

Programming Assignments

1. Installing matplotlib

Install `matplotlib` on your computer using `pip` by following the instructions from class (or see <https://matplotlib.org/stable/install/index.html>). Then copy at least one of the examples from class and run it.

2. Plotting Character Frequency

Write a program that given a string of text it analyzes and displays the frequency of each letter of the alphabet found in the text.

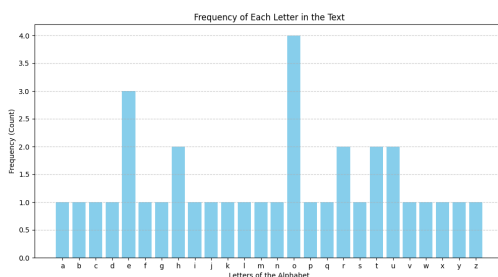
Use `matplotlib.pyplot` to create a bar chart that visualizes these counts.

- The x-axis should represent the letters of the alphabet.
- The y-axis should represent the frequency (count) of each letter.

Sample 1 Input

the quick brown fox jumps over the lazy dog

Sample 1 Output



3. Recursive Reversal

Create a recursive function `reverse_string(s)` that takes a string and returns a new string with the characters in reverse order.

Don't use any loops in your code.

Sample 1 Input

hello

Sample 1 Output

olleh

Sample 2 Input

ghana

Sample 2 Output

anahg

4. Sum to K

Write a function `sum_to_k(K)` that prints all the lists containing positive integers whose sum is K

Sample 1 Input

3

Sample 1 Output

[1, 1, 1]

[1, 2]

[2, 1]

[3]