**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**

def divisible\_by\_5\_and\_7(n):

for i in range(n + 1):

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

yield i

# Get input from the user

n = int(input("Enter a value for n: "))

# Generate the divisible numbers using the generator

divisible\_nums = divisible\_by\_5\_and\_7(n)

# Print the numbers in comma-separated form

result = ",".join(str(num) for num in divisible\_nums)

print(result)

**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**

def even\_numbers(n):

for i in range(n + 1):

if i % 2 == 0:

yield i

# Get input from the user

n = int(input("Enter a value for n: "))

# Generate the even numbers using the generator

even\_nums = even\_numbers(n)

# Print the numbers in comma-separated form

result = ",".join(str(num) for num in even\_nums)

print(result)

**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**

def fibonacci\_sequence(n):

sequence = [0, 1] # Initialize the sequence with the first two Fibonacci numbers

# Generate the Fibonacci sequence using list comprehension

sequence += [sequence[i - 1] + sequence[i - 2] for i in range(2, n + 1)]

return sequence

# Get input from the user

n = int(input("Enter a value for n: "))

# Generate the Fibonacci sequence using list comprehension

fibonacci\_seq = fibonacci\_sequence(n)

# Print the sequence in comma-separated form

result = ",".join(str(num) for num in fibonacci\_seq)

print(result)

**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**

def get\_username(email):

username = email.split("@")[0]

return username

# Get input from the user

email\_address = input("Enter an email address: ")

# Extract the username from the email address

username = get\_username(email\_address)

# Print the username

print(username)

**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.**

class Shape:

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

self.area = 0

def calculate\_area(self):

print("Area of the shape:", self.area)

class Square(Shape):

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

super().\_\_init\_\_()

self.length = length

self.calculate\_area()

def calculate\_area(self):

self.area = self.length \*\* 2

print("Area of the square:", self.area)

# Create an instance of the Square class

square = Square(5)