

# Python Basic Programming Assignment - 15

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.

```
In [1]: def divisible_by_5_and_7(n):
        for i in range(n+1):
            if i % 5 == 0 and i % 7 == 0:
                yield i
        # get the generator object
        generator = divisible_by_5_and_7(100)
        # print the numbers in a comma separated form
        print(", ".join(str(x) for x in generator))
```

0, 35, 70

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.

```
In [2]: def even_numbers(n):
        for i in range(n+1):
            if i % 2 == 0:
                yield i
        n = int(input("Enter a number: "))
        print(", ".join(str(i) for i in even_numbers(n)))
```

Enter a number: 20

0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

3. Please write a program using list comprehension to print the Fibonacci Sequence in comma separated form with a given n input by console.

```
In [4]: def fibonacci_sequence(n):
        # Initialize the first two numbers in the sequence
        a, b = 0, 1
        # Create a List of the Fibonacci sequence up to n
        fibonacci_sequence = [a, b] + [a + b for i in range(2, n)]
        # Convert the list to a string and separate each element with a comma
        return ", ".join(map(str, fibonacci_sequence))
        # Get n from the user
        n = int(input("Enter a number: "))
        # Print the Fibonacci sequence up to n
        print(fibonacci_sequence(n))
```

Enter a number: 10

0, 1, 1, 1, 1, 1, 1, 1, 1, 1

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.

```
In [5]: def extract_username(email):  
        # find the index of the @ symbol  
        at_index = email.index('@')  
        # return the portion of the string before the @ symbol  
        return email[:at_index]  
        # test the function  
print(extract_username("johnsmith@gmail.com")) # prints "johnsmith"  
print(extract_username("jane.doe@yahoo.com")) # prints "jane.doe"
```

```
johnsmith  
jane.doe
```

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 [6]: class Shape:  
        def area(self):  
            return 0  
        class Square(Shape):  
            def __init__(self, length):  
                self.length = length  
            def area(self):  
                return self.length ** 2  
s = Shape()  
print(s.area())  
sq = Square(5)  
print(sq.area())
```

```
0  
25
```

```
In [ ]:
```