Python program to check whether the string is Symmetrical or Palindrome

Given a string. the task is to check if the string is symmetrical and palindrome or not. A string is said to be symmetrical if both the halves of the string are the same and a string is said to be a palindrome string if one half of the string is the reverse of the other half or if a string appears same when read forward or backward.

Example:
Input: khokho
Output:
The entered string is symmetrical
The entered string is not palindrome

Input:amaama
Output:
The entered string is symmetrical
The entered string is palindrome

```
str1=input("Enter Any String ")
rev_str=str1[::-1]
if str1==rev_str:
    print("The entered string is palindrome")
else:
    print("The entered string is not palindrome")


if len(str1)%2==0:
    i=len(str1)//2
    h1=str1[:i]
    h2=str1[i:]
    if h1==h2:
        print("The entered string is symmetrical")
    else:
        print("The entered string is not symmetrical")
else:
    print("The entered string is not symmetrical")
```

Reverse Words in a Given String in Python

We are given a string and we need to reverse words of a given string

Examples:
Input : str =" geeks quiz practice code"
Output : str = code practice quiz geeks
Input : str = "my name is laxmi"
output : str= laxmi is name my

```
str1=input("Enter Any String") # python is language
list1=str1.split()#["python","is","language"]
str2=' '.join(list1[::-1])
print(str1)
print(str2)
```

How to Remove Letters From a String in Python

Strings are data types used to represent text/characters. In this example, we present different methods for the problem of removing the ith character from a string.

Input: 'Geeks123For123Geeks'
Output: GeeksForGeeks
Explanation: In This, we have removed the '123' character from a string.

```
str1='Geeks123For123Geeks'
str2=str1.replace("123",'')
print(str1)
print(str2)
```

String methods
String data type or class provides the following methods to perform operations.

String conversion methods

1. Capitalize()
2. Lower()
3. Swapcase()

4. Title()
5. Upper()
6. Casefold()

Capitalize() method returns a new string with first letter capitalize and remaining in lowercase.

```
>>> str1="python"
>>> str2=str1.capitalize()
>>> print(str1)
python
>>> print(str2)
Python
>>> str3="PYTHON PROGRAMMING"
>>> str4=str3.capitalize()
>>> print(str3)
PYTHON PROGRAMMING
>>> print(str4)
Python programming
```

Lower() method returns a new string by converting all the characters into lowercase.

```
>>> str1="PYTHON"
>>> str2=str1.lower()
>>> print(str1)
PYTHON
>>> print(str2)
python
```

swapcase() return new string by converting uppercase characters into lowercase and lowercase characters into uppercase

```
>>> s1="PytHoN"
>>> s2=s1.swapcase()
>>> print(s1)
PytHoN
>>> print(s2)
pYThOn
```

title() method return a new string with every word first letter is uppercase and remaining in lowercase.

```
>>> s1="python programming langauge"
>>> s2=s1.title()
>>> print(s1)
python programming langauge
>>> print(s2)
Python Programming Langauge
>>> s3="PYTHON PROGRAMMING LANGUAGE"
>>> s4=s3.title()
>>> print(s3)
PYTHON PROGRAMMING LANGUAGE
>>> print(s4)
Python Programming Language
```

Upper() method returns string in upper case.

Example:

```
studList=[[1,"naresh"],
          [2,"suresh"],
          [3,"kishore"],
          [4,"ramesh"]]

for stud in studList:
    print(f'{stud[0]}\t{stud[1].upper()}')
```

Output:

```
1       NARESH
2       SURESH
3       KISHORE
4       RAMESH
```

casefold() method return string converting all the characters into lowercase.

```
>>> s1="NIT"
>>> s2=s1.casefold()
>>> print(s1)
```

```
NIT
>>> print(s2)
nit
```

Python – Convert Snake case to Pascal case

Sometimes, while working with Python Strings, we have problem in which we need to perform a case conversion of String. This a very common problem. This can have application in many domains such as web development.

Input : geeks_for_geeks
Output : GeeksforGeeks

Input : left_index
Output : leftIndex

```
str1="geeks_for_geeks"
str2=str1.replace("_"," ")
print(str1)
print(str2)
str3=str2.title()
print(str3)
str4=str3.replace(" ","")
print(str4)
```

String examine methods
These methods return boolean value (True/False).

1. Isupper()
2. Islower()
3. Isalpha()
4. Isdigit()
5. Isalnum()
6. Istitle()

Example:

```
>>> str1="PYTHON"
>>> str1.isupper()
True
```

```
>>> str1.islower()
False
>>> str2="python"
>>> str2.islower()
True
>>> str2.isupper()
False
```

Example:

```
# Write a program to count uppercase and lowercase
# letters within string

str1=input("Enter any string") # pyTHon
lc=0
uc=0
for ch in str1:
    if ch.islower(): # if ch>='a' and ch<='z':
        lc+=1
    elif ch.isupper(): # if ch>='A' and ch<='Z':
        uc+=1
print(f'Lowercase Count {lc}')
print(f'Uppercase Count {uc}')
```

Output:

```
Enter any stringPython
Lowercase Count 5
Uppercase Count 1
```

Example:

```
# name validation
# name should contain only alphabets

name=input("Enter Name ")
if name.isalpha():
    print("Valid")
else:
    print("Invalid")
```

Output:

```
Enter Name naresh
```

Valid

Enter Name nit123
Invalid

Enter Name naresh$
Invalid