

## Alpha 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 :A

```
BB
CCC
DDDD
```

### 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 are to be printed in ith row and run a loop for that within this.
4. Now, figure out “What to print?” in a particular (row, column). It can depend on the column number, row number or N.

Pseudo code for the given problem:

```
input=N
i=1
While i is less than or equal to N:
    Character x='A'
    j=1
    While j is less than or equal to i:
        print(x)
        Increment j by 1
    Increment i by 1
    Increment x by 1
    Add a new line here
```

❑ Let us dry run the Code for N=4

- i=1(<=4)
  - j=1 (<=1), so print ‘A’.
  - j=2(>1), move out of the inner loop with a new line.

- $i=2(\leq 4)$ 
  - $j=1(\leq 2)$ , so print 'B'.
  - $j=2(\leq 2)$ , so print 'B'.
  - $j=3(>2)$ , move out of the inner loop with a new line.
- $i=3(\leq 4)$ 
  - $j=1(\leq 3)$ , so print 'C'
  - $j=2(\leq 3)$ , so print 'C'
  - $j=3(\leq 3)$ , so print 'C'
  - $j=4(>3)$ , move out of the inner loop with a new line.
- $i=4(\leq 4)$ 
  - $j=1(\leq 4)$ , so print 'D'
  - $j=2(\leq 4)$ , so print 'D'
  - $j=3(\leq 4)$ , so print 'D'
  - $j=4(\leq 4)$ , so print 'D'
  - $j=5(>4)$ , move out of the inner loop with a new line.
- $i=5(>4)$ , move out of the loop

So , final output:

A

BB

CCC

DDDD