OOP - Inheritance

Introduction
Inheritance is a subtopic in Object Oriented Programming.
Inheritance allows us to define a new class that will inherit all the properties and methods from another class.

It allows us to have a parent - child relationship between classes.

Parent class = This is the class that being inherited from,
also called the 'Base Class'.

Child class = This is the class will inherit properties and methods from a parent class.

Logics between Parent and Child classes = In real life definitions we can have a 'Parent' term, for example vehicle.
And have several child definitions below it - sort of sub-categories, such as 'private car', 'truck' and 'bus'.

(!) All child classes would "absorb" all the methods and properties of the parent class.

Inheritance of methods & Properties

For example, Let's assume that the parent class would have 1 method, and 1 property, that is relevant for all child classes as well.

- 'engine_status()' **method**

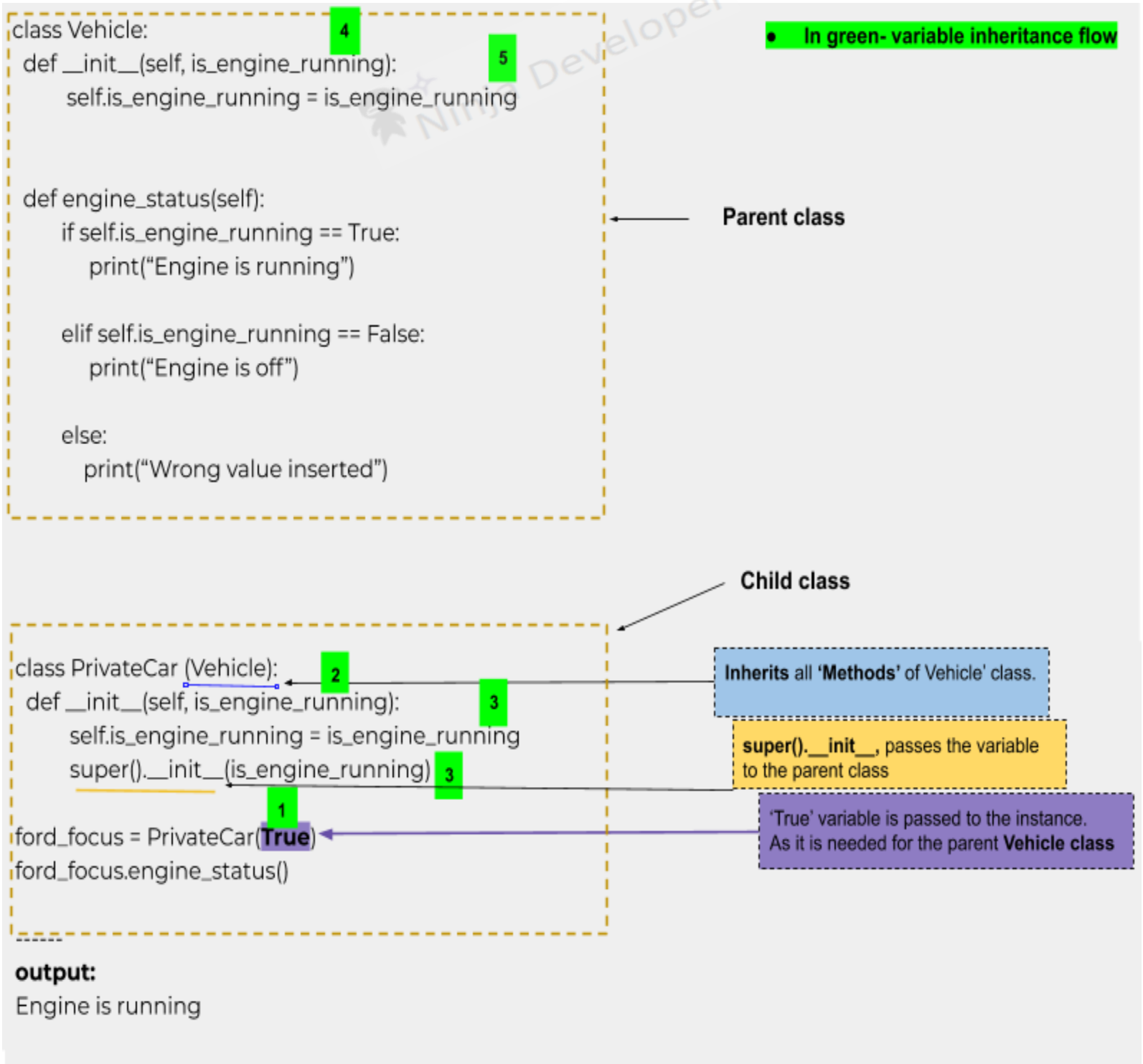
  By mentioning the name of the 'Parent' class, in the 'Child' class declaration (inside the round brackets),
  we gain access to all 'Parent' methods

- 'self.is_engine_running' **property**

  We will add a 'super().__init__(is_engine_running)',
  to the child __init__ method, and by that, we can inherit the property of the parent class

- Go ahead to the next page for the example -

Let’s see how Inheritance actually looks like, and create a Parent class and also a Child class.



Example explanation

- PrivateCar class inherits ‘method’ and a ‘property’ from ‘Vehicle’ class. PrivateCar is the child class, while Vehicle class is the parent

- By mentioning ‘Vehicle’, in the declaration of ‘PrivateCar’ class, we achieve that all methods from ‘Vehicle’ can be used, by a instance of ‘PrivateCar’

- In the parent class we use a variable that is called ‘is_engine_running’, in a method. In order to pass a property from the ‘PrivateCar’ class, we use the super().__init__ phrase