**7 ) Inheritance**

* **Single, Multilevel, Multiple, Hierarchical, and Hybrid inheritance in Python.**

**Inheritance in Python**

Inheritance is a feature in object-oriented programming that allows one class (child/derived class) to acquire the properties and methods of another class (parent/base class).

1. **Single Inheritance**

In single inheritance, a child class inherits from only one parent class.

1. **Multilevel Inheritance**

In multilevel inheritance, a class is derived from a child class which is itself derived from another class.

1. **Multiple Inheritance**

In multiple inheritance, a child class inherits from more than one parent class.

1. **Hierarchical Inheritance**

In hierarchical inheritance, multiple child classes inherit from a single parent class.

1. **Hybrid Inheritance**

Hybrid inheritance is a combination of two or more types of inheritance (like multiple + multilevel + hierarchical). Python uses the Method Resolution Order (MRO) to handle this.

* **Using the super() function to access properties of the parent class.**

**Super Function In Python.**

The super() function in Python is used to call methods or access properties from the parent class. It is mostly used in inheritance, especially inside the \_\_init\_\_() method to initialize the parent class.

* super() gives access to methods and properties of the parent class.
* Commonly used in constructors (\_\_init\_\_) to call the parent’s constructor.
* Helps in **method overriding** (when child class has a method with the same name as the parent).

Example:

class Animal:

def sound(self):

print("Animal makes sound")

class Dog(Animal):

def sound(self):

super().sound()

print("Dog barks")

d = Dog()

d.sound()