import java.util.Scanner;

public class Cigoreanu\_Madalina\_for\_2 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

sc.close();

draw\_1(n);

draw\_2(n);

draw\_3(n);

}

public static void draw\_1(int n) {

for (int i = 1; i < n + 1; ++i) {

for (int j = 1; j< n+1; ++j) {

System.out.printf("%3d ", Math.min(i, j));

}

System.out.println();

}

System.out.println();

}

public static void draw\_2(int n) {

for (int i = 0; i < n; i++) {

for (int j = 1; j < n + 1; j++) {

System.out.printf("%3d ", n\*i + j);

}

System.out.println();

}

System.out.println();

}

public static void draw\_3(int n) {

int[][] square = new int[n][n];

int r = 0, c = 0, start = 1, length = n;

while (length > 0) {

for (int i = c; i < (c + length); i++)

square[r][i] = start++;

for (int i = r + 1; i < (r + length); i++)

square[i][c + length - 1] = start++;

for (int i = c + length - 2; i > c-1 ; i--)

square[r+length-1][i] = start++;

for (int i = r + length -2; i > r; i--)

square[i][c] = start++;

r++; c++;

length -= 2;

}

for (int i = 0; i < square.length; ++i) {

for (int j = 0; j < square[i].length; ++j) {

System.out.printf("%3d ", square[i][j]);

}

System.out.println();

}

}

}