Lab 6.0
Mutating Sequences

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Goals

The goal of this lab is to practice using Python 3. Specifically, you will practice:

- Slicing
- Concatenation and Repetition
- Mutating Lists

Instructions

Work is due by the end of your lab session and must be submitted to Brightspace in the proper place. Unless otherwise instructed, submissions must be python files (e.g. files that end with *.py*). Any other format, even if it is plain text, will **not** be graded. Messy or otherwise unreadable code will lose points. Lab submissions can be all in the same file, but please label with comments to which task code belongs. IMPORTANT: Any code that is commented out will not be graded. **RUN YOUR CODE TO MAKE SURE IT WORKS!!!**

Task 1 - Slicing

This task involves slicing strings. For this task you will use the string called *quote* found in the lab6 python file. This is a quote credited to the computer scientists Brian Kernighan and Dennis Ritchie. I have changed the spaces to dashes so that when you slice the string you can see if your slices include spaces or not.

A From the string above slice out the word, *way* and print it.

B Slice the quote exactly in half and print the first half. You should get: *The-only-way-to-learn-a-new-programming*

C Print the quote above with the last two words sliced off.

D Slice and print every second letter in the quote.

E Print the last character (the period) 10 times using slicing and repetition.

Task 2 - List Mutation

For this task you will be using *append*, *remove*, concatenation, repetition and slicing to mutate lists. Use the list, *rossum*, found in the lab6 python file. The strings in the list comprise a quote from Guido van Rossum the creator of the Python programming language. If a task makes changes to the list, you should reset the list between subtasks by redefining it.

A Append the first and last names of the man who said these words to the list.

B Remove *hate* from the list.

C Make a new list using slicing which consists of all the words in the second sentence of the quote. Print the result to test.

D Remove ALL occurrences of the word *properly* from the quote. Print.

E Slice out the first three elements in the list, creating a new list. Then slice out the word *syntax*, creating another new list. Concatenate these lists together into a third new list. Finally, create a fourth list in which the contents of the third list are repeated 10 times. Print this fourth list.

F Write a program to remove periods and question marks from strings within the list. All words, whether they had punctuation or not, should be stored in a new list. For a simpler version of this problem, you may assume periods and question marks always come at the end of a word. DO THE SIMPLER VERSION FIRST. For a slightly more difficult version, you should not assume they are at the end. For an even more difficult version, don't use the replace() function. Instead, manually find where they are and slice them out.

Task 3 - Extra Challenge

Only do this if you have extra time in lab. Or, if at home, only work on this if you've done the homework.

For this task you will use the string in Task 1. Write a small program which will turn the quote into a list. Each element in the list should be a word in the string. White space (the dashes) should be removed. In other words, you are breaking the sentence into words and making a list of strings from them. **IMPORTANT**: you may **not** use the split() function. You must do this manually.