Dictionary Basics

Dictionaries are the second iterable data structure we will cover in this course. Dictionaries contain unordered `key:value` pairs where each key uniquely maps to a value. Keys cannot be repeated but the values can repeat. The keys can then be used to loopkup values.

Dictionary literals are stored as key value pairs enclosed in a set of curly braces. Each `key:value` pair is separated by a `:` The pairs are separated by commas

The examples in this notebook demonstrate how

1. to lookup values using keys
2. to create dictionaries
3. use the `len()` function to find the number of key value pairs in a dictionary

Dictionary literals are stored as key value pairs enclosed in a set of curly braces. Each `key:value` pair is separated by a `:` The pairs are separated by commas.

The syntax to look up a value based on the key is: `dict_name[key]`

In [1]:

```
my_dict = {'Name':'Zara', 'Age': 7, 'Class': 'First'}
print('my_dict[Name]', my_dict['Name'])
print('my_dict[Class]', my_dict['Class'])

'''
We get a  KeyError if we try to lookup a value using a key that does not exist
'''
print('my_dict[Type]', my_dict['Type']) #This statement will return an error
```

```
my_dict[Name] Zara
my_dict[Class] First
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-1-18aba55c94d7> in <module>
      6 We get a  KeyError if we try to lookup a value using a key that does not exist
      7 '''
----> 8 print('my_dict[Type]', my_dict['Type']) #This statement will return an error

KeyError: 'Type'
```

In [2]:

```
'''
You can create an empty dictionary as follows
'''
my_dict2 = { }
print(my_dict2)
```

```
{}
```

In [3]:

```
'''
You can also create an empty dictionary using the dict() function
'''
my_dict3 = dict()
print(my_dict3)
```

```
{}
```

In [4]:

In [4]:

```
'''
You can also create non-empty dictionaries using the dict() function.  The input can be any number
of
key:value pairs as shown below.  However, the key must be an alphanumeric value.
'''
my_dict4 = dict(s1='Amy', s2='Betty', s3='Cathy', s4='Diana')
print(my_dict4)
```

```
{'s1': 'Amy', 's2': 'Betty', 's3': 'Cathy', 's4': 'Diana'}
```

In [5]:

```
'''
You can find the number of key-value pairs in a dictionary by using the len() function
'''
print(len(my_dict))
print(len(my_dict2))
print(len(my_dict3))
print(len(my_dict4))
```

```
3
0
0
4
```