

# Python Collections (Arrays):

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There are four collection data types **in** the Python programming language:

List is a collection which is ordered and changeable. Allows duplicate members.  
Tuple is a collection which is ordered and unchangeable. Allows duplicate members.  
Set is a collection which is unordered and unindexed. No duplicate members.  
Dictionary is a collection which is unordered, changeable and indexed. No duplicate members.

## Access Items:

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```
thislist = ["apple", "banana", "cherry"]  
print(thislist[1])
```

```
thislist = ["apple", "banana", "cherry"]  
print(thislist[-1])
```

```
banana  
cherry
```

## Range of Indexes:

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```
thislist = ["apple", "banana", "cherry", "orange", "kiwi", "melon", "mango"]  
print(thislist[2:5])  
#This will return the items from position 2 to 5.  
#Remember that the first item is position 0,  
#and note that the item in position 5 is NOT included
```

```
thislist = ["apple", "banana", "cherry", "orange", "kiwi", "melon", "mango"]  
print(thislist[:4])  
#This will return the items from index 0 to index 4.  
#Remember that index 0 is the first item, and index 4 is the fifth item  
#Remember that the item in index 4 is NOT included
```

```
thislist = ["apple", "banana", "cherry", "orange", "kiwi", "melon", "mango"]  
print(thislist[2:])  
#This will return the items from index 2 to the end.  
#Remember that index 0 is the first item, and index 2 is the third
```

```
thislist = ["apple", "banana", "cherry", "orange", "kiwi", "melon", "mango"]
print(thislist[-4:-1])
#Negative indexing means starting from the end of the list.
#This example returns the items from index -4 (included) to index -1 (excluded)
#Remember that the last item has the index -1,
```

```
['cherry', 'orange', 'kiwi']
['apple', 'banana', 'cherry', 'orange']
['cherry', 'orange', 'kiwi', 'melon', 'mango']
['orange', 'kiwi', 'melon']
```

## Change Item Value:

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```
# To change the value of a specific item, refer to the index number:
thislist = ["apple", "banana", "cherry"]
thislist[1] = "blackcurrant"
print(thislist)
```

```
['apple', 'blackcurrant', 'cherry']
```

## Check if Item Exists:

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```
thislist = ["apple", "banana", "cherry"]
if "apple" in thislist:
    print("Yes, 'apple' is in the fruits list")
```

```
Yes, 'apple' is in the fruits list
```

## List Length:

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```
thislist = ["apple", "banana", "cherry"]
print(len(thislist))
```

```
3
```