CSCA08 Fall 2015

Week 6 – Lists & Selection

Bo(Kenny) Zhao

University of Toronto Scarborough

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UNIVERSITY OF TORONTO SCARBOROUGH

LEARNING OBJECTIVES

- At the end of the tutorial, you will be able to …

1. Draw lists in memory model

2. Know how to use selection wisely

if-statement

DATA TYPE(Review)

an empty str

obj

	Examples
str	"CSCA08", "2015", "True", "None", ""
int	2015, 0, 4, -50, -2
float	2015.0, 4.0, 2.7, -97.6
bool	True, False
NoneType	None
list	[2015, "CSCA08", None], [True], []

an empty list

LISTS IN MEMORY MODEL

- Example

1. my_str = “CSCA67”

2. my_list = [“A”, None, [“B”, True], 5.1]
3. 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]]
7. print(my_list)

SELECTION(IF-STATEMENT)

```
def ph_value_message(ph_value):
    '''(float) -> str
    Return a message of given ph_value. If an extrem ph value is less
    than 2 or greater than 11, then return "run". If ph_value is
    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
    acidic, but you're probably okay". If ph_value is 7, then return
    "Your water is neutral". If ph_value is between 7 and 11, then
    return "That's pretty basic stuff".
    >>> ph_value(6.0)
    "Your water is acidic, but you're probably okay"
    >>> ph_value(7.0)
    "Your water is neutral"
    >>> ph_value(8.0)
    "That's pretty basic stuff"
    >>> ph_value(0.9)
    "RUN"
    >>> ph_value(2.0)
    "Your water is acidic, but you're probably okay"
    >>> ph_value(12.2)
    "RUN"
    '''
```

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