Python Example OOPS:

Creating Python program with simple class

```
class Items():
    ino = 5
    def display(self):
        print("hello")
# Class definition ends here
# new object creation
x = Items()
x.display()
print(x.ino)

class Students():
    slcmno = 5
     name =  “Dheeraj”
    def display(self):
        print("hello Dheeraj welcome to MAHE")
# Class definition ends here
# new object creation
S1 = Students()
S1.display()
print(s1.slcmno)
print(s1.name)
```

creating class with constructor

```
class Items1():
    def __init__(self, ino, iname):
        self.ino = ino
        self.iname = iname
```

```
            print(self.ino, self.iname)
    # end of class definition with constructor
    I1 = Items1(111,"pencil")
    I2 = Items1(112," pen" )
    I3 = Items1(113," book" )
```

creating class with counter variable

```
    class Student():
        count = 0
        def __init__(self):
            Student.count = Student.count + 1
    s1=Student()
    s2=Student()
    s3=Student()
    print("The number of students:",Student.count)
```

creating class with two same constructor

```
    class Student:
        def __init__(self):
            print("The First Constructor")
        def __init__(self):
            print("The second contructor")

    st = Student()
```

creating class with Hierarchical inheritance

```
    class Animal:
        def speak(self):
            print("Animal Speaking")
    class Dog(Animal):
        def bark(self):
```

```
        print("dog barking")
class DogChild(Dog):
    def eat(self):
        print("Eating bread...")

d = DogChild()
d.bark()
d.speak()
d.eat()
```

creating class with multiple inheritance

```
class Calculation1:
    def Summation(self,a,b):
        return a+b;
class Calculation2:
    def Multiplication(self,a,b):
        return a*b;
class Derived(Calculation1,Calculation2):
    def Divide(self,a,b):
        return a/b;
d = Derived()
print(d.Summation(10,20))
print(d.Multiplication(10,20))
print(d.Divide(10,20))
```

creating class with polymorphism overriding

```
class Bank:
    def rate(self):
        return 10;
class NBD(Bank):
    def rate(self):
```

```
        return 7;

class DIB(Bank):
    def rate(self):
        return 8;
b1 = Bank()
b2 = NBD()
b3 = DIB()
print("Bank Rate of interest:",b1.rate());
print("NBD Rate of interest:",b2.rate());
print("DIB Rate of interest:",b3.rate());
```