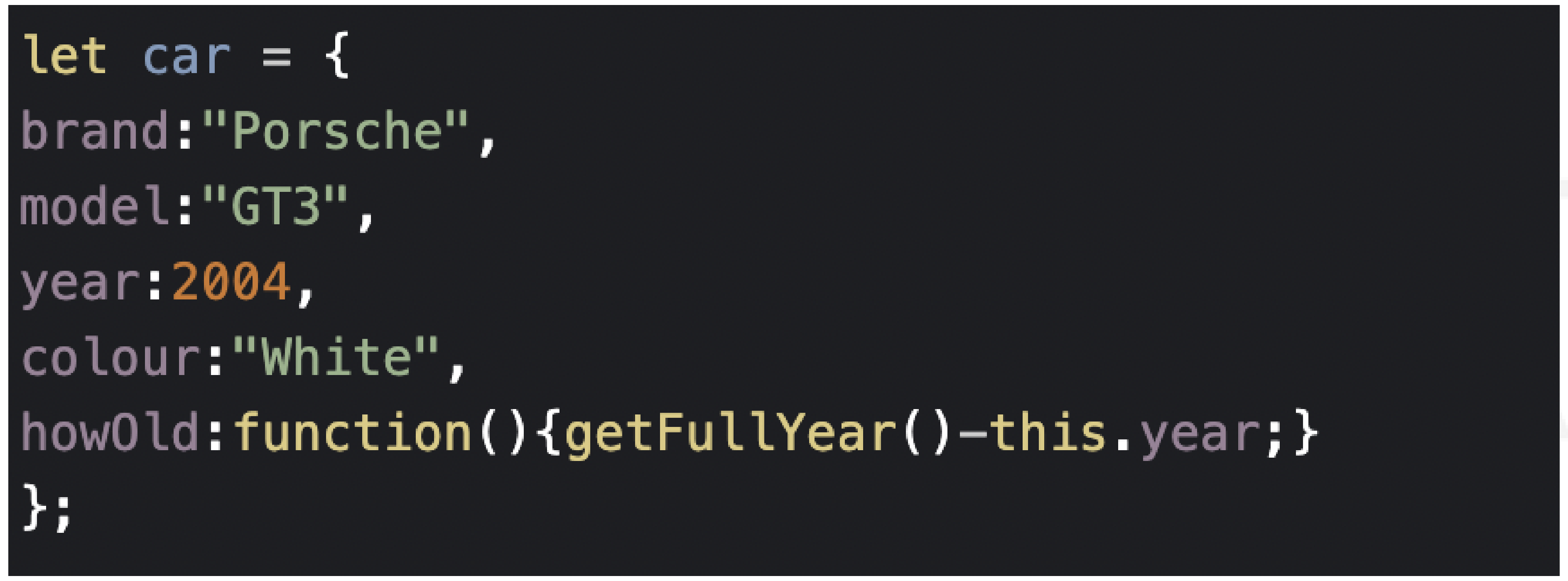
Methods

Object

Creating Defined Objects

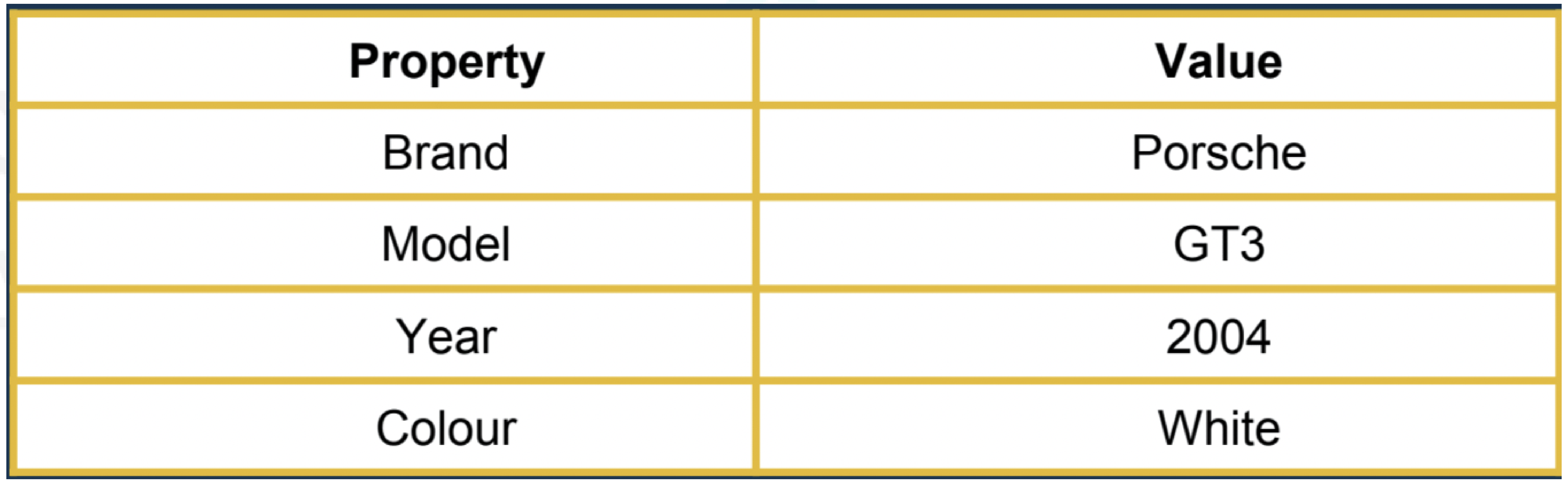
There is 2 methods to create defined objects:

❖Method 1:Using Object Literal



```
let car = {
brand:"Porsche",
model:"GT3",
year:2004,
colour:"White",
howOld:function(){getFullYear()-this.year;}
};
```

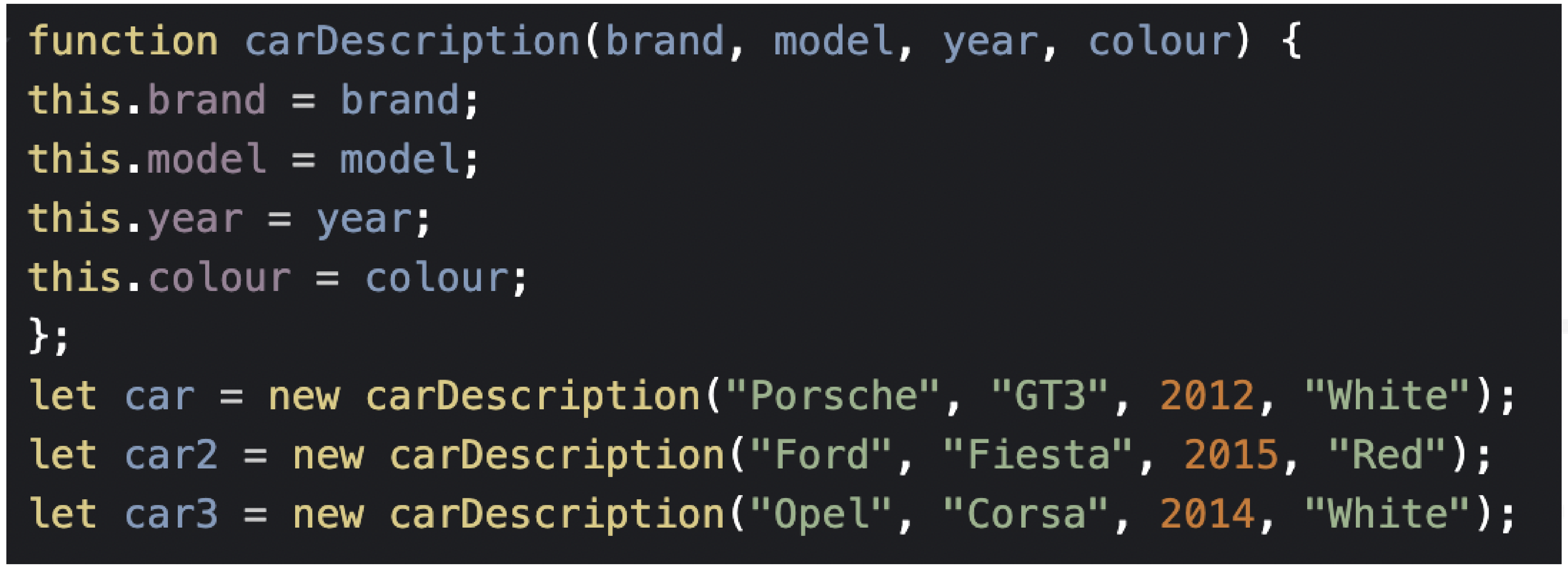
❖Attributes:



Property	Value
Brand	Porsche
Model	GT3
Year	2004
Colour	White

Creating Defined Objects

- Method 2: Using Object Constructor:



```
function carDescription(brand, model, year, colour) {
this.brand = brand;
this.model = model;
this.year = year;
this.colour = colour;
};
let car = new carDescription("Porsche", "GT3", 2012, "White");
let car2 = new carDescription("Ford", "Fiesta", 2015, "Red");
let car3 = new carDescription("Opel", "Corsa", 2014, "White");
```

- To change the colour: `car.colour =“Black”;`

- To delete properties of an object: `deletecar.colour;`

Some Objects that you have Already Encountered

- Most of the built-in code that you have worked with so far has used objects.

- When you use code such as

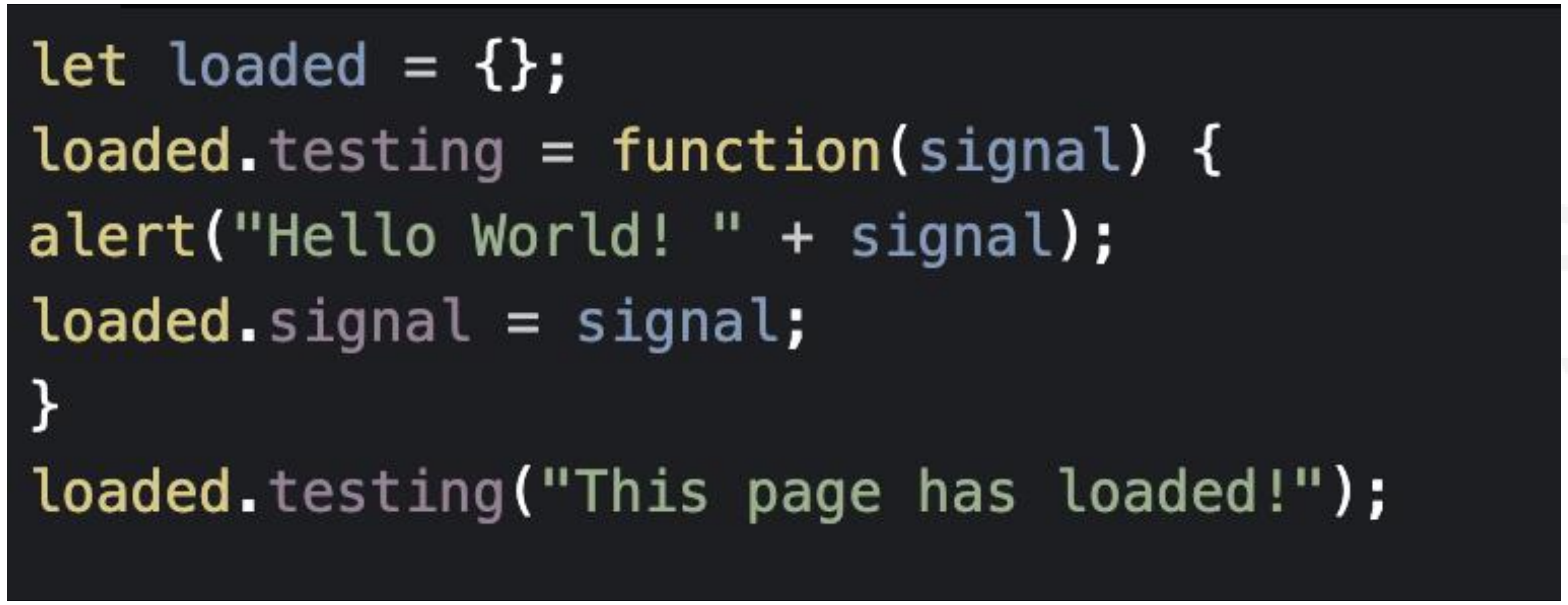
```
let htmlSelect = document.getElementById('personList’)
```

you have been using the document object

- Every time you create an array, you are actually creating an array object that is defined by an array class

Function meets Object

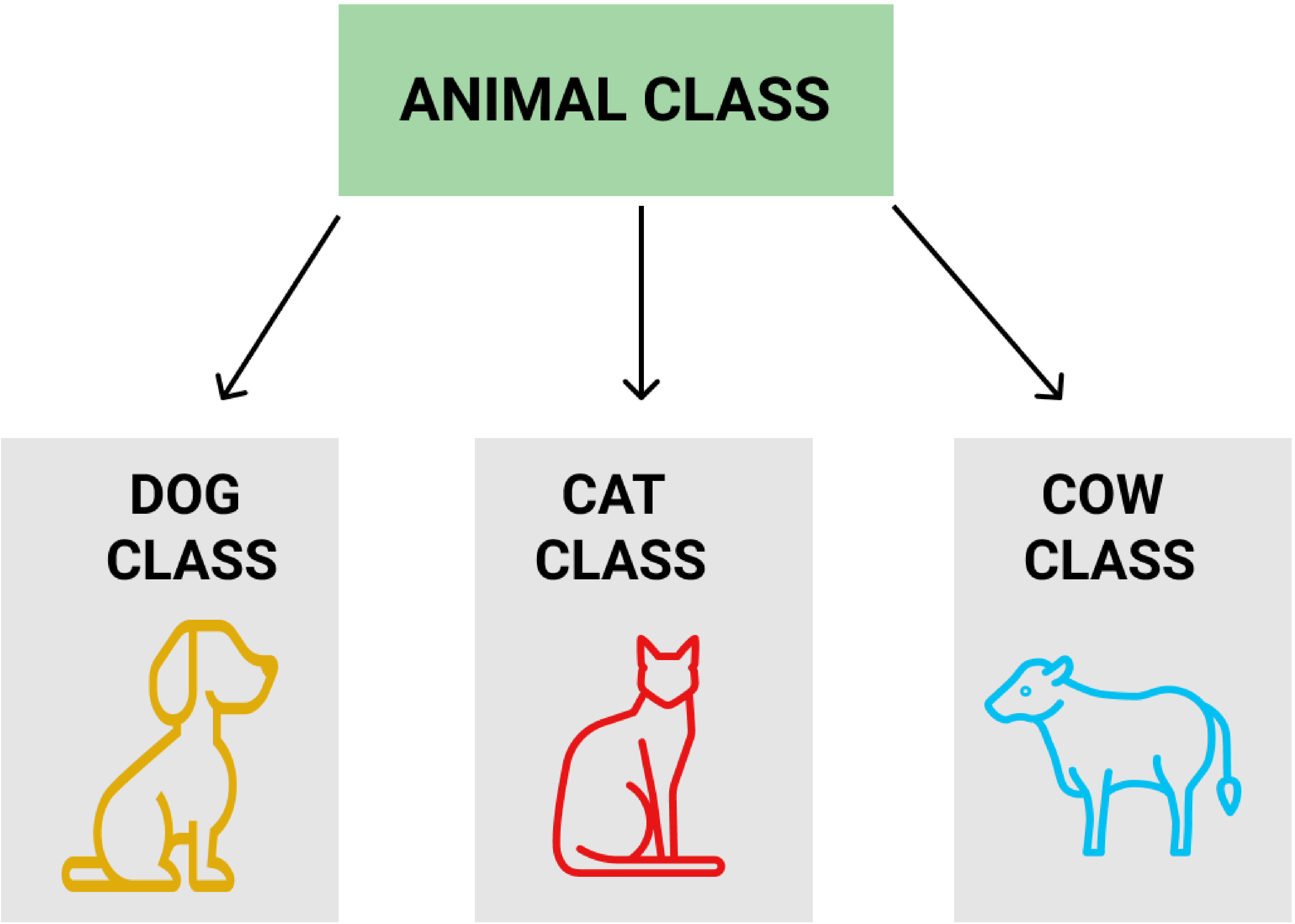
- Let’s consider the declaration of an object with implementation through a function.



```
let loaded = {};
loaded.testing = function(signal) {
alert("Hello World! " + signal);
loaded.signal = signal;
}
loaded.testing("This page has loaded!");
```

Inheritance

- Inheritance is a mechanism in which one class acquires the property of another class.



Summary

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Resources

- JHD