Online on Loops

Section: C1+C2   Time: 60 minutes

Q1.Divisible by Odd Position Digit Sum

Write a program to check whether a number is divisible by the sum of the digits at **odd positions** (counting starts from the **leftmost non zero** digit as position 1).

You cannot use any arrays. You may use conditional statements and loops.

Input: 12345
Output: No
Explanation: 1 (1st), 3 (3rd), 5 (5th) → Sum = 9 ⇒ 12345 is not divisible by 9.

Input: 840
Output: Yes
Explanation: 8 (1st), 0 (3rd) → Sum = 8 ⇒ 840 is divisible by 8

Input: 1032
Output Yes
Explanation: 1 (1st), 3 (3rd) → Sum = 4 ⇒ 1032 is divisible by 4

Q2.Print Diamond-shaped Pattern

Write a program that prints a diamond-shaped pattern using numbers.

Each row of the upper half contains numbers starting from 1 and increasing to the row number, followed by decreasing numbers, forming a mirror. The lower half is symmetrical.

You may only use **nested loops** and **conditional statements**. Arrays and functions are **not allowed**.

Input: A single integer n (1 ≤ n ≤ 9), which indicates the number of rows in the upper half (including the center row).
Output: A diamond with 2*n-1 rows and 2*n-1 columns.

Examples:

Input: 3

Output:

```
   1
  121
12321
  121
   1
```

Input: 2

Output:

```
  1
 121
  1
```