

Function (N):

matrix = 0s in $N \times N$ size

if N odd then $x, y = (N/2)$

else $x, y = (N/2) - 1$

matrix[x, y] = 1 // start with 1.

directions: $\{ (0, 1) \rightarrow \text{right}$

$(0, -1) \rightarrow \text{left}$

$(1, 0) \rightarrow \text{down}$

$(-1, 0) \rightarrow \text{up} \}$

directionIndex = 0, steps = 1

loop till matrix.value $\leq N^2$

for $i = 1$ till steps:

$dx, dy = \text{directions}$

$x += dx, y += dy$

if $(x \geq 0 \ \& \ x < N \ \& \ y \geq 0 \ \& \ y < N)$:

matrix[x, y] = matrix.value

matrix.value ++

change directions

increment steps
Return matrix
print matrix.

for the diagonal sums:

function (matrix):

diagonal-1, diagonal-2 = 0

for $i = 0$ till $N-1$:

diagonal-1 $+=$ matrix[i][i]

diagonal-2 $+=$ matrix[i][N-1-i]

Return diagonal-1, diagonal-2

print diagonal-1, diagonal-2