DAY 14 **[10 - JULY - 2025]**

INHERITANCE

Inheritance allows us to define a class that inherits all the methods and properties from another class.

Parent class is the class being inherited from, also called base class.

Child class is the class that inherits from another class, also called derived class.

Add the __init__() Function

So far we have created a child class that inherits the properties and methods from its parent.

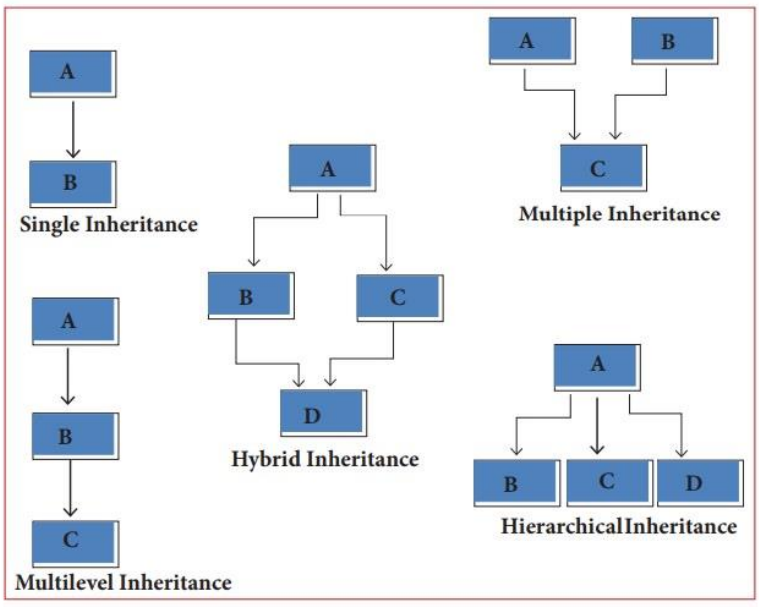
We want to add the __init__() function to the child class (instead of the pass keyword).

Use the super() Function

Python also has a super() function that will make the child class inherit all the methods and properties from its parent:

Types of Inheritance in Python

1. Single Inheritance
2. Multiple Inheritance
3. Multilevel Inheritance
4. Hierarchical Inheritance
5. Hybrid Inheritance



PRACTICE QUESTIONS:

```
[1] # Single Inheritance - One child class inherits from one parent class.
    class base:
      def morning(self):
        print("Good morning")

    class derived(base):
      def afternoon(self):
        print("Good afternoon")

    obj=derived()
    obj.morning()
    obj.afternoon()
```

```
Good morning
Good afternoon
```

```
# Multiple Inheritance - One child class inherits from more than one parent class.
class base1:
  def morning(self):
    print("Good morning")

class base2:
  def afternoon(self):
    print("Good afternoon")

class derived(base1,base2):
  def evening(self):
    print("Good evening")

obj = derived()
obj.morning()
obj.afternoon()
obj.evening()
```

```
Good morning
Good afternoon
Good evening
```

```
# Hierarical Inheritance - Multiple child classes inherit from a single parent class.
class base:
  def morning(self):
    print("Good morning")

class derived1(base):
  def afternoon(self):
    print("Good afternoon")

class derived2(base):
  def evening(self):
    print("Good evening")

obj = derived1()
obj.morning()
obj.afternoon()
print("\n")
obj1 = derived2()
obj1.morning()
obj1.evening()
```

```
Good morning
Good afternoon
```

```python
#Hybrid Inheritance   - combination of two or more type of inheritance
class base:
  def morning(self):
    print("Good morning")

class derived1(base):
  def afternoon(self):
    print("Good afternoon")

class derived2(base):
  def evening(self):
    print("Good evening")

class derived3(derived1,derived2):
  def night(self):
    print("Good night")

obj = derived3()
obj.morning()
obj.afternoon()
obj.evening()
obj.night()
```

```
Good morning
Good afternoon
Good evening
Good night
```

```python
# Multilevel Inheritance  - Child class inherits from a parent class, and another class inherits from that child.
class base:
  def morning(self):
    print("Good morning")

class derived1(base):
  def afternoon(self):
    print("Good afternoon")

class derived2(derived1):
  def evening(self):
    print("Good evening")

obj = derived2()
obj.morning()
obj.afternoon()
obj.evening()
```

```
Good morning
Good afternoon
Good evening
```