



Chittagong University of Engineering and Technology (CUET)

Department of Electronics and Telecommunication Engineering

Lab Report

Experiment Name: Python Iterators or Loops

Experiment No.: 03

Course Title: Multimedia Communication Sessional

Course No.: ETE 408

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Objectives:

- To get familiarized with the Python control flow statements.
- To write Programs using Python loops.

Required Software:

- Jupyter Notebook

Program Code:

1.1 Write a program that repeatedly reads numbers until the user enters “done”. Once “done” is entered, print out the total, count, and average of the numbers. If the user enters anything other than a number, detect their mistake using *try* and *except* and print an error message and skip to the next number.

Code:

```
flag = True
total = 0
count = 0
while flag == True:
    num = input("Enter a number: ")

    if num == 'done':

        break
    try:
        num = int(num)
        total = total + num
        count = count + 1

    except:
        print("invalid input")

if count > 0:
    avg = total/count
    print("total: ", total)
    print("count: ", count)
    print("average: ", avg)
```

Output:

```
⇒ Enter a number: 4
Enter a number: 5
Enter a number: bad data
invalid input
Enter a number: 7
Enter a number: done
total: 16
count: 3
average: 5.333333333333333
```

1.2 Write a program to prompt for a score between 0.0 and 1.0. If the score is out of range, print an error message. If the score is between 0.0 and 1.0, print a grade using the following table:

Score Grade

>= 0.9 A

>= 0.8 B

>= 0.7 C

>= 0.6 D

< 0.6 F

Code:

```
num = input("Enter number: ")
try:
    num = float(num)
    if num < 0.0 and num > 1.0:
        print("Bad Score")
    else:
        if num >= 0.9 and num <=1.0:
            print("A")
        elif num>=0.8 and num < 0.9:
            print("B")
        elif num >= 0.7 and num < 0.8:
            print("C")
        elif num >= 0.6 and num < 0.7:
            print("D")
        elif num < 0.6 and num >= 0.0:
            print("F")
        else:
            print("Bad Score")
except:
    if type(num) == str:
        print("Bad Score")
```

Output:

Enter number: 0.6

D

Enter number: tt

Bad Score

1.3 Write a Python program to find those divisible numbers by 7 and multiple of 5, between 1500 and 2700 (both included).

Code:

```
▶ for num in range(1500, 2700):  
    #num = int(input("Enter a number: "))  
    if (num%7 == 0) and (num%5 == 0):  
        print("The numbers are: ", num)
```

Output:


The numbers are: 1505	The numbers are: 2345
The numbers are: 1540	The numbers are: 2380
The numbers are: 1575	The numbers are: 2415
The numbers are: 1610	The numbers are: 2450
The numbers are: 1645	The numbers are: 2485
The numbers are: 1680	The numbers are: 2520
The numbers are: 1715	The numbers are: 2555
The numbers are: 1750	The numbers are: 2590
The numbers are: 1785	The numbers are: 2625
The numbers are: 1820	The numbers are: 2660
The numbers are: 1855	The numbers are: 2695
The numbers are: 1890	
The numbers are: 1925	
The numbers are: 1960	
The numbers are: 1995	
The numbers are: 2030	
The numbers are: 2065	
The numbers are: 2100	
The numbers are: 2135	
The numbers are: 2170	
The numbers are: 2205	
The numbers are: 2240	
The numbers are: 2275	
The numbers are: 2310	

1.4 Write a Python program that prints all the numbers from 0 to 6 except 3 and 6.

Code:

```
for num in range(0,6):  
    if num == 3 or num == 6:  
        continue  
    print(num)
```


Output:



```
0
1
2
4
5
```

1.5 Write a Python program to get the Fibonacci series between 0 to 50


Code:



```
a = 0
b = 1

while a < 50:
    a, b = b, a+b
    print(a)
```

Output:



```
1
1
2
3
5
8
13
21
34
55
```

1.6 Write a program to accept a number from a user and calculate the sum of all numbers from 1 to a given number.

Code:

```
num = int(input("Enter a number: "))
sum = 0
for n in range(1, num+1):
    sum = sum + n
print(sum)
```

Output:

```
Enter a number: 4
10
```

1.7 Write a program to display all prime numbers within a range.

Code:

```
▶ def is_prime(num):
    if num <= 1:
        return False
    for i in range(2, int(num**0.5) + 1):
        if num % i == 0:
            return False
    return True

lower = int(input("lower limit: "))
upper = int(input("upper limit: "))

for num in range(lower, upper + 1):
    if is_prime(num):
        print(num)
```

Output:

```
lower limit: 2
upper limit: 20
2
3
5
7
11
13
17
19
```

Discussion:

- The for loop and while loop have been understood and implemented by this experiment.
- The use of break and continue has been implemented.
- Exception handling has been done via this experiment.