loop :- Statement / Task / function   Hello

→ for

→ while

→ dowhile

→ for (foreach Loop - Arrays)

Syntax: for (init; cond; inc/dec) {

// Statement

3

for (int i = 1; i <= 10; i++){
        Syso (Hello);

3

Hello → 10 line

0 - 9
1 - 10
1 - < 11
0 < 10

int i;

for (i=1; i<=10 ; i++) {

① ② false ④

// Statement ③

}

Scanner

$\llcorner$ int

next float
next Double

next ✓]

next line ✗

JAVA
Base class

Object
$\llcorner$ Class

String

Integer]
Float
Double]

Stûnpelme

String st = Scn. next();] 10, 20.5

parse

10, 14.15 ─────┤└→ Double

Integer

Wrapper class object

String ["10"] $\xrightarrow{\text{Integer}}$ int (10)

Wrapper Class

String "23.45" $\xrightarrow{\text{Double}}$ double (23.45)

2 Loop

Outer Loop

Inner Loop
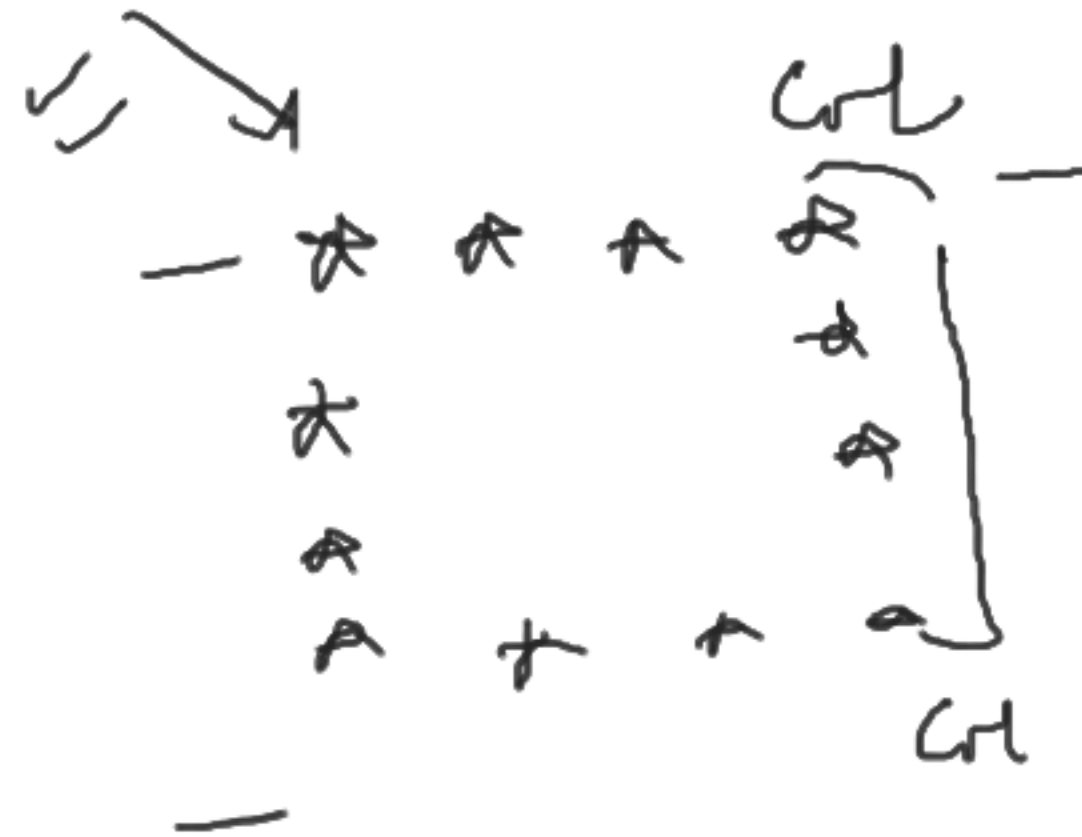
$\leftarrow$ { MAX - 3 loop

[inc

Total Rows $(n) = 4$

for $(1 - 4)$
(i)
row

$1-4$

row
1
2
3
4

(j) Loop
col (times)
$-1-4$

4
4
4
4

i | j → 1 2 3 4

row [1
      2
      3
      4

$\star \star \star \star \star \wedge \wedge$

```
int ttlRows = (4); 10 ✓
for ( int row = 1 ; row <= ttlRows; row++) {

                                    ttlRows
    for(int col = 1; col <= (4); col++) {

        Syso print ("*");

    }

    Syso println ( );

}
```

```
int ttlRows=10;
    int colTimes = 5;

        ①        ②              ④
    for(int row=1;row<=ttlRows;row++){
        3·1      3·2       3·4
        for(int col=1;col<=ttlRows;col++){

            System.out.print("* "); 3·3
        }

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

→ * * * * * * * * * *
→ *
→ *

③

next line

row=1; 1<=10 ⇒ true

col=1; 1<=10 → true
col=2; 2<=10; true
col=10; 10<=10 → true
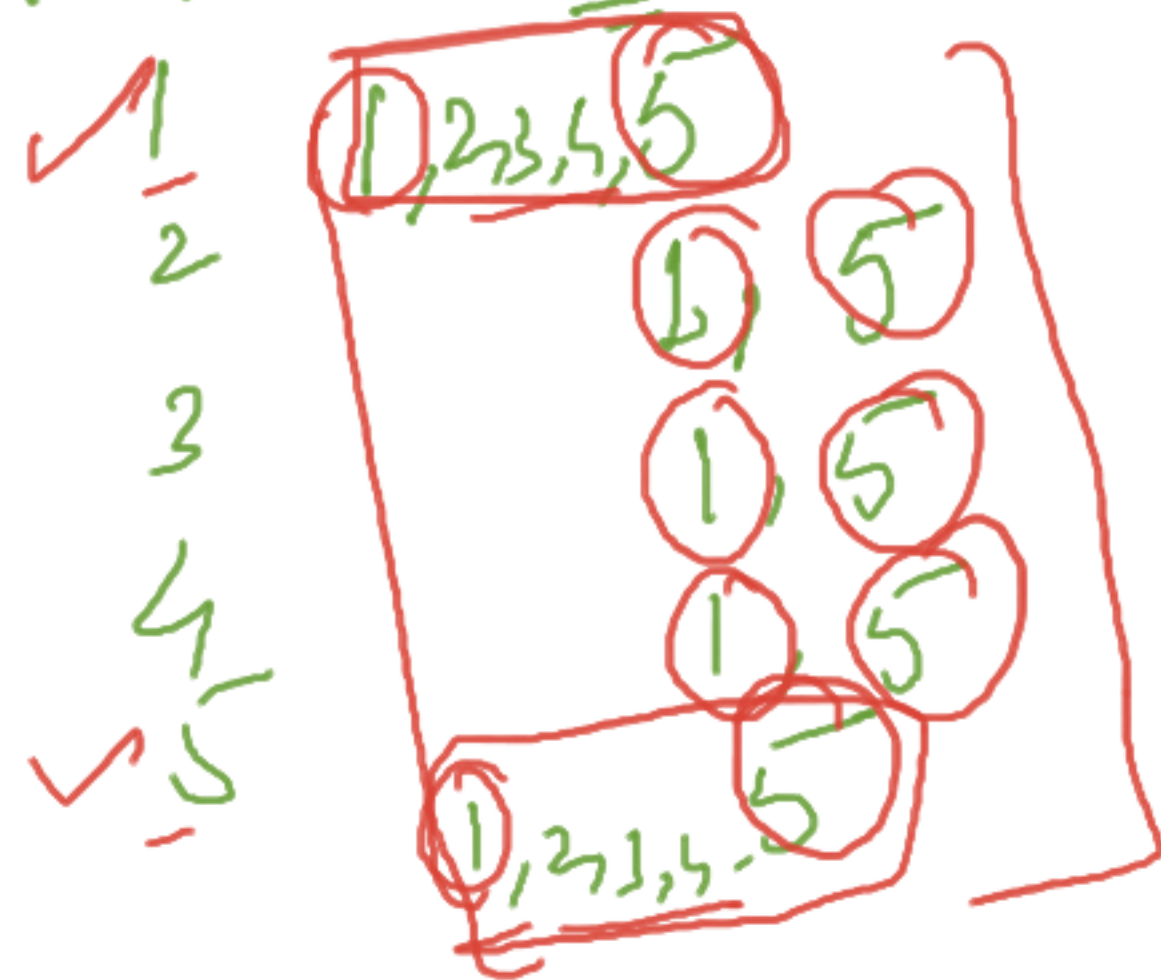col=11; 11<=10 → false

③

④ row=2; 2<=10 → true
col=1; 1<=10 → true
col 10 - - -
col 11 → false

row=11;
11<=10 } row=3

ttl Rows = 5

Row   Col. (1-5)   print Star

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

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

1 0 1 0 1
0 1 0 1 0

Row = 1 & Col = 1 → *
Row 5 & Col 5 → *

```
1 2 3 4 5
1 1 0 1 0 1
2 0 1 0 1 0
3 1 0 1 0 1
4 0 1 0 1 0
5 1 0 1 0 1
```

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

```
1 2 3 4 5
1 1 0 0 0 1
2 0 1 0 1 0
3 0 0 1 0 0
4 0 1 0 1 0
5 1 0 0 0 1
```

```
1 2 3 4 5
1 1 0 0 0 0
2 0 1 0 0 0
3 0 0 1 0 0
4 0 0 0 1 0
5 0 0 0 0 1
```