Birla Institute of Technology & Science, Pilani, K. K. BIRLA Goa Campus
Computer Programming
Second Semester 2013-2014
Lab-8 (Two dimensional arrays)

Question

Write a program which accepts the dimensions of the two dimensional square array and generates the spiral matrix for the same. The spiralling should be outwards to inwards.

Example:

Input

Enter the dimensions of 2D array
6

Output

1	2	3	4	5	6
20	21	22	23	24	7
19	32	33	34	25	8
18	31	36	35	26	9
17	30	29	28	27	10
16	15	14	13	12	11

Hint:

1) Notice that we move Right → Down → Left → Up → Right → Down.. till we reach centre.
2) int row_right = 0, column_down = n - 1, row_left = n - 1, column_up = 0;
3) Fill the elements 1->6, move down fill 7->11,move left fill 12-16,move up fill 17->20.
4) Since the direction is Right again, increment the row count so that we write the elements of next row. Set the next direction as Down.
5) Now since the direction is Down, decrement the column_down so that we write the elements of last but one column. Set the next direction as Left.
6) Repeat it till we reach 36 (Dim*Dim).
7) Finally the logic should work for any dimension.