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**ASSIGN : 15**

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 console

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

# Use the generator to generate numbers divisible by 5 and 7

result = ','.join(map(str, divisible\_by\_5\_and\_7(n)))

# Print the result

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 console

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

# Use the generator to generate even numbers

result = ','.join(map(str, even\_numbers(n)))

# Print the result

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

# Get input from console

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

# Define Fibonacci sequence using list comprehension

fib = [0, 1] + [fib[i-1] + fib[i-2] for i in range(2, n+1)]

# Convert list of numbers to comma-separated string

result = ','.join(map(str, fib))

# Print the result

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

# Get input from console

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

# Extract username from email

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

# Print the result

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 get\_area(self):

print("Area of Shape: ", self.area)

class Square(Shape):

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

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

self.length = length

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

def get\_area(self):

print("Area of Square: ", self.area)

# Create an instance of Shape

shape = Shape()

shape.get\_area()

# Create an instance of Square with length 5

square = Square(5)

square.get\_area()