

2. Pattern Printing

Difficulty: Easy

Question:

Given an integer n , print the pattern according to it.

Constraint: Arrays should not be used.

Example 1:

Input: $n = 5$

Output:

```

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

Example 2:

Input: $n = 4$

Output:

```

                                1
                           5   2
                        8   6   3
                   10   9   7   4
```

(Code given below! Try on your own before viewing the code)

Solution : (C++)

```
#include<bits/stdc++.h>
using namespace std;
int main(){

    int n, val = 1, prevval = val;

    cout << "\n Enter the value of n : ";
    cin >> n;

    for(int i=1; i<=n; ++i){
        int space = 0, prevspace = 0;

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

            // Display space
            if(j <= n-i){
                cout << " ";
                space ++; // count the spaces
                prevspace = space;
            }

            // Display value
            else{
                cout << setw(2) << val << " ";

                if(j != n-i){
                    val -= (j);
                }
            }
        }

        // increment according to the space wrt 'previous value'
        val = prevval + prevspace + 1;
        prevval = val;
        cout << endl;
    }

    return 0;
}
```