Training On Python

Lecture – 8
String Manipulation In Python

Introduction To String

String is a sequence of characters. This is a widely used data type in projects. Python has several built-in functions associated with the string data type. These functions let us easily modify and manipulate strings. We can think of functions as being actions that we perform on elements of our code. Built-in functions are those that are defined in the Python programming language and are readily available for us to use.

Making String Upper And Lower Case

The functions str.upper() and str.lower() will return a string with all the letters of an original string converted to upper- or lower-case letters. Because strings are immutable data types, the returned string will be a new string. Any characters in the string that are not letters will not be changed.

For Example:-

ss="Softpro India"

print(ss.upper())

O/P:-

SOFTPRO INDIA

Example Application - 1

```
"""

Develop a program in python to take a string as input now display string in upper case and lowercase also

find the length of string.

"""

st=input("Enter a string : ")

print("String in upper case : ",st.upper())

print("String in lower case : ",st.lower())

print("The length of string : ",len(st)) # The len() method find the length of string
```

Boolean Methods

Python has some string methods that will evaluate to a Boolean value. These methods are useful when we are creating forms for users to fill in, for example. If we are asking for a post code we will only want to accept a numeric string, but when we are asking for a name, we will only want to accept an alphabetic string.

Method	**True if**
str.isalnum()	String consists of only alphanumeric characters (no symbols)
str.isalpha()	String consists of only alphabetic characters (no symbols)
str.islower()	String's alphabetic characters are all lower case
str.isnumeric()	String consists of only numeric characters
str.isspace()	String consists of only whitespace characters
str.istitle()	String is in title case
str.isupper()	String's alphabetic characters are all upper case

Some Example Applications Of Boolean Methods

Example 1

```
number = "5"
letters = "abcdef”
print(number.isnumeric())
print(letters.isnumeric())
```

Output:-

True

False

Example 2

```
movie = "2001: A SAMMY ODYSSEY"
book = "A Thousand Splendid Sharks"
poem = "sammy lived in a pretty how town“
print(movie.islower()) #False
print(movie.isupper()) #True
print(book.istitle()) #True
print(book.isupper()) #False
print(poem.istitle()) #False
print(poem.islower()) #True
```

join(), split(), and replace() Methods

The str.join(), str.split(), and str.replace() methods are a few additional ways to manipulate strings in Python.

- The str.join() method will concatenate two strings, but in a way that passes one string through another.
- The str.split() method returns a list of strings that are separated by whitespace if no other parameter is given.
- The str.replace() method can take an original string and return an updated string with some replacement.

Example Application - 2

```
#Develop a program in python to check given string is palindrome or not

string=input("Enter a string : ")

reverse_string="".join(reversed(string))

print(reverse_string)

if string==reverse_string:

    print("String is palindrome")

else:

    print("String is non-palindrome").
```

Example Application - 3

```
"""
Develop a program in python to take user full name as input and display short name
E.g.
Input: Ajay Kumar Singh
Output: A.K.Singh
"""
name=input("Enter your full name : ")
shortname=name.split(" ")
print("Your short name :",end="")
for n in range(len(shortname)-1):
    print(shortname[n][0]+".",end="")
print(shortname[len(shortname)-1])
```

Example Application - 4

"""

Develop a program in python to take a sentence now search a word in sentence and replace that word with another word.

"""

```
sentence=input("Enter a sentence : ")
fw=input("Find what? ")
rw=input("Replace with : ")
print("Modified sentence : "+sentence.replace(fw,rw))
```

O/P:-

```
Enter a sentence : India is a great country.
Find what? great
Replace with : best
Modified sentence : India is a best country.
```

Example Application - 5

"""

Develop a program in python to take a decimal no. as input and display its binary, octal and hexa-decimal equivalent.

"""

```
n=int(input("Enter a number : "))
print("Binary format : "+bin(n).replace("0b",""))
print("Octal format : "+oct(n).replace("0o",""))
print("Hexa-decimal format : "+hex(n).replace("0x",""))
```

Output:-

```
Enter a number : 10
Binary format : 1010
Octal format : 12
Hexa-decimal format : a
```