Python **Dictionaries**

A **dictionary** is a data type similar to arrays (or lists), but works by giving each value in a collection a **name** (or **KEY**) instead of giving it a numerical addresses or index.





A **contact list** is a good example of the necessity and usefulness of **dictionaries**. Sometimes we want to label data with **a word** or **name** rather than just a location. If we want to look up someone’s phone number in out contact list we would get their number by looking up **name** rather than looking up anything related to their actual phone#

The name in this case is called the **KEY** in our dictionary

A dictionary could consist of names with phone numbers:

>>> phoneNumbers[“Mary”] = “555-6789”

>>> phoneNumbers[“Bob”] = “444-4321”

>>> phoneNumbers[“Jenny”] = “867-5309”

**or alternatively we could initialize the dictionary like this:**

>>> phoneNumbers = {'Bob': '444-4321', 'Mary': '555-6789', 'Jenny': '867-5309'}

>>> print phoneNumbers

{'Bob': '444-4321', 'John': '555-1234', 'Mary': '555-6789', 'Jenny': '867-5309'}

>>> phoneNumbers = {'Bob': '444-4321', 'Mary': '555-6789', 'Jenny': '867-5309'}

And dictionaries have some **methods** that we can use to work with them.

1. The **keys** method gives us a list of all the dictionary keys:

>>> phoneNumbers.keys()

['Bob', 'John', 'Mary', 'Jenny']

1. The **values** method gives us a list of all the values:

>>> phoneNumbers.values()

['444-4321', '555-1234', '555-6789', '867-5309']

1. Now, the whole reason we created a dictionary was so we could look things up.  In this case we want to look something up by name.  You do that like this:

>>> print phoneNumbers[“Mary”]

‘555-6789’

1. Find out if a key exists in the dictionary:  in

>>> phoneNumbers = {'Bob': '444-4321', 'Mary': '555-6789', 'Jenny': '867-5309'}

>>> “Bob” in phoneNumbers

True

>>> “Barb” in phoneNumbers

False

Your assignment:

click on the assignment button for dictionaries. Do the selected exercises then:

Do exercise 137 in python workbook.