“All your troubles are due to those ‘ifs’,” declared the Wizard. If you were not a Flutterbudget you wouldn’t worry.”
- The Emerald City of Oz by Frank Baum

Announcements

- Test 1 is Thursday, Oct 5!
  - You must take the exam in your lecture section
  - Accommodations for test 1? Should have already filled out form on website
- Assignment 4 due TODAY
  - Late penalty 10% extended through Friday, Oct 6
- See Regrades form on website
- No labs this week
- Consulting hours this week
  - Ask UTAs to go over exam questions, etc.

Exam logistics

- Exam is in the regular classroom
- Only need a pen or pencil
- No calculator, smart watch, electronics, scratch paper
- Will give you a reference sheet of Python information with the test (see resources page)
- Closed book, closed notes, closed neighbor
- Covers lecture, lab and assigned reading, assignments, apts
- Have put old quizzes back up as quiz review
  - This is NOT for a grade, for studying only

The best way to study

- Write code on paper!
  - Don’t spend time debugging!
- Resources page has old tests and solutions
  - Try writing code, then look at solutions
- Rewrite an APT
- Rewrite code we did in lecture
- Rewrite code we did in lab
What we have not done

- Test 1 from Fall 2014 on we have covered everything.
- If looking at old exams, note we **have not done** the following:
  - List comprehensions
  - Code in square brackets such as
    \[ y = \{ w \text{ for } w \text{ in } \text{alist} \} \]
    There may be other things…. If it looks strange, it might be we haven’t done it….

Not covered on the exam

- While loops
- Writing files
- Turtles

Understand

- What is the difference between:
  - [ ] and ( )
  - w =      and    w +=
  - print value and assigning value to a variable
  - When do you print? When do you return?
  - Does a function print or return?
- if, for, range, strings, lists
  - Understand format and how they work
  - Looping over items VS looping over index
- Parameters vs arguments

Writing functions with formulae

[bit.ly/101f17-1003-1]
Writing functions with formulae

• Using extra variables: can be really smart
  – Helps in making each line simple
  – Easy to correct if you've made a mistake

• See triangleArea, what about other math symbols and formula?
  – What do +, -, *, /, % do?
  – What about math.sqrt or 5**0.5 or math.sin ...

APT Quiz 1 Solns on today’s date

<table>
<thead>
<tr>
<th>Problem Statement</th>
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<tbody>
<tr>
<td>In this problem we will be looking at words in a phrase. Your task is to count the</td>
</tr>
<tr>
<td>number of words in the phrase that start and end with a different vowel. For exam-</td>
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<tr>
<td>ple, consider the phrase &quot;you will unite the entire world&quot;. The word &quot;you&quot; starts</td>
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<tr>
<td>with the vowel &quot;u&quot; and ends with the vowel &quot;a&quot;, so this word would be counted. The</td>
</tr>
<tr>
<td>words &quot;will&quot; &quot;the&quot; and &quot;world&quot; do not start and end with a vowel, so they are not</td>
</tr>
<tr>
<td>counted. The word &quot;unite&quot; starts with &quot;u&quot; and ends with &quot;e&quot;, different vowels, so it</td>
</tr>
<tr>
<td>is counted. The word &quot;entire&quot; starts and ends with a vowel but they are the same vowel,</td>
</tr>
<tr>
<td>so it does not count. Thus there are only two such words.</td>
</tr>
<tr>
<td>Write function vowelWords that has one string parameter: phrase. This function re-</td>
</tr>
<tr>
<td>turns an integer representing the number of words in phrase that start and end with</td>
</tr>
</tbody>
</table>
a different vowel. If the same word appears more than once in a phrase and it starts |
| and ends with different vowels, then it is counted every time it appears. For the |
| phrase "usa go usa", this function would return 2.                                  |

1. phrase = "usa will unite the entire world"
returns: 2

Accumulating in a loop

• If you are going to return a string
  – Initialization, return value, how to "build it"

• If you are going to return an int (counter)
  – Initialization, return value, how to "build it"

• If you are going to return a list
  – Initialization, return value, how to "build it"
Counting 'a's in a string, 'fox' in a list?

- What Python functions/methods help
  - If you forget, how can you recreate yourself?
  - See exam Python reference sheet

Review Old Exam Questions

Basic List/file Processing

bit.ly/10f17-1003-2