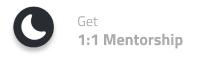
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February 26, 2023 Pattern

Pattern – 6: Inverted Numbered Right Pyramid

Problem Statement: Given an integer N, print

the following pattern:

12345

1234

123

12

1

Here, N = 5.

Examples:

Input Format: N = 3
Result:
1 2 3
1 2
1
Input Format: N = 6
Result:





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```
1 2 3 4 5 6
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```



Solution

Disclaimer: Don't jump directly to the solution, try it out yourself first.

Problem Link

Approach:

There are 4 general rules for solving a patternbased question :

- We always use nested loops for printing the patterns. For the outer loop, we count the number of lines/rows and loop for them.
- Next, for the inner loop, we focus on the number of columns and somehow connect them to the rows by forming a logic such that for each row we get the required number of columns to be printed.
- We print the '*' inside the inner loop.
- Observe symmetry in the pattern or check if a pattern is a combination of two or more similar patterns or not.

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In this pattern, we run the outer loop for N times as we have to print N rows and since we have to print a right-angled triangle/pyramid which must be inverted, so the inner loop will run from 1 to (N-i)th integer in every row till we reach the Nth row where only '1' would be left to get printed. For eg: in the 1st-row numbers from 1 to N get printed, in the 2nd-row numbers from 1 to (N-1) get printed, and so on.

Code:

C++ Code

```
#include <bits/stdc++.h>
using namespace std;
void pattern6(int N)
{
    // This is the outer loop which will l
    for (int i = 0; i < N; i++)
         // This is the inner loop which l
        // no. of columns = (N - row index)
        // as we have to print an inverted
        // (N-j) will give us the numbers
        for (int j =N; j>i; j--)
            cout <<N-j+1<<" ";</pre>
        }
        // As soon as numbers for each ite
        // next row and give a line break
        // would get printed in 1 line.
        cout << endl;</pre>
}
int main()
```

```
{
    // Here, we have taken the value of N
    // We can also take input from the use
    int N = 5;
    pattern6(N);
    return 0;
```

Output

Java Code

```
class Main {
  static void pattern6(int N)
   // This is the outer loop which will 1
   for (int i = 0; i < N; i++)
    {
       // This is the inner loop which lo
       // no. of columns = (N - row index)
       // as we have to print an inverted
        // (N-j) will give us the numbers
        for (int j = N; j > i; j--)
            System.out.print(N-j+1+" ");
        }
        // As soon as numbers for each it
        // next row and give a line break
        // would get printed in 1 line.
        System.out.println();
    }
```

```
public static void main(String[] args)

// Here, we have taken the value o
   // We can also take input from the
   int N = 5;
   pattern6(N);
}
```

Output

```
12345
1234
123
12
1
```

Special thanks to **Priyanshi Goel** for contributing to this article on takeUforward. If you also wish to share your knowledge with the takeUforward fam, please check out this article. If you want to suggest any improvement/correction in this article please mail us at write4tuf@gmail.com

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