



Ex NO :
DATE :

AREA AND PERIMETER OF A CIRCLE

AIM : The aim of the python program is to find the area and perimeter of Circle

PROCEDURE :

Step 1: Get the radius of the circle as input from the user.

Step 2: Calculate the area of the circle using the formula: $\text{area} = \pi * (\text{radius} ** 2)$

Step 3: Calculate the perimeter of the circle using the formula:
 $\text{perimeter} = 2 * \pi * \text{radius}$

Step 4: Print the area and perimeter of the circle.

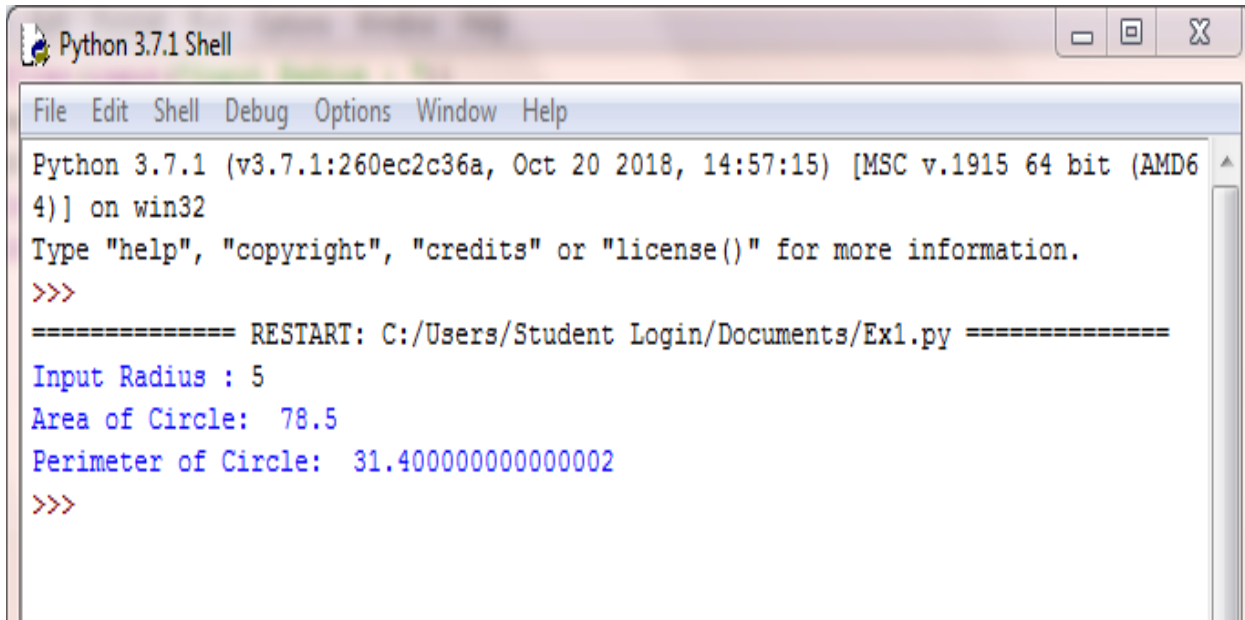


PROGRAM CODE :

```
r=float(input("Input Radius : "))  
area=3.14*r*r  
perimeter=2*3.14*r  
print("Area of Circle: ",area)  
print("Perimeter of Circle: ",perimeter)
```



OUTPUT:



```
Python 3.7.1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.1 (v3.7.1:260ec2c36a, Oct 20 2018, 14:57:15) [MSC v.1915 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Student Login/Documents/Ex1.py =====
Input Radius : 5
Area of Circle: 78.5
Perimeter of Circle: 31.400000000000002
>>>
```

RESULT : Thus the python program to find the area and perimeter of circle has been implemented and executed successfully.



Ex NO :

DATE :

GENERATE FIBONACCI SERIES

AIM : The aim of the python program is to generate Fibonacci series

PROCEDURE :

Step 1: Get the number of terms in the series as input from the user.

Step 2: Initialize the first two terms of the series as 0 and 1.

Step 3: Loop through the range of the number of terms, and print each term of the series.

Step 4: In each iteration of the loop, calculate the next term of the series by adding the previous two terms.

Step 5: Print the Fibonacci series of n terms



PROGRAM CODE :

```
n_terms = int(input ("How many terms the user wants to print? "))

n_1 = 0
n_2 = 1
count = 0

if n_terms <= 0:

    print ("Please enter a positive integer, the given number is not valid")
elif n_terms == 1:

    print ("The Fibonacci sequence of the numbers up to", n_terms, ": ")
    print(n_1)
else:

    print ("The fibonacci sequence of the numbers is:")

    while count < n_terms:

        print(n_1)

        nth = n_1 + n_2

        n_1 = n_2

        n_2 = nth

        count += 1
```



OUTPUT :

```
Python 3.7.1 Shell
File Edit Shell Debug Options Window Help
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>>>
===== RESTART: C:/Users/Student Login/Documents/Ex2.py =====
How many terms the user wants to print? -1
Please enter a positive integer, the given number is not valid
>>>
===== RESTART: C:/Users/Student Login/Documents/Ex2.py =====
How many terms the user wants to print? 15
The fibonacci sequence of the numbers is:
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
>>>
===== RESTART: C:/Users/Student Login/Documents/Ex2.py =====
How many terms the user wants to print? 1
The Fibonacci sequence of the numbers up to 1 :
0
>>> |
```

RESULT : Thus the python program to generate Fibonacci series for n terms has been implemented and executed successfully



Ex NO :

DATE :

COMPUTE GCD OF TWO NUMBERS

AIM : The aim of the python program is to compute the GCD of Two Numbers.

PROCEDURE :

Step 1: Get the two numbers as input from the user.

Step 2: Set the minimum of the two numbers as the starting point for the GCD.

Step 3: Loop through the range of the smaller number, and check if both numbers are divisible by the current number.

Step 4: Store the last common divisor found in step 3 as the GCD.

Step 5: Print the GCD of the two numbers.

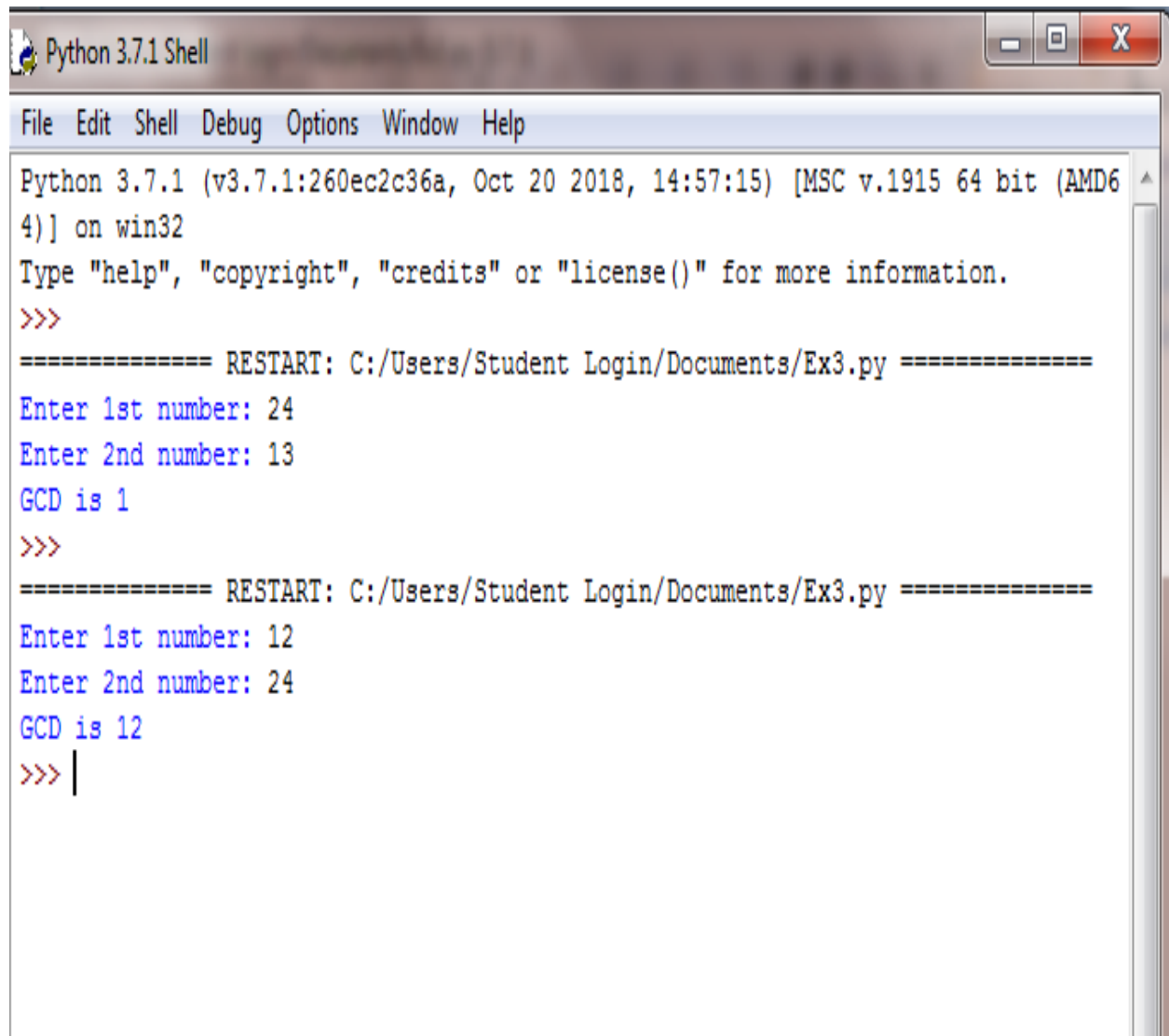


PROGRAM CODE :

```
num1 = int(input("Enter 1st number: "))
num2 = int(input("Enter 2nd number: "))
i = 1
while(i <= num1 and i <= num2):
    if(num1 % i == 0 and num2 % i == 0):
        gcd = i
    i = i + 1
print("GCD is", gcd)
```




OUTPUT :



```
Python 3.7.1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.1 (v3.7.1:260ec2c36a, Oct 20 2018, 14:57:15) [MSC v.1915 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Student Login/Documents/Ex3.py =====
Enter 1st number: 24
Enter 2nd number: 13
GCD is 1
>>>
===== RESTART: C:/Users/Student Login/Documents/Ex3.py =====
Enter 1st number: 12
Enter 2nd number: 24
GCD is 12
>>> |
```

RESULT : Thus the python program to compute the GCD of two numbers has been implemented and executed successfully.



Ex NO:

DATE :

GENERATE FIRST N PRIME NUMBERS

AIM : The aim of the python program is to generate first n Prime Numbers.

PROCEDURE :

Step 1: Get the value of n as input from the user.

Step 2: Initialize an empty list to store the prime numbers.

Step 3: Initialize a variable to keep track of the number of prime numbers found.

Step 4: Loop through the range of numbers from 2 to infinity, until the required number of prime numbers have been found.

Step 5: Initialize a variable to check if the current number is prime.

Step 6: Check if the current number is divisible by any number between 2 and the square root of the number.

Step 7: If the current number is prime, add it to the list of prime numbers, and increment the count.

Step 8: Print the list of prime numbers.

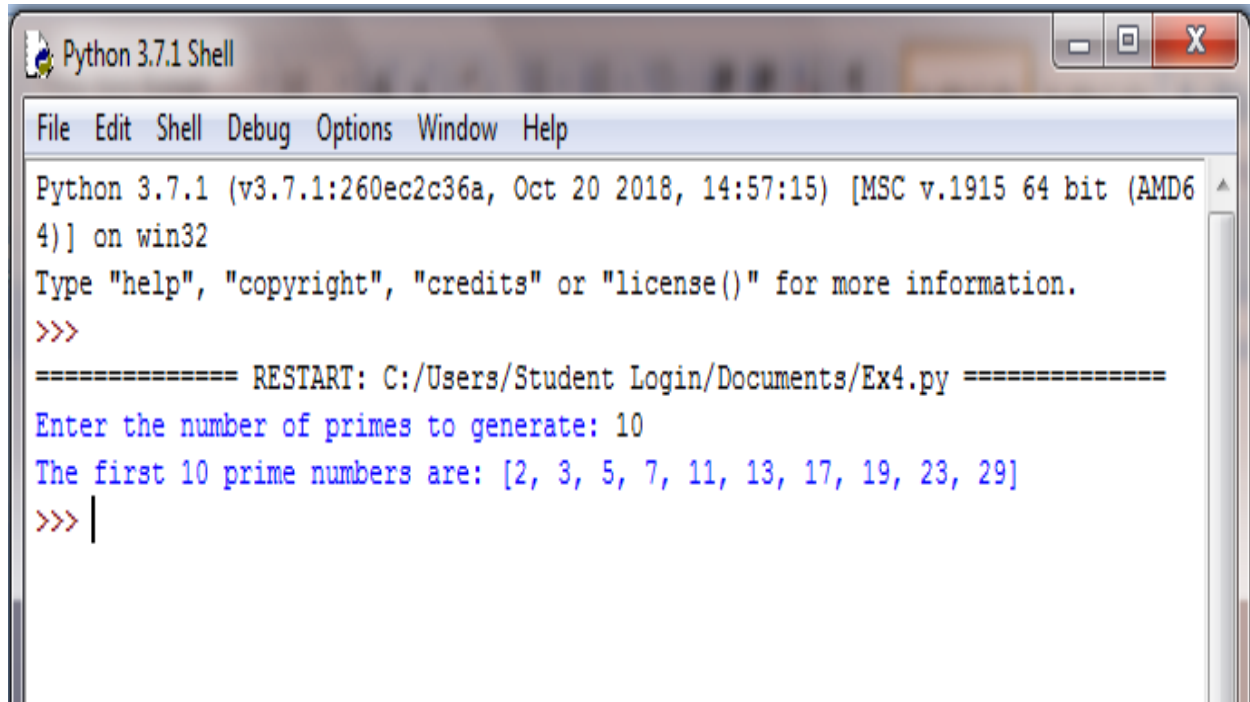


PROGRAM CODE :

```
def generate_primes(n):  
    primes = []  
    num = 2  
    while len(primes) < n:  
        is_prime = True  
        for i in range(2, int(num ** 0.5) + 1):  
            if num % i == 0:  
                # if it is divisible, it's not prime  
                is_prime = False  
                break  
        if is_prime:  
            primes.append(num)  
        num += 1  
    return primes  
  
n = int(input("Enter the number of primes to generate: "))  
primes = generate_primes(n)  
print(f"The first {n} prime numbers are: {primes}")
```



OUTPUT:



```
Python 3.7.1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.1 (v3.7.1:260ec2c36a, Oct 20 2018, 14:57:15) [MSC v.1915 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Student Login/Documents/Ex4.py =====
Enter the number of primes to generate: 10
The first 10 prime numbers are: [2, 3, 5, 7, 11, 13, 17, 19, 23, 29]
>>> |
```

RESULT : Thus the python program to generate First n Prime Numbers has been implemented and executed successfully.



Ex NO :

DATE :

SUM OF SQUARES OF N NATURAL NUMBERS

AIM : The aim of the python program is to find the sum of squares of N natural numbers .

PROCEDURE :

Step 1: Get the value of n as input from the user.

Step 2: Initialize a variable to store the sum of squares of the first n natural numbers.

Step 3: Loop through the range of numbers from 1 to n.

Step 4: In each iteration of the loop, square the current number, and add it to the sum of squares.

Step 5: Print the sum of squares of the first n natural numbers.



PROGRAM CODE :

```
def sum_of_squares(n):  
    sum = 0  
    for i in range(1, n + 1):  
        sum += i**2  
    return sum  
  
n = int(input("Enter the number of natural numbers to use: "))  
result = sum_of_squares(n)  
print(f"The sum of squares of the first {n} natural numbers is {result}")
```



OUTPUT :

```
Python 3.7.1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.1 (v3.7.1:260ec2c36a, Oct 20 2018, 14:57:15) [MSC v.1915 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Student Login/Documents/Ex5.py =====
Enter the number of natural numbers to use: 10
The sum of squares of the first 10 natural numbers is 385
>>> |
```

RESULT : Thus the python program to find the sum of squares of n natural numbers has been implemented and executed successfully.



Ex NO:

DATE :

SUM OF ELEMENTS IN AN ARRAY

AIM : The aim of the python program is to find the sum of elements in an array

PROCEDURE :

Step 1: Get the array as input from the user.

Step 2: Convert the input elements from string to integer, and store them in the array.

Step 3: Initialize a variable to store the sum of elements in the array.

Step 4: Loop through the array, and add each element to the sum of elements.

Step 5: Print the sum of elements in the array.



PROGRAM CODE :

```
def sum_array(arr):  
    sum = 0  
    for i in arr:  
        sum += i  
    return sum  
  
arr = input("Enter the array of numbers, separated by commas: ")  
arr = [int(x) for x in arr.split(",")]  
result = sum_array(arr)  
print(f"The sum of the array {arr} is {result}")
```



OUTPUT :

```
Python 3.7.1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.1 (v3.7.1:260ec2c36a, Oct 20 2018, 14:57:15) [MSC v.1915 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Student Login/Documents/Ex6.py =====
Enter the array of numbers, separated by commas: 5,6,8,9,10
The sum of the array [5, 6, 8, 9, 10] is 38
>>> |
```

RESULT : Thus the python program to find the sum of elements in an array has been implemented and executed successfully.



Ex NO :

DATE :

LARGEST ELEMENT IN THE ARRAY

AIM : The aim of the python program is to find the largest element in the array

PROCEDURE :

Step 1: Get the array as input from the user.

Step 2: Convert the input elements from string to integer, and store them in the array.

Step 3: Initialize a variable to store the largest element in the array.

Step 4: Loop through the array, and compare each element with the current largest element.

Step 5: Print the largest element in the array.



PROGRAM CODE :

```
arr = []  
  
n = int(input("Enter the number of elements in the array: "))  
  
for i in range(n):  
    element = int(input("Enter element " + str(i) + ": "))  
    arr.append(element)  
  
largest = arr[0]  
  
for i in range(1, len(arr)):  
    if arr[i] > largest:  
        largest = arr[i]  
  
print("Largest Element in the array is :", largest)
```



OUTPUT :

```
Python 3.7.0a1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0a1 (v3.7.0a1:8f51bb4, Sep 19 2017, 19:32:44) [MSC v.1900 64 bit (AMD 64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Susmitha/Documents/Python Programs/Ex7.py =====
Enter the number of elements in the array: 5
Enter element 0: 2
Enter element 1: 5
Enter element 2: 6
Enter element 3: 8
Enter element 4: 1
Largest Element in the array is : 8
>>>
```

RESULT : Thus the python program to find the largest element in the array has been implemented and executed successfully.



Ex NO :

DATE :

GIVEN STRING IS A PALINDROME OR NOT

AIM : The aim of the python program is to check given string is a palindrome

PROCEDURE :

Step 1: Get the string as input from the user.

Step 2: Remove any spaces from the string.

Step 3: Reverse the string.

Step 4: Compare the original string with the reversed string.

Step 5: Print the result of given string

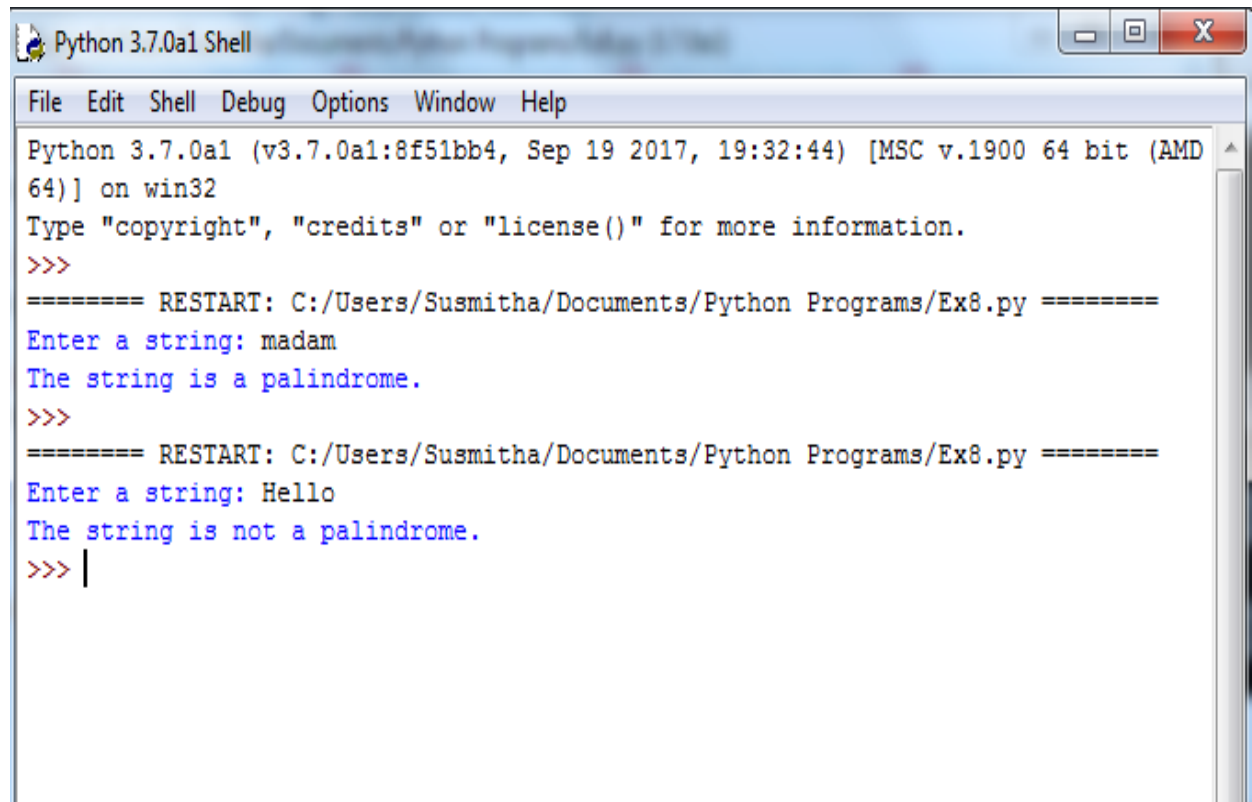


PROGRAM CODE:

```
string = input("Enter a string: ")
string = string.lower().replace(" ", "")
reverse_string = string[::-1]
if string == reverse_string:
    print("The string is a palindrome.")
else:
    print("The string is not a palindrome.")
```



OUTPUT :



```
Python 3.7.0a1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0a1 (v3.7.0a1:8f51bb4, Sep 19 2017, 19:32:44) [MSC v.1900 64 bit (AMD 64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Susmitha/Documents/Python Programs/Ex8.py =====
Enter a string: madam
The string is a palindrome.
>>>
===== RESTART: C:/Users/Susmitha/Documents/Python Programs/Ex8.py =====
Enter a string: Hello
The string is not a palindrome.
>>> |
```

RESULT : Thus the python program to check the given string is palindrome or not is implemented and executed successfully



Ex No :
DATE:

STORE STRINGS IN A LIST AND PRINT THEM

AIM : The aim of the python program is to store strings in a list and print them.

PROCEDURE :

Step 1: Initialize an empty list to store the strings.

Step 2: Get the number of strings as input from the user.

Step 3: Loop n times to get each string from the user and append it to the list.

Step 4: Print the strings in the list.



PROGRAM CODE :

```
string_list = []  
  
n = int(input("Enter the number of strings: "))  
  
for i in range(n):  
    string = input("Enter string " + str(i+1) + ": ")  
    string_list.append(string)  
  
print("The strings are:")  
  
for string in string_list:  
    print(string)
```



OUTPUT :

RESULT : Thus the python program to store strings in a list and to print them has been implemented and executed successfully.



Ex NO :

DATE :

LENGTH, REVERSE ,COPY AND CLEAR A LIST

AIM : The aim of the python program is to find the length of list , reverse it, copy it and then clear a list.

PROCEDURE :

Step 1: Create a list of integers

Step 2: Find the length of the list using len () function and print them

Step 3: Reverse the list using reverse () function and print them

Step 4: Copy the list using copy () function and print them

Step 5: Clear the list using clear() function



PROGRAM CODE :

```
my_list = [1, 2, 3, 4, 5]
list_length = len(my_list)
print("Length of the list:", list_length)
my_list.reverse()
print("Reversed list:", my_list)
my_list_copy = my_list.copy()
print("Copied list:", my_list_copy)
my_list.clear()
print("Cleared list:", my_list)
```



OUTPUT :

RESULT : Thus the python program to find the length of the list, reverse it, copy it, and clear the original list has been implemented and executed successfully.