Exp-2.7

Title:

Find the first occurrence index of a substring in a string or return -1 if not found.

Aim:

To design and implement a Python program to find the first occurrence index of the string needle in haystack, or return -1 if needle is not part of haystack.

Procedure:

1. Read the two input strings: haystack and needle.
2. Check if needle is an empty string; if yes, return 0 (by definition).
3. Use Python's built-in string find() method or manually check for the first occurrence of needle in haystack.
4. Return or print the index of the first occurrence; if not found, return -1.

Algorithm:

1. Start
2. Input strings haystack and needle.
3. If needle is empty, return 0.
4. Use haystack.find(needle) to get first index of needle.
5. If found, return index; otherwise, return -1.
6. End.

Input:

sadbutsad

sad

leetcode

leeto

Output:

0

-1

Program:

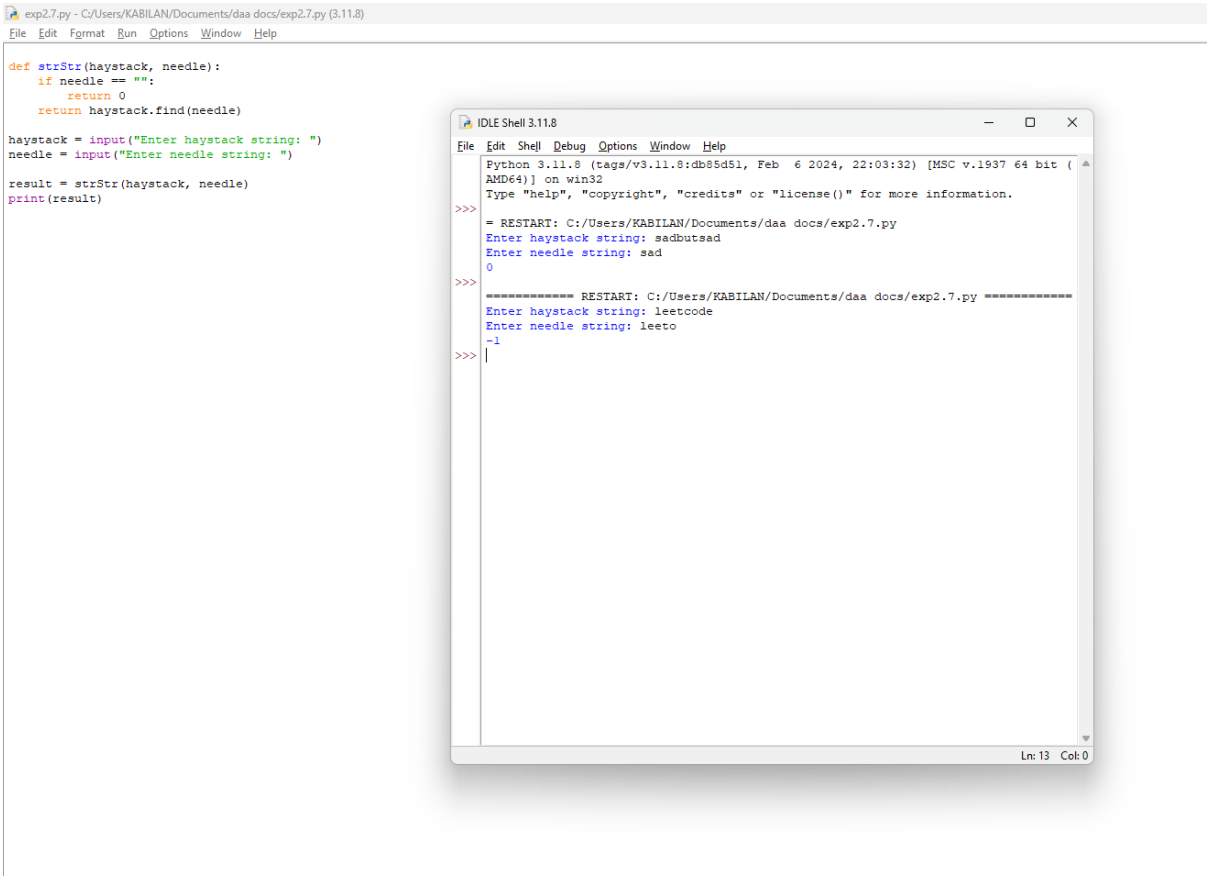
```
def strStr(haystack, needle):
    if needle == "":
        return 0
    return haystack.find(needle)
haystack = input("Enter haystack string: ")
needle = input("Enter needle string: ")

result = strStr(haystack, needle)
print(result)
```

Performance Analysis:

Time Complexity: : O(m * n)

Space Complexity: O(1)

Program Output:



Result:

Thus the given program Substring Search is executed and got output successfully.