**Program :1**

def fact\_rec(n):  
 if n==0 or n==1:  
 return 1  
 else:  
 return n\* fact\_rec(n-1)  
number=int(input("enter a value"))   
res=fact\_rec(number)  
print("the factroial of {}is{}.".format(number,res))

**program:2**

def isLeapYear(year):  
 if (year % 4 == 0 and year % 100 != 0)or year % 400 == 0:  
 return True  
 else:  
 return False  
year = int(input("enter a year:"))   
if isLeapYear(year):  
 print('{}is a leap year.'.format(year))  
else:  
 print('{} is not a leap year.'. format(year))

**program:3**

# Python program to create Bankaccount class

# with both a deposit() and a withdraw() function

class Bank\_Account:

def \_\_init\_\_(self):

self.balance=0

print("Hello!!! Welcome to the Deposit & Withdrawal Machine")

def deposit(self):

amount=float(input("Enter amount to be Deposited: "))

self.balance += amount

print("\n Amount Deposited:",amount)

def withdraw(self):

amount = float(input("Enter amount to be Withdrawn: "))

if self.balance>=amount:

self.balance-=amount

print("\n You Withdrew:", amount)

else:

print("\n Insufficient balance ")

def display(self):

print("\n Net Available Balance=",self.balance)

# Driver code

# creating an object of class

s = Bank\_Account()

# Calling functions with that class object

s.deposit()

s.withdraw()

s.display()

**program 4:**

#Define the base class playerclass player:

class player:

def player(self):

print("The player is playing cricket.")

#Define the derived class Batsman

class Batsman(player):

def play(self):

print("The Batsman is batting.")

#Define the derived class Bowler

class Bowler(player):

def play(self):

print("The bowler is bowling.")

#create objects of Batsman and Bowler classes

batsman = Batsman()

bowler = Bowler()

#call the play() method for each object

batsman.play()

bowler.play()