

Introduction to Python

Feature Summary, Session 5

FUNCTIONS / OPERATIONS

dicts

- subscript with dict key: ***access/read a value associated with a dict key***
- subscript with dict key and value: ***add a key/value pair***
- for** looping: ***iterate over each key in a dict***
*as Python iterates over each key in the dictionary, it assigns the key to the loop variable (at right, **mykey**), then executes the block. The assignment and block execution happen once for each key in the dict.*
argument: N/A (iterates over dict keys)
return value: with each iteration, key from the dict is assigned to the loop variable
- in** membership test: ***return True if key is in dict, False otherwise***
"arguments": key to search for, and dict to search
return value: **True** if key is in the dict;
False if the key is not in the dict
- len()** function: ***return integer length (# of pairs) of a dict***
argument: dict
return value: integer
- sorted()** function: ***return a sorted list of keys from a dict***
argument: dict
return value: a list of the keys from the dict, sorted
- sorted()** with **key=dict.get**: ***return a list of dict keys sorted by value***
arguments: dict, key=dictname.get (using dict name)
return value: a list of the keys from the dict, sorted by associated value

```
myd = {'a': 1, 'b': 2}
val = myd['a']          # 1
```

```
myd = {'a': 1, 'b': 2}
myd['c'] = 3
print(myd)
# {'a': 1, 'b': 2, 'c': 3}
```

```
myd = {'a': 1, 'b': 2}
for mykey in myd:
    print(mykey)
```

```
myd = {'a': 1, 'b': 2}
if 'a' in myd:
    print("it's there")
```

```
myd = {'a': 1, 'b': 2}
print(len(myd))          # 2
```

```
myd = {'y': 1, 'p': 2}
sx = sorted(myd)
print(sx)                 # ['p', 'y']
```

```
myd = {'p': 99, 'y': 1}
sx = sorted(myd, key=myd.get)
print(sx)                 # ['y', 'p']
```

boolean

- **any()** function: *return True if any of the items in iterable are True, False otherwise*
- **all()** function: *return True if all of the items in iterable are True, False otherwise*

```
items = [1, 0, 0]
if any(items):
    print('true')
```

```
items = [1, 5, 9]
if all(items):
    print('True')
```

METHODS

- dict **keys()** method: *return iterator of dict keys*
argument: NA -- reads from dict itself
return value: iterator (object that can be looped over)
- dict **values()** method: *return iterator of dict values*
argument: NA -- reads from dict itself
return value: iterator (object that can be looped over)
- dict **items()** method: *return iterator of key/value 2-item tuples*
argument: NA -- reads from dict itself
return value: iterator (object that can be looped over)

```
myd = {'p': 99, 'y': 1}
for ikey in myd.keys():
    print(ikey)    # 'p'
                  # 'y'
```

```
myd = {'p': 99, 'y': 1}
for ikey in myd.values():
    print(mys)    # 99
                  # 1
```

```
myd = {'p': 99, 'y': 1}
for item in myd.items():
    print(item)   # ('p', 99)
                  # ('y', 1)
```