Experiment No. 6

Aim: Demonstrate the use of two-dimensional arrays to solve a given problem.

Common:

a) Write a program to perform Matrix Addition, Subtraction, Multiplication, Transpose of Matrix and Norm of Matrix. Dimensions of matrices will be decided by user.

b) Write a program which reads the current year followed by N followed by a list of N employee numbers and their current ages. Produce a list showing the years in which the employees retire (become 65 years old). If more than one employee retires in a given year then include them all under the same heading.
For example:

Year	Number
1986	896743
1988	674501
	450926

Batchwise Programs:

Batch 1: Write a C program which sorts the contents of a 2D array so that they are in ascending order when the array is scanned row by row, left to right. Your program should not use any storage for additional arrays

Batch 2: Write a program which, given the shape of an island as the coordinates of a series of connected points on its coastline, determines whether an arbitrary point is in the sea or on land. Assume that the island is a polygon.

Batch 3: A matrix is singular if and only if its determinant is 0. Write a function which determines whether a matrix is singular or not.

Batch 4: Given a nxn matrix, find whether it is an upper triangular matrix or not. Also print the upper triangle of the matrix.