

SPIRAL TRAVERSAL

★ In this problem we are supposed to print the spiral form of an $m \times n$ matrix

1	2	3	4	This should print	1	2	3	4	8	12	16	20
5	6	7	8		19	18	17	13	9	5	6	7
9	10	11	12		11	15	14	10				
13	14	15	16									
17	18	19	20									

Pattern is to go right bottom left up and repeat. Only one solution

We implement this by taking 4 separate pointers top right bottom and left. When first top layer is printed we bring the top pointer down and print the right layer. After this we bring right pointer one to the left and print the bottom layer. Now the bottom pointer is brought one towards the top. Finally print the left row, take the left pointer and move it to the right and repeat full process

Pseudocode :

SpiralMatrix (arr, n, m) {
 left = 0, right = m - 1
 top = 0, bottom = n - 1

```

while (top <= bottom && left <= right) {
    for (i = left → right) {
        print(arr[top][i])
    }
    top += 1
    for (i = top → bottom) {
        print(arr[i][right])
    }
    right -= 1
    if (top <= bottom) {
        for (i = right → left) {
            print(arr[bottom][i])
        }
    }
    bottom -= 1
    if (left <= right) {
        for (i = bottom → top) {
            print(arr[i][left])
        }
    }
    left += 1
}
}

```