{START OF TERM 2!}

Crista Falk
3/13/17
A2

Sets & FROZEN sets

Definition: Cantor: "A set is a gathering together into a whole of definite, distinct objects of our perception and of our thought — which are called elements of the set."

A WELL-DEFINED COLLECTION OF OBJECTS

Set - collection type (a grouping of data items w/ shared significance to problem being solved, operated together in a controlled fashion; generally same type or derived from a common ansestor type)
- mathematics theory → data type in Python
- Thus, sets can't have mult. occurences of same element (unlike lists, tuples)

Creating sets - built-in set function w/ iterable obj.

e.g.

STRING

```
>>> x = set("A Python Tutorial")
>>> x
set(['A', ' ', 'i', 'h', 'l', 'o', 'n', 'P', 'r', 'u', 't', 'a', 'y', 'T'])
>>> type(x)
<type 'set'>
>>>
```

set([ ])

set FUNCTION
- built-in
- arguments:
  - a sequence
  - a string
  - any iterable object
- No doublets (mult. occurrences of an element)

TUPLE

```
>>> cities = set(("Paris", "London", "Paris", "Berlin"))
>>> cities
set(['Paris', 'London', 'Berlin'])
```

NO MUTABLE OBJECTS (such as lists)

```
X >>> errorAlph = set((('A','B','C'),('W','X','Y'), 'Z'))
✓ >>> correctAlph = set((['A','B','C'],['W','X','Y'], 'Z'))
```

ERROR

```
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
TypeError: unhashable type: 'list'
>>>
```