List

In [16]:
```
#List
"""
s = ['h','e','l','l','o']   #create a list
s.append('d')   #append to end of list
len(s)          #number of items in list
s.sort()      #sorting the list
s.reverse() #reversing the list
s.extend(['w','o']) #grow list
s.insert(1,2)   #insert into list
s.remove('d') #remove first item in list with value e
s.pop() #remove last item in the list
s.pop(1) #remove indexed value from list
s.count('o') #search list and return number of instances found
s = range(0,10) #create a list over range
s = range(0,10,2) #same as above, with start index and increment
"""


emptyList = []

list1 = ['one, two, three, four, five']

list2 = ['one', 'two', 'three', 'four', 'five']

print(list1)
print(len(list1))

print('\n')

print(list2)
print(len(list2)) # will give the length of the list
```

```
['one, two, three, four, five']
1


['one', 'two', 'three', 'four', 'five']
5
```

In [17]:
```
#List append()

media = ["movies","music","pictures"]

print(len(media))

media.append("books")
media.append("blogs")

print(media)
print(len(media))
```

```
3
['movies', 'music', 'pictures', 'books', 'blogs']
5
```

In [18]:
```
#List insert()
list = ["movies", "music", "pictures"]

list.insert(0,"files")
list.insert(2,"books")
list.insert(3,"blogs")

print(list)
```

```
['files', 'movies', 'books', 'blogs', 'music', 'pictures']
```

In [19]:
```
#List extend()

media_list = ['files', 'movies', 'books']
media_list1 = ['music', 'pictures']

media_list.extend(media_list1)

print(media_list)
```

```
['files', 'movies', 'books', 'music', 'pictures']
```

In [20]:
```
#List pop

seasons = ["summer", "winter", "spring", "fall"]
seasons.pop(0)
seasons.pop(-1)
print(seasons)
```

```
['winter', 'spring']
```

In [21]:
```
#List remove()

media_list = ['files', 'movies', 'books', 'blogs', 'music', 'pictures']

media_list.remove('files')

print(media_list)
```

```
['movies', 'books', 'blogs', 'music', 'pictures']
```

In [22]:
```
#List delete
color = ["yellow", "red", "blue"]
print(color)
shape = ["square", "triangle", "rectangle"]
print(shape)

del color[0]
print(color)
```

```
['yellow', 'red', 'blue']
['square', 'triangle', 'rectangle']
['red', 'blue']
```

In [23]:
```
#List and if statement
days = ["Sun", "Monday", "Tuesday", "Wednesday"]

if "Sun" in days:
    print("Yes")
else:
    print("No")


if "Saturday" in days:
    print("Yes")
else:
    print("No")
```

```
Yes
No
```

In [25]:
```
#List and if statement
#Keyword 'not' can be combined with 'in'

months = ['jan','feb','mar','apr']

input = "dec"

if input not in months:
    print("month you entered is not in the list")
else:
    print("month you entered is in the list")

input1 = "mar"
if input1 not in months:
    print("month you entered is not in the list")
else:
    print("month you entered is on the list")
```

```
month you entered is not in the list
month you entered is on the list
```

In [26]:
```
#List reverse
numbers = ["one","two","three","four","five"]
print(numbers)
numbers.reverse()
print(numbers)
```

```
['one', 'two', 'three', 'four', 'five']
['five', 'four', 'three', 'two', 'one']
```

In [27]:
```
#List sort
numbers = [5,4,3,2,1]
letters = ['e','d','c','b','a']

print(sorted(numbers))
print(sorted(letters))
```

```
[1, 2, 3, 4, 5]
['a', 'b', 'c', 'd', 'e']
```

In [28]:
```
#List length

mylist = "one,two,three,four,five"
mylist1 = ["one,two,three,four,five"]
mylist2 = ["one","two","three","four","five"]

print(len(mylist))
print(len(mylist1))
print(len(mylist2))
```

```
23
1
5
```

In [48]:
```
#List split

number_list = "one,two,three,four,five"
number_list1 = ["one,two,three,four,five"]
number_list2 = ["one","two","three","four","five"]

new_list = number_list.split(',')
print(new_list)
print(len(new_list))

#you can not split the number_list1 and number_list2
#because it has no attribute to split ','.
```

```
['one', 'two', 'three', 'four', 'five']
5
```

In [52]:
```
a = "My name is John. I live in Bangalore"
print(a)
print(len(a))
print('\n')

b = a.split(',')
print(b)
print(len(b))
print('\n')

c = a.split('.')
print(c)
print(len(c))
print('\n')

d = a. split(' ')
print(d)
print(len(d))
```

```
My name is John. I live in Bangalore
36


['My name is John. I live in Bangalore']
1


['My name is John', ' I live in Bangalore']
2


['My', 'name', 'is', 'John.', 'I', 'live', 'in', 'Bangalore']
8
```

In [53]:
```
#List boolean
#It'll check if all the conditions are true.
#It'll give false even one condition(s) are false.

list_boo = ['first','second','third']
list_boo[0] == 'first'
list_boo[1] == 'second'
list_boo[2] == 'third'

#Below will give the result false
# list_boo = ['first','second','third']
# list_boo[0] == 'first'
# list_boo[1] == 'second'
# list_boo[1] == 'third'
```

Out[53]:
```
True
```

In [56]:
```
#List slicing
"""variable_name[start:end] items start through end-1
variable_name[start:] items start through the rest of the array
variable_name[:end] items from the beginning through end-1
variable_name[:] whole array"

Start or end may be a negative number. It counts from the end of the
array instead of at the beginning.

a[-1] # last item in the array
a[-2:] # last two items in the array
a[:-2] # everything except the last two items
"""

z = ['yellow','green','red','blue','white']
z1 = z[1:-1]
print(z1)
```

```
['green', 'red', 'blue']
```

In [57]:
```
#List loops

items_1 = [1,2,3,4,5]

for i in items_1:
    print(i)
```

```
1
2
3
4
5
```

In [58]:
```
#List for loops incrementing value
num_val = [1,10,20,30]
cal = 1
for num_vals in num_val:
    cal = cal+num_vals
    print(cal)
```

```
2
12
32
62
```

In [61]:
```
#List for loops range
for i in range(0,5):
    print(i)
```

```
0
1
2
3
4
```

In [80]:
```
#List range

for i in range(0,3):
    print(i)
```

```
0
1
2
```

Dictionary

In [ ]:
```
#Dictionary
#variable name = {} #to create an empty dictionary
#dictionary has key : value
#Nested dictionary - you can create a dictionary within a dictionary
```

In [81]:
```
phone_released_year = {"iphone1":2007,
            "iphone2":2008,
            "iphone3":2009,
            "iphone4":2010
            }

print(phone_released_year)
```

```
{'iphone1': 2007, 'iphone2': 2008, 'iphone3': 2009, 'iphone4': 2010}
```

In [82]:
```
#Dictionary - add key and value to the dictionary

phone_released_year["iphone5"] = 2011

print(phone_released_year)
```

```
{'iphone1': 2007, 'iphone2': 2008, 'iphone3': 2009, 'iphone4': 2010, 'i
phone5': 2011}
```

In [83]:
```
#Dictionary - remove key and value to the dictionary
del phone_released_year["iphone1"]
print(phone_released_year)
```

```
{'iphone2': 2008, 'iphone3': 2009, 'iphone4': 2010, 'iphone5': 2011}
```

In [84]:
```
#Dictionary length
print(len(phone_released_year))
```

```
4
```

In [85]:
```
#Test the dictionary
my_dictionary = {'a':'one',
                 'b':'two'}

print('a' in my_dictionary)
print('b' in my_dictionary)
print('c' in my_dictionary)
```

```
True
True
False
```

In [86]:
```
#Test the dictionary using for loop

my_dictionary = {'a':'one',
                 'b':'two'}

for i in my_dictionary:
    if 'a' in my_dictionary:
        print("key found")
        break
    else:
        print("no key found")
```

```
key found
```

In [87]:
```
#Dictionary - get a value of a specified key..

my_dictionary = {'a':'one',
                 'b':'two'}

print (my_dictionary.get('a'))
```

```
one
```

In [88]:
```
#Dictionary - print all keys with a for loop

iphones_released_years = {"iphone1":2007,
            "iphone2":2008,
            "iphone3":2009,
            "iphone4":2010
            }


print("-"*10)
print("iphones released so far:")
print("-"*10)
for model in iphones_released_years.items():
    print(model)
```

```
----------
iphones released so far:
----------
('iphone1', 2007)
('iphone2', 2008)
('iphone3', 2009)
('iphone4', 2010)
```

In [89]:
```
iphones_released_years = {"iphone1":2007,
            "iphone2":2008,
            "iphone3":2009,
            "iphone4":2010
            }
for key in iphones_released_years:
    print(key)
```

```
iphone1
iphone2
iphone3
iphone4
```

In [91]:
```
#Dictionary items
#create two variables to unpack value of items

iphones_released_years = {"iphone1":2007,
            "iphone2":2008,
            "iphone3":2009,
            "iphone4":2010
            }
for key, val in iphones_released_years.items():
    print(key,"=>", val)
```

```
iphone1 => 2007
iphone2 => 2008
iphone3 => 2009
iphone4 => 2010
```

In [92]:
```
#Dictionary - sort dictionary
models_years = {"iphone4":2010,
            "iphone2":2008,
            "iphone1":2007,
            "iphone3":2009
            }
for keys, values in sorted(models_years.items()):
    print(keys,values)
```

```
iphone1 2007
iphone2 2008
iphone3 2009
iphone4 2010
```

Loops

In [93]:
```
#Range

for d in range(1,5):
    if d == 4:
        break
    print(d)
```

```
1
2
3
```

In [ ]:
```
#While loop
#Depending on the use case but developer use it very rarely

while True:
    raw_input1 = input("Start typing....")
    if raw_input1 == "quit":
        break
    print(f"your answer was,{raw_input1}")
```

In [5]:
```
#While loop

counter = 0
while counter <= 6:
    print(counter)
    counter = counter+1
```

```
0
1
2
3
4
5
6
```

In [8]:
```
#While loop

counter = 0
while counter < 6:
    counter = counter+1
    print(counter)
```

```
1
2
3
4
5
6
```

In [14]:
```
#Nested loops - loops inside the a loop
for x in range(1,3):
    for y in range(1,5):
        print(x,y)
```

```
1 1
1 2
1 3
1 4
2 1
2 2
2 3
2 4
```

In [15]:
```
#Loops through words
word = "computer"
for letter in word:
    print(letter)
```

```
c
o
m
p
u
t
e
r
```