In [29]:

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

import math
class cylinder:
    def __init__(self,radius):
        self.radius=radius
    def volume(self):
        return math.pi*(self.radius**2)*h
    def surface(self):
        return (2*math.pi*(self.radius*h)+(math.pi*self.radius**2))
r=float(int(input("Enter radius : ")))
h=float(int(input("Enter height : ")))
obj=cylinder(r)
obj=cylinder(h)
print("volume of cylinder:",(obj.volume()))
print("surface area of cylinder:",(obj.surface()))
```

```
Enter radius : 4
Enter height : 6
volume of cylinder: 678.5840131753953
surface area of cylinder: 339.29200658769764
```

In [28]:

```
2.#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().
#(simple class and object with constructor)

class student:

    studCount = 0
    def __init__(self,name, rollno, mark1,mark2):
        self.name = name
        self.rollno = rollno
        self.mark1 = mark1
        self.mark2 = mark2
        student.studCount += 1

    def setdata(self):
        print("Total students %d" % student.studCount)
    def displaydata(self):
        print ("Name:",self.name, "rollno:",self.rollno, "mark1:",self.mark1, "mark2:",

stud1 = student("Zara", 2,10,11)

stud2 = student("Manni", 5,11,12)

stud3 = student("nani",6,16,13)
stud1.displaydata()
stud2.displaydata()
stud3.displaydata()
print("Total student %d" % student.studCount)
```

```
Name :  Zara rollno:  2 mark1: 10 mark2: 11
Name :  Manni rollno:  5 mark1: 11 mark2: 12
Name :  nani rollno:  6 mark1: 16 mark2: 13
Total student 3
```

In [39]:

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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
#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)

class Person:
    name = ""
    idnumber = ""
    salary = ""

    def show_person(self,name,idnumber,salary):
        self.name = name
        self.idnumber = idnumber
        self.salary = salary




class employee(Person):
    def show_employee(self):
        print("name",self.name, "idnumber",self.idnumber,"salary",self.idnumber)


emp1 = employee()
emp1.name = "Mark"
emp1.idnumber = "1"
emp1.salary ="1234"
emp1.show_person()
emp1.show_employee()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-39-74121ee413e7> in <module>
     28 emp1.idnumber = "1"
     29 emp1.salary ="1234"
---> 30 emp1.show_person()
     31 emp1.show_employee()

TypeError: show_person() missing 3 required positional arguments: 'name', 'i
dnumber', and 'salary'
```

In [ ]:

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1
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