Predefined methods or functions of str class or data type

The methods of str data type are immutable. These methods are does not do any changes within string, it returns changes in new string.

Case Conversion Methods
1. upper()
2. lower()
3. title()
4. capitalize()
5. swapcase()

upper() : This method return string by converting into uppercase

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

Example:
```
# Write a program to convert input string into uppercase
# without using upper()

str1=input("Enter any String ")
str2=''
for ch in str1:
    if ch>='a' and ch<='z':
        str2=str2+chr(ord(ch)-32)
    else:
        str2=str2+ch

print(str1)
print(str2)
```

Output
```
Enter any String PyThON1.13
PyThON1.13
PYTHON1.13
```

2. **lower()** : This method return string into lowercase (OR) it converts string into lowercase

Variable-name=string_name.lower()

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

Example:
```
# Login Application


user=input("UserName :")
pwd=input("Password :")
if user.lower()=="nit" and pwd=="nit123":
    print(f'{user} Hello')
else:
    print("invalid username or password")
```

Output
UserName :NIT
Password :nit123
NIT Hello

UserName :abc
Password :nit123
invalid username or password

Example:
```
# Write a program to convert input string into lowercase
# without using lower method

str1=input("Enter any string ")
str2="
```

```
for ch in str1:
    if ch>='A' and ch<='Z':
        str2=str2+chr(ord(ch)+32)
    else:
        str2=str2+ch

print(str1)
print(str2)
```

Output
Enter any string AbCDef123
AbCDef123
abcdef123

3. **capitalize()** : This method returns first letter of string in capital or in uppercase and remaining all in lowercase

```
>>> str3="PYTHON"
>>> str4=str3.capitalize()
>>> print(str3)
PYTHON
>>> print(str4)
Python
>>> str5="PYTHOn PROGRAMMING"
>>> str6=str5.capitalize()
>>> print(str5)
PYTHOn PROGRAMMING
>>> print(str6)
Python programming
```

Example:
```
names=["naresh","suresh","SURESH","ramesh","KISHORE"]
for name in names:
    print(name.capitalize())
```

Output
Naresh
Suresh
Suresh
Ramesh

Kishore

Example:
```
# write a program to capitalize input string without
# using capitalize method

str1=input("Enter any string ")
str2=''

for ch in str1:
    if str2=='':
        if ch>='a' and ch<='z':
            str2=str2+chr(ord(ch)-32)
        else:
            str2=str2+ch
    elif ch>='A' and ch<='Z':
        str2=str2+chr(ord(ch)+32)
    else:
        str2=str2+ch

print(str1)
print(str2)
```

Output
```
Enter any string PYTHON
PYTHON
Python
```

```
Enter any string python
python
Python
```

Example:
```
# write a program to capitalize input string without
# using capitalize method

str1=input("Enter any string ")
str2=''
for i in range(len(str1)):
```

```
    if i==0:
        if str1[i]>='a' and str1[i]<='z':
            str2=str2+chr(ord(str1[i])-32)
        else:
            str2=str2+str1[i]
    elif str1[i]>='A' and str1[i]<='Z':
        str2=str2+chr(ord(str1[i])+32)
    else:
        str2=str2+str1[i]

print(str1)
print(str2)
```

Output
Enter any string PYTHON
PYTHON
Python

Enter any string python
python
Python

title() : return string by converting every word first letter in uppercase and remaining all letters in lowercase

Example
```
>>> str1="python high level language"
>>> str2=str1.title()
>>> print(str1)
python high level language
>>> print(str2)
Python High Level Language
>>> str3="PYTHON PROGRAMMING LANGUAGE"
>>> str4=str3.title()
>>> print(str3)
PYTHON PROGRAMMING LANGUAGE
>>> print(str4)
Python Programming Language
```

Example:
Write a program to convert input string into title case
without using title() method

```python
str1=input("Enter any String ")
str2=''

i=0
while i<len(str1):
    if i==0:
        if str1[i]>='a' and str1[i]<='z':
            str2=str2+chr(ord(str1[i])-32)
        else:
            str2=str2+str1[i]
    elif str1[i]==' ':
        str2=str2+str1[i]
        i=i+1
        if str1[i]>='a' and str1[i]<='z':
            str2=str2+chr(ord(str1[i])-32)
        else:
            str2=str2+str1[i]
    elif str1[i]>='A' and str1[i]<='Z':
        str2=str2+chr(ord(str1[i])+32)
    else:
        str2=str2+str1[i]
    i=i+1

print(str1)
print(str2)
```

Output
Enter any String python programming
python programming
Python Programming

Enter any String PYTHON PROGRAMMING LANGUAGE
PYTHON PROGRAMMING LANGUAGE
Python Programming Language

swapcase(): This method returns string by converting uppercase letters to lowercase and lowercase to uppercase

```
>>> str1="PyTHon"
>>> str2=str1.swapcase()
>>> print(str1)
PyTHon
>>> print(str2)
pYthON
```

Example:
Write a progam to swapcase the input string

```
str1=input("Enter any string ")
str2=''
for ch in str1:
    if ch>='a' and ch<='z':
        str2=str2+chr(ord(ch)-32)
    elif ch>='A' and ch<='Z':
        str2=str2+chr(ord(ch)+32)
    else:
        str2=str2+ch

print(str1)
print(str2)
```

Output
```
Enter any string ABcd
ABcd
abCD
```

String examine methods
1. isupper()
2. islower()
3. istitle()
4. isalpha()
5. isalnum()
6. isdigit()
7. isspace()

All these methods returns boolean value (True/False)