



Bahria University, Islamabad

Department of Software Engineering

Artificial Intelligence Lab

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Lab Journal: 3

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Task No:	Task Wise Marks		Documentation Marks		Total Marks (20)
	Assigned	Obtained	Assigned	Obtained	
1	8		5		
2	7		5		

Comments:

Signature

Lab No: 3

OOP in Python (Part-1) (Functions, Classes)

Introduction

Functions:

A function is a block of code which only runs when it is called. You can pass data, known as parameters, into a function. A function can return data as a result.

In Python a function is defined using the def keyword:

```
def my_function():  
    print("Hello from a function")
```

To call a function, use the function name followed by parenthesis:

```
def my_function():  
    print("Hello from a function")
```

my_function()

Arguments

Information can be passed into functions as arguments. Arguments are specified after the function name, inside the parentheses. You can add as many arguments as you want, just separate them with a comma.

The following example has a function with one argument (fname). When the function is called, we pass along a first name, which is used inside the function to print the full name:

Tools Used

Tool used to perform this task is **PyCharm Community Addition**

Task 1:

In this challenge, the user enters a string and a sub-string. You have to print the number of times that the sub-string occurs in the given string. String traversal will take place from left to right, not from right to left.

Note: String letters are case-sensitive.

Input Format:

The first line of input contains the original string. The next line contains the sub-string.

Constraints:

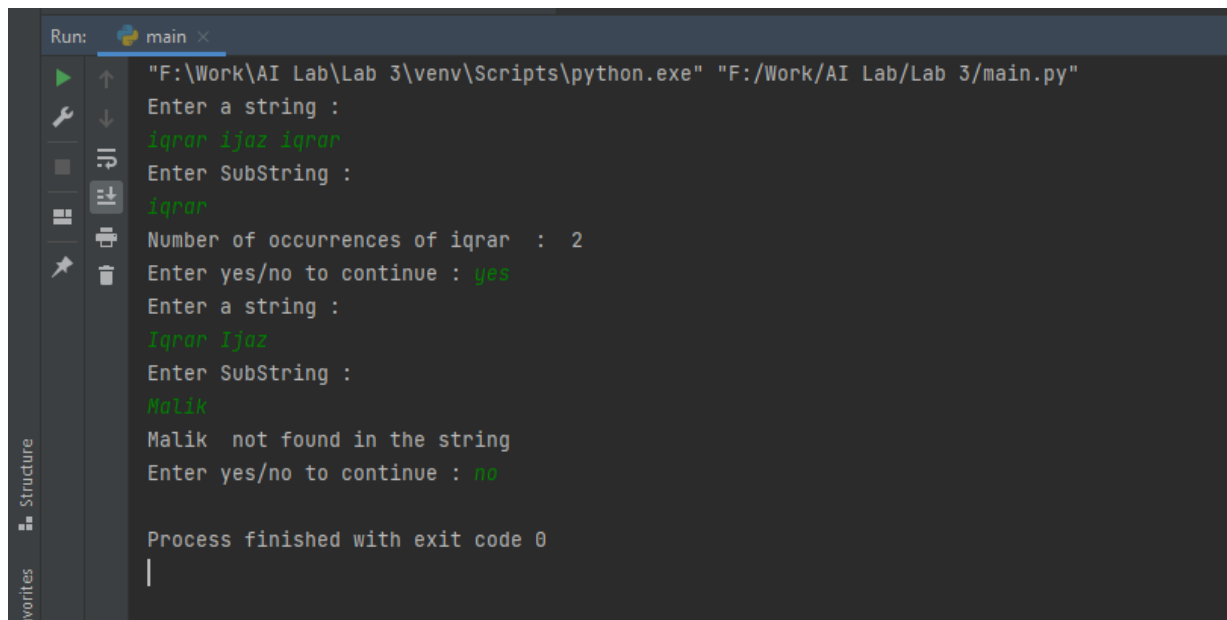
$1 \leq \text{len}(\text{string}) \leq 200$

Code:

```
1  def SubStringFinder(s, sub):
2      if sub in s:
3          s.count(sub)
4          print("Number of occurrences of", sub, " : ", s.count(sub))
5      else:
6          print(sub, " not found in the string")
7
8
9  def Inputs():
10     print("Enter a string : ")
11     CompleteString = input()
12     print("Enter SubString : ")
13     SubString = input()
14     SubStringFinder(CompleteString, SubString)
15
```

```
16
17     Inputs()
18     while True:
19         a = input("Enter yes/no to continue : ")
20         if a == "yes":
21             Inputs()
22             continue
23         elif a == "no":
24             break
25         else:
26             print("Enter either yes/no")
27
```

Outputs:



The screenshot shows a Python IDE's console window with the following text:

```
Run: main x
"F:\Work\AI Lab\Lab 3\venv\Scripts\python.exe" "F:/Work/AI Lab/Lab 3/main.py"
Enter a string :
Iqrar Ijaz Iqrar
Enter SubString :
Iqrar
Number of occurrences of Iqrar : 2
Enter yes/no to continue : yes
Enter a string :
Iqrar Ijaz
Enter SubString :
Malik
Malik not found in the string
Enter yes/no to continue : no

Process finished with exit code 0
```

Task # 02: (7 marks)

Count the occurrences of each character in the input_str.

Input:

Take an input from user named input_str.

Output:

Print each character and its count.

Sample:

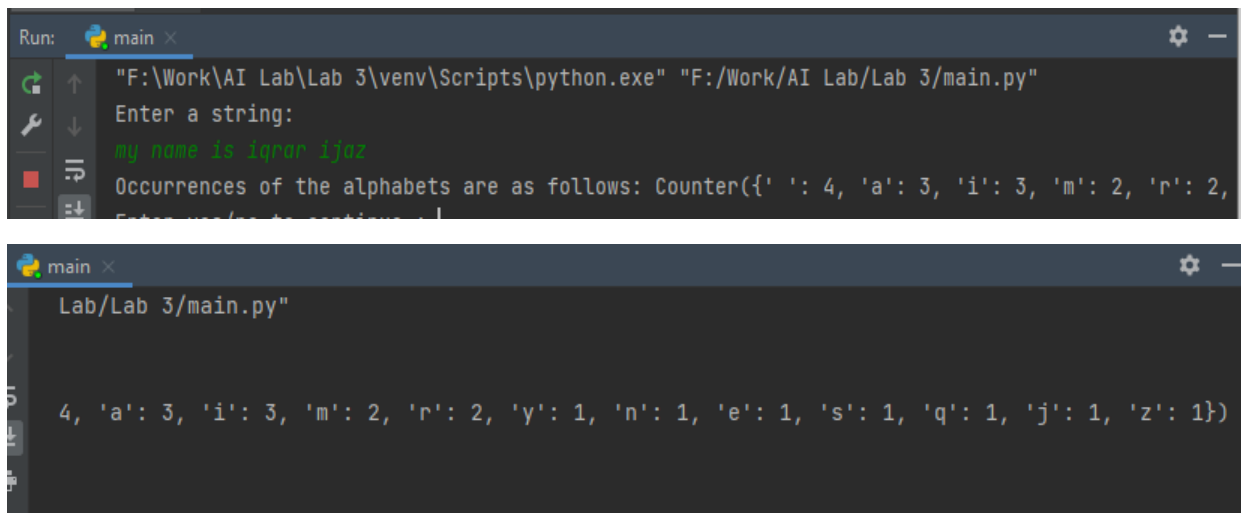
IN: aabcd

OUT: a:2, b:1, c:1, d:1

Code:

```
16
17     from collections import Counter
18
19     print("Enter a string:")
20     entered_string = (input())
21     result = Counter(entered_string)
22     print("Occurrences of the alphabets are as follows:", result)
23
```

Output:



```
Run: main x
"F:\Work\AI Lab\Lab 3\venv\Scripts\python.exe" "F:/Work/AI Lab/Lab 3/main.py"
Enter a string:
my name is iqrar ijaz
Occurrences of the alphabets are as follows: Counter({' ': 4, 'a': 3, 'i': 3, 'm': 2, 'r': 2, 'y': 1, 'n': 1, 'e': 1, 's': 1, 'q': 1, 'j': 1, 'z': 1})

main x
Lab/Lab 3/main.py"
4, 'a': 3, 'i': 3, 'm': 2, 'r': 2, 'y': 1, 'n': 1, 'e': 1, 's': 1, 'q': 1, 'j': 1, 'z': 1})
```

Conclusion

I completed the tasks given to us and pasted output above.