Assignment 14

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 [9]:
```
def numbers(n):
    for i in range(n):
        if i%7==0:
            yield i

for i in numbers(20):
    print(i)
```

```
0
7
14
```

2.Write a program to compute the frequency of the words from the input. The output should output after sorting the key alphanumerically.

In [16]:
```
d=dict()
s=input("Enter the sentence:")
for i in s.split():
    d[i]=d.get(i,0)+1
print(d)
print(sorted(d.items()))
```

```
Enter the sentence:New to Python or choosing between Python 2 and Python 3? Read Python 2 or Python
3
{'New': 1, 'to': 1, 'Python': 5, 'or': 2, 'choosing': 1, 'between': 1, '2': 2, 'and': 1, '3?': 1, 'R
ead': 1, '3': 1}
[('2', 2), ('3', 1), ('3?', 1), ('New', 1), ('Python', 5), ('Read', 1), ('and', 1), ('between', 1),
('choosing', 1), ('or', 2), ('to', 1)]
```

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 [25]:
```
class Person(object):
    def getGender( self ):
        return "Unknown"

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

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

larissa = female()


larissa.getGender()
```

Out[25]: 'Female'

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 [26]:
```
subject = ["I", "You"]
verb = ["Play", "Love"]
objects = ["Hockey","Football"]

for i in subject:
    for j in verb:
        for k in objects:
            print("{} {} {}".format(i,j,k))
```

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

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

In [29]:
```
import zlib
string1 = 'hello world!hello world!hello world!hello world!'.encode()
t = zlib.compress(string1)
print(zlib.decompress(t))
```

```
b'hello world!hello world!hello world!hello world!'
```

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 [36]:
```
import math
def search(li, element):
    bottom = 0
    top = len(li)-1
    index = -1
    while top>=bottom and index==-1:
        mid = int(math.floor((top+bottom)/2.0))
        if li[mid]==element:
            index = mid
        elif li[mid]>element:
            top = mid-1
        else:
            bottom = mid+1

    return index

li=[2,5,6,8,9,4,1,5,6,3,491,821]
print(search(li,5))
```

```
7
```

In [ ]:
```

```