
Python #5

How to Train Your List

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What is a list?

- Python's "array"
- A bunch of ordered elements
- Elements may be any Python object, including lists
- Mutable
- Index, like strings, from 0
- Slicing like strings
- List slices can be altered, unlike strings
- Assigned to variables and passed to functions by *reference*

Some things you can do with lists

- Length
- `append`, `extend`, `concatenate`
- `pop`, delete element
- `insert` element
- `index`, `in`
- Change element, group of elements
- `clear`
- `copy`
- Loop
- `reverse`
- `sort`
- `==`

Sort

- `list.sort()` VS `sorted(list)`
- `list.sort(reverse=True)`
- `list.sort(key)`

For loops

- `for x in list:`
- `for i in range(len(list)):`
- `for i, x in enumerate(list):`
- `for x,y in zip(list1, list2):`
- `for i in range(x, y)`
- Nested loops
- `break, continue`
- `for ...: ... else:`
- Modifying list in loop

More with lists

- Concatenate elements into a string with `array.join(mylist)`
- Split a string into a list
- Filter, map, reduce
- List comprehensions, generator expressions
- Iterators
- Unpacking list into tuple: `a,b,c...=list`

Tuple

- Similar to lists....but
- Immutable!
- So can do most things lists can do as long as tuple itself not altered
 - Index
 - Length
 - Slices
 - Copy
 - Loops
 - ...
- Initialization
 - `t = 1, 2, 3` or `t = (1, 2, 3)`
 - `t = (1,)`
- Access with `[]` like lists