Zigzag

Problem Code	ds54b_quiz1_zigzag
Running Time Limit	1 sec
Memory Limit	16 mb

Objective

- To test knowledge about manipulating 2D array

Introduction

In this problem, we want to fill 2D array with numbers in a “zigzag” order starting from 0 and keep counting up as you move to the right until you reach the end of the row, you then go down one row and keep going left, then go down and keep going right ..... until you fill an entire array.

For example, for 2D array of size 3x3, you get

0	1	2
5	4	3
6	7	8

For 2D array of size 4x4, you get

0	1	2	3
7	6	5	4
8	9	10	11
15	14	13	12

Task

Fill in the implementation of function zigzag in the code below.

Input

The first line of input contains one integer indicating **n**, the width and height of the 2D array.

Note: You can assume 0 < **n** <= 100

Output

The output contains **n** lines, each with **n** integers showing the content of the array after being filled with zigzag function.

Example

Ex1

Input	Output
3	0 1 2 5 4 3 6 7 8

Ex2

Input	Output
4	0 1 2 3 7 6 5 4 8 9 10 11 15 14 13 12

Main.c

```
/*
LANG: C++
TASK: ds54b_quiz1_zigzag
*/

#include <stdio.h>
#include <stdlib.h>

void zigzag(int** data, int n) {
	// Fill in your code here
}

int main() {
	int n;
	int** data;
	int i, j;

	scanf("%d", &n);

	// Allocate memory
	data = (int**)malloc(sizeof(int*) * n);
	for (i = 0; i < n; i++) {
		data[i] = (int*)malloc(sizeof(int) * n);
	}

	zigzag(data, n);

	// Print output
	for (i = 0; i < n; i++) {
		for (j = 0; j < n; j++) {
			printf("%d ", data[i][j]);
		}
		printf("\n");
```

```
	}


	// Free memory
	for (i = 0; i < n; i++) {
		free(data[i]);
	}
	free(data);
	return 0;
}
```