

KEY_Practice18_Dictionaries

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1 Dictionaries

Now it's time to practice with dictionaries!

Let's start by making a dictionary of relatives in your family. Make a dictionary where the keys are a relation (ex. mom, dad, sister, brother, uncle, aunt, cousin, etc.), and the values are the people's name(s) who are related to you in that way:

```
[37]: # make dictionary of relations
family = {'mom': 'carmen',
          'dad': 'dan',
          'sister': 'maya',
          'brother': 'sam',
          'uncle': ['russell', 'david'],
          'aunt': ['helene', 'sharry', 'diana', 'debbie'],
          'cousin':
            → ['zane', 'nico', 'hannah', 'alyssa', 'zach', 'kamilya', 'ismail', 'saidi']}

# print out your dictionary
print(family)
```

```
{'mom': 'carmen', 'dad': 'dan', 'sister': 'maya', 'brother': 'sam', 'uncle':
['russell', 'david'], 'aunt': ['helene', 'sharry', 'diana', 'debbie'], 'cousin':
['zane', 'nico', 'hannah', 'alyssa', 'zach', 'kamilya', 'ismail', 'saidi']}
```

Now access all your aunts:

```
[38]: # access all aunts in dictionary
family['aunt']
```

```
[38]: ['helene', 'sharry', 'diana', 'debbie']
```

What if you don't remember all of the keys in your dictionary? How can you print them all out?

```
[39]: # print all keys in dictionary
family.keys()
```

```
[39]: dict_keys(['mom', 'dad', 'sister', 'brother', 'uncle', 'aunt', 'cousin'])
```

Now you've decided that you want to add some of your closest friends to the list too. Add a key-value pair to your dictionary with some of your closest friends:

```
[40]: # add friends to dictionary
family['friends'] = ['brooke', 'marlena', 'kelly']

# print dictionary to see if it worked!

family
```

```
[40]: {'aunt': ['helene', 'sharry', 'diana', 'debbie'],
      'brother': 'sam',
      'cousin': ['zane',
                 'nico',
                 'hannah',
                 'alyssa',
                 'zach',
                 'kamilya',
                 'ismail',
                 'saidi'],
      'dad': 'dan',
      'friends': ['brooke', 'marlena', 'kelly'],
      'mom': 'carmen',
      'sister': 'maya',
      'uncle': ['russell', 'david']}
```

See how friends isn't at the end of the dictionary? That's a friendly reminder that dictionaries are *unordered*.

Now let's loop through our dictionary and print out the name of the key and the length of the values (how many of that relation you have):

```
[41]: for k,v in family.items():
      print(k)
      print(len(v))
```

```
mom
6
dad
3
sister
4
brother
3
uncle
2
aunt
4
cousin
```

```
8
friends
3
```

Challenge: Let's add in a friend to our dictionary. How can we do that? (*Note:* We didn't learn this exact thing. Feel free to use Google if you need to!)

```
[42]: # add friend to friends key-value pair
family['friends'].append('stephanie')

# print dictionary to see if it worked
print(family)
```

```
{'mom': 'carmen', 'dad': 'dan', 'sister': 'maya', 'brother': 'sam', 'uncle':
['russell', 'david'], 'aunt': ['helene', 'sharry', 'diana', 'debbie'], 'cousin':
['zane', 'nico', 'hannah', 'alyssa', 'zach', 'kamilya', 'ismail', 'saidi'],
'friends': ['brooke', 'marlena', 'kelly', 'stephanie']}
```

Say we changed our mind and now we actually want our friends to be in a separate list. How could we do that using one line of Python code?

```
[43]: # get friends out of dictionary
friends = family.pop('friends')

# print friends
print(friends)
```

```
['brooke', 'marlena', 'kelly', 'stephanie']
```

Nice job! You're becoming an expert at accessing and manipulating keys and values in dictionaries.