**IT Lab 4: Python Objects and Classes**

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1.) Write a Python class to get all possible unique subsets from a set of distinct integers

**Code:**

class powerSetClass:

'''This class is to find uniwue possible subsets'''

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

self.arr = arr

def powerSetGenerator(self):

powerSet=[]

for i in range(2\*\*(len(self.arr))):

subset = []

for j in range(len(self.arr)):

if((i & (1<<j))):

subset.append((self.arr[j]))

if subset not in powerSet:

powerSet.append(subset)

return powerSet

pass

if \_\_name\_\_ == '\_\_main\_\_':

print("Enter the numbers in the array with space seperation")

arr = [i for i in input().split()]

psc = powerSetClass(arr)

powerSet = psc.powerSetGenerator()

print(powerSet)

**Output: (P.T.O)**



2.) Write a Python class to find a pair of elements (indices of the two numbers) from a given array whose sum equals a specific target number.

**Code:**

class pairtargetsum:

def \_\_init\_\_(self, arr, target):

self.arr = arr

self.target = target

def pairFinder(self):

for i in range(0,len(self.arr)-1):

if self.arr[i]+self.arr[i+1]==self.target:

print(str(i+1)+" ,"+str(i+2))

return

print("pair not found")

pass

if \_\_name\_\_ == '\_\_main\_\_':

print("Enter the numbers in the array with space seperation")

arr = [int(i) for i in input().split()]

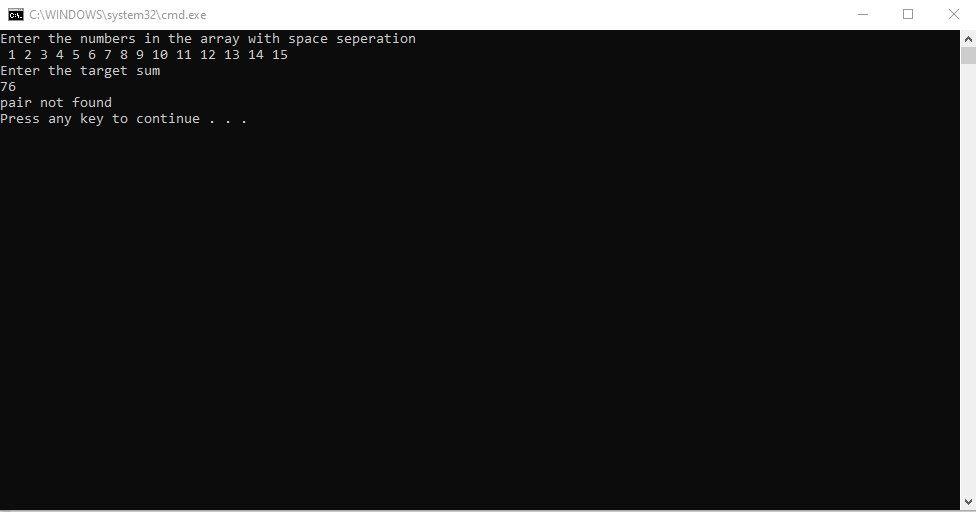
print("Enter the target sum")

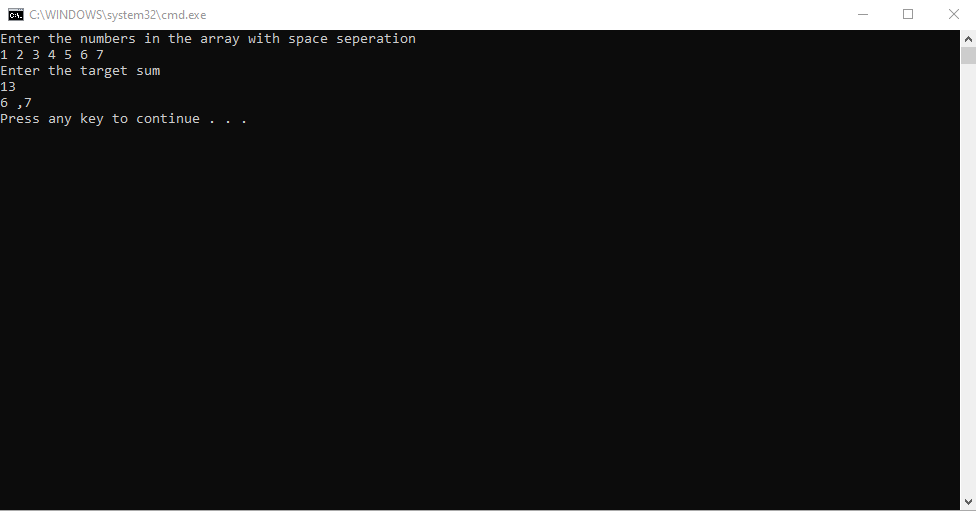
t = int(input())

pts = pairtargetsum(arr,t)

pts.pairFinder()

**Output:**





3.) Write a Python class to implement pow(x, n).

**Code:**

class Maths:

def pow(x,n):

if n==1:

return x

return x\*pow(x,n-1)

pass

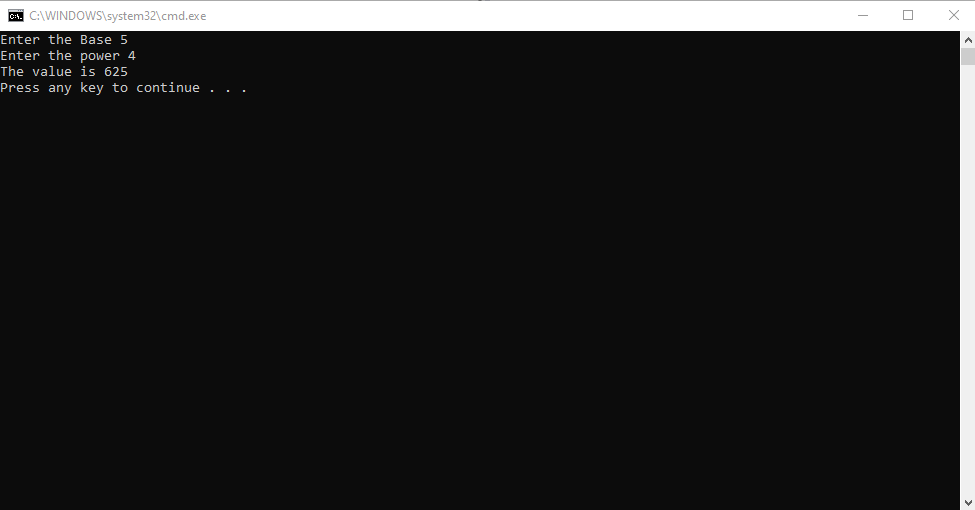
if \_\_name\_\_ == '\_\_main\_\_':

x = int(input("Enter the Base"))

n = int(input("Enter the power"))

print("The value is "+str(Maths.pow(x,n)))

**Output:**





4.) Write a Python class which has two methods get\_String and print\_String. get\_String accept a string from the user and print\_String print the string in upper case.

**Code:**

class Strings:

def get\_String(self):

self.string = input("Enter the string")

def print\_String(self):

for i in self.string:

if (ord(i)>=97):

print(chr(ord(i)-32),end="")

else:

print(i,end="")

print()

pass

if \_\_name\_\_=='\_\_main\_\_':

string = Strings()

string.get\_String()

string.print\_String()

**Output:**

