CompSci 101 Conditionals (Cont'd), Collections, Strings, Lists

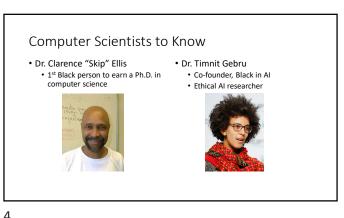
Announcements

- Upcoming due dates
 - All Sakai quizzes due @145pm day of lecture
 - Assignment 1-due 2/11 @1130pm
- Piazza channel

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• Direct questions here

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PFTD

- Selections/Conditionals continued
- Lists
- "The mere imparting of information is not education."
 - Dr. Carter G. Woodson

Selection/Conditionals: if...elif...else if BOOLEAN_CONDITION: if BOOLEAN_CONDITION: cODE_BLOCK_A else: CODE_BLOCK_B cODE_BLOCK_B elif BOOLEAN_CONDITION: CODE_BLOCK_B else: CODE_BLOCK_C

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WOTO 4: Review

- ullet Extending your program from WOTO 3
- Simulate rolling two dice
 - "Roll" two dice
 - \bullet Results of the rolls sent to function named $\it sum$

 - Sum dice values
 If sum is 7 or 11, then output "You win!"
 - Otherwise, output "Next time!"

Functions Calling Other Functions

def function1(parameter): result=function2(parameter2)

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def function2(parameter2):

if __name __ = = '__main__'
output=function1(argument)

print(output)
Example code(PyCharm)

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Collection Data Type

- Collection of books, toys, shoes
 - Direct access to each item
- Comprised of smaller pieces Strings and lists
- Strings
 - Smaller strings of size one char Empty string- "" or "
- Operations on strings
 - + →concatenation
 * →repetition

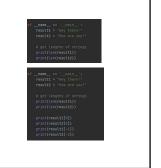


Indexing a String

<mark>string_name</mark>[<mark>index</mark>]

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- Index: 0 to (string_length-1)
- **Whitespaces count**



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Slicing Strings

- Slicing bread, tomatoes, etc.
- Substring (smaller part) of the larger string

<mark>string_name</mark>[<mark>n</mark>:m]





WOTO 1: http://bit.ly/101s21-0204<mark>-1b</mark>

Comparing Strings

- Compares strings to determine the relationship between them
- ==, >, <, >=, <=, !=

 string1 == string2

need to output this or store the result



in and not in operators

• Is string1 a substring of string2?

string1 in string2

string can be a variable or a string literal (e.g., "This is literally an example of a string literal.")



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WOTO 2: http://bit.ly/101s21-0204-2

Lists

- Groceries, errands, names, etc.
- Lists are:
 - Ordered
 - Mutable
 Duplicate elements allowed
 - Elements don't have to be the
 - Elements don't have to be the same type

list_name=[item1, item2, ...item6]
only top-level items in list



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List access and length

• Similar to strings

<mark>list_name</mark>[index</mark>]

- list_name-your variable name
- index-character element directly accessing
 - leftmost 0 to list_length-1
- What about list_name[-1]?



Slicing Lists

• Sublist (smaller part) of the larger list

<mark>list_name</mark>[<mark>n:m</mark>]

 $\it n$ -index of the first character in the sublist

m-index of the character that immediately follows the last character in the sublist



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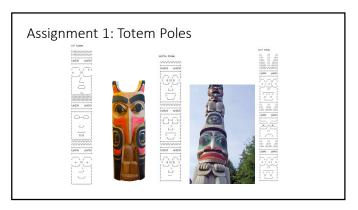
in and not in operators

• Is list1 a member of list2?





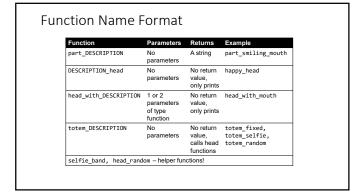
WOTO 3: http://bit.ly/101s21-0204-3

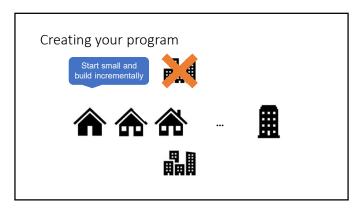


Learning Goals: Totem Pole

- Understand differences and similarities:
 - Function definitions vs function calls
 - Functions with return statements vs those without
 - Functions with parameters vs those without
 - Functions can be arguments
- Be creative and learn lesson(s) about software design and engineering
 - Create a small, working program, make incremental improvements.
 - Read the directions and understand specifications!

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With functions grow by...



- Minimal code that does run and can be submitted
- Where go from here?
- Add head part functions to create happy_head()
- Create the next head function for totem_fixed and any new head part functions
- Try a head_with function
- Go to the next totem
- etc.

Totem Assignment by Tuesday

- At minimum...
- · Read the assignment
- Do the Totem reading quiz
- Create initial design
- Create project and start writing code (do not need to finish)
- Goal: Find your first question about how to do this assignment then ask on Piazza or at consulting/office hours

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Remember

- Work smarter, not harder
- Design first
- \bullet Try to identify where you are stuck
 - Identify resources to help solve problem
- Leverage your design and PythonTutor to understand program flow of control
 - http://pythontutor.com