25. Explain Inheritance in Python with an example? What is init? Or What Is A Constructor In Python?

* Inheritance is a fundamental concept in object-oriented programming (OOP) that allows one class (subclass or derived class) to inherit attributes and methods from another class (superclass or base class). This promotes code reuse and allows you to build upon existing classes without rewriting their functionality.
* class Animal:

def \_\_init\_\_(self, name):

self.name = name

def speak(self):

raise NotImplementedError("Subclass must implement abstract method")

class Dog(Animal):

def speak(self):

return f"{self.name} says Woof!"

class Cat(Animal):

def speak(self):

return f"{self.name} says Meow!"

dog = Dog("Buddy")

cat = Cat("Whiskers")

print(dog.speak()) # Output: Buddy says Woof!

print(cat.speak()) # Output: Whiskers says Meow!

* In Python, \_\_init\_\_ (double underscore before and after "init") is a special method, also known as the constructor. It is automatically called when an object (instance) of a class is instantiated. The primary purpose of the \_\_init\_\_ method is to initialize the attributes (data members) of the class.