Question 1:

Please write a program using generator to print the numbers which can be divisible by 5 and 7 between 0 and n in comma separated form while n is input by console.

Example:  
If the following n is given as input to the program:

100

Then, the output of the program should be:

0,35,70

Question 2:

Please write a program using generator to print the even numbers between 0 and n in comma separated form while n is input by console.

Example:  
If the following n is given as input to the program:

10

Then, the output of the program should be:

0,2,4,6,8,10

Question 3:

The Fibonacci Sequence is computed based on the following formula:

f(n)=0 if n=0  
f(n)=1 if n=1  
f(n)=f(n-1)+f(n-2) if n>1

Please write a program using list comprehension to print the Fibonacci Sequence in comma separated form with a given n input by console.

Example:  
If the following n is given as input to the program:

7

Then, the output of the program should be:

0,1,1,2,3,5,8,13

Question 4:

Assuming that we have some email addresses in the "[username@companyname.com](mailto:username@companyname.com)" format, please write program to print the user name of a given email address. Both user names and company names are composed of letters only.

Example:  
If the following email address is given as input to the program:

[john@google.com](mailto:john@google.com)

Then, the output of the program should be:

john

Question 5:

Define a class named Shape and its subclass Square. The Square class has an init function which takes a length as argument. Both classes have a area function which can print the area of the shape where Shape's area is 0 by default.

Solutions :

**1.How many seconds are in an hour? Use the interactive interpreter as a calculator and multiply the number of seconds in a minute (60) by the number of minutes in an hour (also 60).**

In [1]:

print(60**\***60)

3600

**2. Assign the result from the previous task (seconds in an hour) to a variable called seconds\_per\_hour.**

In [2]:

seconds\_per\_hour **=** 60**\***60

print(seconds\_per\_hour)

3600

**3. How many seconds do you think there are in a day? Make use of the variables seconds per hour and minutes per hour.**

In [3]:

minutes\_per\_hour **=** 60

print(seconds\_per\_hour**\***24)

86400

**4. Calculate seconds per day again, but this time save the result in a variable called seconds\_per\_day**

In [4]:

seconds\_per\_day **=** 24**\***60**\***60

print(seconds\_per\_day)

86400

**5. Divide seconds\_per\_day by seconds\_per\_hour. Use floating-point (/) division.**

In [5]:

print(seconds\_per\_day**/**seconds\_per\_hour)

24.0

**6. Divide seconds\_per\_day by seconds\_per\_hour, using integer (//) division. Did this number agree with the floating-point value from the previous question, aside from the final .0?**

In [6]:

print(seconds\_per\_day**//**seconds\_per\_hour, end**=**'')

print(' -> yes this values agree with the floating point value from the previous question')

24 -> yes this values agree with the floating point value from the previous question

**7. Write a generator, genPrimes, that returns the sequence of prime numbers on successive calls to its next() method: 2, 3, 5, 7, 11, ...**

In [7]:

**def** genPrimes():

n **=** 0

**while** **True**:

**if** n **==** 2 **or** n **==** 3 :

**yield** n

**elif** ((n**-**1)**%6** == 0 or (n+1)%6 == 0) and n !=1:

**yield** n

n **=** n**+**1

output **=** genPrimes()

**for** ele **in** range(5):

print(next(output))

2

3

5

7

11