Print a given matrix in spiral form

Given a 2D array, print it in spiral form. See the following examples.

```
Input:
        1    2   3   4
        5    6   7   8
        9   10  11  12
        13  14  15  16
Output:
1 2 3 4 8 12 16 15 14 13 9 5 6 7 11 10


Input:
        1   2   3   4  5   6
        7   8   9  10  11  12
        13  14  15 16  17  18
Output:
1 2 3 4 5 6 12 18 17 16 15 14 13 7 8 9 10 11
```

We strongly recommend that you click here and practice it, before moving on to the solution.

Solution:

```
/* This code is adopted from the solution given
   @ http://effprog.blogspot.com/2011/01/spiral-printing-of-two-dimensional.html */

#include <stdio.h>
#define R 3
#define C 6

void spiralPrint(int m, int n, int a[R][C])
{
    int i, k = 0, l = 0;

    /*  k - starting row index
        m - ending row index
        l - starting column index
        n - ending column index
        i - iterator
    */

    while (k < m && l < n)
    {
        /* Print the first row from the remaining rows */
        for (i = l; i < n; ++i)
        {
            printf("%d ", a[k][i]);
        }
        k++;

        /* Print the last column from the remaining columns */
        for (i = k; i < m; ++i)
        {
            printf("%d ", a[i][n-1]);
        }
        n--;

        /* Print the last row from the remaining rows */
        if ( k < m)
        {
            for (i = n-1; i >= l; --i)
            {
                printf("%d ", a[m-1][i]);
            }
            m--;
        }

        /* Print the first column from the remaining columns */
        if (l < n)
        {
            for (i = m-1; i >= k; --i)
            {
                printf("%d ", a[i][l]);
            }
            l++;
        }
    }
}

/* Driver program to test above functions */
int main()
{
    int a[R][C] = { {1,  2,  3,  4,  5,  6},
        {7,  8,  9,  10, 11, 12},
        {13, 14, 15, 16, 17, 18}
    };

    spiralPrint(R, C, a);
    return 0;
}

/* OUTPUT:
  1 2 3 4 5 6 12 18 17 16 15 14 13 7 8 9 10 11
*/
```

Time Complexity: Time complexity of the above solution is O(mn).