

CoGrammar

Dictionaries





Lecture Objectives

Define dictionaries and how we use them.

Create dictionaries within you programs.

3. Use dictionary methods to access and manipulate the data within the dictionary.







Assessment

CoGrammar

Recap on 2D lists

Dictionaries

- ★ Dictionaries in Python are similar to those Oxford dictionaries we all used in English class.
- ★ Python dictionaries are similar to a list, however each item has two parts, a key and a value.
- ★ For example, an English dictionary has the word (key) and then its definition (value)

Dictionary Example

```
my_dictionary = {
    "name" : "Terry",
    "age" : 23,
    "is_funny" : False
}
```

- ★ Dictionaries are enclosed in curly brackets; key value pairs are separated by colon and each pair is separated by a comma.
- ★ On the left is the key, on the right is the value.

Dict Function

- ★ Used to create dictionaries.
- ★ Assign values to keys by passing in keys and values separated by an = sign.

```
new_dictionary = dict(name="kitty", age=0.5, kitten=True)
print(new_dictionary)
# Result >> {'name': 'kitty', 'age': 0.5, 'kitten': True}
```

Accessing a value in dictionaries

- ★ To access a value in a dictionary, we simply call the key and Python will return the value paired with said key.
- Similar to indexing, however we provide a key name instead of an index number.

Example

```
new_dictionary = dict(name="kitty", age=0.5, kitten=True)
print(new_dictionary["name"])
# Result >> kitty
print(new_dictionary["age"])
# Result >> 0.5
```

Accessing all values

We are able to use the .values() method on a dictionary in a for loop to access every value in a dictionary.

```
new_dictionary = dict(name="kitty", age=0.5, kitten=True)
for value in new_dictionary.values():
    print(value)

# Result >> kitty
# 0.5
# True
```

Accessing all keys

We are able to use the .keys() method on a dictionary in a for loop to access every key in a dictionary.

```
new_dictionary = dict(name="kitty", age=0.5, kitten=True)
for keys in new_dictionary.keys():
    print(keys)

# Result >> name
# age
# kitten
```

Accessing both keys & values

We are able to use the .items() method on a dictionary in a for loop to access all keys and values in a dictionary.

```
new_dictionary = dict(name="kitty", age=0.5, kitten=True)
for keys, values in new_dictionary.items():
    print(keys, " : ", values)

# Result >> name : kitty
# age : 0.5
# kitten : True
```

Popping out of a dictionary

- ★ Similar to the list, we can use .pop() to remove a pair out of a dictionary and return the value of the pair in a variable.
- ★ Please note that using .pop() must have the key as an argument for pop to work.

```
new_dictionary = dict(name="kitty", age=0.5, kitten=True)
value = new_dictionary.pop("name")
print(value)
# Result >> kitty
```





Poll:

Assessment

Wrapping Up

Dictionaries

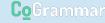
Dictionaries store data as key value pairs. To get access to a specific values you can index to it using the key.

Keys

Keys can consist of strings, integers, floats or boolean.

Values

Values can be any data type including another dictionary.



C<u>o</u>Grammar

Questions around Dictionaries

CoGrammar

Thank you for joining

