	PUNE INSTITUTE OF COMPUTER TECHNOLOGY PUNE - 411043	
	Department of Electronics & Telecommunication	
	ASSESMENT YEAR: 2024-2025	CLASS: SE 6
	SUBJECT: DATA STRUCTURES	
EXPT No:	LAB Ref: SE/2024-25/	Starting date:
	Roll No:22203	Submission date:

Title:	Operations on Strings using python	
Problem Statement	Write a program to demonstrate the operations on strings using Python & virtual lab experiments.	

Programmer Name: Arpan Agrawal
Batch: E6.

CODE :

```
def calculate_length(str1):
    length = 0
    for _ in str1:
        length += 1
    return length
def is_substring(string, sub):
i = 0
    j = 0
    while i<len(string):
        if string[i] == sub[j]:
            temp = i
            while i<len(string) and j <len(sub) and string[i] == sub[j]:
i += 1
                j += 1
            if j == len(sub):
                return 1
            j = 0
```

```
i = temp + 1
        else:
i += 1
    return 0
def check_palindrome(string):
    length = len(string)
    count = 1
    for i in range(length // 2):
        if string[i] != string[length - i - 1]:
            count = 0
            break
    if count == 0:
print("String 1 is not a palindrome.")
    else:
print("String 1 is a palindrome.")
def copy_string(source, destination):
destination.clear()
    for char in source:
destination.append(char)


def reverse_string(string):
reversed_string = ""
    for char in string:
reversed_string = char + reversed_string
```

```
    return reversed_string
def compare_strings(str1, str2):
i = 0
    while i<len(str1) and i<len(str2) and str1[i] == str2[i]:
i += 1
    if i == len(str1) and i == len(str2):
        return 0
elifi == len(str1):
        return -1
elifi == len(str2):
        return 1
    else:
        return ord(str1[i]) - ord(str2[i])
if __name__ == "__main__":
    option = 0
comp_result = 0
    string1 = input("Enter The string 1: ")
    string2 = ""
    string3 = [ ]
    length1 = calculate_length(string1)
    length2 = calculate_length(string2)

print("1.Substring\n 2.Palindrome\n 3. String Copy\n 4. String reversal\n 5. Compare\n")
    while True:
```

```
        try:
            option = int(input("Enter The option: "))
            break
        except ValueError:
print("Invalid input. Please enter a valid option.")
    if option == 1:
        string2 = input("Enter The string 2: ")
        if is_substring(string1, string2) == 0:
print("Substring not found.")
        else:
print("Substring Found")
elif option == 2:
check_palindrome(string1)
elif option == 3:
copy_string(string1, string3)
        print(''.join(string3))
elif option == 4:
        string3 = reverse_string(string1)
        print(string3)
elif option == 5:
        string2 = input("Enter The string 2: ")
comp_result = compare_strings(string1, string2)
        if comp_result == 0:
print("Strings are equal")
```

```
elifcomp_result> 0:
print("String 1 is greater than string 2")
    else:
print("String 2 is greater than String 1")
  else:
print("INVALID OPTION CHOSEN")
```

Output

```
Enter The string 1: BASKETBALL
1. Substring
2. Palindrome
3. String Copy
4. String reversal
5. Compare
Enter The option: 1
Enter The string 2: BALL
Substring Found

Enter The string 1: YAY
1.) Substring
2.) Palindrome
3.) String Copy
4.) String reversal
5.) Compare
```

Enter The option: 2

String 1 is a palindrome.

Enter The string 1: DATA

1.) Substring

2.) Palindrome

3.) String Copy

4.) String reversal

5.) Compare

Enter The option: 3

DATA

Enter The string 1: SHELF

1.) Substring

2.) Palindrome

3.) String Copy

4.) String reversal

5.) Compare

Enter The option: 4

FLEHS

Enter The string 1: FLOWER

1.) Substring

2.) Palindrome

3.) String Copy

4.) String reversal

5.) Compare

Enter The option: 5

Enter The string 2: PLATE

String 1 is greater than string 2