Report

Encapsulation

It’s considered the private section as it enclosed the data and the code in a private area , it makes the variables private as they can’t be accessed outside the shield,the variables are hidden from other classes, and can be accessed by any member function of its own class in which they are declared,, it’s also known as data hiding. it’s achieved through 2 things:1) declaring all the variables as private in the class 2) writing public methods to set and get the values and the variables.

Consider a real-life example of encapsulation, in a company, there are different sections like the accounts section, finance section, sales section etc. The finance section handles all the financial transactions and keeps records of all the data related to finance. Similarly, the sales section handles all the sales-related activities and keeps records of all the sales. Now there may arise a situation when for some reason an official from the finance section needs all the data about sales in a particular month. In this case, he is not allowed to directly access the data of the sales section. He will first have to contact some other officer in the sales section and then request him to give the particular data. This is what encapsulation is. Here the data of the sales section and the employees that can manipulate them are wrapped under a single name “sales section”. Using encapsulation also hides the data. In this example, the data of the sections like sales, finance, or accounts are hidden from any other section. **(not my own way of writing by I just wanted to prove my words by a real life application)**

Abstraction:

Data abstraction is achieved through encapsulation, they are actually synonyms, ,the hide the data and show their functions so that the name captures the functionality or the basic idea of what the whole program does. It provides code resusability , provides less complexity of the code and it provides more security, actually they can be implemented through classes and abstract methods, actually it is considered as a partial implementation of the functionality , as it can be done in python, defining the function without complete functionality in a class so that it can be defined completely in its child class.

Dunder methods:

They are also known as magic methods that start and end with the double underscores, they are not meant to be intentionally by you, but it might happen internally from a class on a specific action, for example when you add the two numbers using the + operator, internally the add() function is called ans do on ,

Built in classes define many magic methods inherited by a class,

Magic methods are most frequently used to define overloaded behaviours of predefined operators in Python. For instance, arithmetic operators by default operate upon numeric operands. This means that numeric objects must be used along with operators like +, -, \*, /, etc. The + operator is also defined as a concatenation operator in string, list and tuple classes. We can say that the + operator is overloaded.

In order to make the overloaded behaviour available in your own custom class, the corresponding magic method should be overridden. For example, in order to use the + operator with objects of a user-defined class, it should include the \_\_add\_\_() method

There are a lot of methods of course as add(), ge(), str() , new().

Args and kwargs in python:

1. Args

They are considered as symbols used for passing arguments, non key worded specially ,variable list, the \*arg allows you to take more number of formal arguments for example we want to take a multiply function that takes any no of arguments and it’s able to mul tiply them all , it can be done by \*args

Also using \*,variable , this variable becomes an iterable variable on which we can perform map,filter,….etc

1. Kwargs

It’s defined by \*\* , it’s used to pass a keyworded variable length argument list, the double star allows you to pass through the key arguments

A key argument : in it the name of the variable is provided to pass it in the function , it’s considered the dictionary that maps each keyword to the to the value that we pass, they nearly don’t have an order after iteration occurs on them,

Both of args and kwargs are used to call a function.