PSG COLLEGE OF TECHNOLOGY
DEPARTMENT OF COMPUTER APPLICATIONS
I MCA
23MX17 DATA STRUCTURES LABORATORY

Problem Sheet on 2D Arrays

1) Sparse matrix is a special matrix with most of its elements are zero. Assume that if (m * n) / 2 elements are zero then it is a sparse matrix. Write a C program to read elements in a matrix and check whether matrix is Sparse matrix or not.

   Example
   Input
   Input elements in matrix:
   1 0 3
   0 0 4
   6 0 0
   Output
   The given matrix is Sparse matrix

2) Given a 2-D matrix. Write a program to print its corner elements and the sum of the corner elements.

   Input:
   6 4 6 9
   2 6 1 8
   5 5 2 2
   4 4 1 3
   Output: Corner elements: 6 4 9 3, Corner_Sum = 22

3) Write a program to check whether two given strings are anagram of each other or not. An anagram of a string is another string that contains same characters, only the order of characters can be different. For example, “abcd” and “dabc” are anagram of each other.

Anagram Words

LISTEN - SILENT

TRIANGLE - INTEGRAL

4) Given a string, eliminate all “b” and “ac” in the string, you have to replace them in-place, and you are only allowed to iterate over the string once.

   Examples:

```
acbac   ==>  ""
aaac    ==>  aa
ababac  ==>   aa
bbbbd   ==>   d
```