

Python program to find volume and surface area of Cylinder ($V=\pi r^2 h$, $SA=2\pi r h$) using class and objects. Create a constructor to initialize the objects and print the results with 2 decimal points precision.(Finding Vol and SA using class and object)

```
In [4]: ▶ import math
class cylinder():
    def __init__(self,r,h):
        self.r=r
        self.h=h
    def vol(self):
        return math.pi*(self.r**2)*(self.h)
    def SA(self):
        return 2*math.pi*self.r*self.h
p=int(input("Enter radius of cylinder: "))
q=int(input("Enter height of cylinder: "))
obj=cylinder(p,q)
print("Volume of cylinder:",round(obj.vol(),2))
print("SA of cylinder:",round(obj.SA(),2))
```

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Enter radius of cylinder: 5
Enter height of cylinder: 10
Volume of cylinder: 785.4
SA of cylinder: 314.16
```

Create a class Student with constructor, setdata() and dispdata() for encapsulating rollno, name, mark1, mark2 into it. Create three objects obj1, obj2, obj3 from class Student. Set rollno, name, mark1, mark2 for 3 students using setdata() and display them using dispdata().

```
In [9]: ▶ class Student:
    'Common base class for all Students'
    stdCount = 0
    #defining the constructor
    def __init__(self,rollno,name,m1,m2):
        self.rollno = rollno
        self.name = name
        self.m1 = m1
        self.m2 = m2
        Student.stdCount += 1
    #defining the member functions
    def setdata(self):
        print("Total Student %d" % Student.stdCount)
    def dispdata(self):
        print ("Rollno :",self.rollno, "Name :",self.name, "Marx1 :",self.m1, "Marx2 :",self.m2)
    "This would create first object of Student class"
    obj1 = Student(17062,"Pranav",98,97)
    "This would create second object of Student class"
    obj2 = Student(17119,"Nachi",89,99)
    "This would create third object of Student class"
    obj3 = Student(17120,"Ravi",86,87)
    obj1.dispdata()
    obj2.dispdata()
    obj3.dispdata()
    print("Total Students %d" % Student.stdCount)
```

```
Rollno : 17062 Name : Pranav Marx1 : 98 Marx2 : 97
Rollno : 17119 Name : Nachi Marx1 : 89 Marx2 : 99
Rollno : 17120 Name : Ravi Marx1 : 86 Marx2 : 87
Total Students 3
```

Create a parent class Person with constructor(name, idnumber), display() to display name and idnumber and child class Employee with constructor(name, idnumber salary, post) and display() to display name, idnumber, salary and post. Create object x from parent to pass name and idnumber as parameter and display them. Create objects a and b of Employee to pass name, idnumber, salary and post and display them (single inheritance)

```
In [20]: ► # parent class
class Person( object ):
    def __init__(self, name, idnumber):
        self.name = name
        self.idnumber = idnumber
    def display(self):
        print(self.name)
        print(self.idnumber)

# child class
class Employee( Person ):
    def __init__(self, name, idnumber, salary, post):
        self.salary = salary
        self.post = post
        Person.__init__(self, name, idnumber)
x = Person('Pranav',886012)
x.display()
a = Employee('Pranav', 886012, 200000, "Software_developer")
a.display()
```

```
Pranav
886012
Pranav
886012
```

In []: ►