Java DSA Lecture 14

Friday, December 2, 2022 8:05 PM

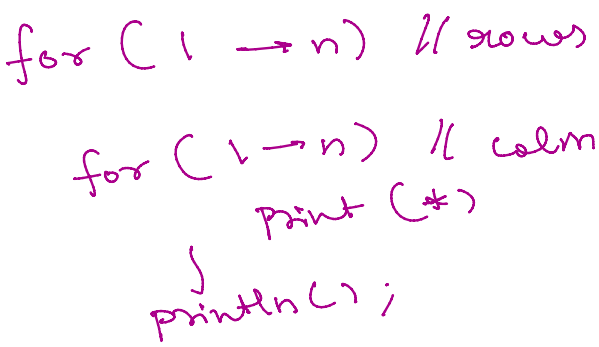
Pattern 3 - nxn star rectangle

Problem | Submissions | Leaderboard | Discussions

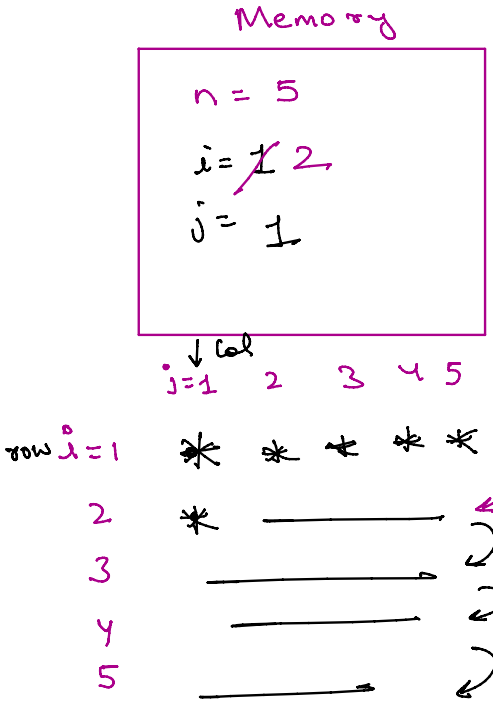
Take n as an integer input. Then print nxn star rectangle as mentioned below.

In each line, n stars should be printed.

And there should be n such lines.



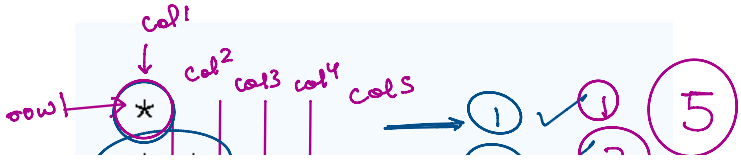

```
Scanner scn= new Scanner(System.in);
int n = scn.nextInt();
for(int i = 1; i<=n ; i++){
    for(int j = 1; j<=n ; j++){
        System.out.print("*");
    }
    System.out.println();
}
```

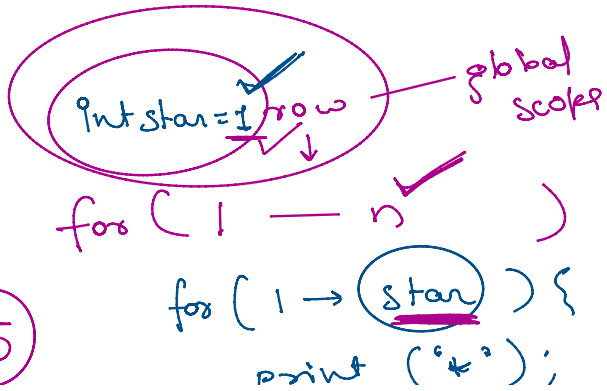


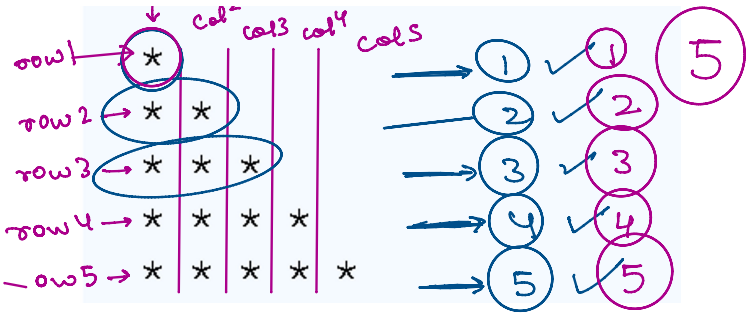
Sample Input 0

```
5
```

Sample Output 0








```
for ( i → star ) {
    print ("* ");
}
println( );
star++;
```

Memory

star = 1 2 3 4

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

```
Scanner scn =  new Scanner(System.in);
int n = scn.nextInt();
int star = 1;
for(int i = 1; i<= n ; i++){ //rows
    for(int j = 1 ; j<=star; j++){ //col
        System.out.print("* ");
    }
    System.out.println();
    star++;
}
```

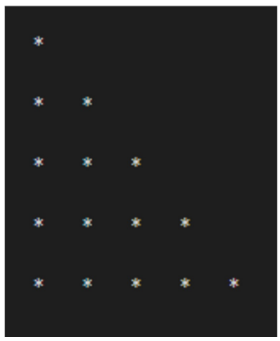
Memory

n = 5

i = 1 2 3 4 5

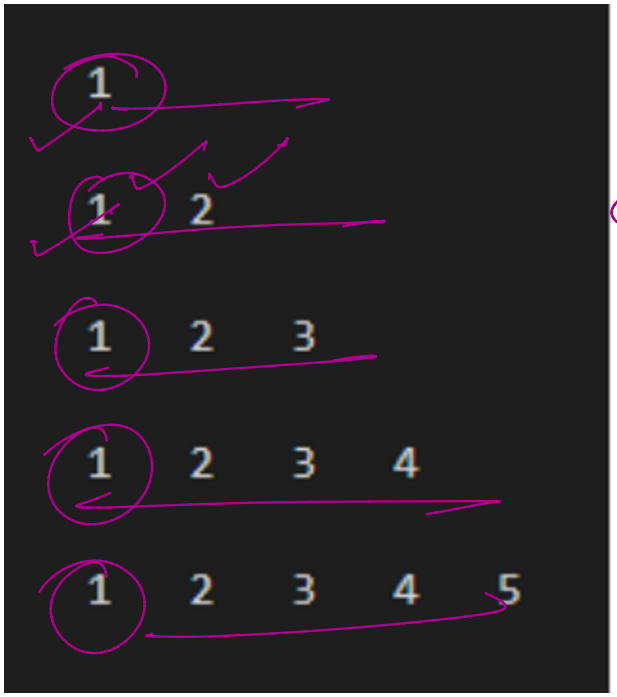
j = 1

star = 1 2 3 4 5



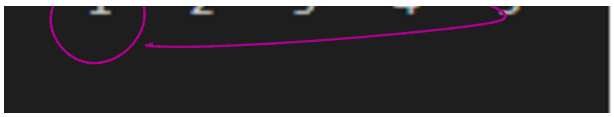
1. 2. 3. 4. 5

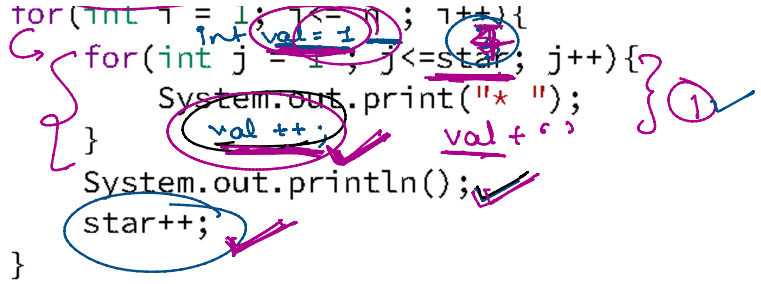
```
1.  *
2.  * *
3.  * * *
4.  * * * *
5.  * * * * *
```

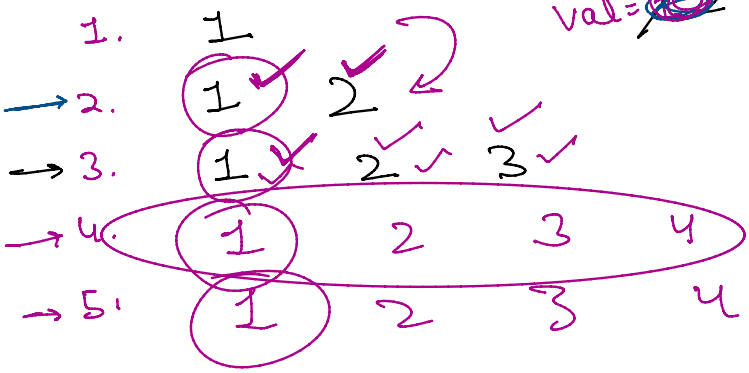



```
*
* *
* * *
* * * *
* * * * *
```

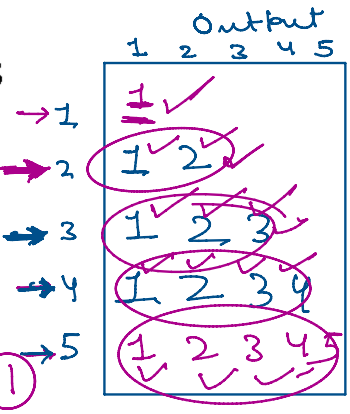
```
Scanner scn =  new Scanner(System.in);
int n = scn.nextInt();
int star = 1;
for(int i = 1; i<= n ; i++){
    for(int j = 1; j<=star; j++){
        System.out.print("* ");
```

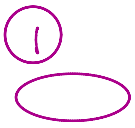


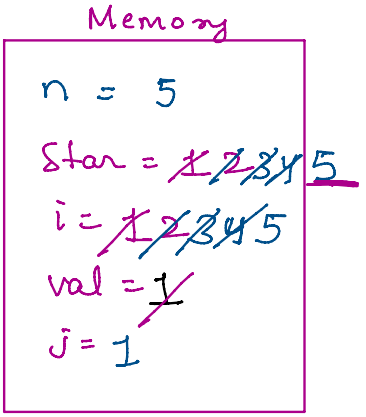


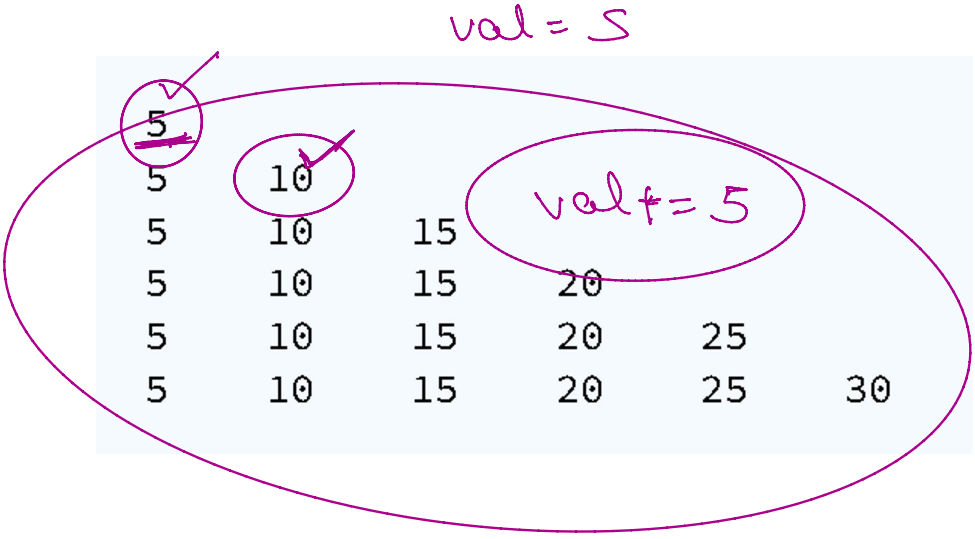


```
Scanner scn = new Scanner(System.in);
int n = scn.nextInt();
int star =1;
for(int i = 1; i<=n ; i++){
    int val = 1;
    for(int j=1 ; j<=star ; j++){
        System.out.print(val + " ");
        val++;
    }
    System.out.println();
    star++;
}
```









```java
Scanner scn = new Scanner(System.in);
int n = scn.nextInt();
int star =1;
for(int i = 1; i<=n ; i++){
    int val = 1;
    for(int j=1 ; j<=star ; j++){
        System.out.print(val + " ");
        val+=5;
    }
    System.out.println();
    star++;
}
```

```java
Scanner scn = new Scanner(System.in);
int n = scn.nextInt();
int star = 1;
for(int i =1 ; i<= n ; i++){
    int val = 5;
    for(int j = 1 ; j<= star; j++){
        System.out.print(val + "\t");
        val+=5;
    }
    System.out.println();
    star++;
}
```

Output

1. 5
2. 5 10
3. 5 10 15
4. 5 10 15 20
5. 5 10 15 20 25

Memory

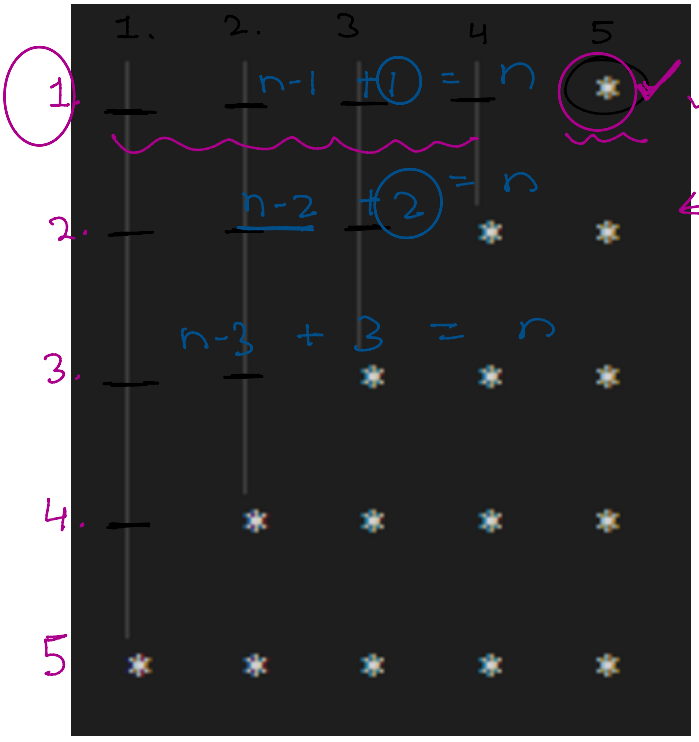
n = 5

star = 1 2 3 4 5 6

i = 1 2 3 4 5 6

val = 5 10 15 20 25 30

j = 1 2 3 4 5 6



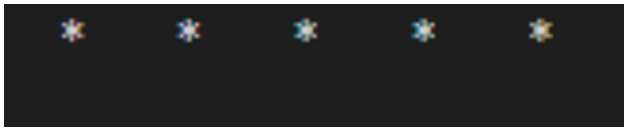
n-1 = 5×5

4 spaces → 3 spaces → 2 spaces → 1 space → 0 space

1 star → 2 star → 3 star → 4 star → 5 star

space decreased by 1

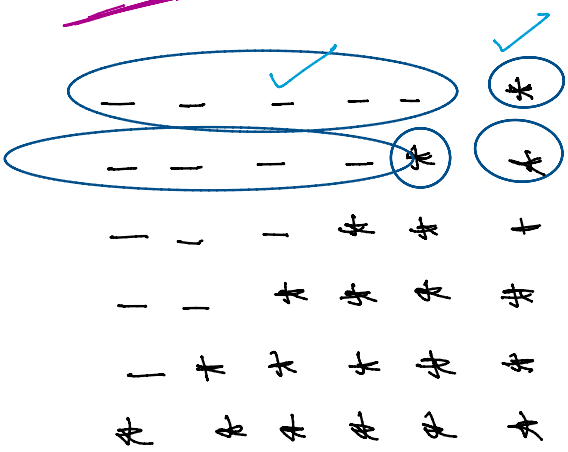
star is getting increased by 1

5 

space decreased by 1

star is getting increased by 1

n = 6



space = n-1

5 s
4 s
3 s
2 s
1 s
0 s

star = 1

1 s
2 s
3 s
4 s
5 s
6 s

Scanner class

n → 5

star = 1

space = n-1

for (1 — n)

n-1 + 1 + n

n-2 + 2 = n

// rows

for (1 → space)
print (" ");

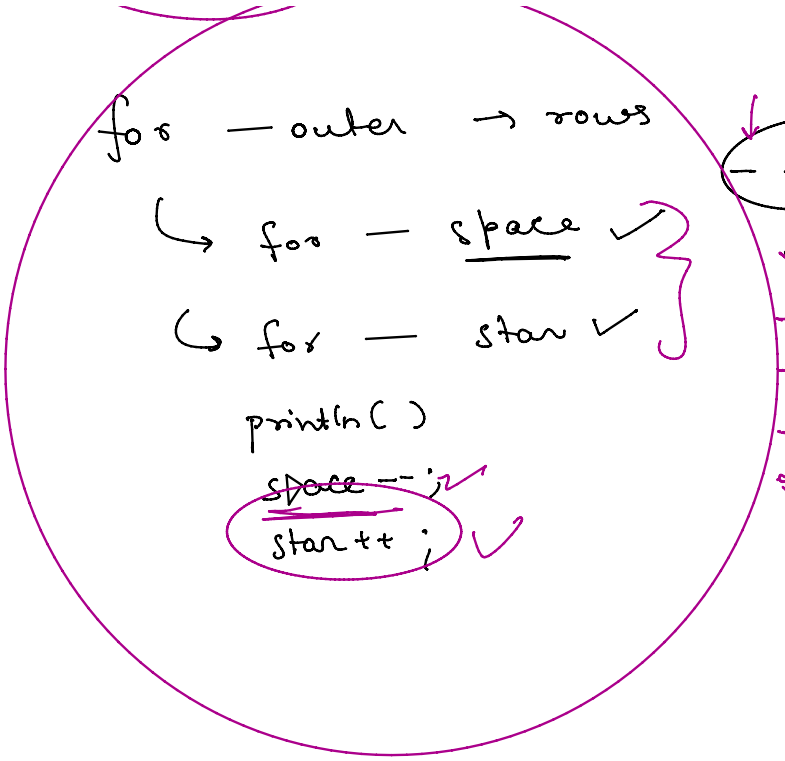
for (1 — star)
print ("*");

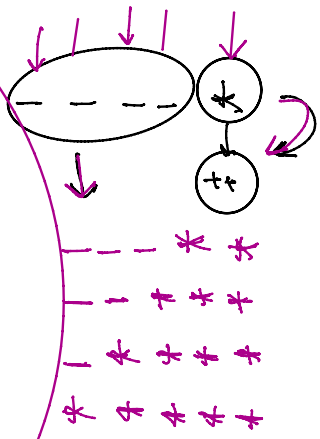
space, star → col

— — — —*

println ( )

star++;
space--;






```
Scanner scn = new Scanner(System.in);
int n = scn.nextInt();
int star = 1;
int space = n-1;
for(int i = 1 ; i<= n ;i++){
    for(int j = 1 ; j <= space ; j++){
        System.out.print(" ");
    }
    for(int j = 1; j<= star ; j++){
        System.out.print("*");
    }
    System.out.println();
    space--;
    star++;
}
```

Memory

n=5
star = 1
space = 4

1. — — — — *
2. — — — * *
3. — — * * *
4. — * * * *
5. * * * * *