Class Inheritance

Instead of starting from a scratch, you can create a class by deriving it from a pre-existing class by listing the parent class in parentheses after the new class name.

The child class inherits the attributes of its parent class, and you can use those attributes as if they were defined in the child class. A child class can also override data members and methods from the parent.

Syntax

Derived classes are declared much like their parent class; however, a list of base classes to inherit from is given after the class name −

```python
class SubClassName (ParentClass1[, ParentClass2, ...]):
    'Optional class documentation string'

    class_suite
```

Example

```python
#!/usr/bin/python3


class Parent:        # define parent class

   parentAttr = 100


   def __init__(self):


   def parentMethod(self):
```

```python
    def setAttr(self, attr):



    def getAttr(self):



class Child(Parent): # define child class

    def___init__(self):



    def childMethod(self):



c = Child()           # instance of child
c.childMethod()       # child calls its method
c.parentMethod()      # calls parent's method
c.setAttr(200)        # again call parent's method
c.getAttr()           # again call parent's method
```

When the above code is executed, it produces the following result −

```
Calling child constructor
Calling child method
Calling parent method
Parent attribute : 200
```

In a similar way, you can drive a class from multiple parent classes asfollows −

```
class A:        # define your class A

.....


class B:         # define your calss B
```

```
.....


class C(A, B):    # subclass of A and B


.....
```

You can use issubclass() or isinstance() functions to check a relationships of two classes and instances.

☐ The **issubclass(sub, sup)** Boolean function returns True, if the given subclass **sub** is indeed a subclass of the superclass **sup.**

☐ The **isinstance(obj, Class)** boolean function returns True, if *obj* is an instance of class *Class* or is an instance of a subclass of Class