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)

Isupper(): This method returns True, if characters within string are in upper case else return False.

Example:

```
>>> str1="PYTHON"
>>> str1.isupper()
True
>>> str2="Python"
>>> str2.isupper()
False
>>> str3="PYTHON123"
>>> str3.isupper()
True
```

Example:

```
# name validation

name=input("Enter Name is Capital letters :")
if name.isupper():
   print("Valid")
else:
   print("Invalid input name in capital letters")
```

Output

```
Enter Name is Capital letters :NARESH
Valid

Enter Name is Capital letters :naresh
```

Invalid input name in capital letters

Example:

```
# Write a program to find input string is in capital or uppercase
# without using isupper method

str1=input("Enter any string ")
c=0
for ch in str1:
    if ch>='A' and ch<='Z' or ch>='0' and ch<='9':
        c=c+1

if c==len(str1):
    print("Uppercase")
else:
    print("Not in Uppercase")
```

Output

```
Enter any string JAVA12
Uppercase

Enter any string java
Not in Uppercase

Enter any string PYthon
Not in Uppercase
```

islower() : This method returns True, if all letters inside string are in lowercase else returns False.

```
>>> str1="python"
>>> str1.lower()
'python'
>>> str1.islower()
True
>>> str2="PYthon"
>>> str2.islower()
False
```

istitle(): This method returns True, if every word first letter is in uppercase else return False.

```
>>> str1="Python Programming"
>>> str1.istitle()
True
>>> str2="Python programming"
>>> str2.istitle()
False
```

Example:

```
# Write a program to find input string is titlecased
# without using istitle method

str1=input("Enter any string ")

answer=True
i=0
while i<len(str1):
    if i==0:
        if str1[i]>='a' and str1[i]<='z':
            answer=False
            break
    elif str1[i]==' ':
        i=i+1
        if str1[i]>='a' and str1[i]<='z':
            answer=False
            break
    elif str1[i]>='A' and str1[i]<='Z':
        answer=False
        break
    i=i+1

print(answer)
```

Output

```
Enter any string Python Programming
True

Enter any string PROGRAMMING
```

False

Enter any string Python ProgRamming
False

isalpha(): This method returns True if string contains only alphabets else return False

```
>>> name="naresh"
>>> name.isalpha()
True
>>> name="python13"
>>> name.isalpha()
False
>>> name="python$"
>>> name.isalpha()
False
```

Example:

```
# write a program to verify input string is alphabetic string
# or not without using isalpha method

str1=input("Enter any string ")
c=0

for ch in str1:
    if ch>='A' and ch<='Z' or ch>='a' and ch<='z':
        c=c+1


if c==len(str1):
    print("alphabetic string")
else:
    print("not alphabetic string")
```

Output

Enter any string abc
alphabetic string

Enter any string abcDEF

alphabetic string

Enter any string abc12
not alphabetic string

Enter any string abc$
not alphabetic string

isalnum(): This method returns True if string is alpha numeric string else return False

What is alphanumeric string?

1. If it contains only alphabets
2. If it contains only digits
3. If it contains alphabets and digits

Alphanumeric string does not contains special character

```
>>> str1="abc"
>>> str1.isalnum()
True
>>> str2="123"
>>> str2.isalnum()
True
>>> str3="abc123"
>>> str3.isalnum()
True
>>> str4="abc$"
>>> str4.isalnum()
False
```

Example:

```
# Write a program to find input string alnumeric string or not
# without using isalnum method

str1=input("Enter any string ")
answer=True
for ch in str1:
    if ch>='A' and ch<='Z' or ch>='a' and ch<='z' or ch>='0' and ch<='9':
        pass
    else:
```

```
        answer=False
        break

print(answer)
```

Output

```
Enter any string 123
True

Enter any string abc
True

Enter any string abc123
True

Enter any string abc123$%
False
```

isdigit (): This method returns True, if string contains only digits else False

```
>>> str1="123"
>>> str1.isdigit()
True
>>> str2="A123"
>>> str2.isdigit()
False
>>> str3="123$"
>>> str3.isdigit()
False
```

Example:

```
# Write a program to find input string contains only digits
# without using isdigit method

str1=input("Enter any string ")
ans=True
for ch in str1:
    if ch>='0' and ch<='9':
        pass
    else:
```

```
        ans=False
        break

print(ans)
```

Output

```
Enter any string 123
True

Enter any string a123
False

Enter any string $123
False
```

isspace(): This method returns True, if string contains only space characters else False

```
>>> str1="       "
>>> str1.isspace()
True
>>> str2="ab cd ef"
>>> str2.isspace()
False
>>> str3=""
>>> str3.isspace()
False
```

Example:

```
# Write a program to find input password is valid or not

password=input("Password :")
ac=0
dc=0
sc=0
sp=0
for ch in password:
    if ch.isalpha():
        ac+=1
    elif ch.isdigit():
```

```
        dc+=1
    elif ch.isspace():
        sp+=1
    else:
        sc+=1

if ac>=4 and dc>=2 and sc>=2 and sp==0:
    print("Valid Password")
else:
    print('''Invalid Password,
Password must contains 4alphabets,2digits and 2special character''')
```

Output

```
Password :abcd123$%
Valid Password

Password :ab12$%
Invalid Password,
Password must contains 4alphabets,2digits and 2special character

Password :12$%
Invalid Password,
Password must contains 4alphabets,2digits and 2special character
```

String split methods

String split method allows splitting or dividing string into number of sub strings using separator or delimiter.

1. split()
2. rsplit()

split() : This method split string into sub strings using separator. The default separator used by split method is space. It search separator from left to right. This method returns list contains all the strings.

Syntax: string-name.split(sep=' ',maxsplit=-1)

```
>>> str1="a b c d e"
>>> list1=str1.split()
>>> print(list1)
```

```
['a', 'b', 'c', 'd', 'e']
>>> str2="a,b,c,d,e"
>>> list2=str2.split(sep=",")
>>> print(list2)
['a', 'b', 'c', 'd', 'e']
>>> list3=str2.split(sep=",",maxsplit=2)
>>> print(list3)
['a', 'b', 'c,d,e']
```

Example:

```
str1="a,b,c,d,e"
list1=str1.split(sep=",")
print(list1)
['a', 'b', 'c', 'd', 'e']
>>> list2=str1.rsplit(sep=",")
>>> print(list2)
['a', 'b', 'c', 'd', 'e']
>>> list3=str1.split(sep=',',maxsplit=2)
>>> list3
['a', 'b', 'c,d,e']
>>> list4=str1.rsplit(sep=',',maxsplit=2)
>>> print(list4)
['a,b,c', 'd', 'e']
>>> s1="10 20 30 40 50"
>>> list1=s1.split()
>>> print(list1)
['10', '20', '30', '40', '50']
>>> s2=input()
10 20 30 40 50
>>> print(s2)
10 20 30 40 50
>>> list2=s2.split()
>>> print(list2)
['10', '20', '30', '40', '50']
```