

Scenario: You are to write a small Java program that will allow for the input of a sentence, as well as the input of **four** letters. Your program will search the phrase for each of the four letters individually and keep a count of how many times each letter appears in the phrase. The user should be able to enter any four characters they wish (assume they will enter only a through z, and assume they will always enter 4 letters separated by a space). Then your program will print this count out at the end.

Requirements:

- You will need to become with the String class methods that we have covered in class as well as those in Ch. 4 of your textbook.
- Loops will be useful for traversing (i.e., walking through) the phrase.
- You will need to convert the phrase to lowercase after the user has typed it in. Investigate the String class and see if there is a method that will convert a phrase to lower case.
- You will need to learn how to store and compare single **char** variables.
- You will need to become completely comfortable with the `.nextLine()` and `.next()` methods of the Scanner class and how they work.
- Note that the order in which the four search characters are typed in do not matter. The user can choose any four characters they want. Assume they will not type in the same one more than once.
- Use just the topics covered in Chapters 1 – 5. You will not need Methods, Arrays, etc. Do not use any methods that are built into the Java API that will parse the phrase for you! (In other words, do the parsing and character search yourself with no automated methods. This does not include the ones mentioned above or the ones in Chapter 1 – 5).
- Comment sufficiently but not excessively
- Do not change the name of your .java file after you export it.
- Remember your comment header at the top of your .java file.

Due: **Tuesday, September 25th by 11:59 p.m.**
Worth: **20 Points**

Example program runs and output below:

Enter a phrase to analyze: I think that CIS331 is a great class, I'm learning a lot!
Enter four characters to count in phrase: g s t l
Counts: 'g': 2, 's':4, 't': 5, 'l':3

Enter a phrase to analyze: Mississippi State University is near the Mississippi River,
in the state of Mississippi!
Enter four characters to count in phrase: s p i u
Counts: 's': 16, 'p':6, 'i': 17, 'u':1