

Week1

Mapping of 2-D arrays to 1-D arrays:

1. Obtain the Row-major and Column-major representation of the given input matrix.
2. Map the following 2-D arrays (matrices) to 1-D arrays (lists).
 - a) Diagonal matrix
 - b) Tri-diagonal matrix
 - c) Upper triangular matrix
 - d) Lower triangular matrix

Display the element at any specified position (row, column).

Expected Program Outline:

Read the matrix dimension

Read the matrix element (Note: in case of special matrix i.e. square matrix read only significant value)

Display matrix

Map it to 1D array

Display 1D array

Read location in the matrix to retrieve the value

Check if it is valid location then compute offset and return the value. If not return appropriate message.