Cheatography

Python3 data structures Cheat Sheet

by desmovalvo via cheatography.com/56139/cs/14893/

Lists and Tuples

What are lists and tuples?

Ordered sequence of values indexed by integer numbers. Tuples are immutable.

How to initialize an empty list/tuple?

Lists: myList = []
Tuples: myTuple = ()

Size of list/tuple?

len (myListOrTuple)

Get element in position x of list/tuple?

myListOrTuple[x] -- if not found,
throws IndexError

Is element "x" in list/tuple?

"x" in myListOrTuple

Index of element "X" of list/tuple?

myListOrTuple.index("x") -- If not
found, throws a ValueError exception

Number of occurrences of "x" in list/tuple?

| myListOrTuple.count("x")

Update an item of a list/tuple?

Lists: myList[x] = "x"

Tuples: tuples are immutable!

Remove element in position x of list/tuple?

Lists: del myList[x]

Tuples: tuples are immutable!

Remove element "x" of a list/tuple?

Lists: myList.remove("x").
Removes the first occurrence
Tuples: tuples are immutable!

Concatenate two lists or two tuples?

Lists: myList1 + myList2

Tuples: myTuple1 + myTuple2

Concatenating a List and a Tuple will produce a TypeError exception

Insert element in position x of a list/tuple?

Lists:myList.insert(x, "value")

Tuples: tuples are immutable!

Lists and Tuples (cont)

Append "x" to a list/tuple?

Lists: myList.append("x")
Tuples: tuples are immutable!

Convert a list/tuple to tuple/list

List to Tuple: tuple (myList)

Tuple to List: list (myTuple)

Slicing list/tuple

myListOrTuple[ind1:ind2:step] -step is optional and may be negative

Sets

What is a set?

Unordered collection with **no duplicate** elements. Sets support mathematical operations like union, intersection, difference and simmetric difference.

Initialize an empty set

mySet = set()

Initialize a not empty set

mySet = set(element1,
element2...) -- Note: strings are split
into their chars (duplicates are deleted). To
add strings, initialize with a Tuple/List

Add element "x" to the set

mySet.add("x")

Remove element "x" from a set

Method 1: mySet.remove("x") -- If
"x" is not present, raises a KeyErorr
Method 2 mySet.discard("x") -Removes the element, if present

Remove every element from the set

mySet.clear()

Check if "x" is in the set

"x" in mySet

Union of two sets

Method 1: mySet1.union(mySet2)

Method 2 mySet1 | mySet2

Sets (cont)

Intersection of two sets

Method 1: mySet1.intersect (mySet2)

Method 2 mySet1 & mySet2

Difference of two sets

Method 1: mySet1.difference(mySet2)

Method 2 mySet1 - mySet2

Simmetric difference of two sets

Method 1:

mySet1.symmetric_difference(mySet2)

Method 2 mySet1 ^ mySet2

Size of the set

len(mySet)

Dictionaries

What is a dictionary?

Unordered set of key:value pairs . Members are indexed by keys (immutable objects)

Initialize an empty Dict

 $myDict = {}$

Add an element with key "k" to the Dict

myDict["k"] = value

Update the element with key "k"

myDict["k"] = newValue

Get element with key "k"

myDict["k"] -- If the key is not present, a

KeyError is raised

Check if the dictionary has key "k"

"k" in myDict

Get the list of keys

myDict.keys()

Get the size of the dictionary

len(myDict)

Delete element with key "k" from the dictionary

del myDict["k"]

Delete all the elements in the dictionary

myDict.clear()



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Page 1 of 1.

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