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180905134 CSE C -23   
IT LAB 4 Objects and Classes

ALL 4 QUESTIONS ARE DONE IN A SINGLE FILE BY CREATING 4 CLASSES   
OUTPUT for all 4 qsns in a single screenshot

1.CODE  
class Subset:

subsets = []

def generateSubsets(self,arr,n):

for i in range(2\*\*n):

subset = []

for j in range(n):

if (i & (1 << j)) != 0:

subset.append(arr[j]);

self.subsets.append(subset)

return self.subsets;

class TwoSum:

def twoSum(self, nums, target):

#dictionary key value number:index pair

lookup = {}

for i, num in enumerate(nums):

if target - num in lookup:

return [lookup[target - num], i ]

lookup[num] = i

return []

class PowClass:

def pow(self, x, n):

#if base is 0 or 1

if x==0 or x==1 or n==1:

return x

#if base is -1

if x==-1:

if n%2 ==0:

return 1

else:

return -1

#anything raise to 0 is 1

if n==0:

return 1

#if negative power then divide

if n<0:

return 1/self.pow(x,-n)

#positive power

val = self.pow(x,n//2)

#val\*val

if n%2 ==0:

return val\*val

#if power is odd hence multiply one more element

return val\*val\*x

class getSetString():

def get\_String(self):

print("Enter a String")

self.str1 = input()

def print\_String(self):

print(self.str1.upper())

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

print("Qsn1.")

A=Subset();

print("Finding subsets for [4,5,6]")

subsets=A.generateSubsets([4,5,6],3)

print(subsets)

print("Qsn2.")

B=TwoSum();

print("Input list [10,20,30,40,50,60,70] Target:50")

indices=B.twoSum((10,20,10,40,50,60,70),50);

if len(indices)==0:

print("No solution");

else:

print("Sum of list elements at index1= %d, index2= %d equals target" % (indices[0], indices[1]))

print("Qsn3.")

C=PowClass();

print("Inputting base as 2 and power as 3")

print("Result:")

print(C.pow(2, 3));

print("Qsn4.")

str1 = getSetString()

str1.get\_String()

str1.print\_String()

SCREENSHOT

