Python is an ***object-oriented programming (OOP) language***.

***Everything*** is in Python ***treated as an object***. Every object belongs to its class.

Including variable, function, list, tuple, dictionary, set, etc.

An object is a **real-life entity**. An object is an **instance of a class**. An object is the collection of data/ attribute and functions/ methods.

A class is a **collection of objects**. A class is a **blueprint/ template** through which objects are created. A class is like an **object constructor**.

\_\_init\_\_() Method

All classes have a function called \_\_init\_\_(), which is always executed when the class is being initiated.

The \_\_init\_\_() function is called automatically every time the class is being used to create a new object.

self parameter

The self-parameter is a **reference to the current instance of the class** and is used to access variables that belong to the class.

It does not have to be named self, you can call it whatever you like, but it must be the first parameter of any function in the class

* Object.\_\_dict\_\_ => to display all the attributes of an object. (Returns a dictionary of attribute)
* hasattr(object, attribute) => to check object has an attribute or not (return Boolean value)
* getattr(object, attribute) => return the value of the attribute of that object
* getattr(object, attribute, third argument) => the function return third argument as default value when the attribute is not present for that object
* delattr(object, attribute) => to delete an attribute of an object

class attribute => common attribute of all the objects such as organization name

instance/ object attribute => unique attribute of an object such as student name and roll number

if an object has instance attribute & class attribute as same so the attribute which going to print is instance attribute if there is no instance attribute then class attribute is going to print

Internally how methods are called in python

ClassName.Function(ObjectName) is same as ObjectName.Function()

self = Object