Programming_Assingment14

Question 1:

Define a class with a generator which can iterate the numbers, which are divisible by

7, between a given range 0 and n.

In [1]:

```
def putNumbers(n):
    i = 0
    while i < n:
        j = i
        i += 1
        if j % 7 == 0:
            yield j
n = int(input('enter n : '))
for i in putNumbers(n):
    print(i)
```

```
enter n : 30
0
7
14
21
28
```

Question 2:

Write a program to compute the frequency of the words from the input. The output

should output after sorting the key alphanumerically.

Suppose the following input is supplied to the program:

New to Python or choosing between Python 2 and Python 3? Read Python 2 or

Python 3.

Then, the output should be:

2:2

3.:1

3?:1

New:1

Python:5

Read:1

and:1

between:1

choosing:1

or:2

to:1

In [7]:

```
string = input('Enter the string ').split()
word = sorted(set(string))     # sort alphbetically

for i in word:
   print("{0}:{1}".format(i,string.count(i)))
```

```
Enter the string New to Python or choosing between Python 2 and Python 3? Read Python 2 or
Python 3
2:2
3:1
3?:1
New:1
Python:5
Read:1
and:1
between:1
choosing:1
or:2
to:1
```

Question 3:

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.

In [2]:

```
class Person(object):
   def getGender( self ):
      return "Unknown"

class Male( Person ):
   def getGender( self ):
      return "Male"

class Female( Person ):
   def getGender( self ):
      return "Female"

objMale = Male()
objFemale= Female()
print(objMale.getGender())
print(objFemale.getGender())
```

```
Male
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"].

In [3]:

```
subject=["I", "You"]
verb=["Play", "Love"]
obj=["Hockey","Football"]

# Use list comprehension instead of looping over each of the predicates
sentence_list = [(sub+" "+ vb + " " + ob) for sub in subject for vb in verb for ob in obj]
for sentence in sentence_list:
   print(sentence)
```

```
I Play Hockey
I Play Football
I Love Hockey
I Love Football
You Play Hockey
```

You Play Football
You Love Hockey
You Love Football

Question 5:

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

world!hello world!hello world!"

In [5]:

```
import zlib
s = 'hello world!hello world!hello world!hello world!'
# In Python 3 zlib.compress() accepts only DataType <bytes>
y = bytes(s, 'utf-8')
x = zlib.compress(y)
print(x)
print(zlib.decompress(x))
```

```
b'x\x9c\xcbH\xcd\xc9\xc9W(\xcf/\xcaIQ\xcc \x82\r\x00\xbd[\x11\xf5'
b'hello world!hello world!hello world!hello world!'
```

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.

In [7]:

```
from bisect import bisect_left

def BinarySearch(a, x):
    i = bisect_left(a, x)
    if i != len(a) and a[i] == x:
        return i
    else:
        return -1

a = [11, 12, 14, 14, 28,28]
x = int(28)
res = BinarySearch(a, x)
if res == -1:
    print(x, "is absent")
else:
    print("First occurrence of", x, "is present at", res)
```

First occurrence of 28 is present at 4