

Programming Assignment 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

```
In [4]: def divi75(n):
        lst=[i for i in range(0, n+1) if i % 7 ==0 and i% 5==0]
        return lst
        divi75(135)
```

Out[4]: [0, 35, 70, 105]

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

```
In [8]: def geneven(n):
        lst=[i for i in range(0, n+1) if i % 2 ==0 ]
        return lst
        geneven(10)
```

Out[8]: [0, 2, 4, 6, 8, 10]

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

```
In [46]: n=int(input('Enter a number for geneating fibbinocci sequence'))
        lst=[0,1]
        [lst.append(lst[-1]+lst[-2]) for i in range(n) ]
        print(lst)
```

Enter a number for geneating fibbinocci sequence10
[0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]

Question 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. 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

```
In [58]: email=str(input('Enter email address'))
        try:
            index1= email.index('@')
            index2= email.index('.')
            if index1 >index2:
                raise Exception('invalid email address')
            elif index2==len(email)-1:
                raise Exception('invalid email address')
            else:
                print(email[:index1])
```

```
except Exception as e:  
    print("Error: ", e)
```

Enter email addressfads@gmail.com
fads

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.

```
In [65]: class Shape():  
        def __init__(self):  
            self.Area=0  
        def area(self):  
            return self.Area  
  
        class Square(Shape):  
            def __init__(self,length):  
                self.length=length  
  
            def area(self):  
                return self.length**2  
box=Square(8)  
box.area()
```

Out[65]: 64

In []: