```
#x Create a function which accepts two inputs from the user and compute nCr

def fact(i):
 if i>0:
  return i*fact(i-1)
 else:
  return 1
def comb(n,r):
 return (fact(n)/((fact(n-r))*fact(r)))
a=int(input('a='))
b=int(input('b='))
comb(a,b)
```

```
     a=3
     b=2
     3.0
```

```
#x Recursive function to compute GCD of 2 numbers
my_list=[4,2,6,1,8,46,987,236,54]
my_list.sort()
print(my_list)
print("The second smallest number in the given list is: ",my_list[1])
print("The second largest number in the given list is:",my_list[len(my_list)-2])
```

```
     [1, 2, 4, 6, 8, 46, 54, 236, 987]
     The second smallest number in the given list is:  2
     The second largest number in the given list is: 236
```

```
#x Recursive function to find product of two numbers
def num():
  a=int(input())
  b=int(input())
  return a*b
num()
```

```
     5
     5
     25
```

```
#x Program to print a specified list after removing the 0th, 4th and 5th elements.
#Sample List : ['Red', 'Green', 'White', 'Black', 'Pink', 'Yellow']
#Expected Output : ['Green', 'White', 'Black']
def rem():
    a=['Red', 'Green', 'White', 'Black', 'Pink', 'Yellow']
    a.pop(5)
    a.pop(4)
    a.pop(0)
    return a
rem()
```

```
     ['Green', 'White', 'Black']
```

```
#x Recursive function to generate Fibonacci series
def fibb(k):
 n1,n2=0,1
 count=0
 print(n1,n2)
 while count<k :
    print(n1)
    nth = n1 + n2
    n1 = n2
    n2 = nth
    count += 1
    return
fibb(100)
```

```
     0 1
     0
```

```
#x Program to get the difference between the two lists.
def diff(a,b):
  a=set(a)
  b=set(b)
  x=(a-b)
  x=list(x)
  return x
a=['Red', 'Green', 'White', 'Black', 'Pink', 'Yellow',"10"]
b= ['Green', 'White', 'Black']
print(diff(a,b))
```

```
     ['10', 'Pink', 'Yellow', 'Red']
```

```
#x Program to find the second smallest number and second largest number in a list.

def min(list):
 list.sort()
 return list[1],list[-2]
list=["10","20","30","40"]
print(min(list))
```

```
     ('20', '30')
```

```
#x Given a list of numbers of list, write a Python program to create a list of tuples
#having first element as the number and second element as the square of the
#number.
def list(a):
  b=[]
  for i in a:
```

```
    x=tuple((i,i*i))
    b.append(x)
  return b
a=[10,20,30,100]
print(list(a))
```

```
 [(10, 100), (20, 400), (30, 900), (100, 10000)]
```

```
#x Program to generate and print a dictionary that contains a number (between 1
#and n) in the form (x, x*x).
#Sample Input: (n=5) :
#Expected Output : {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

n=int(input())
d=dict()
for x in range(1,n+1):
  d[x]=x*x
print(d)
```

```
 9
 {1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81}
```

```
#x Program for replacing one substring by another For example - Rabbit - Replace µbb¶ b\
#µcc¶
def rep():
 x=str(input())
 print(x.replace("bb","cc"))
rep()
```

```
 rabbit
 raccit
```

```
a=str(input())
k=str(input())
a.count(k)
```

```
 I am kaushik from gitam colllege
 3
 0
```

```
## Program to count the number of strings where the string length is 2 or more and the first
bhagy= ['abc', 'xyz', 'aba', '2321']
count=0
for x in bhagy:
 if len(x)>1 and x[0]==x[-1]:
  print("The wanted strings are:",x)
count=count+1
print("The number of strings with given conditions are:",count)
```

```
The wanted strings are: aba
The number of strings with given conditions are: 1
```

```
## Python function that accepts a string and calculates the number of uppercase letters and l
a="Rise Roar Revolt"
upp=0
low=0
for x in a:
 if x.isupper():
  upp=upp+1
 elif x.islower():
  low=low+1
else:
  pass
print("No of upper case letters are:",upp)
print("No of lower case letters are:",low)
```

```
No of upper case letters are: 3
No of lower case letters are: 11
```

```
## Program for replacing one substring by another
lalitha="kaushik"
print(lalitha.replace("bb","cc"))
```

```
kaushik
```

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