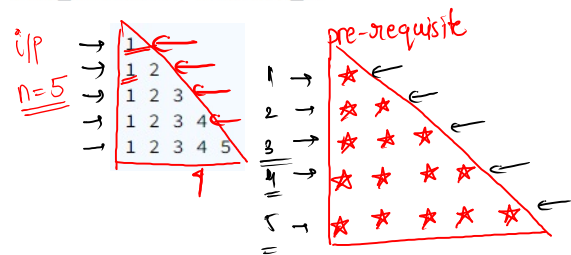


HW_GKSTR17 Pattern_2



```
for (int i = 1; i <= n; i++) {
    for (int j = 1; j <= i; j++) {
        System.out.print(j + " ");
    }
    System.out.println();
}
```

$$i=1, j=1 \leq 1 \checkmark$$

$$i=2, j=1 \leq 2 \checkmark$$

$$j=2 \leq 2 \checkmark$$

$$i=3, j=1 \leq 3 \checkmark$$

$$j=2 \leq 3 \checkmark$$

$$j=3 \leq 3 \checkmark$$

$$i=4, j=1 \leq 4 \checkmark$$

$$j=2 \leq 4 \checkmark$$

$$j=3 \leq 4 \checkmark$$

$$j=4 \leq 4 \checkmark$$

$$i=5, j=1 \leq 5 \checkmark$$

$$j=2 \leq 5 \checkmark$$

$$j=3 \leq 5 \checkmark$$

$$j=4 \leq 5 \checkmark$$

$$j=5 \leq 5 \checkmark$$

Ques

Pattern 6 - Right triangle of 5 multiples

i/p
n=6

5					
5	10				
5	10	15			
5	10	15	20		
5	10	15	20	25	
5	10	15	20	25	30

multiply
by 5

1					
1	2				
1	2	3			
1	2	3	4		
1	2	3	4	5	

```
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();

    for (int i = 1; i <= n; i++) {
        for (int j = 1; j <= i; j++) {
            System.out.print(j * 5 + "\t");
        }
        System.out.println();
    }
}
```

Ques

Pattern 7 - Print a hollow m by n star rectangle.

Sample Input 0

5
4

Sample Output 0

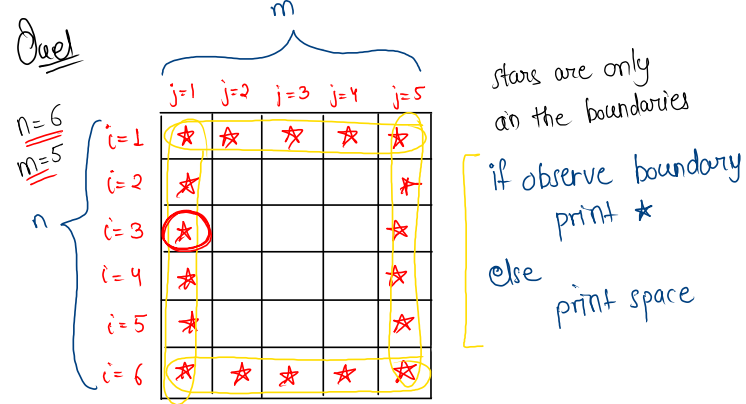
```
*****
*   *
*   *
*   *
*****
```

Sample Input 1

7
8

Sample Output 1

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



i==1 i==n j==1 j==m

```
for (int i = 1; i <= n; i++) { // rows
    for (int j = 1; j <= m; j++) { // cols
        if (i == 1 || i == n || j == 1 || j == m) {
            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.println();
}
```

Ques

HW_Pattern 8 - Print a hollow square without top

Sample Input 0

5

Sample Output 0

```

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

Sample Input 1

7

Sample Output 1

```

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

Sample Input 2

3

Sample Output 2

```

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

```
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt(); // rows and cols

    for (int i = 1; i <= n; i++) { // rows
        for (int j = 1; j <= n; j++) { // cols
            if (i == n || j == 1 || j == n) {
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        }
        System.out.println();
    }
}
```

Ques

HW_Print a, C, e, G, i, K... till 'z' or 'Z'

```
int turn = 1;
for (int i = 97; i <= 122; i+=2) {
    char ch = (char)i;
    if (turn % 2 == 0) {
        ch = Character.toUpperCase(ch);
    }
    turn++;
    System.out.println(ch);
}
```

or

```
int turn = 1;
for (int i = 97; i <= 122; i+=2) {
    char ch = (char)i;
    if (turn % 2 == 0) {
        ch = (char)(i - 32);
    }
    turn++;
    System.out.println(ch);
}
```

97 → a ← +32 → 65 → A

98 → b ← → 66 → B

99 → c ← → 67 → C

...

122 → z ← → 90 → Z

-32

Print n/3

```
Scanner scn = new Scanner(System.in);  
int n = scn.nextInt();  
  
while ( n > 0 ) {  
    System.out.print(n + " ");  
    n = n / 3;  
}
```

$n = 103/3$
 $= 34/3$
 $= 11/3$
 $= 3/3$
 $= 1/3$
 $= 0$

Console

103
34
11
3
1