In [ ]:
```
#============= Python Part-1========================
1) syntax
2) Baic python
3) Conditional : if else
4) Functions
5) Loops: For/while

# strings
# list
# dic
# tuple
# sets
# file handing
```

In [2]:
```
name='python'
type(name)
```

Out[2]:
```
str
```

In [4]:
```
name
```

Out[4]:
```
'python'
```

In [3]:
```
name1="python"
name1
```

Out[3]:
```
'python'
```

In [5]:
```
print(name)
```

```
python
```

In [6]:
```
# doc string: triple quotes
# multilple lines
# in jupter: markdown
# notepad++
# vscode
# pycharm
string1="""hi how are you
   im good
   im learning python"""
```

In [7]:
```
string1
```

Out[7]:
```
'hi how are you\n   im good\n   im learning python'
```

- triple quotes is means doc string
- it is an informatiom about the code

In [10]:
```
"""
this program about infinite while loop
the original password='python'
function:
      arguments: None
      return: None
"""
def pwd():
    password='python'  # random number  (1,10)
    while True:
        user_pwd=input("enter pwd")  # user number= eval(input)
        if password==user_pwd:
            print('you won')
            break
        else:
            print("the password is wrong")
```

Out[10]: 10

In [12]:
```
print("hello 'python'")
```

```
hello 'python'
```

In [13]:
```
print('hello "python"')
```

```
hello "python"
```

- entire string will be in double quotes, the highlited string in single quotes
- entire string will be in single quotes, the highlited string in double quotes

In [14]:
```
string1='python'
string2=string1 # 'py'
string3='hello' # 'he'
string4=string3 # 'he'
string4=string1 # 'py'
string4=string2 # 'py'
string5=string4 #'py'
string5
```

Out[14]: 'python'

- type
- len
- max
- min

In [15]:
```
string1='python'
type(string1)
```

Out[15]: str

In [16]:
```
len(string1)
# p y t h o n
```

Out[16]: 6

In [17]:
```
max(string1)
```

Out[17]: 'y'

In [18]:
```
min(string1)
```

Out[18]: 'h'

In

In [24]:
```
# iterate a loop on string1
# print each letter
# get the ascii value
'p' in 'python'
'y' in 'python'
't' in 'python'
'h' in 'python'
'o' in 'python'
'n' in 'python'

# i in 'python'
```

Out[24]: True

In [26]:
```
for i in 'python':
    print(i,ord(i))
```

```
p 112
y 121
t 116
h 104
o 111
n 110
```

- type
- max
- min
- len
- in

In [28]:
```
string1='hai'
string2='python'
```

In [29]:
```
string1+string2  # string concatination
```

Out[29]: 'haipython'

In [30]:
```
string1-string2
# i can not do subtraction between two strings
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[30], line 1
----> 1 string1-string2

TypeError: unsupported operand type(s) for -: 'str' and 'str'
```

In [31]:
```
string1/string2
# i can not do division between two strings
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[31], line 1
----> 1 string1/string2

TypeError: unsupported operand type(s) for /: 'str' and 'str'
```

In [34]:
```
string1*string2
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[34], line 1
----> 1 string1*string2

TypeError: can't multiply sequence by non-int of type 'str'
```

In [35]:
```
2*string2
```

Out[35]:
```
'pythonpython'
```

In [ ]:
```
string1+string2
string1-string2
string1*string2
string1/string2
# read the errors
```

In [ ]:
```
# how to read the string
# single /double/triple
# triple: docstring
# type
# len
# max
# min
# + : conacte
# - :
# *
# /
```

In [1]:
```
string1='hello'
string2='python'
```

In [2]:
```
string1+string1
```

Out[2]:
```
'hellohello'
```

In [3]:
```
2*string1
```

Out[3]:
```
'hellohello'
```

indexing

In [4]:
```
name='python'
```

In [5]:
```
# how many letters are there: 6
# python index start with :0

p   y    t    h    o    n
0   1    2    3    4    5
```

In [6]:
```
name[0]
```

Out[6]:
```
'p'
```

In [7]:
```
name[1]
```

Out[7]:
```
'y'
```

In [ ]:
```
name[0]    #  'p'
name[1]    #  'y'
name[2]    #  't'
name[3]    # 'h'
name[4]    #  'o'
name[5]    # 'n'

name[i]
```

In [10]:
```
# how to print any word/sentence by using range method
for i in range(6):
    print(name[i])   # iter1:  i=0    name[0]   p
                     # iter2:  i=1    name[1]   y
```

```
p
y
t
h
o
n
```

In [12]:
```
name='python'
for i in range(7):
    print(name[i])   #  0   1   2   3  4  5  name[6]
```

```
p
y
t
h
o
n
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[12], line 3
      1 name='python'
      2 for i in range(7):
----> 3     print(name[i])

IndexError: string index out of range
```

In [14]:
```
name1='hello how are you'
# spaces also consider one character
print(len(name1))
# i need to provide some number
for i in range(len(name1)):
    print(name1[i],end=' ')
```

```
17
h e l l o   h o w   a r e   y o u
```

In [ ]:
```
# wap ask the user print the letters from a given word
# using for loop
# 'the index of p is:0'
# 'the index of y is:1'

# i want letter as well as attached index number
```

In [17]:
```
name2='python'
for i in range(len(name2)):
    print('the index of {} is:{}'.format(name2[i],i))
```

```
the index of p is:0
the index of y is:1
the index of t is:2
the index of h is:3
the index of o is:4
the index of n is:5
```

In [18]:
```
# same code using while loop
i=0
name2='python'
while i<len(name2):
    print('the index of {} is:{}'.format(name2[i],i))
    i+=1
```

```
the index of p is:0
the index of y is:1
the index of t is:2
the index of h is:3
the index of o is:4
the index of n is:5
```

In [ ]:
```
-6  -5   -4   -3   -2   -1
p   y    t    h    o    n
0   1    2    3    4    5 ==========> postive index
```

In [21]:
```
name3='python'
name3[-6]
```

Out[21]:
```
'p'
```

In [ ]:
```
# wap ask the user print the letters from a given word
# using for loop
# 'the negative index of p is:-6'
# 'the negative index of y is:-5'

# i want letter as well as attached index number
```

In [32]:
```
name3='python'
for i in range(-len(name3),0):
    print("the negative index of {} is {}".format(name3[i],i))           #  -6   -5    -4   -3   -2
```

```
the negative index of p is -6
the negative index of y is -5
the negative index of t is -4
the negative index of h is -3
the negative index of o is -2
the negative index of n is -1
```

In [34]:
```
name4='python'
for i in range(len(name4)):
    print("the negative index of {} is {}".format(name4[i],i-len(name4)))
```

```
the negative index of p is -6
the negative index of y is -5
the negative index of t is -4
the negative index of h is -3
the negative index of o is -2
the negative index of n is -1
```

In [35]:
```
# how to print -6 -5 -4 -3 -2 -1 using while loop
i=0
name4='python'
while i>-len(name4):
    print('the -ve index of {} is : {}'.format(name4[i],-len(name4)-i))
    i-=1
```

```
the -ve index of p is : -6
the -ve index of n is : -5
the -ve index of o is : -4
the -ve index of h is : -3
the -ve index of t is : -2
the -ve index of y is : -1
```

In [36]:
```
name='python'
i=-len(name)
while i<0:
    print("The negative Index of {} is {}".format(name[i],i))
    i=i+1
```

```
The negative Index of p is -6
The negative Index of y is -5
The negative Index of t is -4
The negative Index of h is -3
The negative Index of o is -2
The negative Index of n is -1
```

In [ ]:
```
'the postive index is 0 and negative index is -6 for p'
'the postive index is 1 and negative index is -5 for y'


for  i   in  range():
    0      -6
    1      -5
```

In [37]:
```
name='python'
for i in range(len(name)):
    print('the positivr index is: {} the negetive index is: {} for {}'. format(i,i-len(name),name[i])
```

```
the positivr index is: 0 the negetive index is: -6 for p
the positivr index is: 1 the negetive index is: -5 for y
the positivr index is: 2 the negetive index is: -4 for t
the positivr index is: 3 the negetive index is: -3 for h
the positivr index is: 4 the negetive index is: -2 for o
the positivr index is: 5 the negetive index is: -1 for n
```

In [39]:
```
name6='python'
for i in range(len(name6)):
    print("the positive index is {} and negative index is {} for {}".format(i,i-len(name6),name6[i]))
```

```
the positive index is 0 and negative index is -6 for p
the positive index is 1 and negative index is -5 for y
the positive index is 2 and negative index is -4 for t
the positive index is 3 and negative index is -3 for h
the positive index is 4 and negative index is -2 for o
the positive index is 5 and negative index is -1 for n
```

In [40]:
```
name2=input('enter a word')
for i in range(len(name2)):
    print('the possitive index is {} and negative index is {} for {}'.format(i,i-len(name2),name[i]))
```

```
enter a wordpython
the possitive index is 0 and negative index is -6 for p
the possitive index is 1 and negative index is -5 for y
the possitive index is 2 and negative index is -4 for t
the possitive index is 3 and negative index is -3 for h
the possitive index is 4 and negative index is -2 for o
the possitive index is 5 and negative index is -1 for n
```

In [41]:
```
word = "Learn Python"
for i in range(len(word)):
    print("The +ve Index is {} and -ve Index is {} for:{}".format(i,i-len(word),word[i-len(word)]))
```

```
The +ve Index is 0 and -ve Index is -12 for:L
The +ve Index is 1 and -ve Index is -11 for:e
The +ve Index is 2 and -ve Index is -10 for:a
The +ve Index is 3 and -ve Index is -9 for:r
The +ve Index is 4 and -ve Index is -8 for:n
The +ve Index is 5 and -ve Index is -7 for:
The +ve Index is 6 and -ve Index is -6 for:P
The +ve Index is 7 and -ve Index is -5 for:y
The +ve Index is 8 and -ve Index is -4 for:t
The +ve Index is 9 and -ve Index is -3 for:h
The +ve Index is 10 and -ve Index is -2 for:o
The +ve Index is 11 and -ve Index is -1 for:n
```

In [49]:
```
for i in range(len(name4)):
    print(i,name4[i],i-len(name4))


#======================= negative index==================
name4='python'
for i in range(len(name4)):
    print("the negative index of {} is {}".format(name4[i],i-len(name4)))

#======================= pos index==================
name4='python'
for i in range(len(name4)):
    print("the positive index of {} is {}".format(name4[i],i))
```

```
0 p -6
1 y -5
2 t -4
3 h -3
4 o -2
5 n -1
the negative index of p is -6
the negative index of y is -5
the negative index of t is -4
the negative index of h is -3
the negative index of o is -2
the negative index of n is -1
the positive index of p is 0
the positive index of y is 1
the positive index of t is 2
the positive index of h is 3
the positive index of o is 4
the positive index of n is 5
```

In [ ]:
```
sent='hai hai how are you'
#Q1 print how many 'a' are there : 3
# count=0
# iterate the leeters through for loop
#        apply the if condition letter=='a'
#                    count+=1


#Q2 print the index of 'a':

#Q3 print the number of vowels: a  a  i  o  a  e  o  u: 9

# Q4 print the number of unique vowels:  a i   o   e  u:4
```

In [52]:
```
#Q1 print how many 'a' are there : 3
# count=0
# iterate the leeters through for loop
#        apply the if condition letter=='a'
#                    count+=1


sent='hai hai how are you'
# first iteratre letters
count=0
for i in range(len(sent)):
    if sent[i]=='a':
        count=count+1

print("no of repated a are:",count)

# step-1:   i=0    sent[0]='h'    'h'=='a'    F
# step-2:   i=1    sent[1]='a'     'a'=='a'   T ====count=0+1= 1
```

```
h
a
i

h
a
i

h
o
w

a
r
e

y
o
u
no of repated a are: 3
```

In [53]:
```
sent='hai hai how are you'
# first iteratre letters
count=0
for i in range(len(sent)):
    if sent[i]=='a':
        count=count+1
        print(i)

print("no of repated a are:",count)
```

```
1
5
12
no of repated a are: 3
```

In [57]:
```
######################################### Q1) getting number of 'a' ##################################
sent='hai hai how are you'
# first iteratre letters
count=0
for i in range(len(sent)):
    if sent[i]=='a':
        count=count+1

print("no of repated a are:",count)


################################### Q2)getting indexof 'a' ########################################
sent='hai hai how are you'
# first iteratre letters
count=0
for i in range(len(sent)):
    if sent[i]=='a':
        count=count+1
        print(i)

print("no of repated a are:",count)


################################### Q3) No of vowels in the given sentence#########################

sent='hai hai how are you'
# first iteratre letters
count=0
for i in range(len(sent)):
    if sent[i] in 'aeiou':
        count=count+1

print("no of repated vowels are:",count)
```

```
no of repated a are: 3
1
5
12
no of repated a are: 3
no of repated vowels are: 9
```

In [55]:
```
'a' in 'aeiou'
```

Out[55]:
```
True
```

In [ ]:
```
# take an empty string
# string1=''
# iterate through loop
#  if  'a' in 'aeiou':
#       if 'a' not in string1"
#           string1=string1+'a'    # string1='a'
```

In [ ]:
```
# check two conditions parallal
#  the given letter is in 'aeiou'
#  if that is true check about same letter it is there in empty string
#  if it is not there move to empty string
#  if it is there dont move it
```

In [ ]:

In [ ]: