

ITLAB-162 IMSc(Life-Sci, HealthPsy, Optometry)  
and IMA Economics  
Assignment - 5 (10 Marks)

Submission in Class - 12 April 2023

First write down the method as a sequence of steps in the Text Cell.  
And then start coding.

1. Compute the number of times a character occurs in a file. Plot a histogram of number of times each character occurs in the file.(Take the text file that was used in an earlier lab).
2. For the matrix  $M$  below, given input of values for  $a$  and  $b$  using the keyboard, your program should print the expressions in the matrix  $M$ , whose values are divisible by 3. Use numpy array to read the matrix given below.

$$\begin{array}{ccc} a^2 - b^2 & a + b & a/b \\ 2a - b & a + 2b & 3a - 4b \\ a + 3b & a - 5b & 7a + 8b \end{array}$$

For example, if I input  $a = 1, b = 1$  then it should print the values obtained for the expressions  $a^2 - b^2, a + 2b, 7a + 8b$ . Also try to print the index positions of these values.