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| Question 1: |
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Define a class with a generator which can iterate the numbers, which are divisible by 7, between a given range 0 and n.

def div7(n):

for i in range(n+1):

if i%7==0:

yield i

Question 2:

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| Write a program to compute the frequency of the words from the input. The output should output after sorting the key alphanumerically. |
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| Suppose the following input is supplied to the program: |
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| New to Python or choosing between Python 2 and Python 3? Read Python 2 or Python 3. |
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| Then, the output should be: |
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| 2:2 |
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| 3.:1 |
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| 3?:1 |
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| New:1 |
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| Python:5 |
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| Read:1 |
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| or:2 |
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to:1

def word\_count(string):

word\_dict = {} #dictionary to store word and its frequency

word\_set = set() #set to store unique words

for i in string:

if i in word\_set: #if word in set, add to its value in dictionary

word\_dict[i]+=1

else:

word\_set.add(i) #if word not in set, add it to dictionary with value 1

word\_dict[i]=1

return word\_dict

s = input('enter the string: ').split() #create a list of words

for k,v in sorted(word\_count(s).items()):

print(k,':',v)

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| Question 3: |
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Define a class Person and its two child classes: Male and Female. All classes have a method "getGender" which can print "Male" for Male class and "Female" for Female class.

class Person:

def getGender(self):

print ('gender')

class Male(Person):

def getGender(self):

print('male')

class Female(Person):

def getGender(self):

print ('female')

Question 4:

Please write a program to generate all sentences where subject is in ["I", "You"] and verb is in ["Play", "Love"] and the object is in ["Hockey","Football"].

sub = ['I','You']

verb = ['Play','Love']

obj = ['Hockey','Football']

for i in sub:

for j in verb:

for k in obj:

print(i,j,k)

Question 5:

Please write a program to compress and decompress the string "hello world!hello world!hello world!hello world!".

import zlib

s = 'hello world!hello world!hello world!hello world!'.encode()

t = zlib.compress(s)

print(t)

print(zlib.decompress(t))

Question 6:

Please write a binary search function which searches an item in a sorted list. The function should return the index of element to be searched in the list.

from ast import literal\_eval #to take list as input

def bin\_search(l1,k):

l1.sort() #sort the input list

l = len(l1)

low = 0

up = l-1

while low !=up: #run the loop till low !=up

x = (low+up)//2

if k == l1[x]: #check till mid value

return x

elif k < l1[x]:

up = x #change up value if number less than mid

else:

low=x #change low value if number higher than mid

return -1 #return -1 if num not found

lis = literal\_eval(input('enter the list '))

k = int(input('enter the search term '))

result = bin\_search(lis,k)

if result!= -1:

print(k,'found at index: ', result )

else:

print('does not exist')