Problem 01 :

Diagonally Dominant Matrix

In mathematics, a square matrix is said to be **diagonally dominant** if for every row of the matrix, the magnitude of the diagonal entry in a row is larger than or equal to the sum of the magnitudes of all the other (non-diagonal) entries in that row. More precisely, the matrix **A** is diagonally dominant if

$$|a_{ii}| \geq \sum_{j != i} |a_{ij}| \qquad \text{for all i,}$$

where a_{ij} denotes the entry in the ith row and jth column

For example, The matrix

$$A = \begin{bmatrix} 3 & -2 & 1 \\ 1 & -3 & 2 \\ -1 & 2 & 4 \end{bmatrix}$$

is diagonally dominant because
$|a_{11}| \geq |a_{12}| + |a_{13}|$ since $|+3| \geq |-2| + |+1|$
$|a_{22}| \geq |a_{21}| + |a_{23}|$ since $|-3| \geq |+1| + |+2|$
$|a_{33}| \geq |a_{31}| + |a_{32}|$ since $|+4| \geq |-1| + |+2|$

Given a matrix **A** of **n** rows and **n** columns. The task is tho check whether matrix A is diagonally dominant or not.

Write a program to check whether a square matrix of dimension n*n is diagonally dominant or not.

Rotate a Matrix by 'n' degree

Given a square matrix, if we turn it by 180 degrees in **anti-clockwise** direction without using any extra space. Here value of n is **180.** Be sure to give the value of n as a **multiple of 90.**

Examples :

```
Input :

Number of degrees to rotate, n : 180

Matrix:   1   2   3

          4   5   6

          7   8   9

Output : 9 8 7

         6 5 4

         3 2 1


Input :

Number of degrees to rotate, n : 90

Matrix:   1 2 3 4

          5 6 7 8

          9 0 1 2

          3 4 5 6

Output : 4 8 2 6

         3 7 1 5

         2 6 0 4

         1 5 9 3
```

Method : 1 (Only prints rotated matrix)
The solution of this problem is that to rotate a matrix by 180 degree we can easily follow that step

```
Matrix =   a00 a01 a02

           a10 a11 a12

           a20 a21 a22
```

```
when we rotate it by 90 degree
then matrix is
Matrix = a02 a12 a22
         a01 a11 a21
         a00 a10 a20


when we rotate it by again 90
degree then matrix is
Matrix = a22 a21 a20
         a12 a11 a10
         a02 a01 a00
```

Write a program which will do the above mentioned task.