

# Lists

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## LISTS

The list is the most common data structure and is often the first you will learn. A list is a sequence of ordered items which share the same ideas and notations that are used for manipulating mathematical notion of sequence.

The following is an example of a basic Python list:

```
In [41]: list1 = [1,2,3,4,5]
         print(list1)
```

```
Out[42]: [1, 2, 3, 4, 5]
```

With a list we can use a single variable to represent an entire sequence and the individual items can be accessed through subscripting.

Called Arrays in other programming languages, which are generally fixed in size. Arrays are also only capable of holding values of the same data type.

However Python lists are dynamic and their size can change on demand, in addition it is possible to mix data types in a single list in Python.

The following is an example of a basic Python list that has mixed data types:

```
In [43]: list1 = [1,2,3,4,5, True, 2.3, "Coffee"]
         print(list1)
```

```
Out[44]: [1, 2, 3, 4, 5, True, 2.3, 'Coffee']
```

In short lists in Python are mutable meaning changing, sequences of arbitrary objects.

Values can be added to the end of a list by using the `append()` method. In the `append()` method, the value needs to put within the parenthesis. See the next example.

```
In [45]: list1 = [1,2,3,4,5, True, 2.3, "Coffee"]
         list1.append(216)
         print(list1)
```

```
Out[46]: [1, 2, 3, 4, 5, True, 2.3, 'Coffee', 216]
```

The length of a list can also be found by using the `len()` function.