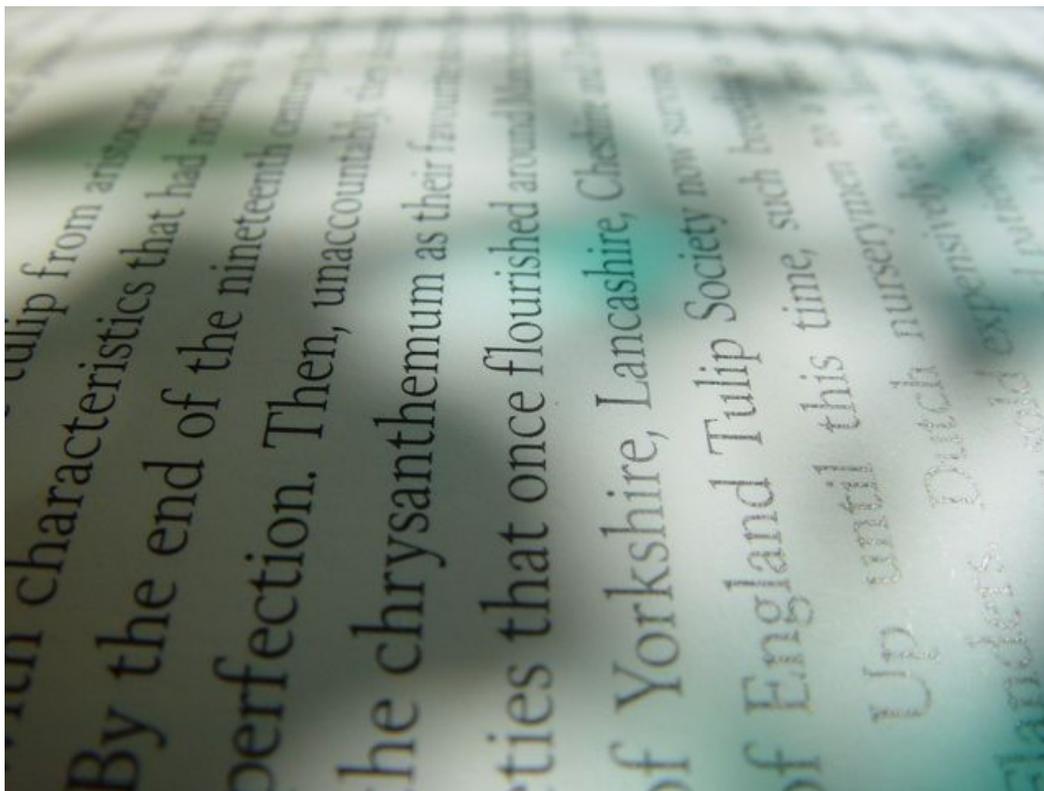


Inquiry Question

Is it better to represent a sentence as a string or a list of words? Explore how data can be represented in different ways to suit the task at hand!

Name: _____ **Date:** _____



General Instructions

What is a string if not a list of words? Well, in python, you can formally turn a string into a list. Does this allow you to do things with your text data that you couldn't do with a string?

In this project you will need to design and code a program that takes a text input from the user and determines the most common and least common words in the input.

Materials you'll need:

- Pencil
- Computer

Project submission:

Submit the completed pages of this project as well as the .py code file for your program.

Design Specifications

- Have the user input a string (you can assume no punctuation, but include code to handle different capitalizations)
- Output the number of unique words in the string
- Output the most common word and the least common word, and how many times each appears in the string
- In the case of a tie, you may choose how the program decides which word is chosen.
- Makes use of lists and loops.

Bonus Options

- Show the percentage of the string that each word makes up.
- Show the entire list of unique words in order from most to least common.

Hints and Resources

Here is an example of what your program output might look like:

```
Enter a sentence: dog dog dog cat
There are 2 unique words in the string 'dog dog dog cat'
The most common word is 'dog' with a count of 3.
The least common word is 'cat' with a count of 1.
```

There are a lot of methods that come built-in python to use with strings, and you can investigate them all in more detail [here](#). One such method is `split()` which takes a parameter called a

“delimiter” that tells python how to split the string into smaller strings. By default, it splits on spaces, but you could also tell it to split on commas, periods, or even certain words.

```
old_string = "comma,separated,data,is,common"  
new_string = old_string.split(',')  
print(new_string)
```

```
['comma', 'separated', 'data', 'is', 'common']
```

You might notice that the split() function returns a list. This way it's easier for you to choose if you want your data in a string form or a list form - depending on what you're trying to do.

Think about how you might go about using python's built-in functions to make this task easier.

- [String Methods](#)
- [List Methods](#)
- [General Functions](#)

Questions

What kind of data do you think you need to store in order to complete this task? Brainstorm a list of variables you might have in your program.

Consider the string “The quick brown fox jumps over the lazy dog”. Should ‘The’ and ‘the’ be counted as different unique words? If not, what is a potential solution to make sure they’re counted as the same word?

What are parallel arrays? Research this term and provide a definition in your own words. Could you see this technique being helpful in your program? Why or why not?

Did you run into any difficulties while coding this project? How did you solve any problems?