February 26, 2023 ▪ Pattern

Pattern-1: Rectangular Star Pattern

Problem Statement: Given an integer **N,** print the following pattern.

Examples:

Example 1:
Input: N = 3
Output:
* * *
* * *
* * *

Example 2:
Input: N = 6
Output:
* * * * * *
* * * * * *

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

Problem Link

Approach:

There are 4 general rules for solving a pattern-based 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.

In this particular problem, we run the outer loop for N times since we have N rows to be printed,

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the inner loop also runs for N times as we have to print N stars in each row. This way we get a rectangular star pattern (square) with an equal number of rows and columns.

Code:

C++ Code

```
#include <bits/stdc++.h>
using namespace std;

void pattern1(int N)
{
    // This is the outer loop which will l
    for (int i = 0; i < N; i++)
    {
        // This is the inner loop which he
        // as we have to print a rectangul
        for (int j = 0; j < N; j++)
        {
            cout << "* ";
        }

        // As soon as N stars are printed,
        // next row and give a line break
        // would get printed in 1 line.
        cout << endl;
    }
}

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

    pattern1(N);
```

```
        return 0;
    }
```

Output

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

Java Code

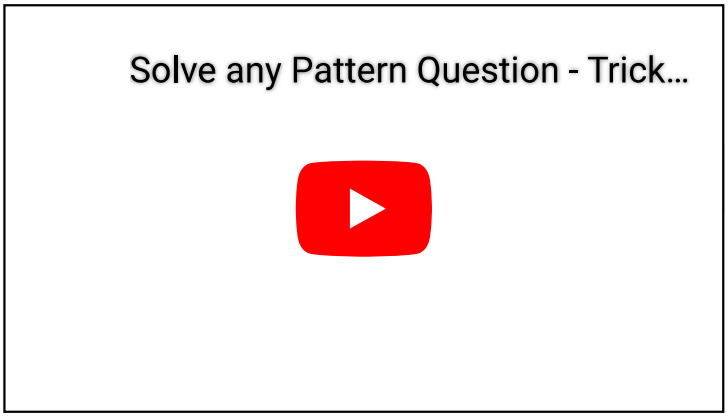
```
class Main {
   static void pattern1(int N)
{
    // This is the outer loop which will l
    for (int i = 0; i < N; i++)
    {
         // This is the inner loop which h
        // as we have to print a rectangul
        for (int j = 0; j < N; j++)
        {
            System.out.print("* ");
        }

         // As soon as N stars are printed
        // 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;
        pattern1(N);
```

```
        }
```

Output

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

> 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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