Sparse matrices:

- < a matrix: a list of list.
- Sparse matrix: majority of values are 0.
- to avoid writing all 0s, we can use a dictionary.
- to find the 0s we use get. (key, value)

Methods:

- Keys → returns the keys
- values → returns the values
- items → returns key-value pairs.
- get → the value associated with a key.

ex:
inventory.values ()
inventory.items ()

to look for a non-existent key in a dictionary you can use fx: in & not in operator

Dictionaries

a python mapping connection

from _____→ to
key (immutable)   value (any python) object

ex: translating eng to spanish

eng2sp = {}
eng2sp ['one'] = 'uno'
eng2sp ['two'] = 'dos'
            └ key value pair

Dictionary Operations

del: removes a key-value pair.

they are mutable.
inventory = {'bananas': 312}
inventory ['banana's] = inv ['banana's] + 200
len [inventory] = 512

Aliasing + Copying:

what is aliasing: multiple variables refer to the same object

→ if you wanna keep a copy of an original variable, you can define a new one built of the old variable

opposite = { 'cat' 12, 'dog': 10}
alias = opposite
alias ['cat'] = 30
print (alias['cat']) = 30 no longer 12