Built-in Methods

1. **String Length:**
   Write a program to find the length of the string:
   sentence = "Data Analytics using Python"

```
len(sentence)
27
```

2. **Changing Case:**

   - **Convert the string "hello world" to uppercase.**
   - **Convert "PYTHON IS FUN" to lowercase.**
   - **Capitalize the first letter of "machine learning".**

```
a= "hello world"
a.upper()
'HELLO WORLD'
b= "PYTHON IS FUN"
b.lower()
'python is fun'
c= "machine learning"
c.capitalize()
'Machine learning'
'
```

3. **Finding and Replacing:**

Given the string: quote = "The quick brown fox jumps over the lazy dog"

- **Find the index of the substring "fox".**
- **Replace "lazy dog" with "active cat".**

```
quote.index("fox")
16
quote.replace("lazy dog", "active cat")
'The quick brown fox jumps over the active cat'
```

4. **String Splitting and Joining:**

Given the string: words = "apple,banana,cherry"

- **Split the string into a list of words.**

```
words.split(',')
['apple', 'banana', 'cherry']
```

- **Join the words back into a string separated by spaces.**

```
words = "apple,banana,cherry"
splited = words.split(",")
print(f'{splited} is the list of words')
print("Joining back the splited list")
joined = " ".join(splited)
print("Joined list: ", joined)
#or we can cancatenate
```

```
['apple', 'banana', 'cherry'] is the list of words
Joining back the splited list
Joined list:  apple banana cherry

=== Code Execution Successful ===
```

5. **Checking Membership:**

- **Check if the substring "Python" exists in the string "Learn Python Programming".**
- **Check if the string starts with "Learn" and ends with "Programming".**

```
e="Learn Python Programming"
e.startswith("Learn")
True
e.endswith("Programming")
True
"Python" in e
True
```

6. **Whitespace Removal:**
   Given the string: messy_text = " Clean this text "
- **Remove leading whitespace.**
- **Remove trailing whitespace.**
- **Remove both leading and trailing whitespace.**

```
messy_text = "   Clean this text    "
messy_text.lstrip()
'Clean this text    '
messy_text.rstrip()
'   Clean this text'
messy_text.strip()
'Clean this text'
```

7. **Counting Substrings:**

Given the string: paragraph = "Python is powerful. Python is versatile. Python is easy to learn."

- **Count the occurrences of the word "Python".**
- **Count the occurrences of the letter "i".**

```
paragraph = "Python is powerful. Python is versatile. Pyth
on is easy to learn."
paragraph.count("Python")
3
paragraph.count("i")
4
```

8. String Palindrome:

Write a program to check if the string "madam" is a palindrome.

```
string = "madam"
if(string == string[::-1]):
    print(f'{string} is a palindrome')
```

```
madam is a palindrome

=== Code Execution Succ
```

9. Anagram Checker:

Write a function to check if the strings "listen" and "silent" are anagrams.

```
string1 = "listen"
string2 = "silent"
if(sorted(string1) == sorted(string2)):
    print(f"Yes! '{string1}' and '{string2}' anagrams")
else:
    ("Not anagrams")
```

```
Yes! 'listen' and 'silent' anagrams

=== Code Execution Successful ===
```

10. Word Frequency:

Given a sentence: sentence = "the quick brown fox jumps over the lazy dog"

Count the number of times each word appears in the sentence.

```
sentence = "the quick brown fox jumps over the lazy dog"
sep_words = sentence.split()
print(sep_words)
print("")
word_list = []
for i in sep_words:
    count = sep_words.count(i)
    word_list.append([i,count])
print(word_list)
'''First we broke the sentence into separate words using the
    function split() then
    created a empty list named word_list[]
    To count used loop for
    counted the occurance of each word
    added the word, and its count in the form of list'''
```

```
['the', 'quick', 'brown', 'fox', 'jumps', 'over', 'the', 'lazy',
    'dog']

[['the', 2], ['quick', 1], ['brown', 1], ['fox', 1], ['jumps', 1],
    ['over', 1], ['the', 2], ['lazy', 1], ['dog', 1]]

=== Code Execution Successful ===
```

11. Extract Digits and Letters:

Given a string: mixed_string = "Python3.8 is awesome!"

- **Extract all the digits (3.8) from the string.**
- **Extract all the alphabetic characters.**
- **Remove Special Characters**

```python
mixed_string = "Python3.8 is awesome!"

#print(mixed_string[6:9])
print("Number Characters are: ")
num=[]
for n in mixed_string:
    if n.isnumeric():
        num.append(n)
print(num)

print()
print("Alphabat Characters are: ")
empty_lst = []
for i in mixed_string:
    if i.isalpha():
        empty_lst.append(i)
print(empty_lst)

print()
print("String after removing special Characters: ")
spe = []
for i in mixed_string:
    # Keep only letters, numbers, and spaces
    if i.isalpha() or i.isnumeric() or i.isspace():
        spe += i
print( ''.join(spe))
```

```
Number Characters are:
['3', '8']

Alphabat Characters are:
['P', 'y', 't', 'h', 'o', 'n', 'i', 's', 'a', 'w', 'e', 's', 'o', 'm', 'e']

String after removing special Characters:
Python38 is awesome

=== Code Execution Successful ===
```

15. Write a program to remove all special characters from the string:

special_text = "Hello@$%& World!!!"

```python
special_text = "Hello@$%& World!!!"
cleaned_str = []
# fro removing removing the special char
for sp in special_text:
    if sp.isalpha() or sp.isspace() or sp.isnumeric():
        cleaned_str += sp
print("String after removing special Characters: ", "".join
    (cleaned_str))
```

```
String after removing special Characters:  Hello World

=== Code Execution Successful ===
```