In [25]:
```
sample_str = "I am very keen in building up my career in Data Science, but not sure from where to start. If I search the web it throws me thousands of articles, few are relevant others make me confused, again I come around to the same page. Supervised has provided me a good platform to remove all such qualms which were wrangling in my mind"

#Consider the above text as a string, figure out the average length of the string.

num = len(sample_str)    #TOTAL LENGTH OF SAMPLE STRING
count = 0

for i in range(num):
    count = count + 1

print("Total Length of Sample_str = ", count)

print('-'*100)    #PRINTS '-' LINES

l1 = sample_str.split() #CREATES ITEMS IN THE LIST
print(l1)

print('-'*100)

average = sum(len(ch) for ch in l1)/len(l1)     #FIRST - FINDS SUM & SECOND - DIVIDES SUM BY TOTAL LENGTH OF LIST

print("Average Length of Sample_str = ", average)
```

```
Total Length of Sample_str =  327
----------------------------------------------------------------------------------------------------
['I', 'am', 'very', 'keen', 'in', 'building', 'up', 'my', 'career', 'in', 'Data', 'Science,', 'but', 'not', 'sure', 'from', 'where', 'to', 'start.', 'If', 'I', 'search', 'the', 'web', 'it', 'throws', 'me', 'thousands', 'of', 'articles,', 'few', 'are', 'relevant', 'others', 'make', 'me', 'confused,', 'again', 'I', 'come', 'around', 'to', 'the', 'same', 'page.', 'Supervised', 'has', 'provided', 'me', 'a', 'good', 'platform', 'to', 'remove', 'all', 'such', 'qualms', 'which', 'were', 'wrangling', 'in', 'my', 'mind']
----------------------------------------------------------------------------------------------------
Average Length of Sample_str =  4.2063492063492065
```

In [24]:
```
'''Lower the text in the string.'''


sample_str = "I am very keen in building up my career in Data Science, 
but not sure from where to start. If I search the web it throws me tho
usands of articles, few are relevant others make me confused, again I 
come around to the same page. Supervised has provided me a good platfo
rm to remove all such qualms which were wrangling in my mind"


print(sample_str.lower())    #JUST LOWERS EACH CHARACTER IN THE STRING
```

```
i am very keen in building up my career in data science, but not sur
e from where to start. if i search the web it throws me thousands of
articles, few are relevant others make me confused, again i come aro
und to the same page. supervised has provided me a good platform to
remove all such qualms which were wrangling in my mind
```

In [52]:
```
'''Try to get the clean text removing the punctuation from the string.
'''


sample_str = "I am very keen in building up my career in Data Science, 
but not sure from where to start. If I search the web it throws me tho
usands of articles, few are relevant others make me confused, again I 
come around to the same page. Supervised has provided me a good platfo
rm to remove all such qualms which were wrangling in my mind"

punc = '~!@#$%^&*()_`-":;<>?,./|\''

for ch in sample_str:
    if ch in punc:
        sample_str = sample_str.replace(ch,'')


print(sample_str)
```

```
I am very keen in building up my career in Data Science but not sure
from where to start If I search the web it throws me thousands of ar
ticles few are relevant others make me confused again I come around
to the same page Supervised has provided me a good platform to remov
e all such qualms which were wrangling in my mind
```

In [203]:
```
'''Extract word "Data Science" from the string.'''

sample_str = "I am very keen in building up my career in Data Science, but not sure from where to start. If I search the web it throws me thousands of articles, few are relevant others make me confused, again I come around to the same page. Supervised has provided me a good platform to remove all such qualms which were wrangling in my mind"

final_extract = ''
sample_list = sample_str.split()
item = 'Data Science'
ch = item.split()


print(sample_str)
print('_'*100)


for word in sample_list:

    if item in ch:

        if word == item:
            final_extract = final_extract + ' ' + word



print('_'*100)
print(final_extract)

item = sample_str.find('Data Science')
print(item)
```

```
I am very keen in building up my career in Data Science, but not sur
e from where to start. If I search the web it throws me thousands of
articles, few are relevant others make me confused, again I come aro
und to the same page. Supervised has provided me a good platform to
remove all such qualms which were wrangling in my mind
____________________________________________________________________
____________________________________
____________________________________________________________________
____________________________________

Data Science
43
```

In [ ]:

In [194]:
```
'''Find the frequency of words used in the string.'''


sample_str = "I am very keen in building up my career in Data Science, 
but not sure from where to start. If I search the web it throws me tho
usands of articles, few are relevant others make me confused, again I 
come around to the same page. Supervised has provided me a good platfo
rm to remove all such qualms which were wrangling in my mind"

sample_list = sample_str.split()
final_list = []

for item in sample_list:

    if item not in final_list:

        final_list.append(item)


for i in range(len(final_list)):
    print(final_list[i], ':', sample_list.count(final_list[i]))
```

```
I : 3
am : 1
very : 1
keen : 1
in : 3
building : 1
up : 1
my : 2
career : 1
Data : 1
Science, : 1
but : 1
not : 1
sure : 1
from : 1
where : 1
to : 3
start. : 1
If : 1
search : 1
the : 2
web : 1
it : 1
throws : 1
me : 3
thousands : 1
```

```
of : 1
articles, : 1
few : 1
are : 1
relevant : 1
others : 1
make : 1
confused, : 1
again : 1
come : 1
around : 1
same : 1
page. : 1
Supervised : 1
has : 1
provided : 1
a : 1
good : 1
platform : 1
remove : 1
all : 1
such : 1
qualms : 1
which : 1
were : 1
wrangling : 1
mind : 1
```

In [75]:
```
'''Fetch the duplicate pairs used in the string.'''



sample_str = "I am very keen in building up my career in Data Science, but not sure from where to start. If I search the web it throws me thousands of articles, few are relevant others make me confused, again I come around to the same page. Supervised has provided me a good platform to remove all such qualms which were wrangling in my mind"
```

In [115]:
```
'''Can you change the word "Supervised" to "Unsupervised" in the strin
g'''


sample_str = "I am very keen in building up my career in Data Science,
but not sure from where to start. If I search the web it throws me tho
usands of articles, few are relevant others make me confused, again I
come around to the same page. Supervised has provided me a good platfo
rm to remove all such qualms which were wrangling in my mind"

sample_list = sample_str.split()
count = 0
final_str = ''

for item in sample_list:

    if item == 'Supervised':
        item = 'Unsupervised'
        sample_list[count] = item


    final_str = final_str + ' ' + item
    count = count + 1


print('Original String: ', sample_str)
print('-'*100)
print('Converted String to List: ', sample_list)
print('-'*100)
print('Final String:', final_str)
```

```
Original String:  I am very keen in building up my career in Data Sc
ience, but not sure from where to start. If I search the web it thro
ws me thousands of articles, few are relevant others make me confuse
d, again I come around to the same page. Supervised has provided me
a good platform to remove all such qualms which were wrangling in my
mind
--------------------------------------------------------------------
---------------------------------
Converted String to List:  ['I', 'am', 'very', 'keen', 'in', 'buildi
ng', 'up', 'my', 'career', 'in', 'Data', 'Science,', 'but', 'not', '
sure', 'from', 'where', 'to', 'start.', 'If', 'I', 'search', 'the',
'web', 'it', 'throws', 'me', 'thousands', 'of', 'articles,', 'few',
'are', 'relevant', 'others', 'make', 'me', 'confused,', 'again', 'I'
, 'come', 'around', 'to', 'the', 'same', 'page.', 'Unsupervised', 'h
as', 'provided', 'me', 'a', 'good', 'platform', 'to', 'remove', 'all
', 'such', 'qualms', 'which', 'were', 'wrangling', 'in', 'my', 'mind
']
--------------------------------------------------------------------
---------------------------------
Final String:  I am very keen in building up my career in Data Scien
ce, but not sure from where to start. If I search the web it throws
me thousands of articles, few are relevant others make me confused,
again I come around to the same page. Unsupervised has provided me a
good platform to remove all such qualms which were wrangling in my m
ind
```

In [198]:
```
'''Splitting of the string with a dot operator(.)'''

sample_str = "I am very keen in building up my career in Data Science,
but not sure from where to start. If I search the web it throws me tho
usands of articles, few are relevant others make me confused, again I
come around to the same page. Supervised has provided me a good platfo
rm to remove all such qualms which were wrangling in my mind"

print(sample_str.split('.'))
```

```
['I am very keen in building up my career in Data Science, but not s
ure from where to start', ' If I search the web it throws me thousan
ds of articles, few are relevant others make me confused, again I co
me around to the same page', ' Supervised has provided me a good pla
tform to remove all such qualms which were wrangling in my mind']
```

In [199]:
```
'''Find the words from the string which ends with "e"'''

sample_str = "I am very keen in building up my career in Data Science, 
but not sure from where to start. If I search the web it throws me tho
usands of articles, few are relevant others make me confused, again I 
come around to the same page. Supervised has provided me a good platfo
rm to remove all such qualms which were wrangling in my mind"

sample_list = sample_str.split()

for word in sample_list:

    if word[-1] == 'e':
        print(word)
```

```
sure
where
the
me
are
make
me
come
the
same
me
remove
were
```

In [202]:
```
'''Figure out number of a's used in the string.'''


sample_str = "I am very keen in building up my career in Data Science, 
but not sure from where to start. If I search the web it throws me tho
usands of articles, few are relevant others make me confused, again I 
come around to the same page. Supervised has provided me a good platfo
rm to remove all such qualms which were wrangling in my mind"

count = 0
for ch in sample_str:

    if ch == 'a':
        count = count + 1

print("Number of a's used in the String: ", count)
```

```
Number of a's used in the String:  22
```

In [266]:
```
'''
```

```
In the weekend , I purchased 250g of apple, 500g of sugar, 2.5 kg of r
ice, 2.5 litres of milk and
finally 1 dozen of egg.

Can you help me frame the above purchase in the form of dictionary wit
h commodities as keys to it.

I forgot to mention another item, 1kg of atta packet. Can you also add
it ?

Instead of 2kg of rice, I bought only 1kg of rice. Can you change the
corresponding value ?

Can you list out all these items using a loop.'''


sample_dict = dict(zip(['apple', 'sugar', 'rice', 'milk', 'egg'], ['25
0g', '500g', '2.5kg', '2.5l', '1doz']))

print('Initial_Dictionary: ', sample_dict)  #Framing the above purchas
e in the form of dictionary with commodities as keys to it.

print('_'*100)

sample_dict['atta']= '1kg'

print('Key_Added_Dictionary: ', sample_dict)   # I forgot to mention a
nother item, 1kg of atta packet. Can you also add it ?

print('_'*100)

sample_dict['rice'] = '1kg'

print('Value_Changed_Dictionary: ', sample_dict)  # Instead of 2kg of
rice, I bought only 1kg of rice. Can you change the corresponding valu
e ?

print('_'*100)

for k, v in sample_dict.items():

    print('Key: ', k,  '&&',  'Value: ', v)   #  Can you list out all
these items using a loop.

print('_'*100)

print('Items in the Dictionary are: ')
for items in sample_dict.items():

    print(items)    #  Can you list out all these items using a loop.
```

```
Initial_Dictionary:  {'apple': '250g', 'sugar': '500g', 'rice': '2.5
kg', 'milk': '2.5l', 'egg': '1doz'}
```

```
Key_Added_Dictionary:  {'apple': '250g', 'sugar': '500g', 'rice': '2
.5kg', 'milk': '2.5l', 'egg': '1doz', 'atta': '1kg'}
```

```
Value_Changed_Dictionary:  {'apple': '250g', 'sugar': '500g', 'rice'
: '1kg', 'milk': '2.5l', 'egg': '1doz', 'atta': '1kg'}
```

```
Key:  apple && Value:  250g
Key:  sugar && Value:  500g
Key:  rice && Value:  1kg
Key:  milk && Value:  2.5l
Key:  egg && Value:  1doz
Key:  atta && Value:  1kg
```

```
Items in the Dictionary are:
('apple', '250g')
('sugar', '500g')
('rice', '1kg')
('milk', '2.5l')
('egg', '1doz')
('atta', '1kg')
```

In [338]:
```
'''
However, the cost of 1 kg apple is Rs.220, 1 kg of sugar is Rs.43, 1 K
g of rice is Rs. 45, 1 litre of milk is Rs.30 and 1 dozen of egg is Rs
. 60.

Create another dictionary for pricing.

Thereby, prepare a bill for me of the overall cost of the total commod
ities purchased by using two dictionaries !
'''

sample_dict = dict(zip(['apple', 'sugar', 'rice', 'milk', 'egg', 'atta
'], ['0.25', '0.50', '1', '2.5','1','1']))
print(sample_dict)

print('-'*90)

second_dict = dict(zip(['apple', 'sugar', 'rice', 'milk', 'egg'],  ['2
20', '43', '45', '30', '60']))
print(second_dict)

print('-'*90)

bill_dict = {}

for k in sample_dict:
    v = sample_dict.get(k)

    for i in second_dict:
        j = second_dict.get(i)

        if k in i:

            print('Sample_dict Key: ', k, '------------->', 'Second_di
ct Key:', i)

            bill_dict.update({k: (float(v)*float(j))})

print('-'*90)

print(bill_dict)
```

```
{'apple': '0.25', 'sugar': '0.50', 'rice': '1', 'milk': '2.5', 'egg'
: '1', 'atta': '1'}
------------------------------------------------------------------
----------------------
{'apple': '220', 'sugar': '43', 'rice': '45', 'milk': '30', 'egg': '
60'}
------------------------------------------------------------------
----------------------
Sample_dict Key:  apple -------------> Second_dict Key: apple
Sample_dict Key:  sugar -------------> Second_dict Key: sugar
Sample_dict Key:  rice --------------> Second_dict Key: rice
Sample_dict Key:  milk --------------> Second_dict Key: milk
Sample_dict Key:  egg -------------> Second_dict Key: egg
------------------------------------------------------------------
----------------------
{'apple': 55.0, 'sugar': 21.5, 'rice': 45.0, 'milk': 75.0, 'egg': 60
.0}
```

In [337]:

```
'''
Listed are the top AI companies in the world
AI_companies = ['Amazon', 'Facebook', 'HiSilicion', 'Google', 'Apple',
'Microsoft', 'SenseTime']

Sort the list in ascending order

Add multiple companies at once 'Nvidia', 'OpenAI' , 'Qualcomm' and 'Re
liance' to the list

Lower the list using List comprehension

Elimiate 'Reliance' from the list

Extract 'Facebook', 'Google' and 'Microsoft' using a single command
'''


AI_companies = ['Amazon', 'Facebook', 'HiSilicion', 'Google', 'Apple',
'Microsoft', 'SenseTime']

print('Orginal_List: ', AI_companies)

print('_'*90)

AI_companies.sort()    # Sort the list in ascending order

print('Sorted_List: ', AI_companies)

print('_'*90)
```

```
AI_companies.extend(['Nvidia', 'OpenAI' , 'Qualcomm', 'Reliance'])   # extend() helps in adding multiple items to the list at a time

print('Extended_List: ', AI_companies)

print('_'*90)

lower_list = []

for item in AI_companies:

    lower_list.append(item.lower())   #  Lower the list using List comprehension

print('Lower_List: ', lower_list)

print('_'*90)

AI_companies.remove('Reliance')    #  Elimiate 'Reliance' from the list

print('Removed_List: ', AI_companies)

print('_'*90)

extract_list = [x for x in ['Facebook', 'Google', 'Microsoft']]   # Extract 'Facebook', 'Google' and 'Microsoft' using a single command

print('Extracted_List: ', extract_list)
```

```
Orginal_List:  ['Amazon', 'Facebook', 'HiSilicion', 'Google', 'Apple
', 'Microsoft', 'SenseTime']
```

```
Sorted_List:  ['Amazon', 'Apple', 'Facebook', 'Google', 'HiSilicion'
, 'Microsoft', 'SenseTime']
```

```
Extended_List:  ['Amazon', 'Apple', 'Facebook', 'Google', 'HiSilicio
n', 'Microsoft', 'SenseTime', 'Nvidia', 'OpenAI', 'Qualcomm', 'Relia
nce']
```

```
Lower_List:  ['amazon', 'apple', 'facebook', 'google', 'hisilicion',
'microsoft', 'sensetime', 'nvidia', 'openai', 'qualcomm', 'reliance'
]
```

```
Removed_List:  ['Amazon', 'Apple', 'Facebook', 'Google', 'HiSilicion
', 'Microsoft', 'SenseTime', 'Nvidia', 'OpenAI', 'Qualcomm']
```

```
Extracted_List:  ['Facebook', 'Google', 'Microsoft']
```

In [456]:

```
'''
Consider the above standard price problem statement and place the pric
es in the form of the tuple.

Find out the min and max price among them.

Also, convert the above "AI_companies" list to a tuple.

Combine two above tuples to a single tuple.

Compare the length of two tuples.

'''

second_dict = dict(zip(['apple', 'sugar', 'rice', 'milk', 'egg'],  ['2
20', '43', '45', '30', '60']))

price_list = []

for val in second_dict.values():

    price_list.append(val)

sample_tuple = tuple(price_list)   #. Converting List to Tuple
```

```
print('Tuple for Price Values: ', sample_tuple)     #   prices in the
form of the tuple

print('_'*90)

sum = len(price_list)

for i in range(0,sum):

    for j in range(1, sum):

        if (price_list[i]) > (price_list[j]):

            price_list[i], price_list[j] = price_list[j], price_list[i
]

final_price_list = []

for k in range(sum):

    j = (sum - 1) - k

    final_price_list.append(price_list[j])

# print('Sorted_List: ', final_price_list)   #  Sorted List for the pr
ice described

sorted_tuple = tuple(final_price_list)

print('Sorted Tuple: ', sorted_tuple)   #   Sorted Tuple for described
prices

print('_'*90)

main_tuple = sorted_tuple

print('Minimum Number of the Price Tuple: ', min(main_tuple))   # The
min price among them

print('Maximum Number of the Price Tuple: ', max(main_tuple))   # The
max price among them

print('_'*90)

AI_companies = ['Amazon', 'Apple', 'Facebook', 'Google', 'HiSilicion',
'Microsoft', 'SenseTime', 'Nvidia', 'OpenAI', 'Qualcomm', 'Reliance']

AI_companies.sort()

AI_tuple = tuple(AI_companies)
```

```
print('AI_companices List to Tuple: ', AI_tuple)   #   Convert the abo
ve "AI_companies" list to a tuple

print('_'*90)

single_tuple = main_tuple + AI_tuple

print('Final Combined Tuples: ', single_tuple)   #  Combined two above
tuples to a single tuple

print('_'*90)

total_length = len(single_tuple)

print('Final Length of the Combined Two Tuples: ', total_length)  #  T
he length of two tuples
```

```
Tuple for Price Values:  ('220', '43', '45', '30', '60')
------------------------------------------------------------------------------------------
Sorted Tuple:  ('30', '43', '45', '60', '220')
------------------------------------------------------------------------------------------
Minimum Number of the Price Tuple:  220
Maximum Number of the Price Tuple:  60
------------------------------------------------------------------------------------------
AI_companices List to Tuple:  ('Amazon', 'Apple', 'Facebook', 'Googl
e', 'HiSilicion', 'Microsoft', 'Nvidia', 'OpenAI', 'Qualcomm', 'Reli
ance', 'SenseTime')
------------------------------------------------------------------------------------------
Final Combined Tuples:  ('30', '43', '45', '60', '220', 'Amazon', 'A
pple', 'Facebook', 'Google', 'HiSilicion', 'Microsoft', 'Nvidia', 'O
penAI', 'Qualcomm', 'Reliance', 'SenseTime')
------------------------------------------------------------------------------------------
Final Length of the Combined Two Tuples:  16
```

In [ ]:

In [ ]: