Nested Lists

Can a list have another list as element? YES!

In [69]:

```
list1 = ['a','b', 'c']
list2 = [1, 2, 3, list1]
list2
```

Out[69]:

```
[1, 2, 3, ['a', 'b', 'c']]
```

In [71]:

```
# Ask for output
list2[3][2]
```

Out[71]:

```
'c'
```

Dictionaries

Dictionaries are similar to other compound types except that they can use any immutable type as an index. As an example, we will create a dictionary to translate English words into Spanish. For this dictionary, the indices are strings.

General

In [72]:

```
#String as keys
dict_1 = {'key1' : 1 , 'key2' : 2 , 'key3': 3}
```

In [26]:

```
dict_1['key2']
```

Out[26]:

```
2
```

In [27]:

```
dict_1[0]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-27-faffe0d0771d> in <module>()
----> 1 dict_1[0]

KeyError: 0
```

In [37]:

```
dict_2 = {'k1':1 , 'k2':3.1416 , 'k3':'string'}
```

In [38]:

```
dict_2['k3']
```

Out[38]:

```
'string'
```

In [39]:

```
dict_2
```

Out[39]:

```
{'k1': 1, 'k2': 3.1416, 'k3': 'string'}
```

In [40]:

```
dict_2['k1'] + 99
```

Out[40]:

```
100
```

In [41]:

```
dict_2['k1']
```

Out[41]:

```
1
```

In [34]:

```
dict_2['k1'] = dict_2['k1'] + 99
```

In [35]:

```
dict_2['k1']
```

Out[35]:

```
100
```

In [43]:

```
# Empty Dictionary
dict_3 = {}
```

In [44]:

```
dict_3
```

Out[44]:

```
{}
```

In [45]:

```
dict_3['key1'] = 'value1'
```

In [46]:

```
dict_3['key2'] = 'value2'
```

In [47]:

```
dict_3
```

Out[47]:

```
{'key1': 'value1', 'key2': 'value2'}
```

In [53]:

```
#Dictionaries are very flexible in data types they hold.
#for e.g. Following dictionary has 1 list, and 1 nested dictionary in it
```

In [54]:

```
dict_4 = {'k1' : 123, 'k2':[11,12,13], 'k3':{'nestkey':{'subnestkey':'value'}}}
```

In [55]:

```
dict_4['k3']
```

Out[55]:

```
{'nestkey': {'subnestkey': 'value'}}
```