Linear Algebra
Programming Assignment #2

For a 2×2 real-valued matrix, write a program in native C/C++/Java/Python:

(1) to find its eigenvalues λ_1 and λ_2.

(2) to find the eigenvector corresponding to λ_1 and λ_2.

Test your program with the following matrices:

$$A = \begin{bmatrix} 1 & 6 \\ 5 & 2 \end{bmatrix}, B = \begin{bmatrix} 2 & 3 \\ 3 & -6 \end{bmatrix}, C = \begin{bmatrix} 7 & 2 \\ -4 & 1 \end{bmatrix}, X = \begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix}, Z = \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$$

Submit your code along with the test results through 北科 i 學園⁺. Contact TA before the due date if you have any problem.