CSCA08 FALL 2015

WEEK 6 – Lists & Selection

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LEARNING OBJECTIVES

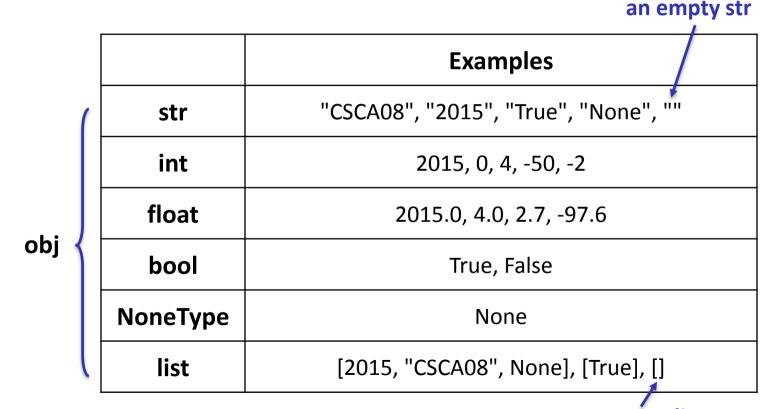
At the end of the tutorial, you will be able to ...

1. Draw <u>lists in memory model</u>

2. Know how to use <u>selection</u> wisely



DATA TYPE(Review)



an empty list

LISTS IN MEMORY MODEL

- Example
 - 1. my_str = "CSCA67"
 - 2. my_list = ["A", None, ["B", True], 5.1]
 - print(my_list[0])
 - 4. print(my_list[3])
 - 5. my_list[1] = "CSCA08"
 - 6. $my_{list[2][1]} = [my_{list[0]}, my_{list[3]}]$
 - print(my_list)

SELECTION(IF-STATEMENT)

def ph value message(ph value):

```
2
        '''(float) -> str
 3
        Return a message of given ph value. If an extrem ph value is less
 4
        than 2 or greater than 11, then return "run". If ph value is
 5
        between 2 and 5, then return "That's pretty acidic, I wouldn't
       drink it". If ph value is 5 and 7, then return "Your water is
 6
        acidic, but you're probably okay". If ph value is 7, then return
 8
        "Your water is neutral". If ph value is between 7 and 11, then
 9
        return "That's pretty basic stuff".
10
        >>> ph value(6.0)
        "Your water is acidic, but you're probably okay"
11
12
        >>> ph value(7.0)
        "Your water is neutral"
13
14
        >>> ph value(8.0)
15
        "That's pretty basic stuff"
16
        >>> ph value(0.9)
17
        "RUN"
18
        >>> ph value(2.0)
        "Your water is acidic, but you're probably okay"
19
        >>> ph value(12.2)
20
21
        "RUN"
        1 1 1
22
```

WORK vs WORK + ELEGANT



Jason 29 days ago

I was also wondering, there is more than one right way to write our programs, correct? The differences are just efficiency and the neatness right?



Brian Harrington 29 days ago Yes, there are an infinite number of ways to write any function, but only a small subset of them are written well.

SUMMARY

- What we learned today ... ?
 - 1. Draw lists in memory model
 - More practice: first 2 questions on Fall 2014 Midterm
 - get stuck?
 use http://www.pythontutor.com/
 settings: python 3.3
 render all objects on the heap
 use text labels for references
 - 2. Use selection wisely
 - More than one way to write a function
 - We want work + elegant code