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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.

**Ans:**

class Question1:

def generator(self, n):

l=[]

for i in range(0, n+1):

if i%7==0:

l.append(i)

return l

n=int(input("Enter value of n:"))

obj=Question1()

print(obj.generator(n))

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

**Ans:**

sentence=input("plesae enter sentence:")

l\_split=sentence.split()

d={}

for l in l\_split:

if l in d.keys():

d[l]+=1

else:

d[l]=1

for i in sorted(d.keys()):

print(i+":", d[i])

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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.

**Ans:**

class person:

def getGender(self):

print("person")

class male(person):

def getGender(self):

return "Male"

class female(person):

def getGender(self):

return "Female"

m=male()

print(m.getGender())

f=female()

print(f.getGender())

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"].

**Ans:**

lst1=["I", "You"]

lst2=["Play", "Love"]

lst3=["Hockey","Football"]

for l1 in lst1:

str1=""

str1=l1

for l2 in lst2:

str2=""

str2=l2

for l3 in lst3:

str3=""

str3=l3

print(str1+str2+str3)

Question 5:

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

**Ans:**

import zlib

text="hello world!hello world!hello world!hello world!"

comp=zlib.compress(text.encode())

print("Compressed: ", comp)

decomp=zlib.decompress(comp)

print("Decompressed: ", decomp)

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.

**Ans:**

def binarySearch(lst, low, high, num):

if high >= low:

mid = (high + low) // 2

# If element is present at the middle itself

if lst[mid] == num:

return mid

# If element is smaller than mid, then it can only

# be present in left subarray

elif lst[mid] > num:

return binarySearch(lst, low, mid - 1, num)

# Else the element can only be present in right subarray

else:

return binarySearch(lst, mid + 1, high, num)

else:

# Element is not present in the array

return -1

lst = [ 2, 3, 4, 10, 40 ]

num = 4

print(binarySearch(lst, 0, len(lst)-1, num))