clickers exercise on lists
and tuples

list comprehensions

functions as objects

map

list comprehensions

$S = \{x^2 : x \text{ in } \{0 \ldots 9\}\}$
$V = (1, 2, 4, 8, \ldots, 2^{12})$
$M = \{x \mid x \text{ in } S \text{ and } x \text{ even}\}$

lambda

lambda<expression>

filter

reduce

Dictionary

name_list

0	Pelagibacter
1	E. coli
2	V. cholera
3	Chlorobium
…	…

tax_list

0	A-Proteobacteria
1	G-proteobacteria
2	G-proteobacteria
3	Chlorobia
…	…

genome_list

0	ATCGTCGACC
1	TCTGGCATAA
2	GGACTAATTC
3	AATGGCCTT
…	…

List

Pelagibacter	Elem 1
1	Elem 2
2	Elem 3
3	Elem 4
…	…

index

element

Dictionary

Key 1	Val 1
Key 2	Val 2
Key 3	Val 3
Key 4	Val 4
…	…

custom index by label

element

store pairs of data
key
value

values
any type (mutable or immutable)
duplicates

keys
must be unique
immutable/hashable type

no order to keys and values

lists

ordered sequence of elements

look up elements using an integer index

indices have an order

index is an integer

dict

matches ‘keys’ to ‘values

look up one item using another item

no order

index can be any immutable/ hashable type

BREAK