Difference Between list.sort() and sorted():—>

sorted(*iterable*, */*, ***, *key=None*, *reverse=False*)

Return a new sorted list from the items in iterable.

Has two optional arguments which must be specified as keyword arguments.

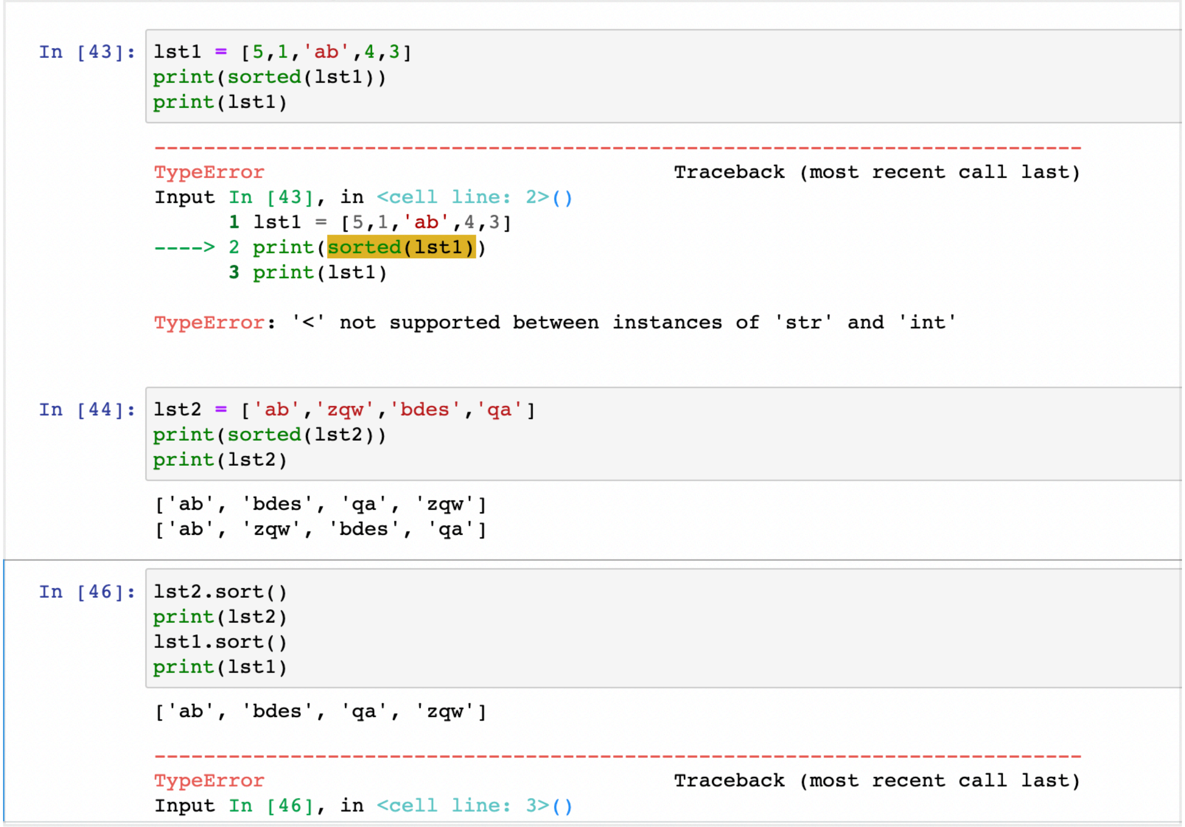
key specifies a function of one argument that is used to extract a comparison key from each element in iterable (for example, key=str.lower). The default value is None (compare the elements directly).

reverse is a boolean value. If set to True, then the list elements are sorted as if each comparison were reversed.

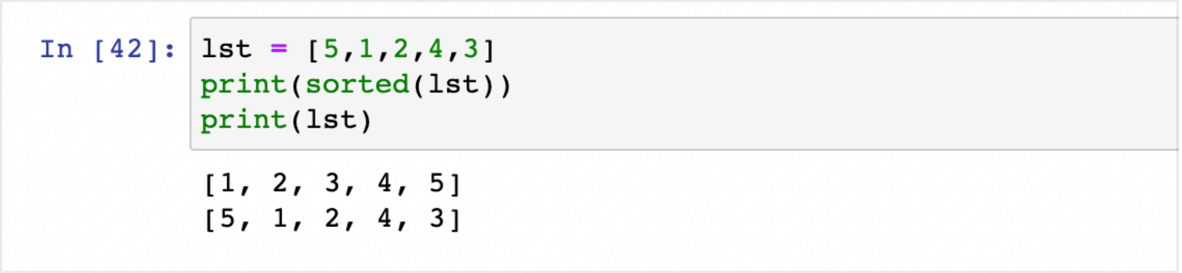
list.sort(***, *key=None*, *reverse=False*)
This method sorts the list in place, using only < comparisons between items. ***Exceptions are not suppressed*** - if any comparison operations fail, the entire sort operation will fail (and the list will likely be left in a partially modified state).

sort() ***accepts two arguments that can only be passed by keyword*** (keyword-only arguments):

key specifies a function of one argument that is used to extract a comparison key from each list element (for example, key=str.lower). The key corresponding to each item in the list is calculated once and then used for the entire sorting process. The default value of None means that list items are sorted directly without calculating a separate key value.



```
In [43]: lst1 = [5,1,'ab',4,3]
         print(sorted(lst1))
         print(lst1)

         ---------------------------------------------------------------------------
         TypeError                                 Traceback (most recent call last)
         Input In [43], in <cell line: 2>()
               1 lst1 = [5,1,'ab',4,3]
         ----> 2 print(sorted(lst1))
               3 print(lst1)

         TypeError: '<' not supported between instances of 'str' and 'int'

In [44]: lst2 = ['ab','zqw','bdes','qa']
         print(sorted(lst2))
         print(lst2)

         ['ab', 'bdes', 'qa', 'zqw']
         ['ab', 'zqw', 'bdes', 'qa']

In [46]: lst2.sort()
         print(lst2)
         lst1.sort()
         print(lst1)

         ['ab', 'bdes', 'qa', 'zqw']

         ---------------------------------------------------------------------------
         TypeError                                 Traceback (most recent call last)
         Input In [46], in <cell line: 3>()
```



```
In [42]: lst = [5,1,2,4,3]
         print(sorted(lst))
         print(lst)

         [1, 2, 3, 4, 5]
         [5, 1, 2, 4, 3]
```

Inference derived from above screenshots:—>

1. Both **list.sort()** and **sorted()** doesn’t work on heterogenous list, they always work on homogenous list or you can roughly say iterable.
2. **List.sort()** only works on list while **sorted()** works on any iterable.
3. **sorted()** doesn’t change the actual iterable instead it create a new and return the same.
4. **List.sort()** do change the actual list.

https://gist.github.com/singhsidhukuldeep/9e1d7cb0ce62f1d9dd08887f8bb2bd59

https://gist.github.com/singhsidhukuldeep/fa9ffa6ec6206c44f61ee95a9c9fdc81