In [14]:
```
#Python program to find volume and surface area of Cylinder (V=pi*r*r*h, SA=
#using class and objects. Create a constructor to initialize the objects and
#with 2 decimal points precision.( Finding Vol and SA using class and object
import math
class Cylinder():
    def __init__(self,radius,height):
        self.radius=radius
        self.height=height
    def volume(self):
        return math.pi*self.radius*self.radius*self.height
    def surface_area(self):
        return math.pi*2*r*h
radius,height=[int(x) for x in input("Enter a two value: ").split()]
obj=Cylinder(radius,height)
print("Area of Cylinder:",round(obj.volume(),2))
print("Perimeter of circle:",round(obj.surface_area(),2))
```

```
Enter a two value: 5 10
Area of Cylinder: 785.4
Perimeter of circle: 314.16
```

In [19]:
```
#Create a class Student with constructor, setdata() and dispdata() for encap
#rollno, name, mark1, mark2 into it. Create three objects obj1, obj2, obj3 f
#Student. Set rollno, name, mark1, mark2 for 3 students using setdata() and
#them using dispdata().
#(simple class and object with constructor)
class Student:
    stdCount=0
    def __init__(self,r,n,m1,m2):
        self.r=r
        self.n=n
        self.m1=m1
        self.m2=m2
        Student.stdCount += 1
    def setdata(self):
        print("Total Students %d" % Student.stdCount)
    def dispdata(self):
        print("Roll_No :",self.r,",Name :",self.n,",Marks1 :",self.m1,",Mark
obj1 = Student(1001,"Nachi",100,100)
obj2 = Student(1002,"Pranav",100,100)
obj3 = Student(1003,"Ravi",100,100)

obj1.dispdata()
obj1.dispdata()
obj1.dispdata()
print("Total Students %d" % Student.stdCount)
```

```
Roll_No : 1001 ,Name : Nachi ,Marks1 : 100 ,Marks2 : 100
Roll_No : 1001 ,Name : Nachi ,Marks1 : 100 ,Marks2 : 100
Roll_No : 1001 ,Name : Nachi ,Marks1 : 100 ,Marks2 : 100
Total Students 3
```

In [47]:

```
#Create a parent class Person with constructor(name, idnumber), display() to
#name and idnumber and child class Employee with constructor(name, idnumber
#salary, post) and display() to display name, idnumber, salary and post. Cre
#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 dis
#them (single inheritance)
class Person:
    def __init__(self, name, idnumber):
        self.name=name
        self.idnumber=idnumber
    def display(self):
        print(f'Name: {self.name}\nIDNumber: {self.idnumber}')

class Employee(Person):
    def __init__(self,name, idnumber, salary, post):
        self.salary=salary
        self.post=post
        super(Employee,self).__init__(name, idnumber)
    def display(self):
        super(Employee,self).display()
        print(f'Salary: {self.salary}\nPost: {self.post}')

x=Person('Nachi',1001)
x.display()
print()
a=Employee('Nachi',1001,600000,'Director')
a.display()
print()
b=Employee('Pranav',1002,70000,'HR')
b.display()
```

```
Name: Nachi
IDNumber: 1001

Name: Nachi
IDNumber: 1001
Salary: 600000
Post: Director

Name: Pranav
IDNumber: 1002
Salary: 70000
Post: HR
```

In [58]:

```
#Create a parent class student in which a method getStudent() is defined to
#and name of the student. Create a child class called test in which a method
#getMarks() is defined to get maths and science marks. Create a grandchild c
#called marks in which display() is defined to display all the details
#rollno,name,maths marks, science marks and average marks (of science and ma
#(Multilevel inheritance problem)

class Student:
    def getStudent(self,rollno,name):
        self.n = name
        self.r = rollno

class Test(Student):
    def getMarks(self,maths,science):
        self.m1 = maths
        self.s = science

class Marks(Test):
    def display(self):
        print("Name : {0}\n RollNo : {1}\nMaths marks : {2}\nScience Marks :
m = Marks()
m.getStudent(input("Enter the rollno. : "), input("Enter the name : "))
m.getMarks(int(input("Enter the Maths marks : ")),int(input("Enter the Scien
m.display()
```

```
Enter the rollno. : 1001
Enter the name : Nachi
Enter the Maths marks : 99
Enter the Science marks : 100
Name : Nachi
 RollNo : 1001
Maths marks : 99
Science Marks : 100
Average : 99.5
```

In [60]:

```
class India():
    def __init__(self,capital,language,currency):
        self.capital=capital
        self.language=language
        self.currency=currency
    def capitale(self):
        print("INDIA's\nCapital = ",self.capital)
    def lang(self):
        print("Language = ",self.language)
    def curr(self):
        print("Currency = ",self.currency)

class USA():
    def __init__(self,capital,language,currency):
        self.capital=capital
        self.language=language
        self.currency=currency
    def capitale(self):
        print("USA's\nCapital = ",self.capital)
    def lang(self):
        print("Language = ",self.language)
    def curr(self):
        print("Currency = ",self.currency)

obj1=India("New Delhi","Hindi and English","Rupee")
obj2=USA("Washington DC","Hindi and English","Dollar")
obj=[obj1,obj2]
for i in obj:
  i.capitale()
  i.curr()
  i.lang()
  print("\n")
```

```
INDIA's
Capital =  New Delhi
Currency =  Rupee
Language =  Hindi and English


USA's
Capital =  Washington DC
Currency =  Dollar
Language =  Hindi and English
```

In [ ]:

```
1
```