

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

Ans:

```
In [6]: 1 n = int(input('Enter a number: '))
        2 class divisible:
        3     def __init__(self, num):
        4         self.num = num
        5     def generate(self):
        6         for i in range(0, self.num+1):
        7             if i%7==0 and i%5==0:
        8                 print(i, end=',')
        9 d = divisible(n)
        10 d.generate()
```

```
Enter a number: 100
0,35,70,
```

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

Ans:

```
In [5]: 1 n = int(input('Enter a number: '))
        2 class divisible:
        3     def __init__(self, num):
        4         self.num = num
        5     def generate(self):
        6         for i in range(0, self.num+1):
        7             if i%2==0:
        8                 print(i, end=',')
        9 d = divisible(n)
        10 d.generate()
```

```
Enter a number: 10
0,2,4,6,8,10,
```

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

Ans:

```
In [7]: 1 n = int(input('Enter number of terms:'))
        2 def Fib(n):
        3     if n<=1:
        4         return n
        5     else:
        6         return(Fib(n-1)+Fib(n-2))
        7 print('0',end = ',')
        8 for i in range(n):
        9     print(Fib(i+1),end=',')
```

```
Enter number of terms:7
0,1,1,2,3,5,8,13,
```

4. Assuming that we have some email addresses in the "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 ?

Ans:

```
In [10]: 1 string = input('Enter Email Address(es): ')
        2 def Username(string):
        3     output = string.split('@')
        4     print('Username: ', output[0])
        5 Username(string)
```

```
Enter Email Address(es): thej.mohan@isro.com
Username: thej.mohan
```

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.

Ans:

```
In [5]: 1 class Shape:
        2     def area(self):
        3         return 0
        4 class Square(Shape):
        5     def __init__(self, length):
        6         self.length = length
        7     def area(self):
        8         return self.length*self.length
        9 square = Square(4)
       10 print(square.area())
```