Java DSA Lecture 15

Monday, December 5, 2022 7:38 PM

Question - 1
Weekly Test

```
Scanner scn = new Scanner(System.in);
int n = scn.nextInt();
while(n > 0){
    int ans = n % 10;
    System.out.println(ans);
    n = n / 10;
}
```

Question - 2
Weekly Test

```
Scanner scn = new Scanner(System.in);
double d1 = scn.nextDouble();
double d2 = scn.nextDouble();
double area = (d1 * d2)/2;
System.out.println(area);
```

```
Scanner scn = new Scanner(System.in);
int n = scn.nextInt();
int count = 0;
for(int i = 1; i<= n ; i++){
    if(count % 2 == 0){ // even
        if(i%3 == 0){
            System.out.print(i + " ");
        }
    }
    count++;
}
```

Memory

n = 21

count = 0 1 2 3 4 5 6

i = 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

3 9 15 21

count → 0 1 2 3 4 5 6

3 6 9 12 15 18 21

```java
Scanner scn = new Scanner(System.in);
int n = scn.nextInt();
if(n >= 90){
    System.out.println("A");
}else if(n >= 75){
    System.out.println("B");
}else if(n>=60){
    System.out.println("C");
}else{
    System.out.println("D");
}
```

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

Problem | Submissions | Leaderboard | Discussions

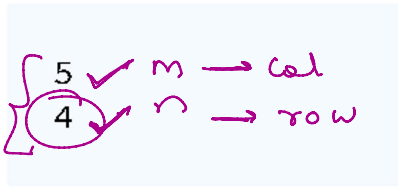
Take m and n as an integer input, then print a hollow m by n star rectangle.

Then print hollow star rectangle which has m stars in the first line and m stars in the nth line.

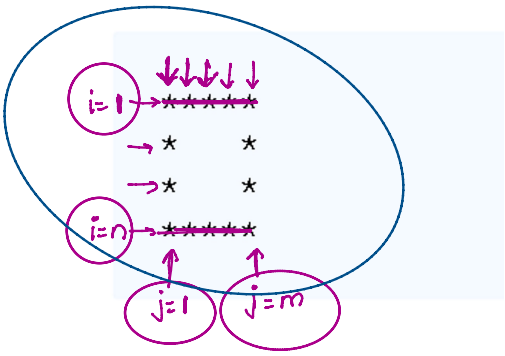
There rectangle should have n lines

and in every line in between should have only first star and then the mth star.

Sample Input 0



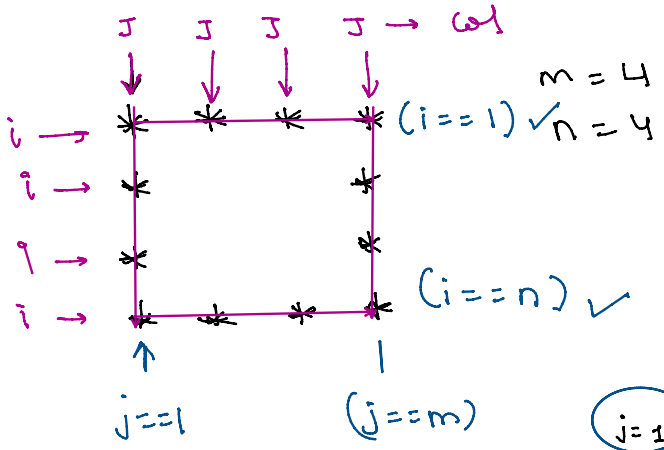
Sample Output 0



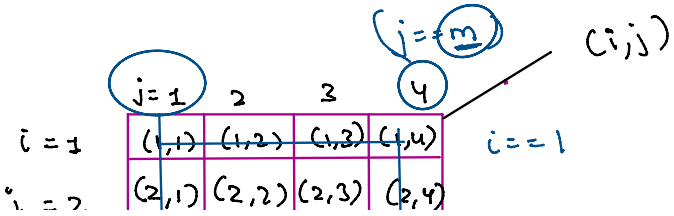
for (1 → n) // row

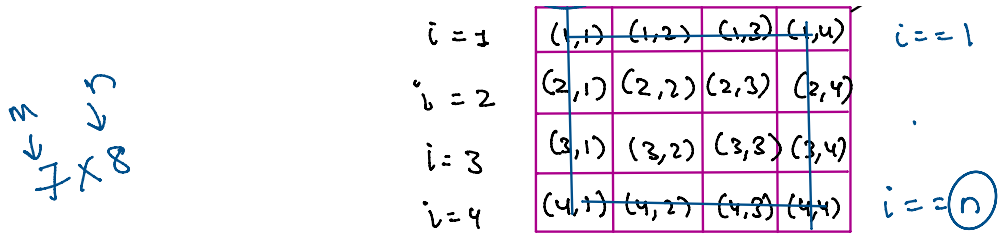
for (1 → m) // col

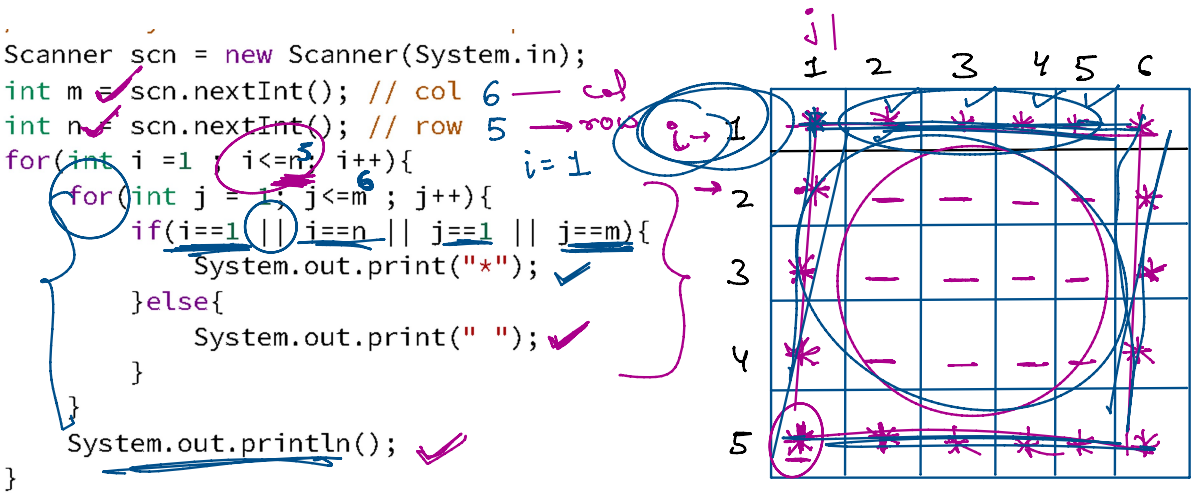
OR { i==1 || i==n || j==1 || j==m }



(i==1) || (i==n) || (j==1) || (j==m)







Pattern 8 - Print a hollow square without top

Problem | Submissions | Leaderboard | Discussions

Take an integer input n and then print a hollow n by n square without the top.

Print as given in the conditions below:

In the first line there will a star , followed by n-2 spaces and then there will be a star again,

Just like above, there will n-1 lines and then

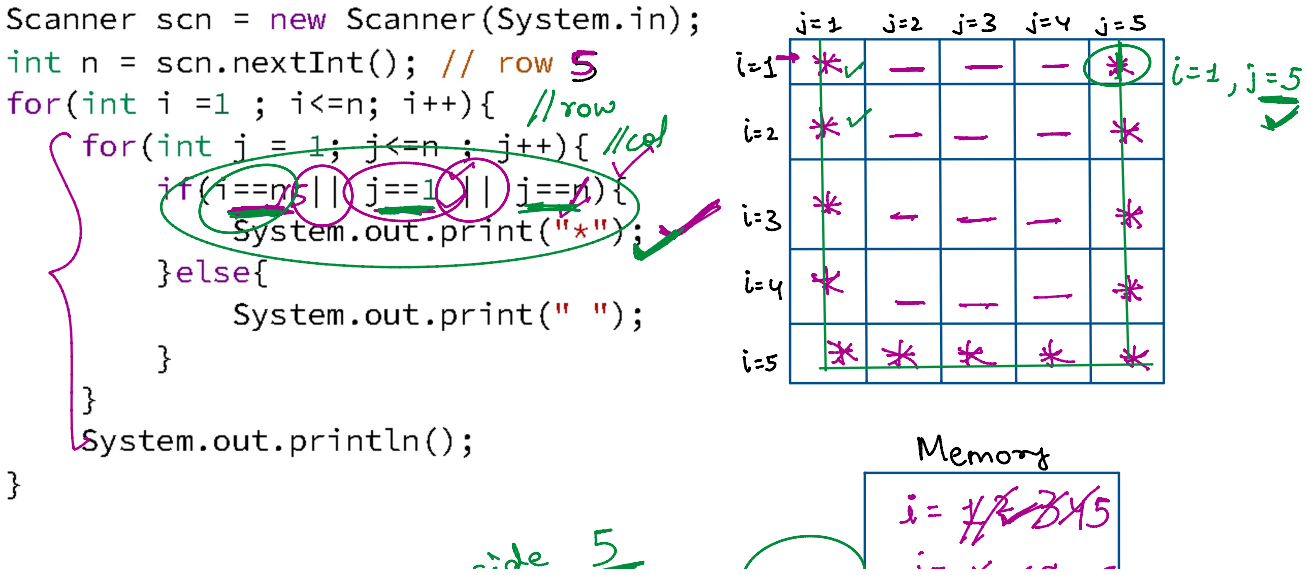
in the last line there will be n stars.

Sample Input 0

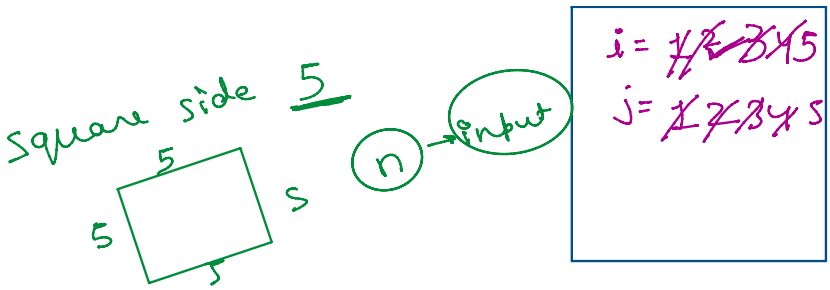
```
5
```

Sample Output 0

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



}



Pattern 9 - Square Ladder with top and bottom

Problem | Submissions | Leaderboard | Discussions

Take n as an integer input, then

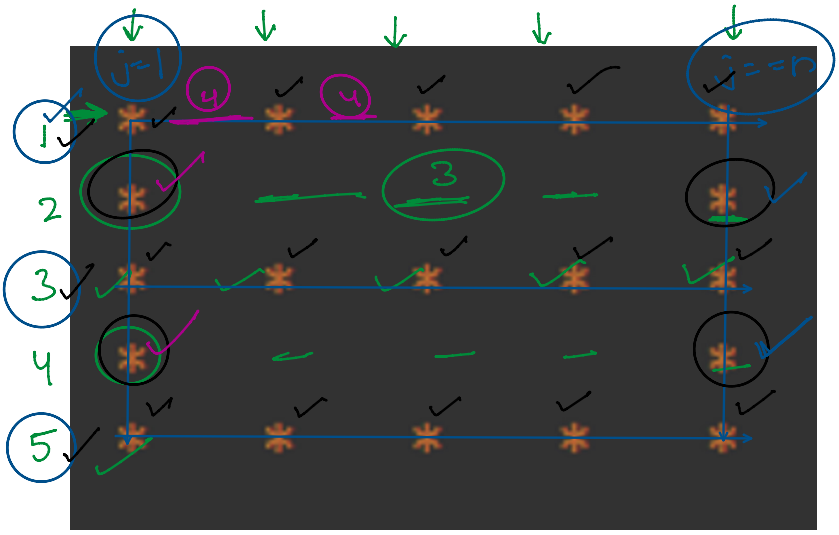
print n tab separated stars in the first line,

then in the second line print a star, then n-2 tabs, then print a star.

then print n tab separated stars in the third line.

then in the fourth line print a star, then n-2 tabs, then print a star .

5



n == 5

for (i - 5)

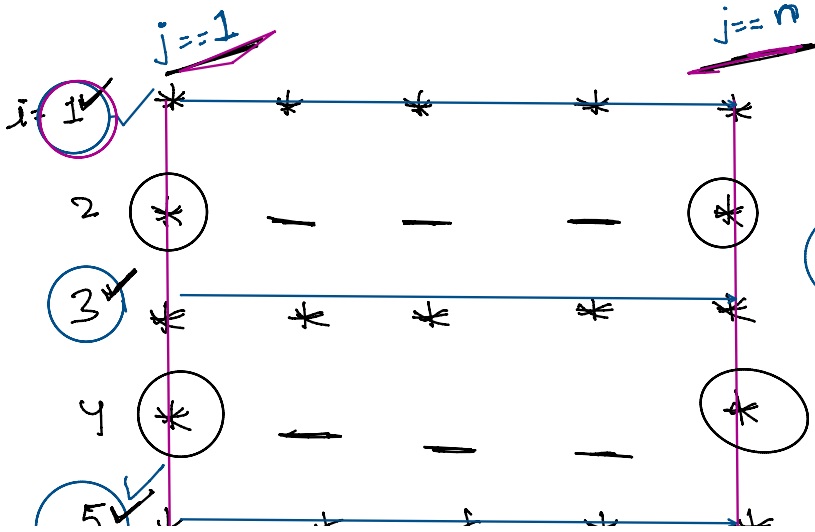
for (i - 5)

if (i%2 == 1) || j==1 || j==n)

odd

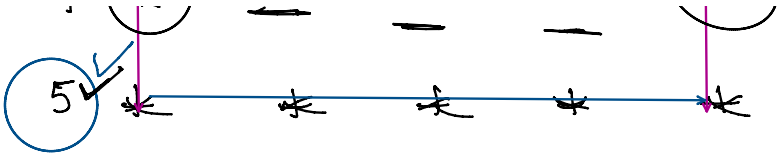
6 * \t" → star

"6 \t" → space

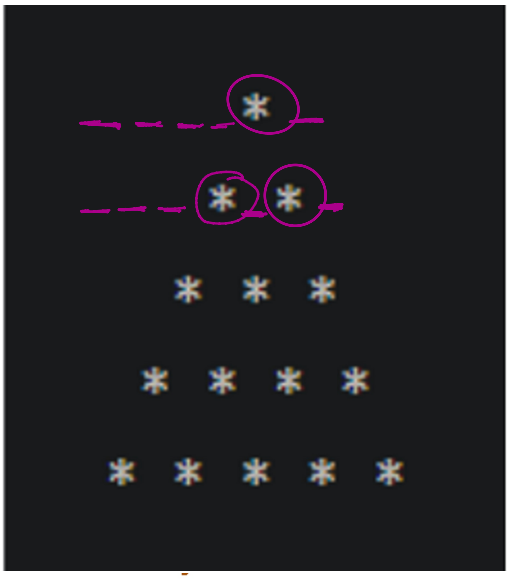


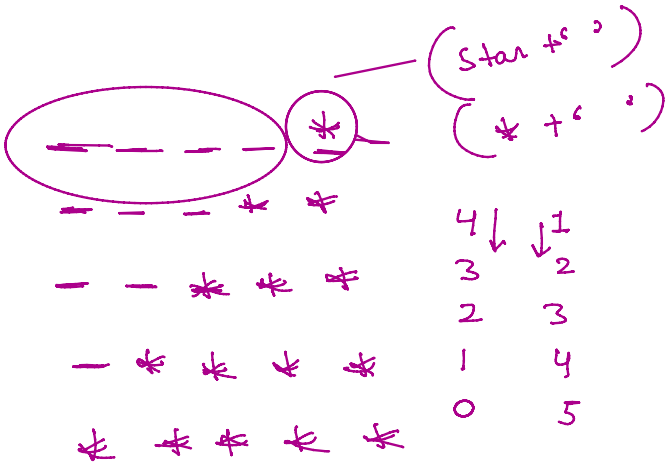
i%2 == 1

odd

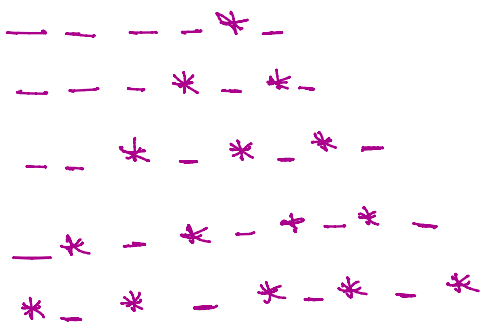



```
Scanner scn = new Scanner(System.in);
int n =scn.nextInt();
for(int i = 1; i<=n ; i++){
    for(int j = 1; j <=n ; j++){
        if(i%2 == 1 || j==1 || j==n){
            System.out.print("*\t");
        }else{
            System.out.print("\t");
        }
    }
    System.out.println();
}
```






```
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--;
```



```
    }
    System.out.println();
    space--;
    star++;
}
```

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

}
```