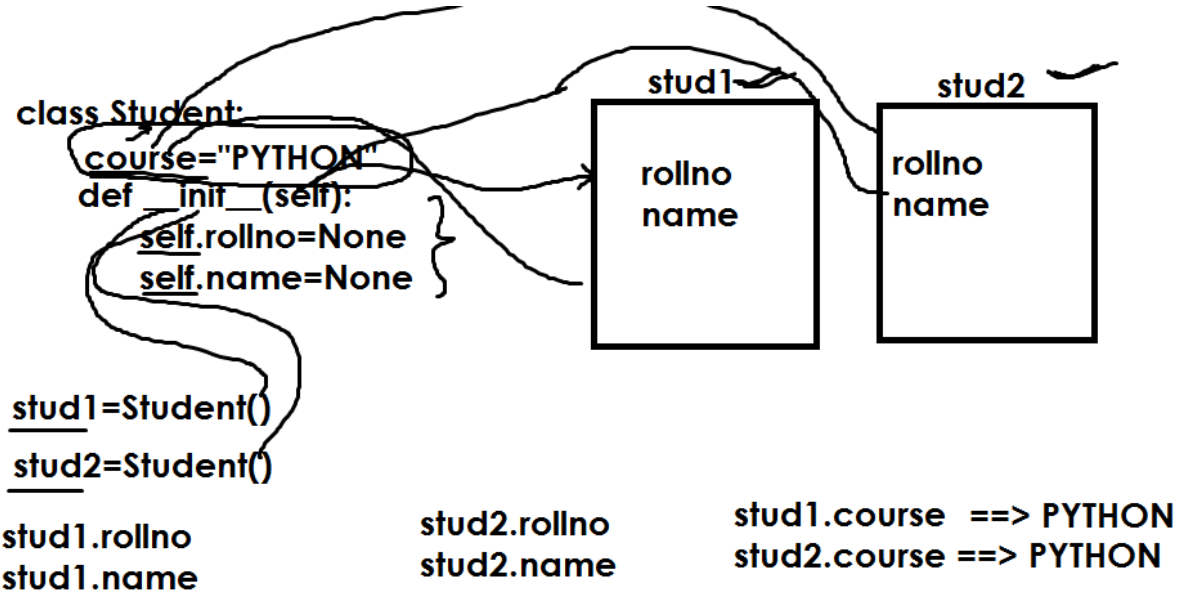
Class level variables
The variables declared inside class are called class level variables
Class level variables bind with class name
Class level variables are global variables, which are global to one or more than object
Class level variables defines common properties

Syntax:
class <class-name>:
    class level variables
    def __init__(self):
        self.variable-name ➔ object level/instance variable
        self.variable-name ➔ object level/instance variable



Example:
```
class A:
   x=100 #class level variable
   def __init__(self):
      self.y=200 # object level variable

def main():
   obj1=A()
   obj2=A()
   print(obj1.x) #==> 100
```

```
    print(obj2.x) #==> 100
    print(obj1.y) #==> 200
    print(obj2.y) #==> 200
    obj1.y=300
    obj2.y=500
    print(obj1.y,obj2.y)
    A.x=900
    print(obj1.x,obj2.x)
    print(A.x)
main()
```

Output:

```
100
100
200
200
300 500
900 900
900
>>>
```

Class level variable can be modified using class name
Class level variable cannot modify/update using object name
We can access class level variable with class name and object name
Inside or outside the class, class level variable is updated with class name only

Example:

```
class Account:
    min_bal=5000 # class level
    def __init__(self,a,cn,b):
        self.__accno=a  # object level
        self.__cname=cn # object level
        self.__balance=b # object level
    def deposit(self,tamt):
        self.__balance=self.__balance+tamt
    def withdraw(self,tamt):
        if self.__balance-tamt<Account.min_bal:
            print("insuff balance")
        else:
```

```
            self.__balance=self.__balance-tamt
    def print_account(self):
        print(f'AccountNo: {self.__accno}')
        print(f'CustomerName : {self.__cname}')
        print(f'Balance: {self.__balance}')

def main():
    acc1=Account(1,"suresh",9000)
    acc2=Account(2,"kishore",8000)
    acc1.print_account()
    acc2.print_account()
    acc1.deposit(2000)
    acc1.print_account()
    acc1.withdraw(9000)
    acc2.withdraw(2000)
    acc2.print_account()
main()
```

Output:

```
AccountNo: 1
CustomerName : suresh
Balance: 9000
AccountNo: 2
CustomerName : kishore
Balance: 8000
AccountNo: 1
CustomerName : suresh
Balance: 11000
insuff balance
AccountNo: 2
CustomerName : kishore
Balance: 6000
```

Example:

 # write a program to count how many objects of given class is created

```
class Point:
    count=0
    def __init__(self):
        print("object is created")
        Point.count+=1
```

```
def main():
    print(Point.count)
    p1=Point()
    p2=Point()
    print(Point.count)
main()
```

Output:

```
0
object is created
object is created
2
>>>
```

Class level method

A method defined inside class with first argument as “cls” is called class level method.
To transform the method to class level python provides @classmethod decorator

Syntax:

```
@classmethod
def <mehod-name>(cls,arg1,arg2,arg3,…):
        statement-1
        statement-2
```

class level method performs class level operation
class level method is used to manipulate class level data
class level method bind with class name (OR) invoked with class name
class level method can access only class level variables but cannot access object level variables.

Example:

```
class A:
    @classmethod
    def m1(cls):
        print("class level method")
    def m2(self):
        print("object level method")
```

```
def main():
    obj1=A()
    obj1.m2()
    A.m1()
    obj1.m1()

main()
```

Output:

```
object level method
class level method
class level method
>>>
```

Example:

```
class Student:
    __college_name="NIT"
    def __init__(self,r,n):
        self.__rollno=r
        self.__name=n

    @classmethod
    def get_college_name(cls):
        return Student.__college_name
    @classmethod
    def set_college_name(cls,c):
        cls.__college_name=c
    def print_student(self):
        print(f'RollNo {self.__rollno}')
        print(f'Name {self.__name}')
        print(f'CollegeName {self.__college_name}')

def main():
    stud1=Student(1,"naresh")
    stud2=Student(2,"suresh")
    stud1.print_student()
    stud2.print_student()
    Student.set_college_name("IIT")
    stud1.print_student()
    stud2.print_student()
```

main()

Output:

```
RollNo 1
Name naresh
CollegeName NIT
RollNo 2
Name suresh
CollegeName NIT
RollNo 1
Name naresh
CollegeName IIT
RollNo 2
Name suresh
CollegeName IIT
>>>
```