LING 331
Text Processing for Linguists

Week 4

—

Basic Python 2

Notes from Assignment 3

Biggest thing:

please make sure your assignment runs all the way through on Quest!

Notes from Assignment 3

- Core ways to read files:

```
for line in open(f):
```

vs

```
text = open(f).read()
```

- You can do operations in defining `for` loops, e.g.:

```
for word in s.split():
```

- `continue` statement in loops

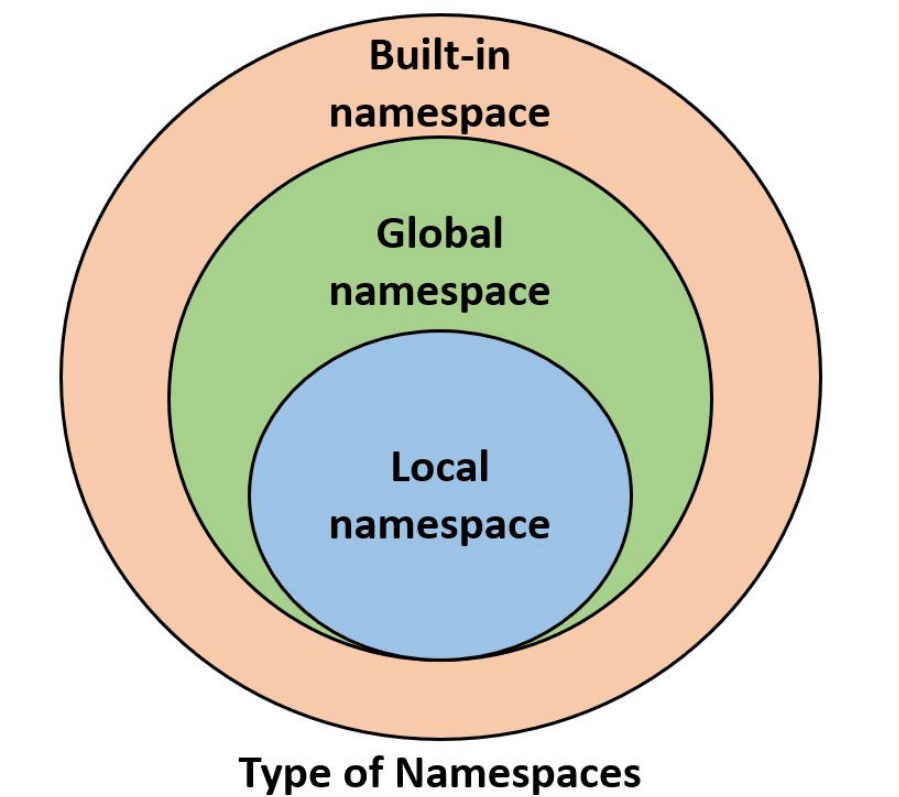
Notes from Assignment 3

- Meaningful variable names!
  - Be aware of clashes - can still work but be confusing!

```
def mean(vals):
    mean = 0
    for val in vals:
        mean += val
    return mean / len(vals)
```

Scope determines where objects are defined

```
# `print` is built-in
print('hi!')

# non-indented is global
my_var = ‘helloooo’

def my_func():
    # only available
    # inside the function
    local_var = 'hey?'

# gets NameError
print(local_var)
```

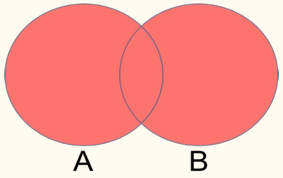
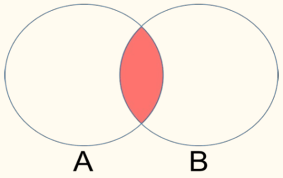
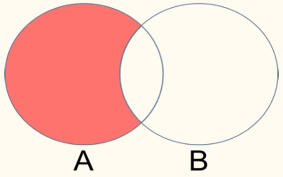
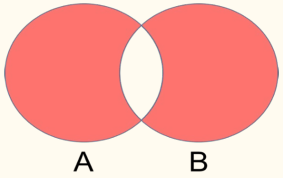


https://www.geeksforgeeks.org/namespaces-and-scope-in-python/

Sets are unordered collections of unique elements

Analogous to sets in math,

lists of unique items

Set Operation	Venn Diagram	Interpretation
Union		$A \cup B$, is the set of all values that are a member of *A*, or *B*, or both.
Intersection		$A \cap B$, is the set of all values that are members of both *A* and *B*.
Difference		$A \setminus B$, is the set of all values of *A* that are not members of *B*
Symmetric Difference		$A \triangle B$, is the set of all values which are in one of the sets, but not both.

https://www.datacamp.com/community/tutorials/sets-in-python

Set Methods

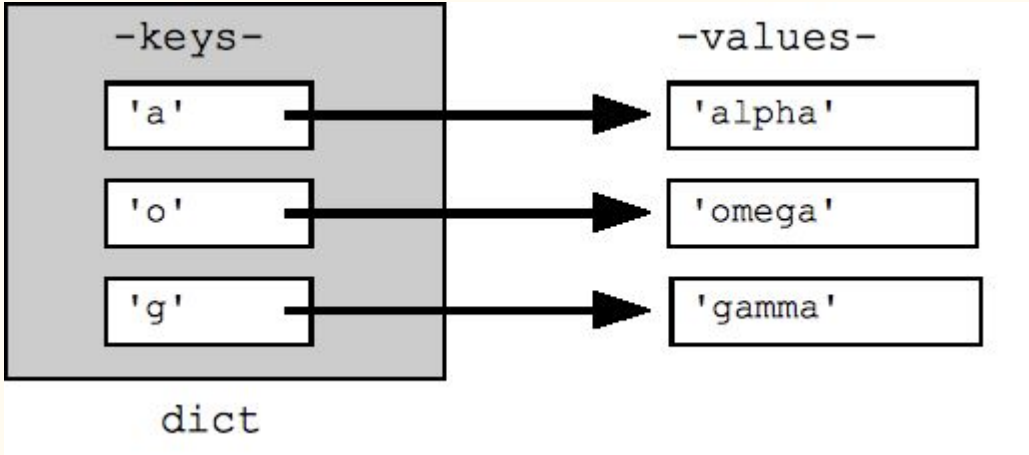
```
s = set()              # create an empty set

s.add(val)             # add a value to the set

s.remove(val)          # remove a value from the set

s1 & s2                # set intersection

s1 - s2                # set difference

s1.issubset(s2)        # set operations
s1.issuperset(s2)
s1.union(s2)
s1.intersection(s2)

len(s)                 # number of items in the set
```

Dictionaries define key-value mappings

Versatile mappings

between (almost) whatever

and whatever else



Dict keys must:

- Be immutable
- Appear only once

https://developers.google.com/edu/python/dict-files

Dictionary Methods

```
d = {}           # create an empty dictionary and assign it to d

d[key] = value   # assign a value to a given dictionary key

d.keys()         # the list of keys of the dictionary

d.values()       # the list of values in the dictionary

if key in d:     # test whether a particular key is in the dictionary

for key in d:    # iterate over the keys of the dictionary

len(d)           # number of keys in the dictionary
```

Random Built-in Module

We'll use it a lot in this assignment!

random.random() with nested conditionals:

```
randval = random.random() # float between 0 and 1
if randval < 0.35:
    # 35% chance of entering here
elif randval < 0.6:
    # 25% chance of entering here
else:
    # 40% chance
```