NOVA IMS Information Management School

Computational Intelligence for Optimization

Practical Classes

Week II

PyCharm, Objects

Instituto Superior de Estatística e Gestão de Informação
Universidade Nova de Lisboa

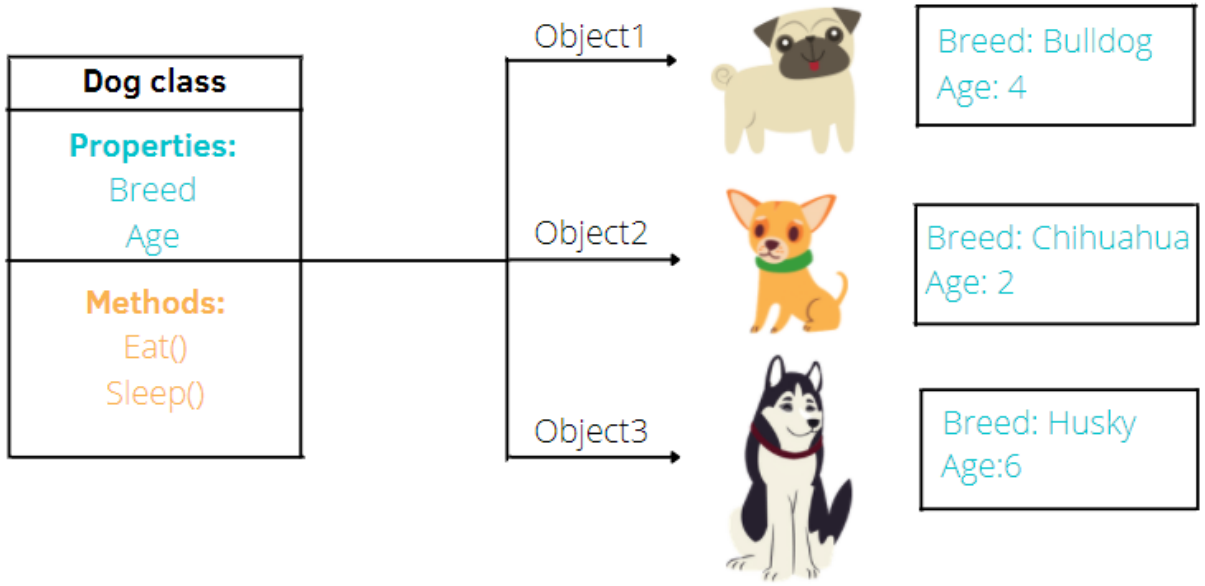
Berfin Sakallioglu

Classes & Objects

- Python is an object-oriented programming language.

object → Variables, functions, lists, tuples all treated as an object. It is a collection of variables and functions.

class → Used to define an object, methods that can be used to change the state of an object or attributes of the object



https://towardsdatascience.com/explaining-python-classes-in-a-simple-way-e3742827c8b5

```python
class Dog:
    def __init__(self, name, breed, age):
        self.Name = name
        self.Breed = breed
        self.Age = age
        print(f"Name: {self.Name}, Breed: {self.Breed}, Age: {self.Age}")


jack = Dog('Jack', 'Husky', 5)
print(jack)
```

```
Name: Jack, Breed: Husky, Age: 5
<__main__.Dog object at 0x00000224C4798070>
```

Why is it important for us?

- We will have two classes named “Population” and “Individuals” to keep variables, functions and methods of our ***search space*** *(**population** of solutions)* and ***solutions*** *(**individuals**).*

- We will use them in all of our optimization algorithms and problems because we need to define a search space and have solutions (individuals) for every algorithm.

- path (a solution): defined by the class “Individuals”