**Python Advance Assignment-11**

**1. What is a metaclass?**

Ans.

In object-oriented programming, a metaclass is a class whose instances are classes. Just as an ordinary class defines the behavior of certain objects, a metaclass defines the behavior of certain classes and their instances. A class is itself an instance of a metaclass.

**2. How do you declare the metaclass of a class?**

Ans.

**type** is a default metaclass in python. But we can create a meta class in the following way:

In [54]:

**class** meta\_class(type):

**pass**

**class** ineuron(metaclass**=**meta\_class):

**pass**

In [55]:

type(ineuron)

Out[55]:

\_\_main\_\_.meta\_class

So here ineuron was a class but now it is an instance for meta\_class class

**3. How do class decorators overlap with metaclasses for managing classes?**

Ans.

Anything which we can do with a class decorator, can be done with a custom metaclass. We just need to apply the functionality of the "decorator function", i.e., the one that takes a class object and modifies it, in the course of the metaclass's new or init that make the class object.

Decorartors rebind a class name to a result which could be called and metaclass route the class creation through a callable object but both hooks can be used for similar class objects. Meta class augment a class after they create it. Decorator simply augment and return the original class object. Decorators may have a slight disadvantage in this role if a new class must be defined because original class has been already created

**4. How do class decorators overlap with metaclasses for managing instances?**

Ans.

We can use both class decorator and metaclasses to manage class instances by inserting a wrapper object to catch the instance creation calls. Decorators may rebind the class name to a cllabale run on instance creation that retains the original class object. Metaclasses can also do the same but they might have some disadvantage as they need to create a new object for that