Computer Science — Python — HW #13

Assigned on Mon, 2017-03-20. Complete by Tue, 2017-03-28, but preferably before the Quiz on 2017-03-27.

1. Read chapter 17 of ThinkPython, 2nd edition. (Only one chapter this week, so you can read it twice!)
2. Read the handout called Brief Review of Classes. Make sure that you understand everything in it. In fact, make sure you can write out both the classes presented there (Player and TeamPlayer) without referring to notes.
3. Decide on a course project from the nine ideas that you've up with. Or decide on a new, tenth idea. Think about the details of the project, including the top three things (i.e., "features") you'd want in the project, and the three aspects of the project that you're the least certain about (e.g., details you're not sure you'll get to, or things that could go wrong). A homework assignment **next week** will involve formulating a Project Plan.

Remember that you're welcome to collaborate with others by forming groups/teams/posses, as long as the Project Plan makes clear who is responsible for doing what. Note that collaboration can take many forms….

1. Suppose two teams each want to write an adventure-type program. They could decide that there are some classes that they could share. One team could write half of the shared classes, while another team could write the other half of the shared classes.
2. Here's a variation on (a). Maybe a third team could write all the shared classes, allowing the two original teams to use those classes, and devote more time to their own individual adventures.
3. **[Turn in]** Trace the execution of the following scripts by completing the table below. Write down what happens at each line of execution. (It might be easier to write this up in a Microsoft Word document, or in some other format that supports tables.)

(a) **Banana slices** (Based on problem #5 of HW #7).

Line #1: s = 'banana'

Line #2: for k in range(0, len(s)):

Line #3: print(s[0])

Line #4: s = s[1::]

|  |  |  |  |
| --- | --- | --- | --- |
| **Line #** | **Change in memory** | **Script output** | **Notes** |
| Line #1 | s = 'banana' | No output |  |
| Line #2 | k = 0 | No output | Starting loop |
| Line #3 | No change | Output: b |  |
| Line #4 | s = 'anana' | No output |  |
| Line #2 | k = 1 | No output | Back to top of loop |
| Line #3 | No change | Output: a |  |
| Line #4 | s = 'nana' | No output |  |
| ...etc... (fill out the rest of this table) | | | |

**(b) (E-)Counting your feet** (Based on problem 2(b) of Quiz #1).

Line #1: def ecount(s):

Line #2: count = 0

Line #3: for character in s:

Line #4: if character == 'e':

Line #5: count += 1

Line #6: return count

Line #7: print(ecount('feet'))

|  |  |  |  |
| --- | --- | --- | --- |
| **Line #** | **Change in memory** | **Script output** | **Notes** |
| Line #1 | Function ecount is defined | No output |  |
| Line #7 | ecount is called with s='feet' | No output | Entering function |
| Line #2 | count = 0 | No output |  |
| Line #3 | character = 'f' | No output |  |
| Line #4 | No change | No output | Condition is False |
| Line #3 | character = 'e' | No output |  |
| Line #4 | No change | No output | Condition is True |
| ...etc... (fill out the rest of this table) | | | |