



SNS COLLEGE OF ENGINEERING



Kurumbapalayam(Po), Coimbatore - 641 107

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Department of CSE(IOT AND CYBERSECURITY INCLUDING BCT) 19CS206 OBJECT ORIENTED PROGRAMMING

I YEAR /II SEMESTER

Unit 1- INTRODUCTION TO OOP

Topic 1: Object Oriented Programming concepts



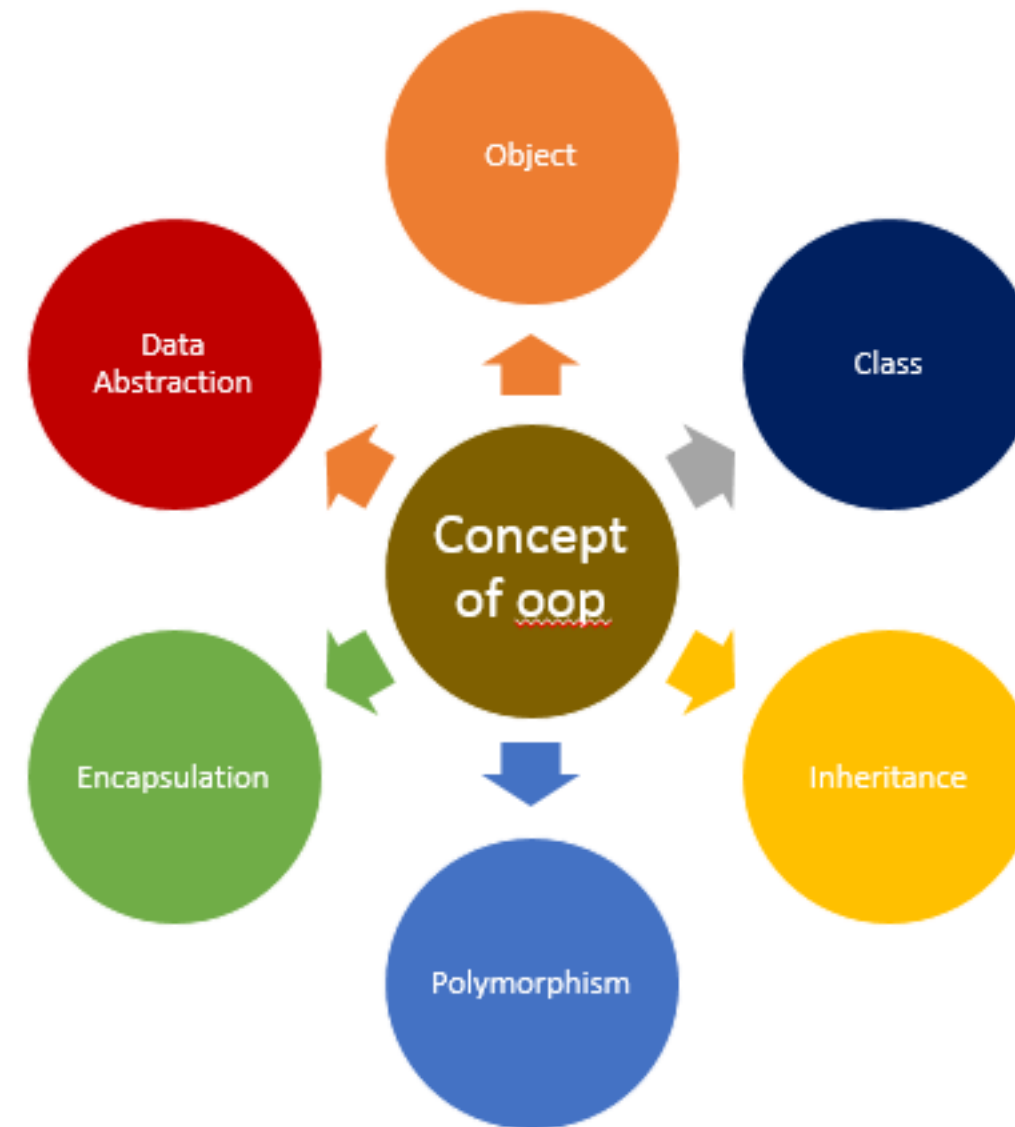


Object Oriented Programming Concepts

- OOPs is a programming paradigm based on the concept of “objects” that contain data and methods.
- The primary purpose of OOP is to increase the flexibility and maintainability of programs.
- This is achieved by representing real word entities in programming.

Object Oriented Programming Concepts

- Objects
- Classes
- Inheritance
- Polymorphism
- Abstraction
- Encapsulation



Object Oriented Programming Concepts

Objects

- Represents real world entities.
- Object consist of **State** and **Behavior**.
- State: Represents attributes or properties
- Behavior : Represents methods

Example of an Object

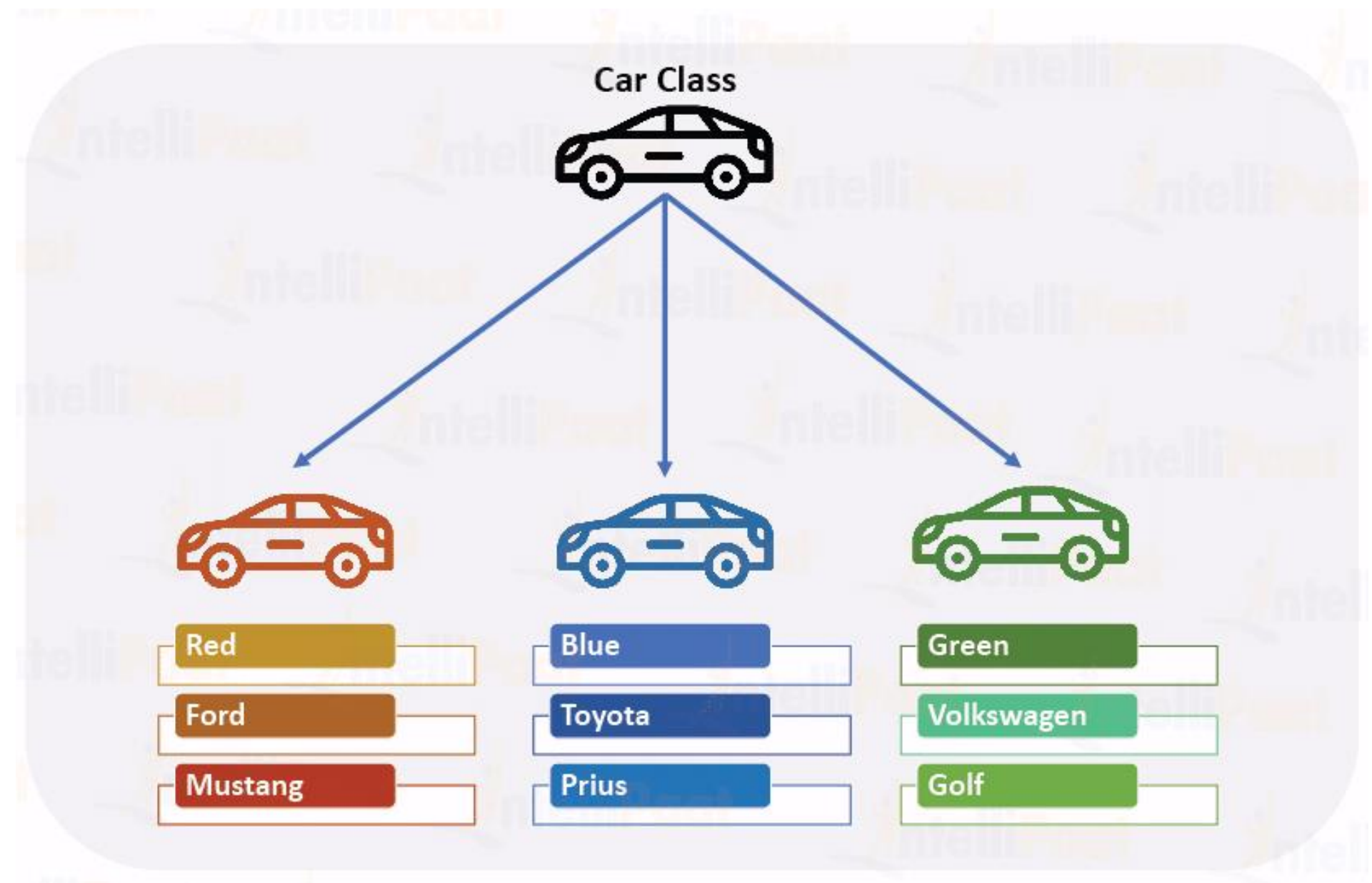


Properties	Methods
Colour	Start, Stop
Transmission Type	Accelerate
Max Speed	Change Transmission

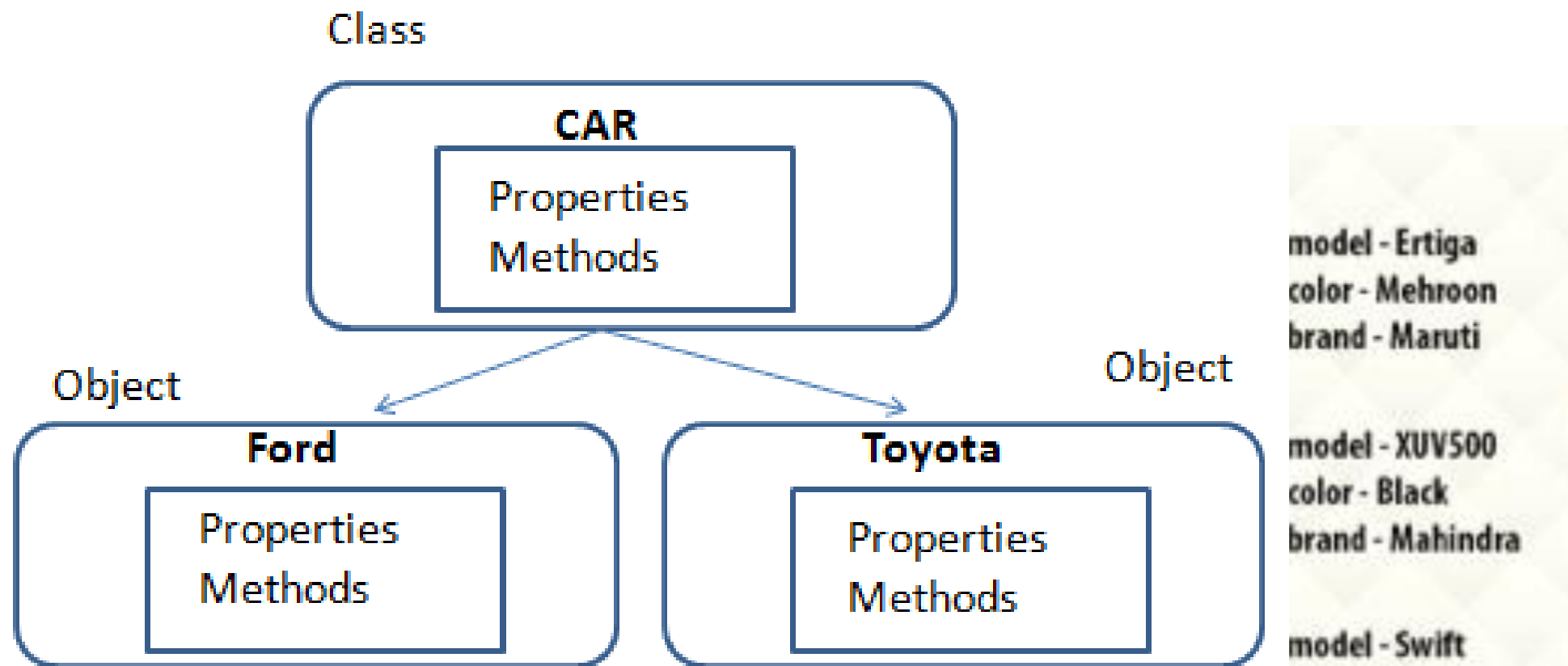
Object Oriented Programming Concepts

Class

- User defined blueprint or prototype from which objects are created
- Represents the set of properties or methods that are common to all objects of one type



Object Oriented Programming Concepts



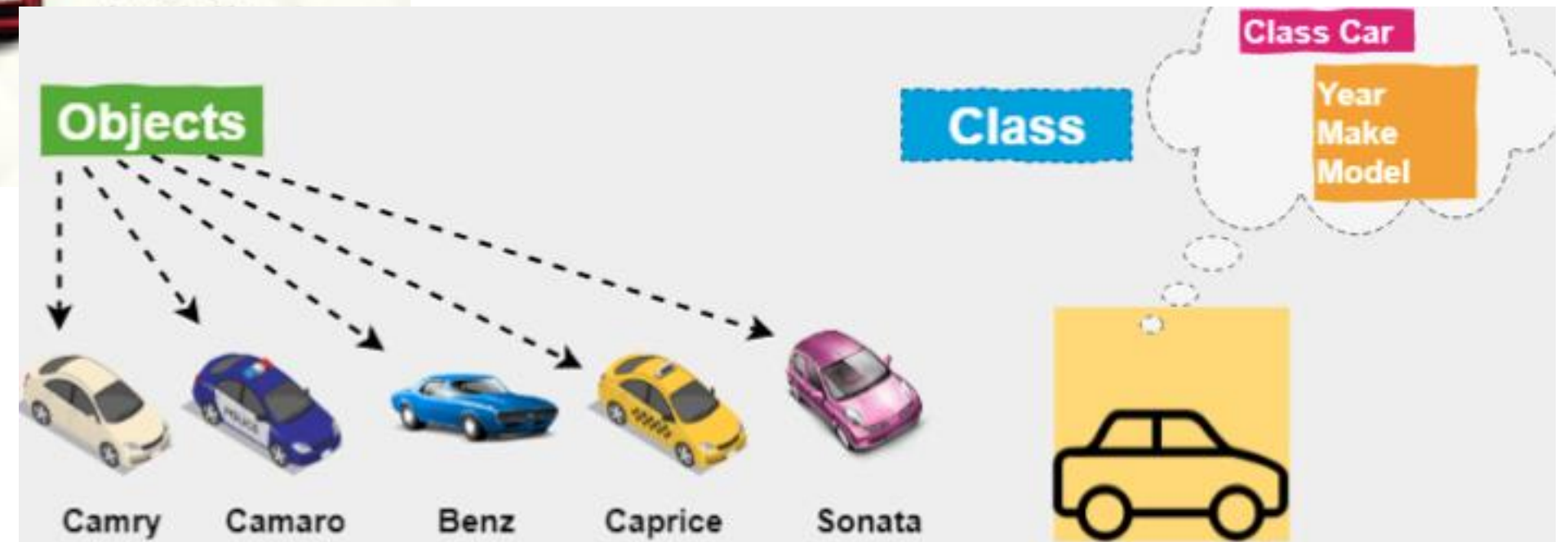
model - Ertiga
color - Mehroon
brand - Maruti

model - XUV500
color - Black
brand - Mahindra

model - Swift
color - Red

Methods

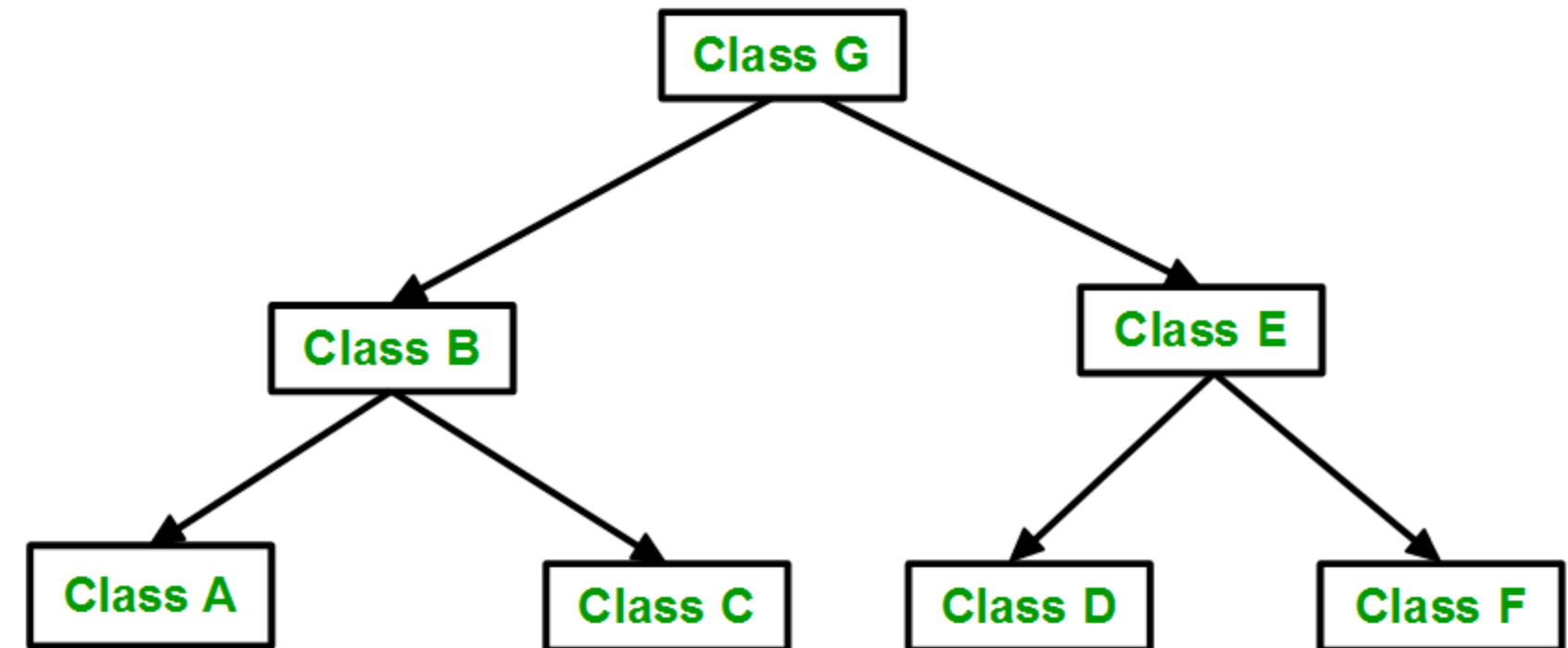
speed()
size()



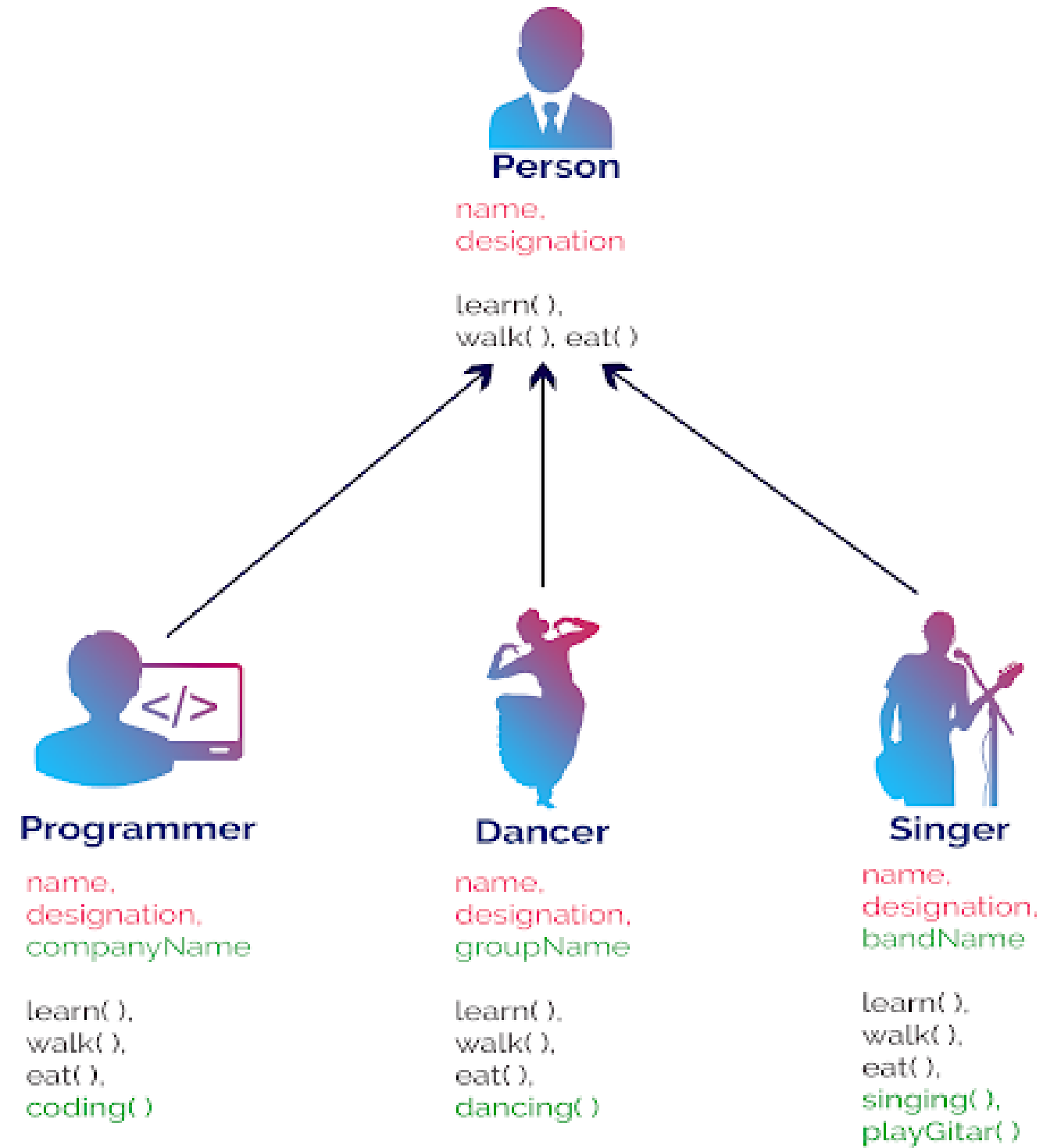
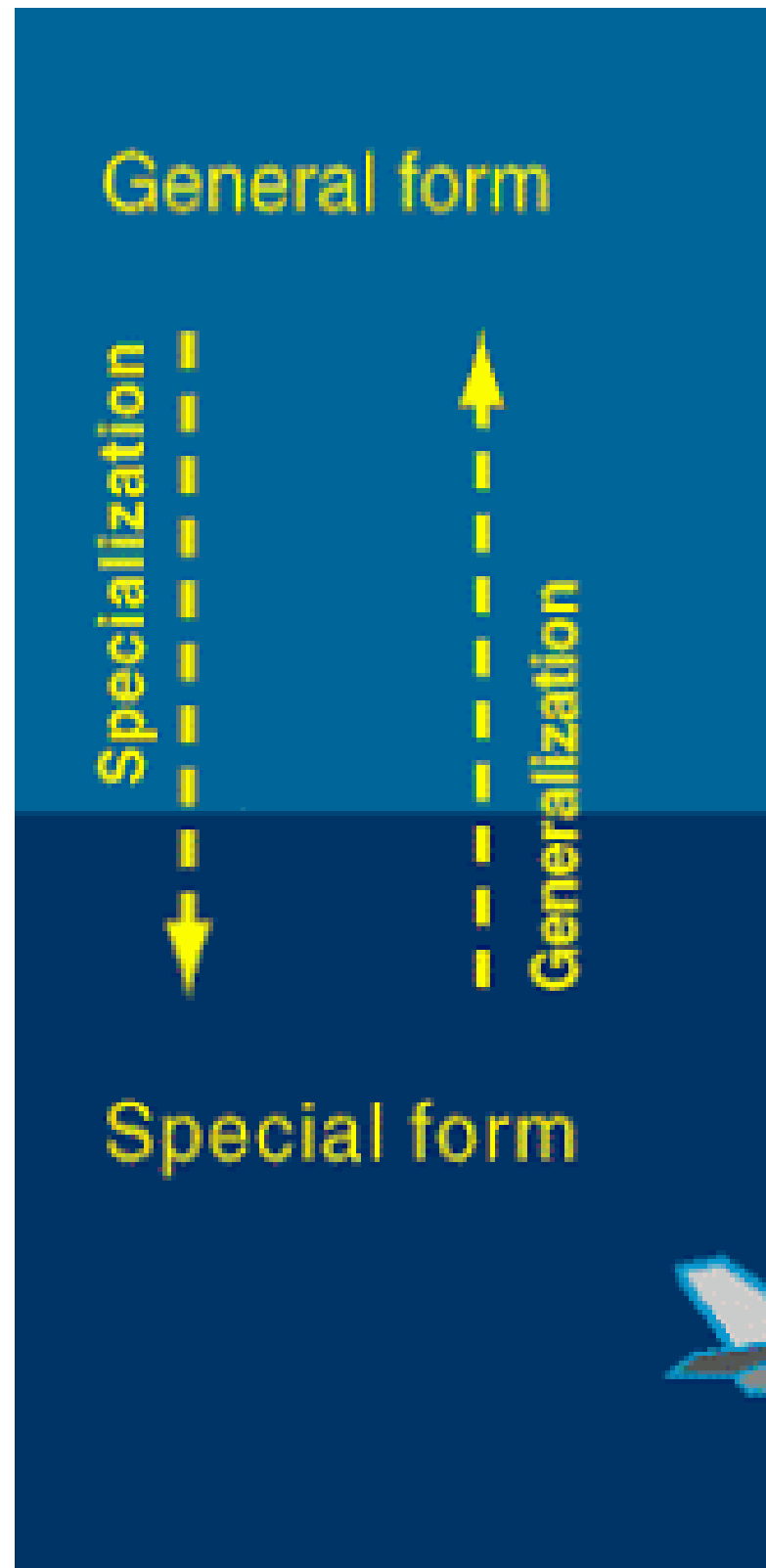
Object Oriented Programming Concepts

Inheritance

- One class is allow to inherit the features(fields and methods) of another class
- Base Class – Super Class – Parent Class
- Derived Class - Sub Class - Child class



Object Oriented Programming Concepts



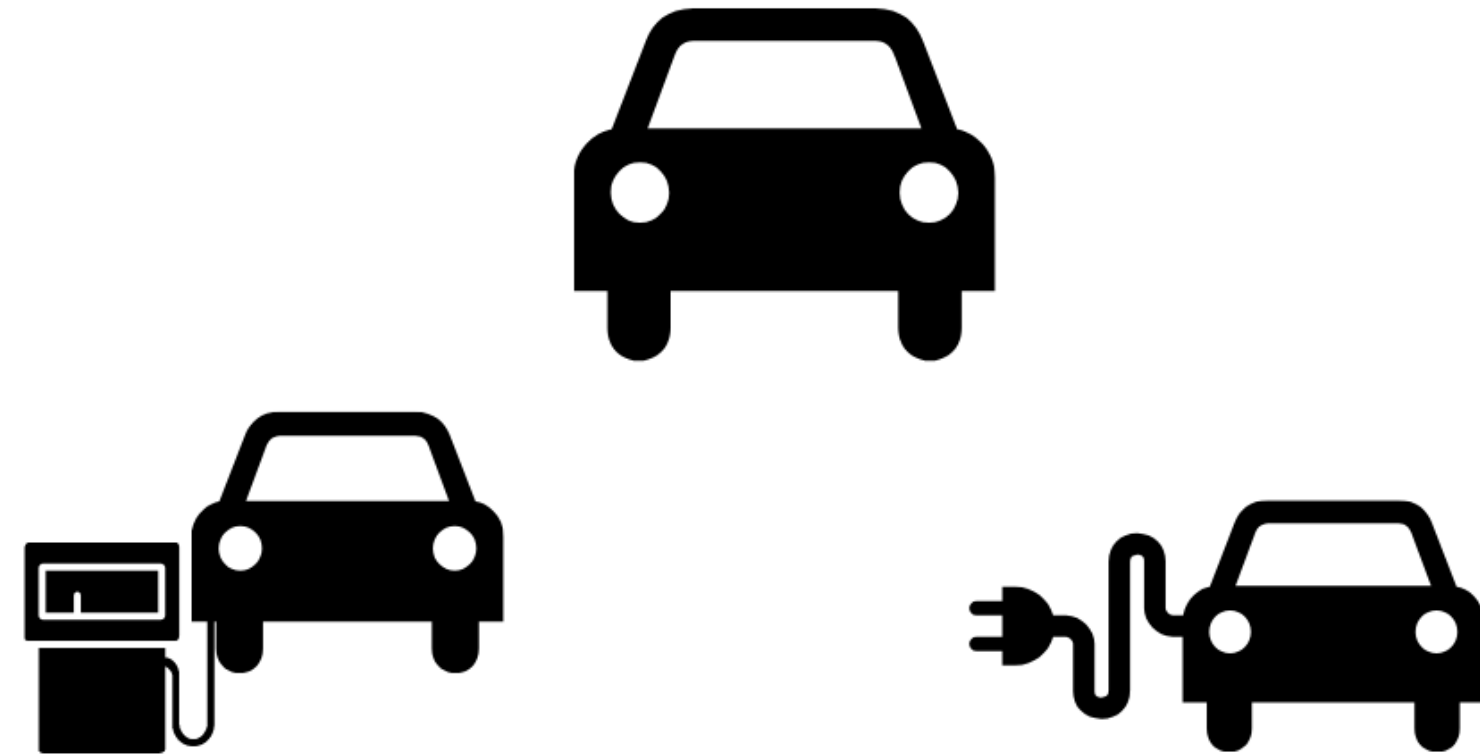
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Object Oriented Programming Concepts

Polymorphism

One task performed in different ways

Many forms



ONE NAME FOR MANY FORMS

POLYMORPHISM

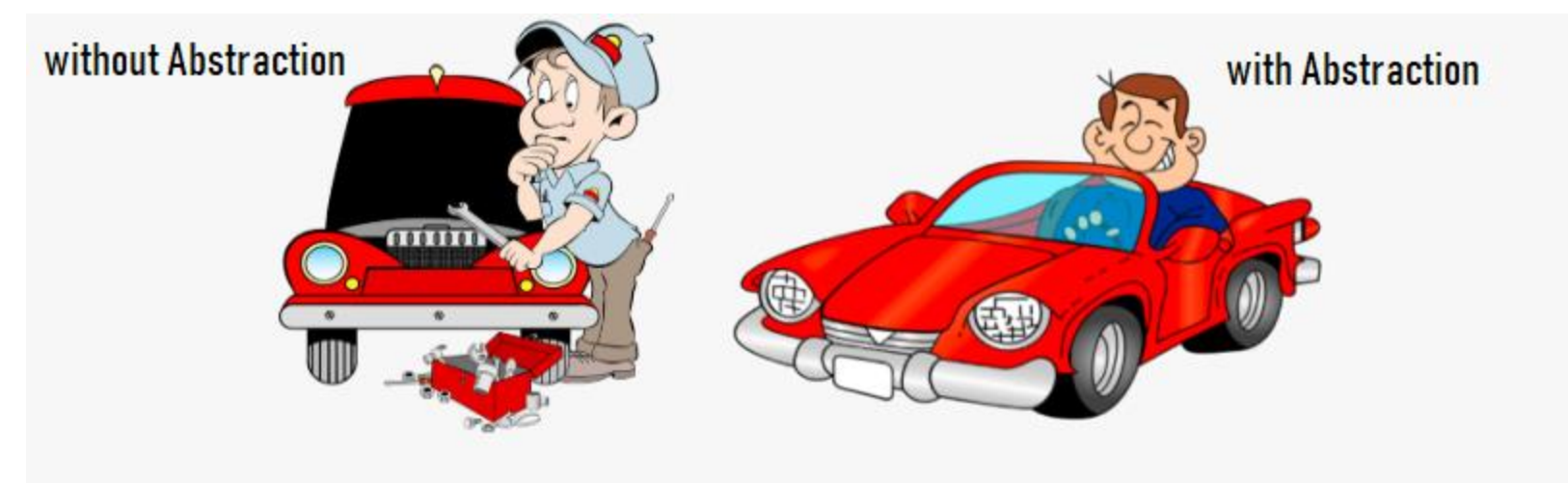
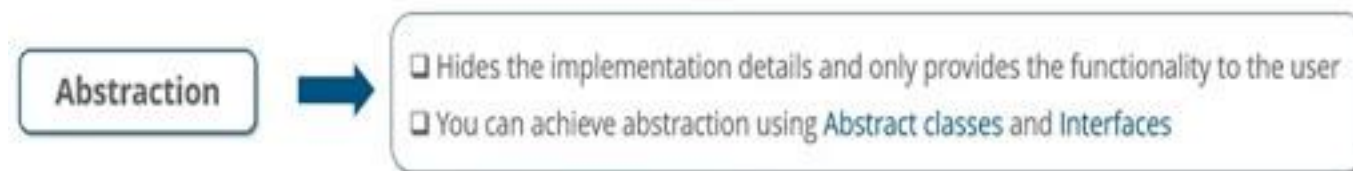
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Object Oriented Programming Concepts

Abstraction

Essential details are displayed to the user

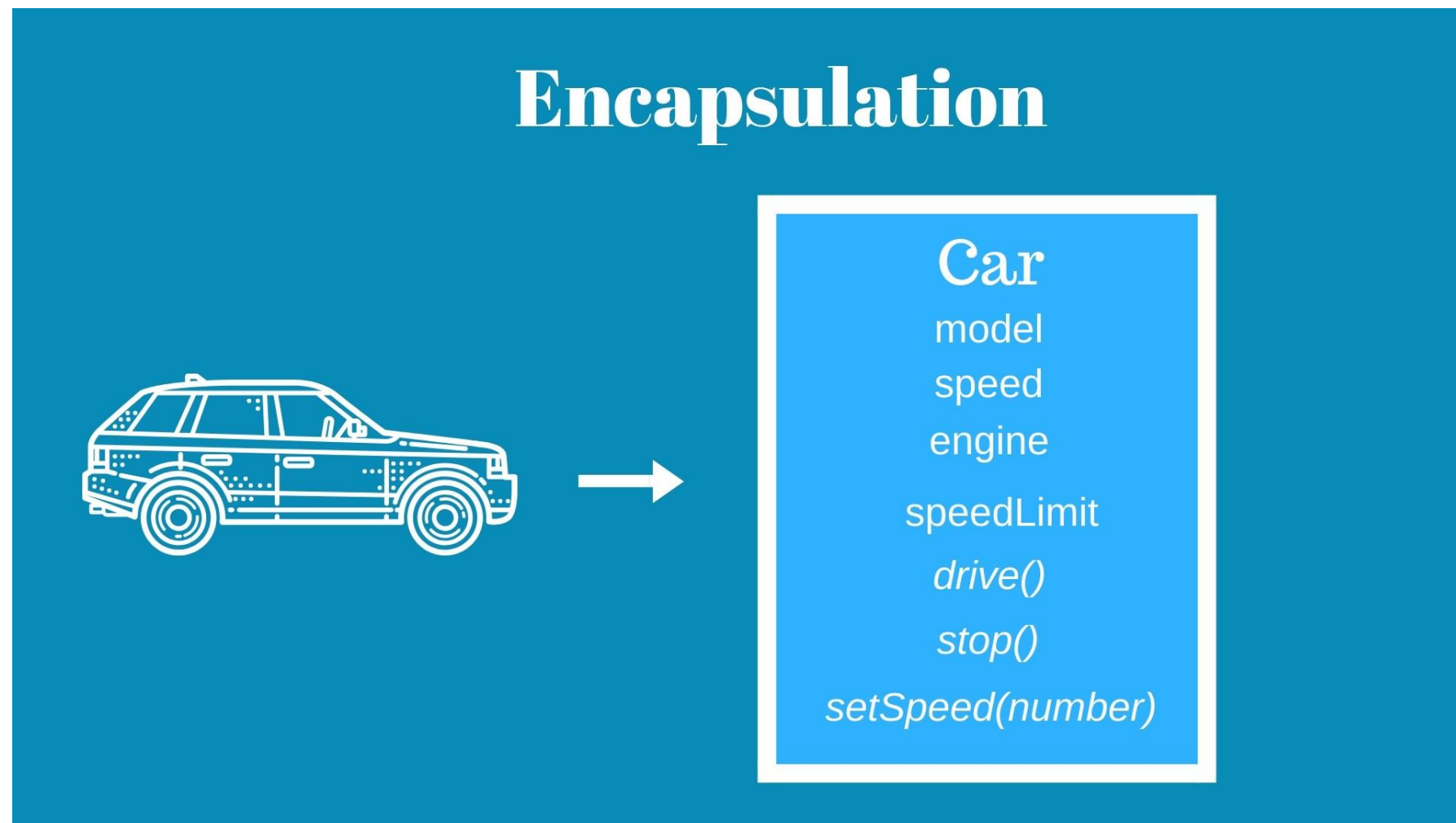
Show only “relevant” data and “hide” unnecessary details of an object from the user.



Object Oriented Programming Concepts

Encapsulation

- wrapping up of data under a single unit
- binds together code and the data it manipulates



```
class  
{  
    data members  
    +  
    methods (behavior)  
}
```

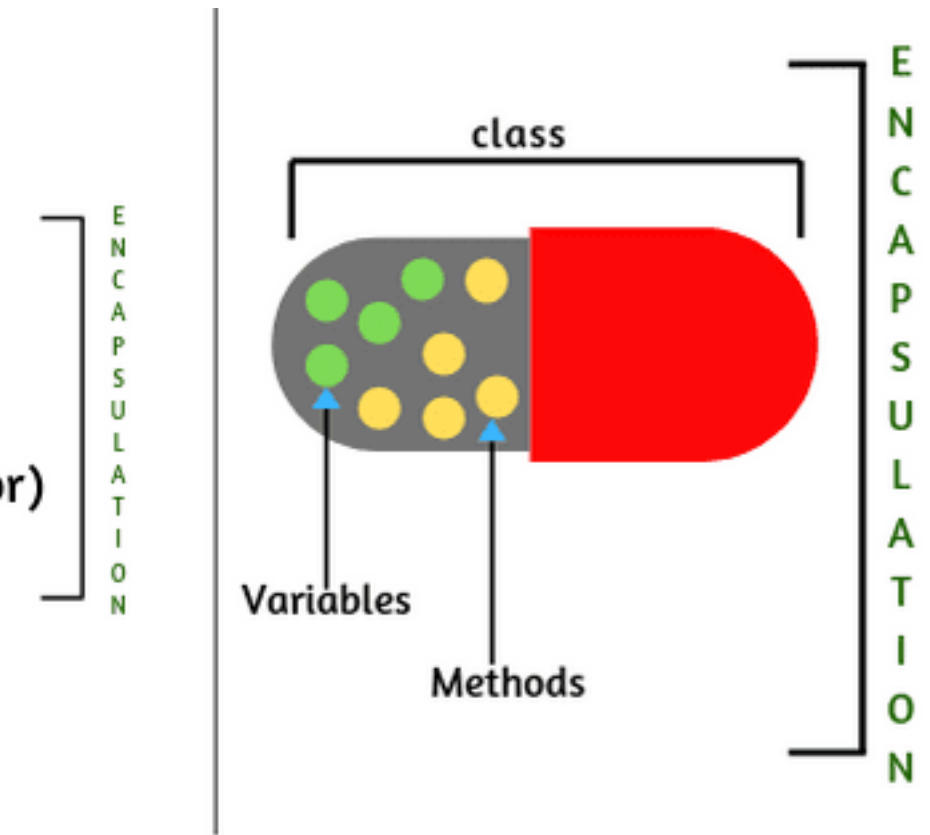


Fig: Encapsulation



THANK YOU