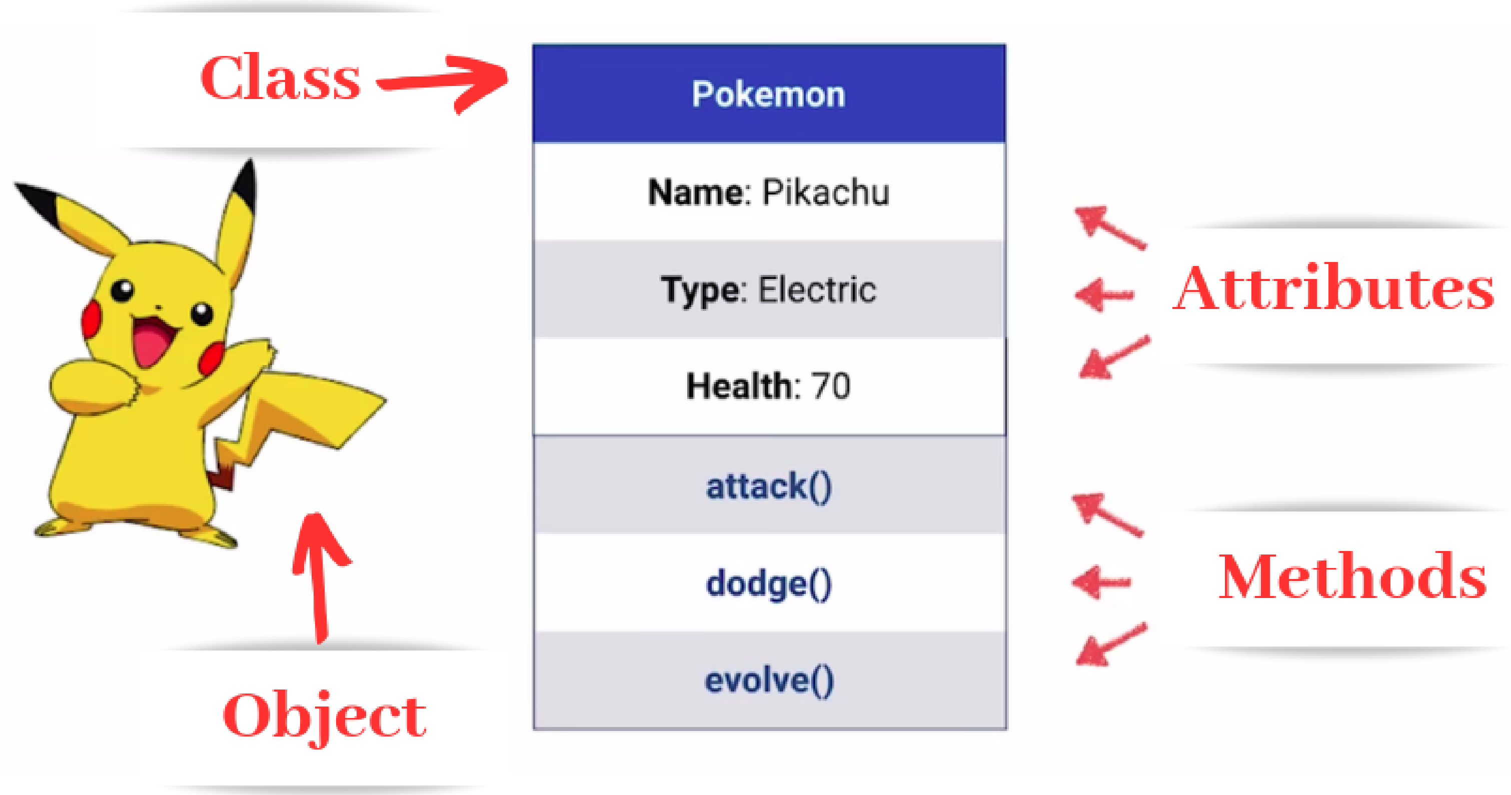
CPSC 231 - Lab

CLASSES AND OBJECTS

Object oriented programming

Object oriented programming is a type of programming with idea of using objects for to represent data and functionality

Object oriented programming



Pokemon

Name: Pikachu

Type: Electric

Health: 70

attack()

dodge()

evolve()

https://medium.com/future-vision/intro-to-oop-with-python-39ba63967e45

How to define a class

```
class <class name>:
  < class body>
```

```
class Student():
    def __init__(self,name):
          self.name = name
```

What is self?

All the class functions must have an extra first name that has to be added to the beginning of the parameter list, but you **do not** give a value for this parameter when you call the method, Python will provide it.

```
class Student:
    def setName(self,name):
        self.name = name


s = Student()
s.setName("Sepehr")
```

How to use class attributes (in methods)?

You should use **self**

```
class Student:
  def set_name(self, first_name. last_name):
        self.first_name = first_name
        Self.last_name = last_name

  def get_full_name(self):
         return self.first_name + " " + self.last_name
```

How to use a class?

Step one: Create an instance

```
student1 = Student()
```

Step two: call methods or use attributes

```
Student1 = set_name("Sepehr", "Sabour")
student1.get_full_name()
print(student1.first_name)
```

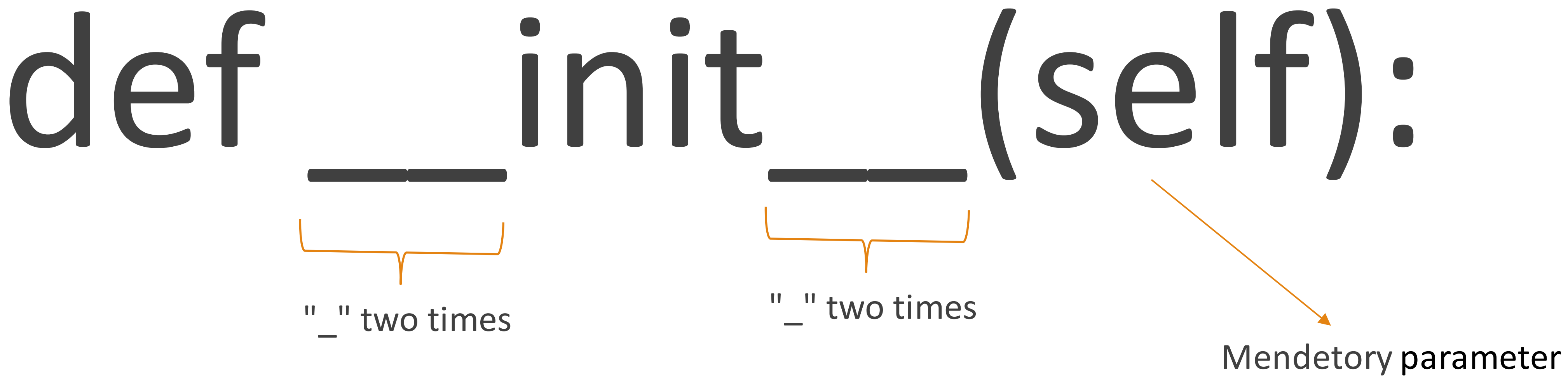
What is a constructor

Constructor is a mandatory function in a class

When you create an instance of a class you call constructor function

```
class Student:
  def  __init__(self,first_name,last_name):
        print("You created an instance of Student class")
        self.first_name = first_name
        self.last_name = last_name
```

How to define a constructor



```
def __init__(self):
```

"_" two times

"_" two times

Mendetory parameter