Explanation of Java Code

This document provides an explanation of a Java program that performs the following tasks: accepting a paragraph as input, counting the number of sentences and words in the paragraph, and counting the frequency of characters in the paragraph.

# 1. Importing Libraries

The code begins by importing the 'java.util.Scanner' class, which is used for reading user input.

# 2. Main Method

The 'main' method is the entry point of the program. It first creates a 'Scanner' object to read input from the user. The user is prompted to enter a paragraph, and this input is stored in the 'paragraph' string variable.

# 3. Counting Sentences and Words

The program calls the 'countSentences' method, which counts the number of sentences in the paragraph based on the presence of '.', '!', or '?'. It then splits the paragraph into individual sentences using a regular expression and counts the number of words in each sentence using the 'countWords' method.

# 4. Counting Characters

The program counts the total number of characters in the paragraph and then uses an array to count the occurrences of each character. It loops through each character of the paragraph, increments the corresponding position in the array, and then displays the frequency of each character. Special handling is provided for spaces (ASCII code 32).

# 5. Method: countSentences

This method accepts a string (the paragraph) as input and counts the number of sentences by checking for sentence-ending punctuation marks: '.', '!', or '?'. It returns the count of sentences.

# 6. Method: countWords

This method accepts a string (a sentence) as input, trims leading and trailing spaces, and counts the number of words in the sentence by counting spaces between words. It assumes that multiple spaces are not allowed between words. It returns the word count.