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

**Ans:- def divisible\_by\_5\_and\_7(n):**

**for num in range(n + 1):**

**if num % 5 == 0 and num % 7 == 0:**

**yield num**

**# Get input from the user**

**n = int(input("Enter a number: "))**

**# Generate divisible numbers and print them in comma-separated form**

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

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

**print(output)**

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

**Ans:- def multiple(a):**

**for i in range(0, a + 1):**

**if i % 2 == 0:**

**yield i**

**a = int(input("Enter a number: "))**

**result = ",".join(str(i) for i in multiple(a))**

**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

**Ans:- def fibonacci\_sequence(n):**

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

**# Generate Fibonacci numbers using list comprehension**

**sequence.extend([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 number: "))**

**# Generate Fibonacci sequence and print it in comma-separated form**

**fib\_sequence = fibonacci\_sequence(n)**

**output = ",".join(str(num) for num in fib\_sequence)**

**print(output)**

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

**Ans:- def username(email):**

**n = email.index("@")**

**name = email[:n]**

**print(f"The name of the employee is: {name}")**

**# Test the function with the example email address**

**username("john@google.com")**

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.

**Ans:- class Shape:**

**def area(self):**

**return 0**

**class Square(Shape):**

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

**self.length = length**

**def area(self):**

**return self.length \*\* 2**