Q.2
Ans:-

Transpose of a matrix is obtained by changing rows to columns and columns to rows. In other words, transpose of A[][] is obtained by changing A[i][j] to A[j][i]

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix} \qquad \begin{bmatrix} 1 & 4 & 7 \\ 2 & 5 & 8 \\ 3 & 6 & 9 \end{bmatrix}$$

I/P O/P

For Square matrix:-

```
# Python 3 program to find
# transpose of a matrix
N=4
# This function stores
# transpose of A[][] in B[][]
def transpose(A, B):
    for i in range(N):
    for j in range(N)
        B[i][j] = A[j][i]

# drivers code
A = [ [1, 1, 1, 1],
      [2, 2, 2, 2],
      [3, 3, 3, 3]
      [4, 4, 4, 4 ]]
B = A[:][:] # To store result
transpose(A, B).
```

For Perimeter Matrix:-

```
# Python 3 program to find
# transpose of a matrix
M = 3
N = 4
# This function stores.
# Transpose of A[][] in B[][]
def transpose of (A, B):
 for i in range (N):-
 for j in range (M)
     B(i)(j) = A(j)(i)
# driver code
A = [[1,1,1,1],
     [2,2,2,2],
     [3,3,3,3]]
# To result
 B = [[0 for x in range (M)] for y in range
      (N)].
 Transpose (A, B).
```

Output:-

Result Matrix is

$$\begin{bmatrix} 1 & 2 & 3 \\ 1 & 2 & 3 \\ 1 & 2 & 3 \\ 1 & 2 & 3 \end{bmatrix}$$