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

# 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

# Define a generator function, Generator1

def Generator1(n):

for i in range(0,n+1):

num = False

# check the condition that number is divisible by both 5 and 7

if i % 5 == 0 and i % 7 == 0:

num = True

if num == True:

yield i

num = False

# Get the value of n from the user in console

n = int(input("Enter the value of n : "))

# Create an object of a generator, Generator1 & pass parameter n

g1 = Generator1(n)

# Print the elements of generator object using list

# This list contains values in the range 0 to n which are divisible by both 5 and 7

print(list(g1))

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

# 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

# Define a generator function, Generator1

def Generator1(n):

for i in range(0,n+1):

num = False

# check the condition that number is 2

if i % 2 == 0:

num = True

if num == True:

yield i

num = False

# Get the value of n from the user in console

n = int(input("Enter the value of n : "))

# Create an object of a generator, Generator1 & pass parameter n

g1 = Generator1(n)

# Print the elements of generator object using list

# This list contains values in the range 0 to n which are divisible 2

print(list(g1))

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

# 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

# get the input from the user

n = int(input("enter positive integer to display fibonacci series :"))

# Declare a list fib with values 0,1

fib = [0,1]

# create a list comprehension for fibonacci series with number n

[fib.append(sum(fib[-2:])) for x in range(n)]

# print the fibonacci series

print((fib[:n]))

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

# 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.

# Example: If the following email address is given as input to the program: john@google.com

# Then, the output of the program should be: john

# Get the email address from the user

string1 = str(input("Enter email address : "))

# split the string using split() method. split using the character '@'

res = string1.split('@')[0]

# Print the user name of the email address

print("The username of the email address is :",str(res))

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.

# A sub class is a class , which is inherited by another class (super class)

# Create a class Shape

class Shape:

# Generic function to print area of any shape

def area(self):

print("area is 0")

# Create a class Square

class Square(Shape):

# constructor

def \_\_init\_\_(self, l):

self.length = l

# Function to calculate area of a square

def area(self):

return self.length \* self.length

# create object of square by passing length as parameter

objSquare = Square(15)

# Print the area of a square

print("Area of a square is : ",objSquare.area())