

Computer Science 101

with Susan Rodgers and Yesenia Velasco

Topics Covered

- Python Data, Variables, operators
- Functions
- Conditionals (if), logic operators
- Looping structions (for, while)
- Turtle Graphics
- Strings
- Lists, Tuples
- Files
- Sets, Dictionaries
- Recursion

We Work On:

- WOTOs
- Programming Assignments
- Exams
- Labs
- Sakai Quizzes
- APTs

APT: CharityDonor

Problem Statement	Specification
<p>You are given information about donors and their contributions. Return the name of the most generous donor, the donor who has given the most to charity.</p> <p>A donor may give more than once. Determine the name of the donor who has given the largest total amount to charity. If there is more than one donor with the largest amount, return the name that comes first in alphabetical order.</p> <p>For example, if the donor list is the following you'll return "Blue".</p> <ol style="list-style-type: none">1. "Sun:70.00"2. "Zebra:80.00"3. "Blue:30.00"4. "Edwards:50.00"5. "Blue:50.00" <p>Both "Zebra" and "Blue" gave the most amount, \$80.00. Return "Blue" as it comes before "Zebra" alphabetically.</p> <p>A donation is represented as a string with the name of the donor first followed by ":" as the separator, followed by the dollar amount given. The dollar amount will represent a valid float.</p> <p>Given a list of donations (a list of strings), return the name of the donor with the largest donation. If there is more than one donor with the maximal amount, return the name of the donor that comes first alphabetically.</p>	<pre>filename: CharityDonor.py def nameDonor(contributions) ''' The parameter contributions is a list of strings, return stringthat is name of most generous donor. See description for details. ''' # you write code here return ''</pre>

```
letters you've guessed: a e i n o r s t u
misses remaining = 1
s _ _ _ o o _
letter> d
you're hung!!
word is skyhook
you made 10 guesses with 8 misses

Do you want to play again? y or n> n
You won 0 game(s) and lost 1
```

```
def nameDonor(contributions):
'''
The parameter contributions is a list of strings,
return stringthat is name of most
generous donor. See description for details.
'''
contributors = {}
for contribution in contributions:
    name_amount = contribution.split(":")
    donor_name = name_amount[0]
    donor_contribution = float(name_amount[1])
    if donor_name in contributors:
        contributors[donor_name] += donor_contribution
    else:
        contributors[donor_name] = donor_contribution
largest_contributors = []
largest_contribution = -1
for donor_name, donor_contribution in contributors.items():
    if donor_contribution > largest_contribution:
        largest_contribution = donor_contribution
        largest_contributors = [donor_name]
    elif donor_contribution == largest_contribution:
        largest_contributors.append(donor_name)
return min(largest_contributors)
```

"Microsoft knows that reliable software is not cost effective. According to studies, 90% to 95% of all bugs are harmless. They're never discovered by users, and they don't affect performance. It's much cheaper to release buggy software and fix the 5% to 10% of bugs people find and complain about."

- Bruce Schneier