Name : Tanvi Bhosale

NHollow.java > Java > NHollow > main(String[] args)

```java
import java.util.Scanner;
public class NHollow {
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s: "ENter Number : ");
        int n =sc.nextInt();
        for (int i = 1; i <=n; i++) {
            for (int j = 1; j <=n; j++) {
                // if((i<=(n-1) && i>=2 ) && (j<=(n-1) && j>=2)){
                if(i==1||i==n||j==1||j==n){
                    System.out.print(s: " *");
                }
                else{
                    System.out.print(s: "  ");
                }

            }
            System.out.println();
        }
    }
}

```

```
C:\DSA>javac NHollow.java

C:\DSA>java NHollow.java
ENter Number : 4
 * * * *
 *     *
 *     *
 * * * *
```

Ass - 2

pattern Visualization & filtering squares

```
n = 3
for (i=1 ; i<=n; i++)
{
  for (j=1 ; j<=n; j++)
    {
      if ( 2<=i<=(n-1) && 2<=j<=(n-1))
        {
          System.out.print(" ");
        }
      else
        {
          System.out.print("*");
        }
    }
  System.out.println();
}
```

Dry run

i = 1 [1]

j <= n (1 <= 3) → true

inner loop

j = 1 [1]

j <= n (1 <= 3) → true

enter into inner loop

if (2 <= 1 <= 2 && 2 <= 1 <= 2) → False

∴ print * (else condition)

j++ j=2 [2]
j≤3 → true
enter into inner loop
if (2≤1≤2 && 2≤3≤2) (true && true) → false
∴ else condition executes
print *
j++ j=3 [3]
j≤3 → true
enter into inner loop
(if 2≤1≤2 && 2≤3≤2) → false
∴ else condition executes
print *
j++ j=4 [4]
j≤3 → false
inner loop stops
i++ i=2 [2]
i≤3 → true
enter into outer loop
j=1 [1]
j≤3 → true
enter into inner loop
if (2≤2≤2 && 2≤1≤2) → (true && false) → false
print " " (else)
j++ (1+1→2) j=2 [2]
j≤3 → true
Enter into inner loop
if (2≤2≤2 && 2≤2≤2) → true
print (" ")
j++ j=3 [3]
j≤3 → true

o/p * * *
* *
* * *

if (2≤2≤2 && 2≤3≤2) → false
print (" * ")
j++ j=4 [4]
j≤3 → false
i++ i=3 [3]
i≤3 → true
enter into outer loop
j=1 [1]
j≤3 → true
if (2≤3≤2 && 2≤1≤2) → false
print (* ")
j++, j=2 [2]
if j≤3 → true
if (2≤3≤2 && 2≤2≤2) (false && true) → false
print (*)
j++ j=3 [3]
j≤3 → true
if (2≤3≤2 && 2≤3≤2) → false again
print (*)
j++ j=4 [4]
j≤4 → false
stop inner loop
i++ i=4 [4]
i≤3 → 4≤3 → false
stop outer loop

o/p * * *
* *
* * *

another option

```
if (i==1 || i==n || j==1 || j==n) {
S.O.print("  *  ");
}
else {
S.O.P("  ");
}
```

first & last also first & last column is filled with starts
∴ first = 1 , last = n
other wise print space

```
import java.util.Scanner;
public static void main() {
Scanner sc = new Scanner(System.in);
System.out.print("enter No:");
  int n = sc.nextInt();
for(int i=1 ; i<=n ; i++){
// if ((i<=(n-1) && i>=2) && (j<=(n-1) && j>=2)){
  if (i==1 || i==n || j==1 || j==n) {
    System.out.print("  *  ");
  }
  else {
    System.out.print("  ");
  }
}
System.out.println();
}
}
```

NCross.java > Java > NCross > main()

```java
import java.util.Scanner;
public class NCross {
    Run main | Debug main | Run | Debug
    void main(){
        Scanner sc= new Scanner(System.in);
        System.out.print(s: "Enter Number : ");
        int n=sc.nextInt();
        for(int i=1;i<=n;i++){
            for(int j =1;j<=n;j++){
                if(i==j || i+j==(n+1)){
                    System.out.print(s: " *");
                }
                else{
                    System.out.print(s: "  ");
                }
            }
            System.out.println();
        }
    }

}
```

```
C:\DSA>java NCross.java
Enter Number : 5
 *       *
   *   *
     *
   *   *
 *       *

C:\DSA>java NCross.java
Enter Number : 10
 *                 *
   *             *
     *         *
       *     *
         * *
         * *
       *     *
     *         *
   *             *
 *                 *
```

```
for (i=1 ; i<=n ; i++)
{
    for (j=1 ; j<=n ; j++)
    {
        if (i+j==(n+1) || i==j)
        {
            System.o.p (" * ");
        }
        else {
            s.o.p (" ");
        }
    }
}
```

n = 3

i = 1 [1]

i ≤ 3 → true

j = 1 [1]

j ≤ 3 → true

if (i+j==(n+1) || i==j);

if (1+1 == 4 || 1==1) → (False || true) → true

print ("* ")

j++ j = 2 [2]

if (1+2 == 4 || 1==2) → False

print (" ");

j++ j = 3 [3]

if (1+3 == 4 || 1==3) → true

print (*)

j++ j = 4 [4]

j ≤ 3 → false

end inner loop

s.o.println(); → next line

i++ i = 2 [2]

[1] j=1 j ≤ 3 → true

if (2+1==4 || 2==1) → false

s.o.p (" ")

j++ j = 2 [2]

j ≤ 3 → true

if (2+2 == 4 || 2==2) → true

s.o.p ("* ")

j++ j = 3 [3]

j ≤ 3 → true

if (2+3 == 4 || 2==3) → false

s.o.p (" ")

j++ j = 4 [4]

j ≤ 3 → false

S.O.println(" "); → next line

i++ i = 3 [3]

i ≤ 3 → true

j = 1 [1] j ≤ 3 → true

if (3+1 = 4 || 3==1) → true

s.o.p ("* ");

j++ → j = 2 [2]

if (3+2 = 4 || 3=2) → false

s.o.p (" ");

j++ → j = 3 [3]

j ≤ 3 → true

if (3+3 = 4 || 3==3) → true

s.o.p ("* ");

j++ j = 4 [4]

j ≤ 3 → false

so.println(); → next line

i++ i = 4 [4]

i ≤ 3 → false

outer loop end

o/p

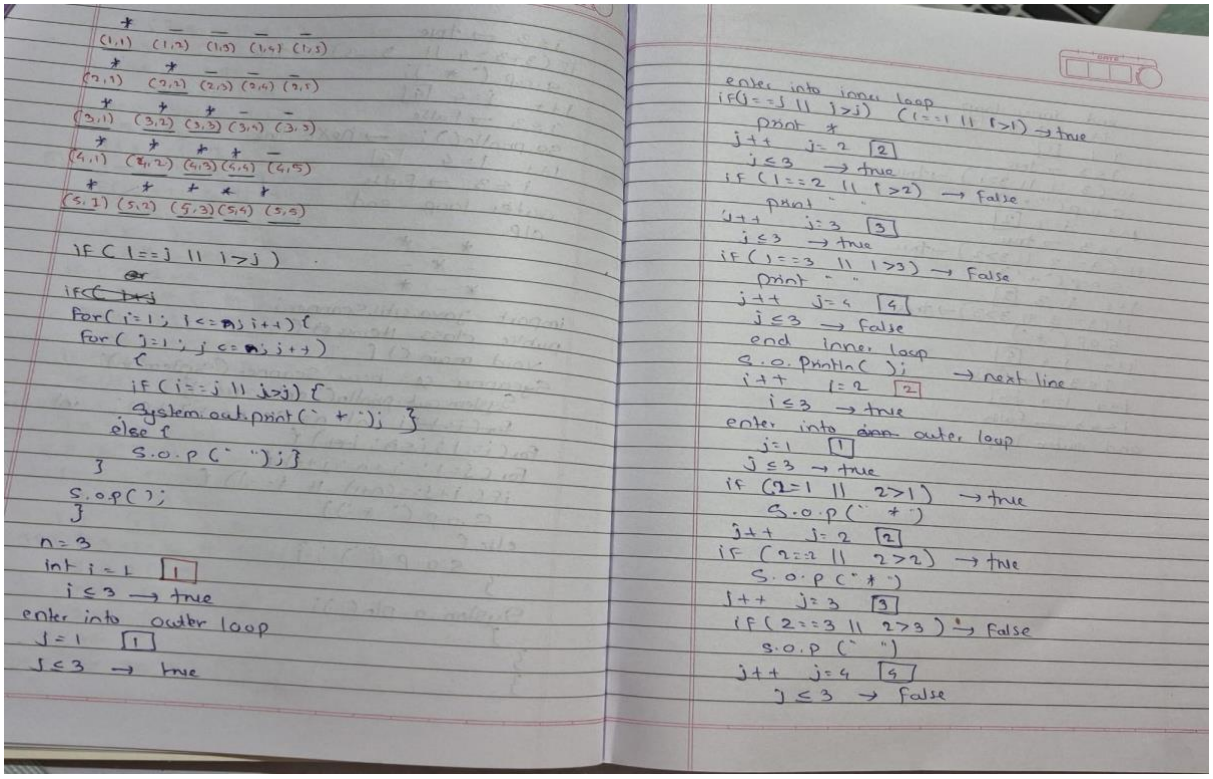
```
* - *
- * -
* - *
```

```
import java.util.Scanner;
public class Ncross {
  void main () {
  Scanner sc = new Scanner (System.in);
    System.out.println("enter No");
    for(i=1;i int n= sc.nextInt();  int i,j;
  for(i= 1; i<=n; i++) {
    for (j=1; j<=n ;j++) {
     if( i+j==(n+1) || j==i) {
       s.o.p ("* ")}
     else {
        s.o.p (" ") ;}
     }
  System.o.pln( );
  }
}
}
```

```java
public class RightTriangle {
    void main(){
        int i,j;
        for(i=1;i<=5;i++){
            for(j=1;j<=5;j++){
                if(i==j || i>j){
                    System.out.print(" *");
                }
                else{
                    System.out.print("  ");
                }
            }
            System.out.println();
        }
    }

}
```

```
C:\DSA>java RightTriangle.java
 *
 * *
 * * *
 * * * *
 * * * * *
```



end inner loop
i++ i = 3 [3]
j = 1 [1]
j ≤ 3 → true
if (3 == 1 || 3 > 1) → true
S.o.p("*")
j++ j = 2 [2]
j ≤ 3 → true
if (3 == 2 || 3 > 2) → true
S.o.p("*")
j++ j = 3 [3]
if (3 == 3 || 3 > 3) → true
S.o.p("*")
j++ j = 4 [5]
j ≤ 3 → false
i++ i = 4 [4]
i ≤ 3 → false
end outer loop

o/p
```
*
* *
* * *
```

```java
public class InvertedRightTriangle {
    void main(){
        int i,j;
        for(i=1;i<=5;i++){
            for(j=1;j<=5;j++){
                if(i+j<=6){
                    System.out.print(" *");
                }
                else{
                    System.out.print("  ");
                }
            }
            System.out.println();
        }
    }

}
```

```
C:\DSA>java InvertedRightTriangle.java
 * * * * *
 * * * *
 * * *
 * *
 *
```

```java
import java.util.Scanner;

public class ChessBoard {
   public ChessBoard() {
   }

   void main() {
      Scanner var1 = new Scanner(System.in);
      System.out.println("Enter number :");
      int var2 = var1.nextInt();

      for(int var3 = 1; var3 <= var2; ++var3) {
         for(int var4 = 1; var4 <= var2; ++var4) {
            if (((var3 + var4) % 2 == 0 || var2 % 2 == 0) && ((var3 + var4) %
2 != 0 || var2 % 2 != 0)) {
               System.out.print(" #");
            } else {
               System.out.print(" *");
            }
         }
```

```
        System.out.println();
      }

   }
}
```

```
C:\DSA>java ChessBoard.java
Enter number :
5
 * # * # *
 # * # * #
 * # * # *
 # * # * #
 * # * # *

C:\DSA>java ChessBoard.java
Enter number :
4
 * # * #
 # * # *
 * # * #
 # * # *
```