Pyramid Number Pattern

Problem Description: You are given with an input number N, then you have to print the given pattern corresponding to that number N.

For example if N=4

Pattern output :   1
                    212
                   32123
                  4321234

How to approach?

1. Take N as input from the user.
2. Figure out the number of rows, (which is N here) and run a loop for that.
3. Now, figure out how many columns have to be printed in ith row. On careful observation, first we have to print spaces and then run a loop upto i columns to print the decreasing sequence for each row and then run a loop for the increasing sequence.
4. Now, figure out "What to print?" in a particular (row, column). Here we have to print numbers in increasing order first and then numbers in decreasing order.

Pseudo code for the given problem:

input=N

i=1

For i =1 to i less than or equal to N:

        space=N-i

        While space is less than or equal to 0:

            Print("spaces")

            Decrement space by 1

        value=i

        While value is greater than 0:

            Print(value)

            Decrement value by 1

        value=value+2

        While value is less than or equal to i:

            Print(value)

            Increment value by 1

❏ Let us dry run the Code for N=4
- i=1(<=4)
  - ➔ Print 3(4-1) spaces first.
  - ➔ value=1 (>0), so print 1.
  - ➔ value=0, so move out of this inner loop.
  - ➔ value=2(>i), move out of this inner loop

- i=2(<=4)
  - ➔ Print 2(4-2) spaces first.
  - ➔ value=2 (>0), so print 2.
  - ➔ value = 1(>0), so print 1.
  - ➔ value =0, so move out of this inner loop.
  - ➔ value=2 (<=i), so print 2.
  - ➔ value=3(>i), so move out of this inner loop.

- i=3(<=4)
  - ➔ Print 1(4-3) space first.
  - ➔ value=3(>0), so print 3.
  - ➔ value=2(>0), so print 2.
  - ➔ value=1(>0), so print 1.
  - ➔ value =0, so move out of this inner loop.
  - ➔ value=2 (<=i), so print 2.
  - ➔ value=3 (<=i), so print 3.
  - ➔ value =4(>i), so move out of this inner loop.

- i=4(<=4)
  - ➔ Print 0(4-4) space first.
  - ➔ value=4(>0), sp print 4.
  - ➔ value=3(>0), so print 3.
  - ➔ value=2(>0), so print 2.
  - ➔ value=1(>0), so print 1.
  - ➔ value =0, so move out of this inner loop.
  - ➔ value=2 (<=i), so print 2.
  - ➔ value=3 (<=i), so print 3.
  - ➔ value =4(<=i), so print 4.
  - ➔ value=5(>i), so move out of this inner loop.

- i=5(>4), move out of the loop

So, final output:
```
   1
  212
 32123
4321234
```