Q1) WAP ask the user count how many 'a' are present in a given string

str1='hai naresh how are you'

Idea: counter wrapper

step-1: count=0

step-2: using for loop in operator iterate through given string

step-3: apply the if condition, whenever the letter equal to 'a'

step-4: count=count+1

Code:

```
str1='hai naresh how are you'
count=0
for i in str1:
    if i=='a':
        count=count+1
print(count)
```

Output:

```
3
```

Q2) WAP ask the find how many vowels are there in a given string

str1='hai naresh how are you’ ans=9

Code:

```
str1='hai naresh how are you'
count=0
s2='aeiouAEIOU'
for i in str1:
    if i in s2:
        count=count+1
print(count)
```

Output:

```
9
```

Q3)str1='hai naresh how are you' Repetaed vowels are there.We dont want repetaed vowels

Count the vowels avoid the repeatition: Unique vowels

Step-1: Count=0

Step-2: take one more empty string: ex= s2=''

s2=''

Step-3: using for loop in operator iterate through given string

step-4: condition-1: That letter shoud not avaialble in s2

step-5 condition-2: vowel check condition

step-6 count=count+1

step-7: update the s2= s2=s2+<letter>

Code:

```
str1='hai naresh how are you'

count=0

s2=' '

for i in str1:

    if i not in s2:

        if i in 'aeiouAEIOU':

            count=count+1

            s2=s2+i

print(s2)
```

Output:

```
aeiou
```

Q4) print each letter using for loop range s='welcome'

Code:

```
s='welcome'

for i in s:

    print(I,end=’ ‘)
```

Output:

```
w e l c o m e
```

Q5) wap ask the user iterate using a string
string='welcome' ,print the postive index of w is 0 ,the positive index of e is 1, the positive index of l is 1

Code:

```
s='welcome'
for i in range(len(s)):
   print(f"positive index of {s[i]} is {i}")
```

output:

```
positive index of w is 0
positive index of e is 1
positive index of l is 2
positive index of c is 3
positive index of o is 4
positive index of m is 5
positive index of e is 6
```

Q6) wap ask the user iterate using a string: string='welcome'.print the negative index of w is -7. the negative index of e is -6. the negative index of l is -5

Code:

```
s='welcome'
for i in range(len(s)):
   print(f"the negative index of {s[i]} is {i-len(s)}")
```

output:

```
the negative index of w is -7
the negative index of e is -6
the negative index of l is -5
the negative index of c is -4
the negative index of o is -3
the negative index of m is -2
the negative index of e is -1
```

Q7) wap ask the user iterate using a string
string='welcome'
the positive index is 0 and the negtaive index -7 for w

Code:

```
s='welcome'
for i in range(len(s)):
   print(f"the positive index of s[i] is {i} and negative index is {i-len(s)}")
```

Output:

```
the positive index of s[i] is 0 and negative index is -7
the positive index of s[i] is 1 and negative index is -6
the positive index of s[i] is 2 and negative index is -5
the positive index of s[i] is 3 and negative index is -4
the positive index of s[i] is 4 and negative index is -3
the positive index of s[i] is 5 and negative index is -2
the positive index of s[i] is 6 and negative index is -1
```

Q8) wap ask the user get the index of each 'a' in a given string
s='hai how are you i am good' a=1 8 18

Code:

```
s='hai how are you i am good'
for i in range(len(s)):
   if s[i]=='a':
      print(i)
```

Output:

```
1
8
18
```

9)wap ask the user to get count of number of 'a' in a given string
using for-range

Code:

```
s='hai how are you i am good'
count=0
for i in range(len(s)):
   if s[i]=='a':
        count=count+1
print(count)
```

Output:

```
3
```

Q10) wap ask the user get the sum of all index numbers of 'a'
 1+8+18= 27

Code:

```
s='hai how are you i am good'
sum=0
for i in range(len(s)):
    if s[i]=='a':
        sum=sum+i
print(sum)
```

Output:

```
27
```

Q11) wap ask the user get the vowels from a given string using for-range

Code:

```
s='hai how are you iam good'
for i in range(len(s)):
if s[i] in 'aeiou':
print(s[i])
```

Output:

```
a
i
o
a
e
o
u
i
a
o
o
```

Q12)wap ask the user get the unique vowels from a given string using for range

Code:

```
str1='hai naresh how are you'

count=0

s2=' '

for i in str1:

    if i not in s2:

        if i in 'aeiouAEIOU':

            count=count+1

            s2=s2+i

print(s2)
print(count)
```

Output:

```
i

o

e

u

The number of vowels are: 4
```

Q14) string1='ola ola ola'
Number of ola = 3

Code:

```
s='ola ola ola'

count=0

for i in range(len(s)):

   if s[i]=='a':

      count=count+1

print(count)
```

output:

```
3
```

Q15) string1='hello hello hello how how how how are you'
 What is the most repeated word : how

Code:

```
s1 = 'hello hello hello how hello how hello how how hello are you'
words = s1.split()
max_count = 0
count = 0
max_word =” “
current_word =” “
for word in words:
        if word == current_word:
                count=count+1
        else:
                count = 1
                current_word = word

if count > max_count:
max_count = count
max_word = current_word
print("Word with maximum occurrences:", max_word)
```

Output:

```
Word with maximum occurrences: hello
```

Q16) string1='hellooooo how aree u'
what is the maximum length of word: helloooo
what is the minimum length of word: u

Code:

```
string1='hellooooo how aree u'
words=string1.split()
small-large=words[0]
for i in range(len(words)):
if len(small) > len (words[i]):
          small=words[i]
if len(large) <len (words[i]):
          large= words[i]
print(small)
print(large)
```

Output:

```
hellooooo
```

Q17) with out using sorted then sort the letters

Code:

```
string="shruthi is good girl"
x=list(string)
print(x)
for i in range(len(x)):
    for j in range(len(x)):
        if x[j]>x[i]:
            temp=x[i]
            x[i]=x[j]
            x[j]=temp
print("string after sorting:")
for k in range(len(x)):
    print(x[k],end=’ ‘)
```

Output:

```
['s', 'h', 'r', 'u', 't', 'h', 'i', ' ', 'i', 's', ' ', 'g', 'o', 'o', 'd', ' ', 'g', 'i', 'r', 'l']
string after sorting:
    d g g h h i i i l o o r r s s t u
```

#1. Write a program that asks the user to enter a string. The program should then print the following:
#(a) The total number of characters in the string

```
string=input("enter a string:")
number=len(string)
print(number)
```

Output:

```
enter a string: Vasanth is an awesome guy i found for my lifetime
49
```

```
#(b) The string repeated 10 times
repeat=string*10
print(repeat)
```

Output:

```
'bananabananabananabananabananabananabananabananabananabanana'
```

```
#(c) The first character of the string (remember that string indices start at 0) (d) The first three
#characters of the string
print(string[0])
```

Output:

```
V
```

```
#(d) The first three characters of the string
print(string[0:3])
```

output:

```
Vas
```

(e) The last three characters of the string

```
print(string[len(string)-3:])
```

output:

```
ime
```

(f) The string backwards

```
print(string[::-1])
```

output:

```
emitefil ym rof dnuof i yug emosewa na si htnasaV
```

(g) The seventh character of the string if the string is long enough and a message otherwise

```
if len(string)>=7:
   print(string[6])
else:
   print("string is not long enough")
```

output:

```
h
```

(h) The string with its first and last characters removed

```
string[1:len(string)-1]
```

output:

```
'asanth is an awesome guy i found for my lifetim'
```

(i) The string in all caps

```
string.upper()
```

output:

```
'VASANTH IS AN AWESOME GUY I FOUND FOR MY LIFETIME'
```

(j) The string with every a replaced with an e

```
string.replace('a','e')
```

output:

```
'Vesenth is en ewesome guy i found for my lifetime'
```

2. A simple way to estimate the number of words in a string is to count the number of spaces in the

string. Write a program that asks the user for a string and returns an estimate of how many words are in the string.
Tip: You need to count the number of words using spaces

```
string=input("enter string:")
number_words=string.count(' ')+1
print(number_words)
```

Output:

```
enter string: VaSanth is an awesome guy i found for my lifetime
10
```

3.Write a program that asks the user to enter a word and prints out whether that word contains any vowels.

Code:

```
word=input("enter a word:")
vowels = "aeiouAEIOU"
for char in word:
    if char in vowels:
        print('yes')
        break
```

output:

```
enter a word: olAhnjUEnhjdl
yes
```

5. Write a program that asks the user to enter a string. The program should create a new string called new_string from the user's string such that the second character is changed to an asterisk and three exclamation points are attached to the end of the string. Finally, print new_string.
Typical output is shown below:
Enter your string: Qbert
Output: Q*ert!!!

Code:

```
string=input("enter your string:")
new_string=' '
s=string.replace('b','*')
s1='!!!'
print(s+s1)
```

Output:

```
enter your string: Qbert
Q*ert!!!
```

6. Write a program that asks the user to enter a word and determines whether the word is a palindrome or not. A palindrome is a word that reads the same backwards as forwards

Code:

```
word=input("enter a word:").lower()
reverse=word[::-1].lower()
if word==reverse:
    print('polindrome')
else:
    print('not a polindrome')
```

Output:

```
enter a word: madam
palindrome
```

7. At a certain school, student email addresses end with @student.college.edu, while professor email addresses end with @prof.college.edu. Write a program that first asks the user how many email addresses they will be entering, and then has the user enter those addresses. After all the

email addresses are entered, the program should print out a message indicating either that all the addresses are student addresses or that there were some professor addresses entered

Code:

```
num_addresses=eval(input("enter how many email addresses you want to enter:"))
count_studentemail=0
count_professoremail=0
for i in range(num_addresses):
  email=input(f"enter email id:{i+1}")
  if email.endswith('@student.college.edu'):
    count_studentemail=count_studentemail+1
  elif email.endswith('@prof.college.edu'):
    count_professoremail=count_professoremail+1
if count_studentemail==num_addresses:
  print("all the addresses are student addresses")
elif count_professoremail==num_addresses:
  print("all the addresses are professor addresses")
else:
  print("there were some professor addresses entered")
```

Output:

```
enter how many email addresses you want to enter: 3
enter email id:1 shruthi@student.college.edu
enter email id:2 vasanth@prof.college.edu
enter email id:3 haasini@prof.college.edu
there were some professor addresses entered
```

8. Write a program that asks the user to enter a string, then prints out each letter of the string doubled and on a separate line. For instance,
if the user entered HEY,
the output would be
HH
EE
YY

Code:

```
string=input("enter a string:")
for i in range(len(string)):
  print(string[i]*2)
```

Output:

```
enter a string: HEY
HH
EE
YY
```

9.Write a program that asks the user to enter a word that contains the letter a. The program should then print the following two lines: On the first line should be the part of the string up to and including the the first a, and on the second line should be the rest of the string.
Sample output is shown below:
Enter a word: buffalo
buffa
lo

Code:

```
word=input("enter a word:")
first=word.index('a')
before_a=word[:first+1]
after_a=word[first+1:]
print(before_a)
print(after_a)
```

Output:

```
enter a word: doraemon
dora
emon
```

10. Write a program that asks the user to enter a word and then capitalizes every other letter of that word So if the user enters rhinoceros,
the program should print rHiNoCeRoS.

Code:

```
word=input("enter a word:")
list=[]
for i in range(len(word)):
   if i %2==0:
      list.append(word[i].upper())
   else:
      list.append(word[i].lower())
''.join(list)
```

Output:

```
enter a word: rhinoceros
rHiNoCeRoS
```

11. Write a program that asks the user to enter two strings of the same length. The program should then check to see if the strings are of the same length. If they are not, the program should print an appropriate message and exit. If they are of the same length, the program should alternate the characters of the two strings. For example,
if the user enters abcde and ABCDE
the program should print out AaBbCcDdEe

Code:

```
str1=input("enter first string:")
str2=input("enter second string:")
list=[]
if len(str1)!=len(str2):
   print("the string are of not same length")
else:
   for i in range(len(str1)):
      list.append(str2[i])
      list.append(str1[i])
      a="".join(list)
   print(a)
```

Output:

```
enter first string: ShRuThI
enter second string: VaSaNtH
VSahSRauNTthHI
```

#12. Write a program that asks the user to enter their name in lowercase and then capitalizes the first letter of each word of their name

Code:

```
name=input("enter name in lowercase:")
name.title()
```

Output:

```
enter name in lowercase: shruthi vangari
‘Shruthi Vangari’
```

13. The goal of this exercise is to see if you can mimic the behavior of the in operator and the count

and index methods using only variables, for loops, and if statements.
(a) Without using the in operator, write a program that asks the user for a string and a letter and prints out whether or not the letter appears in the string.
(b) Without using the count method, write a program that asks the user for a string and a letter and counts how many occurrences there are of the letter in the string.
(c) Without using the index method, write a program that asks the user for a string and a letter and prints out the index of the first occurrence of the letter in the string. If the letter is not in the string, the program should say so.

Code:

```
string=input("enter a string:")
letter=input("enter a letter:")
found=False
for i in string:
   if i==letter:
      found=True
      break
if found:
   print(f"the {letter} appears in string")
else:
   print(f"the {letter} not appear in string")
```

Output:

```
enter a string: vasanth
enter a letter: v
the v appears in string
```

Code:

```
string=input("enter a string:")
letter=input("enter a letter:")
count=0
for i in string:
   if i==letter:
      count=count+1
print(count)
```

Output:

```
enter a string: woooloolooooloo
enter a letter: o
10
```

Code:

```
string=input("enter a string:")
letter=input("enter a letter:")
ind=-1
for i in range(len(string)):
   if string[i]==letter:
      ind=i
      break
if ind!=-1:
   print(f"index of first occurrence of letter is {ind}")
else:
   print(f"letter is not present in the string")
```

Output:

```
enter a string: shruthi
enter a letter: h
index of first occurrence of letter is 1
```

14. Finding a substring within a string
For example, if we were presented a series of lines formatted as follows:
From stephen.marquard@uct.ac.za Sat Jan 5 09:14:16 2008
and we wanted to pull out only the second half of the address (i.e., uct.ac.za)

Code:

```
string='From stephen.marquard@uct.ac.za Sat Jan 5 09:14:16 2008'
i1=string.find('@')
i1
i2=string.find(' ')
i2
i3=string.find(' ',i2+1)
i3
s=string[i1+1:i3+1]
print(s)
```

Output:

```
uct.ac.za
```

15. Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead.
If the string length of the given string is less than 3, leave it unchanged.
Go to the editor
Sample String : 'abc'
Expected Result : 'abcing'
Sample String : 'string'
Expected Result : 'stringly'

Code:

```
string=input("enter a string:")
if string.endswith('ing'):
    new_string=string +'ly'
    print(new_string)
elif len(string)>=3:
    new_string=string+'ing'
    print(new_string)
elif len(string)<3:
    print(string)
```

Output:

```
enter a string: string
stringly
enter a string: HE
HE
```

#16. Take the following Python code that stores a string:‘
string = 'X-DSPAM-Confidence: 0.8475'
Extract the portion of the string after the colon character and then use the float function to convert the extracted string into a floating point number

Code:

```
string = 'X-DSPAM-Confidence: 0.8475'
i1=string.find(':')
i1
substring=string[i1+1:]
trimm=substring.strip()
floatt=float(trimm)
print(floatt)
```

Output:

```
0.8475
```

LIST:

Q2)l1=['Hyd','Mumbai','Chennai','blr']

ans=['Mumbai','Chennai'] we want lements which are len of element >4

code:

```
l1=['Hyd','Mumbai','Chennai','blr']
l2=[]
for i in l1:
    if len(i)>4:
        l2.append(i)
print(l2)
```

Output:

```
['Mumbai', 'Chennai']
```

Q3)l1=['Hyd','Mum#bai','Chen#nai','blr']

# ans=['Mum#bai'',Chen#nai']

# we want lements which are having '#'

Code:

```
l1=['Hyd','Mum#bai','Chen#nai','blr']
l2=[]
for i in l1:
    if '#' in i:
        l2.append(i)
print(l2)
```

Output:

```
['Mum#bai', 'Chen#nai']
```

Q4)l1=['hyd','mumbai','chennai','blr']

ans= ['Hyd','Mumbai','Chennai','Blr']

we want lements which are len of element >4

code:

```
l1=['hyd','mumbai','chennai','blr']

l3=[]

l2=[]

for i in l1:

   t=i.title()

   l3.append(t)

print(l3)

for i in l3:

   if len(i)>4:

       l2.append(i)

print(l2)
```

Output:

```
['Hyd', 'Mumbai', 'Chennai', 'Blr']
['Mumbai', 'Chennai']
```

Q5)l1=['Hyd','Mumbai','chennai','blr']

ans= ['Hyd','Mumbai']

we want lements which are having first letter capital

code:

method-1:

```
l1=['Hyd','Mumbai','chennai','blr']

l2=[]

for i in l1:

   a=i.title()

   if i in a:

       l2.append(i)

print(l2)

#method-2:

l1=['Hyd','Mumbai','chennai','blr']

l2=[]

for i in l1:

   if i[0].isupper():

       l2.append(i)

print(l2)
```

Output:

```
['Hyd', 'Mumbai']
```

Q6)l1=['Hyd','Mum#bai','Chen#nai','blr']

ans_#=['Mum#bai",Chen#nai']

ans_without_#=['Hyd",'blr']

we want lements which are having '#'

code:

```
l1=['Hyd','Mum#bai','Chen#nai','blr']

l2=[]

l3=[]

for i in l1:

    if '#' in i:

        l2.append(i)

    if '#' not in i:

        l3.append(i)

print(f'answer with # {l2}')

print(f'answer without # {l3}')
```

Output:

```
answer with # ['Mum#bai', 'Chen#nai']
answer without # ['Hyd', 'blr']
```

[ ]:

Q7) ask the user get 5 numbers randomly

even_list and odd_list

even numbers should append at even_list

odd number should append at odd_list

code:

```
import random

even_list=[]

odd_list=[]

for i in range(5):

    num=random.randint(1,100)

    if num%2==0:

        even_list.append(num)

    else:

        odd_list.append(num)

print(f'even list:{even_list}')
print(f'odd list :{odd_list}')
```

Output:

```
even list:[86, 32, 40]
odd list :[65, 71]
```

Q8) str='hello hai how are you'

Maximum len of word using split and max method

sum of all the indexes of the maximum len of word using append

code:

```
str='hello hai how are you'

words=str.split()

sum=0

maxx=max(words,key=len)

print(f'maximum len word:{maxx}')

for i in range(len(maxx)):

   sum=sum+i

print(f'sum of all indexex of maximum len of word:{sum}')
```

Output:

```
maximum len word:hello
sum of all indexex of maximum len of word:10
```

[ ]:

Q9) str1='virat.kohli@rcb.com, Rohit.sharma@mi.co, KL.Rahul@lucknow.com'

Firstname=[] second name=[] cname =[]

append first name should be in first name list

second name shoul be in second name list

third name will be in thirs name list

```
str1 = 'virat.kohli@rcb.com, Rohit.sharma@mi.co, KL.Rahul@lucknow.com'

firstname = []

secondname = []

thirdname = []

words = str1.split(', ')

for word in words:

   i1 = word.index('.')

   i2 = word.index('@')
```

```
    fname = word[:i1]
    sname = word[i1+1:i2]
    tname = word[i2+1:word.index('.', i2)]
    firstname.append(fname)
    secondname.append(sname)
    thirdname.append(tname)
print("First names:", firstname)
print("Second names:", secondname)
print("Company names:", thirdname)
```

Output:

```
First names: ['virat', 'Rohit', 'KL']
Second names: ['kohli', 'sharma', 'Rahul']
Company names: ['rcb', 'mi', 'lucknow']
```

```
 10 )You have two lists qns=['What is capital of India',
      'Who is PM of india',
       'Who is ICT ODI captian']
ans = ['Delhi','Modi','Rohit']

For i in qns:  print(i) ans= delhi
index should match
    delhi  modi
     marks= marks+1
 print the total marks
```

Code:

```
marks=0
qns=['What is capital of India',
      'Who is PM of india',
       'Who is ICT ODI captian']
ans = ['Delhi','Modi','Rohit']
for i in range(len(qns)):
   print(qns[i])
   anss=input("enter answer:")
   if anss==ans[i]:
      marks=marks+1
print(f'total marks are : {marks}')
```

Output:

```
What is capital of India
enter answer: Delhi
Who is PM of india
enter answer: Rohit
Who is ICT ODI captian
enter answer: Modi
total marks are : 1
```