

Python fundamentals

day 19

Today's Agenda

- Strings built-in functions (contd)
- Programs on strings
- String translation



Strings built-in functions (contd)

To continue with the built-in functions, let us see the below example where we shall be checking if the string starts with **https**, if yes then print the string

```
url = ["https://www.google.com/", "https://www.youtube.com/"
      , "http://www.xyz.com", "http://www.abc.com"]

for i in url:
    if i[0:5:] == "https":
        print(i)
```

Output:

```
In [35]: runfile('C:/Users/rooman/OneDrive/
Desktop/python/test.py', wdir='C:/Users/rooman/
OneDrive/Desktop/python')
https://www.google.com/
https://www.youtube.com/
```

In the above example we are using string slicing method, now let us see can we do the same using built-in functions

```
url = ["https://www.google.com/", "https://www.youtube.com/"
      , "http://www.xyz.com", "http://www.abc.com"]

for i in url:
    if i.startswith("https"):
        print(i)
```

Output:

```
In [36]: runfile('C:/Users/rooman/OneDrive/
Desktop/python/test.py', wdir='C:/Users/rooman/
OneDrive/Desktop/python')
https://www.google.com/
https://www.youtube.com/
```



Now let us see a similar example but now we shall check how many amongst the **url** list ends with **com**

```
url = ["https://www.google.com/", "https://www.youtube.com/"
      , "http://www.xyz.com", "http://www.abc.org"]

for i in url:
    if i[len(i)-3::]=="com" or i[len(i)-4::]=="com/":
        print(i)
```

Output:

```
In [39]: runfile('C:/Users/rooman/OneDrive/
Desktop/python/test.py', wdir='C:/Users/rooman/
OneDrive/Desktop/python')
https://www.google.com/
https://www.youtube.com/
http://www.xyz.com
```



Let us see is there any built-in function which can do the same function with reduction of code complexity

```
url = ["https://www.google.com/", "https://www.youtube.com/"
      , "http://www.xyz.com", "http://www.abc.org"]

for i in url:
    if i.endswith("com") or i.endswith("com/"):
        print(i)
```

Output:

```
In [40]: runfile('C:/Users/rooman/OneDrive/
Desktop/python/test.py', wdir='C:/Users/rooman/
OneDrive/Desktop/python')
https://www.google.com/
https://www.youtube.com/
http://www.xyz.com
```

We can simplify the above example like below

```
url = ["https://www.google.com/", "https://www.youtube.com/"
      , "http://www.xyz.com", "http://www.abc.org"]

for i in url:
    if i.endswith(("com", "com/")): #by giving two conditions as a tuple format
        print(i)
```

Note: If we are passing multiple inputs to `endswith()` then it should be passed as tuple.

Output:

```
In [41]: runfile('C:/Users/rooman/OneDrive/
Desktop/python/test.py', wdir='C:/Users/rooman/
OneDrive/Desktop/python')
https://www.google.com/
https://www.youtube.com/
http://www.xyz.com
```

Programs on strings

1. Program to count number of lower case, upper case, numbers and special characters present in a string.

```
s=input("Enter the string:")
low_count, up_count, sp_count, num_count=0,0,0

for i in s:
    if i.islower():
        low_count += 1
    elif i.isupper():
        up_count += 1
    elif i.isnumeric():
        num_count += 1
    else:
        sp_count += 1

print("Lower case=", low_count)
print("Upper case=", up_count)
print("Numeric=", num_count)
print("Special character=", sp_count)
```



Output:

```
In [42]: runfile('C:/Users/rooman/OneDrive/
Desktop/python/test.py', wdir='C:/Users/rooman/
OneDrive/Desktop/python')
```

```
Enter the string:PyThOn@123
Lower case= 3
Upper case= 3
Numeric= 3
Special character= 1
```

UPPER	lower
1234567	@_#\$^&

Now why don't you try the same example without using any built-in method.

2. Program to swap the case. That is, change upper case to lower and vice versa using `swapcase()`.

```
s="STAY HOME stay safe"
s1=s.swapcase()
print(s)
print(s1)
```

Output:

```
In [43]: runfile('C:/Users/rooman/OneDrive/
Desktop/python/test.py', wdir='C:/Users/rooman/
OneDrive/Desktop/python')
STAY HOME stay safe
stay home STAY SAFE
```



3. Using the same above example let's see what `title()` and `capitalize()` do

```
s="STAY HOME stay safe"
s1=s.swapcase()
print(s)
print(s1)
s2=s.title() # makes the first letter of each word capital
print(s2)
s3=s.capitalize() # makes only the first letter capital
print(s3)
print("python".capitalize())
```

Output:

```
In [45]: runfile('C:/Users/rooman/OneDrive/
Desktop/python/test.py', wdir='C:/Users/rooman/
OneDrive/Desktop/python')
STAY HOME stay safe
stay home STAY SAFE
Stay Home Stay Safe
Stay home stay safe
Python
```



String translation

Python string method **translate()** returns a copy of the string in which all characters have been translated using table (constructed with the **maketrans()** function in the **string** module)

```
s="Error 404 not found"
table=s.maketrans("aeiou","AEIOU","0123456789")
s_table=s.translate(table)
print(s)
print(s_table)
```

Logic:



Output:

```
In [46]: runfile('C:/Users/rooman/OneDrive/
Desktop/python/test.py', wdir='C:/Users/rooman/
OneDrive/Desktop/python')
Error 404 not found
ErrOr  nOt fOUnd
```