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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 iterate(n):  
 i=0  
 while(i<n):  
 j=i  
 i=i+1  
 if(j%7==0):  
 yield j  
for i in iterate(int(input())):  
 print(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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| **and:1** |
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| **between:1** |
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| **choosing:1** |
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| **or:2** |
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**to:1**

s=input().split()  
word=sorted(set(s))  
for i in word:  
 print("{0}:{1}".format(i,s.count(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.**

class person(object):  
 def \_\_init\_\_(self):  
 return None  
class Male(person):  
 def getGender(self):  
 return "Male"  
class Female(person):  
 def getGender(self):  
 return "Female"  
m=Male()  
f=Female()  
print(m.getGender())  
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"].**

subjects=["I","You"]  
verbs=["Play","Love"]  
objects=["Hockey","Football"]  
for i in range(len(subjects)):  
 for j in range(len(verbs)):  
 for k in range(len(objects)):  
 sentence="%s %s %s."%(subjects[i],verbs[j],objects[k])  
 print(sentence)

**Question 5:**

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

import zlib  
s='hello world!hello world!hello world!hello world!'  
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.**

def bin\_search(l,item):  
 low=0  
 high=len(l)-1  
 while(low<=high):  
 mid=round((low+high)/2)  
 if(l[mid]==item):  
 return mid  
 elif(l[mid]>item):  
 high=mid-1  
 else:  
 low=mid+1  
 return None  
l=list(input().split(','))   
print(bin\_search(l,input()))