Q Given a number N. Print N stars.

N = 3 → * * *

N = 4 → * * * *

N = 5 → * * * * *

1 → ? N

N = 5

N-stars → loops → for loop

5 → 5-1 = 4

[i, N] == N-i+1 [N-i+1]

1) `for (int i = 1; i <= N; i++) { sop("*"); }`

[1, N-1] → 1 less

N = 4, 5,

2) `for (int i = 1; i < N; i++) { sop("*"); }`

[1, N+1] - 1 extra

N = 5, 7, ... N

3) `for (int i = 0; i <= N; i++) { sop("*"); }`

`(int i = a; i <= b; i++)`

inclusion → [a, b] → (b - a) + 1

→ [i, N] ⇒ no of (N - i) + 1

[1, 5] ⇒ no of → 5 → (5 - 1) + 1

[2, 5] ⇒ no of → 4. (5 - 2) + 1

[1, 7] ⇒ no of → 7 (7 - 1) + 1

`int i = a+1; i < b;`

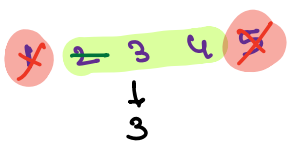
exclusion → (a, b) (b - a - 1)

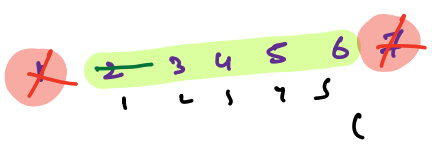
(i, N) → N - i - 1

(1, 5) ⇒ no of 3 → (5 - 1) - 1

(2, 5) ⇒ no of 2 → (5 - 2) - 1

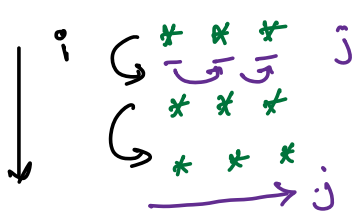
(1, 7) ⇒ no of 5 → (7 - 1) - 1



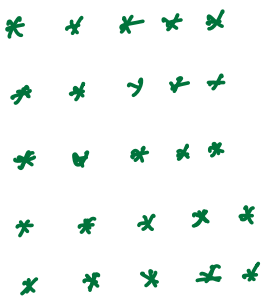


Q 2) Print a sequence of N * N stars.

N = 3 3×3

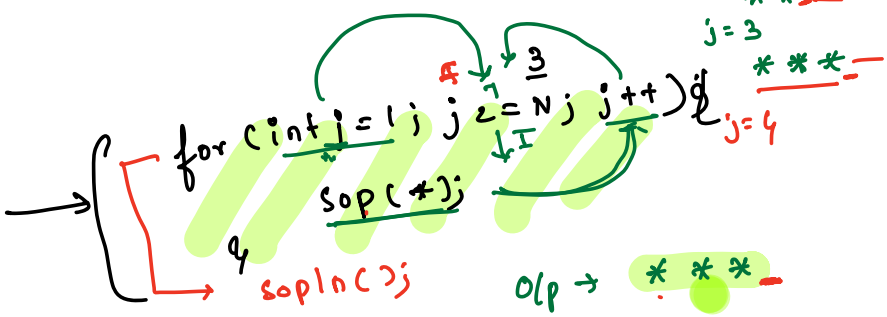


N = 5 5×5

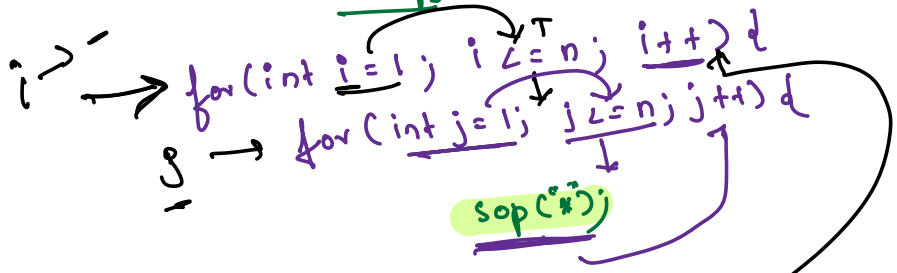


d = b

s = s



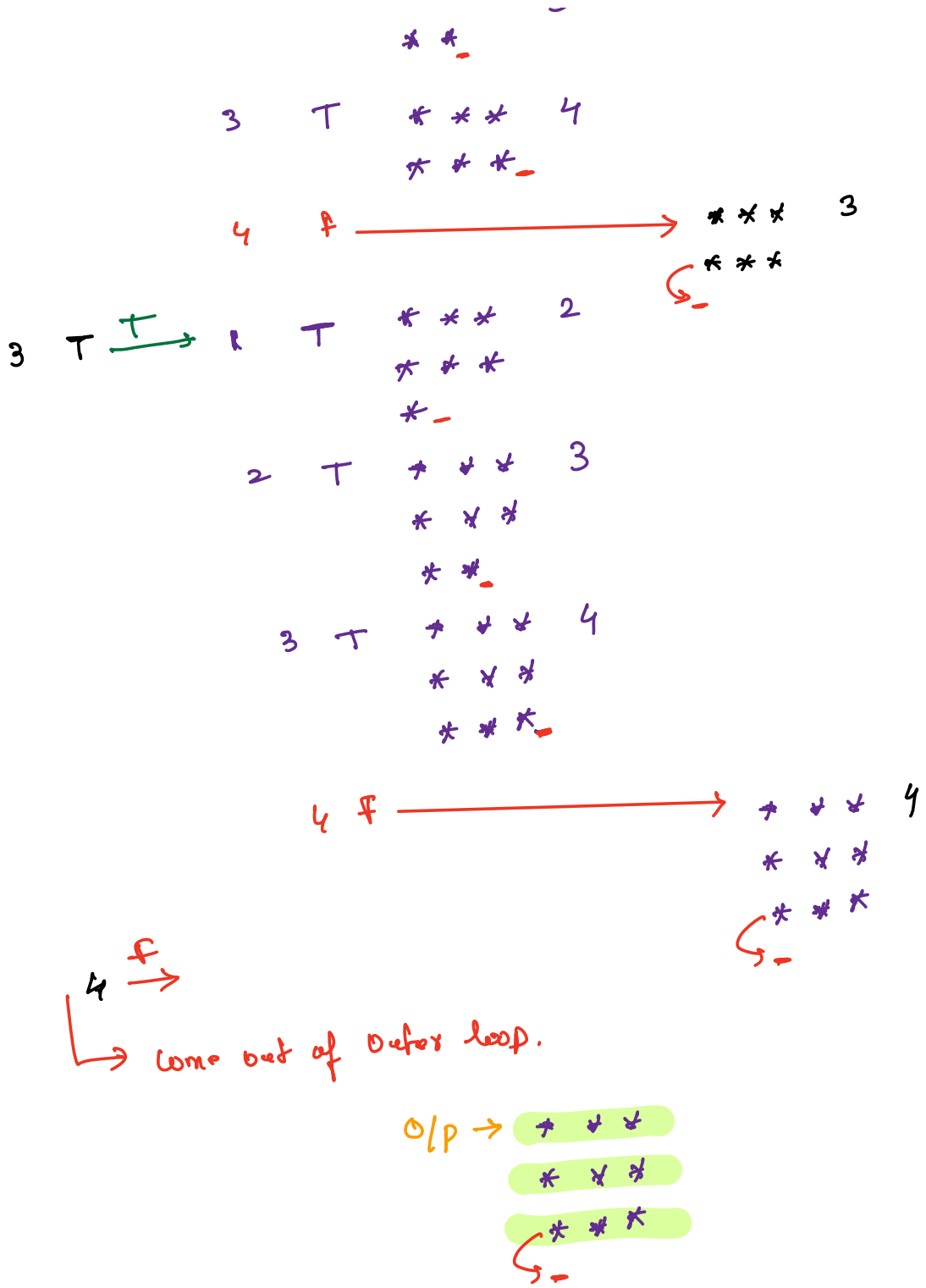
modify



***

i	i<=N	→	j	j<=N	sop("*")	j++	sopln()	i++
1	T	T	1	T	*	2		
			2	T	**	3		
			3	T	***	4	***	2
			4	F				
2	T	T	1	T	*	2		
			2	T	**	3		

4 of inner comes out


3 T
4
4 f
3
3 T T
1 T
2
2 T
3
3 T
4
4 f
4
4 f
come out of outer loop.
O/p →

Break Till 10:27

→ sponsor Abdal refreshment

clinic / co sponsored Mens Association

Q → Print the following pattern

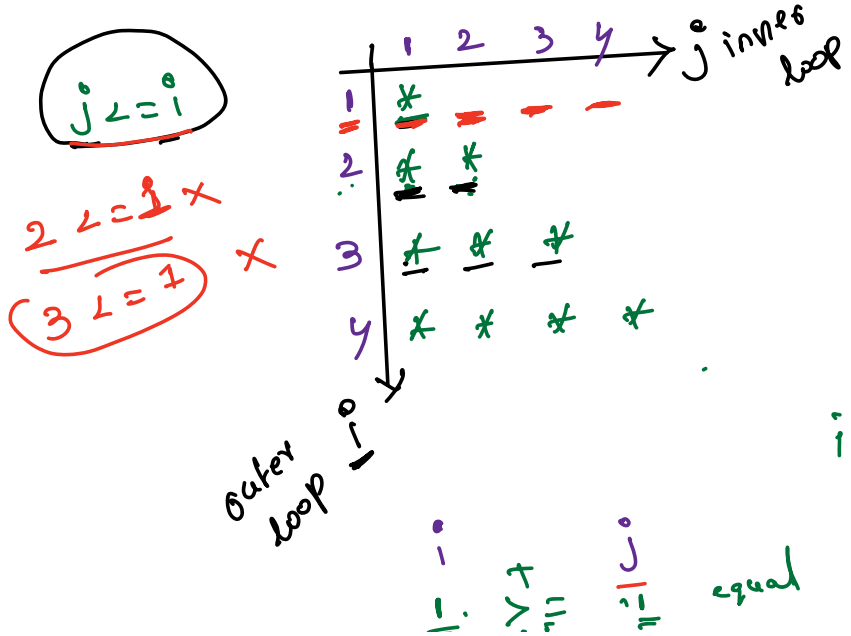
N = 3

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

N = 4 [1 – 4]

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

relation ship b/w i and j



2 >= 1 2 equal

3 >= 1 2 3

4 >= 1 2 3 4

i >= j → j <= i

N=3

```
for(int i=1; i<=N; i++){
    for(int j=1; j<=i; j++){
        sop("*");
    }
    soplnc();
}
```

Outside inner loop & inside outer loop

N=3

i	j	j<=i	O/p	j++	soplnc i++
1	1	T	*	2	
1	2	F → come out i.e			reading 2
2	1	T	*	2	
2	2	T	**	3	
2	3	F → come out i.e			reading 3
3	1	T	*	2	
3	2	T	**	3	
3	3	F → come out i.e			reading 4
4	1	T	*	2	
4	2	T	**	3	
4	3	T	***	4	
4	4	F → come out i.e			reading 5

1)
*

2)
*
**

3)
*
**
***

3 3 T 4 4

3 4 F → Come out ill. nextline.

4 if → Come out of 0(loop.

O/p.

*
* *
* * *

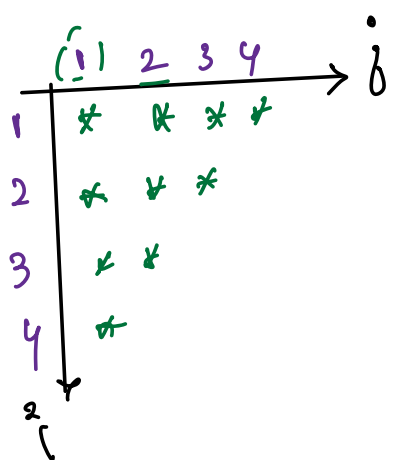
Q Given N print Inverted triangle

N = 4

* * * *
* * *
* *
*

N = 3

* * *
* *
*



N = 4

N = 4

i
1
2
3
4

j
1 2 3 4
1 2 3
1 2
1

i = 1

N - i + 1

$j <= N-i+1$

$i=2$	$N-1$
$i=3$	$N-2$
$i=4$	$N-3$

3 $\quad N-i+1$

$N-2+1$

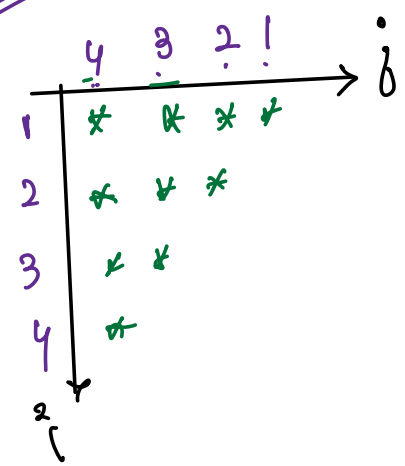
$N-1$.

```
for(int i=1; i<=N; i++) {
    for(int j=1; j<=N-i+1; j++) {
        sop('*');
    }
```

sop | sopln();

2nd Approach

```
for( j=N; ——— ; j-- )
```



i	j
1	4 3 2 1
2	4 3 2
3	4 3
4	4.

$j >= i$

https://www.interviewbit.com/snippet/1fe9252960424366aa46/