

→ Hallow Pattern Printing :

→ functions

N=1:

*

// given - N

N=2:

* *
* *

↳ # Rows $\rightarrow N$
↳ # Columns $\rightarrow N$

N=3

* * *
* - *
* * *

```
if (row == 1 || row == N || col == 1 || col == N) {  
    | print('0')  
    }  
else  
    | print(' ')  
    }
```

N=4

col: 1 2 3 4

row

1	*	*	*	*
2	*	-	-	*
3	*	-	-	*
4	*	*	*	*

N=5

col: 1 2 3 4 5

row \rightarrow

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

if (row == 1 || row == 5 || col == 1 || col == 5)

print('0')

else

print(' ')

// Patterns: { Hallow Pattern Printing }

→ { Analyse: In which rows and in which columns we are printing }

// given N?

↳ N rows
↳ N Columns

Conditions:

$i = 1 || j = 1 || i = N || j = N || i = j$

↙
boundary

↘
diagonal of 1-N

N=4

	col	1	2	3	4
row	1	x	x	x	x
	2	x	x	-	x
	3	x	-	x	x
	4	x	x	x	x

N=5

	col	1	2	3	4	5
row	1	x	x	x	x	x
	2	x	x	-	-	x
	3	x	-	x	-	x
	4	x	-	-	x	x
	5	x	x	x	x	x

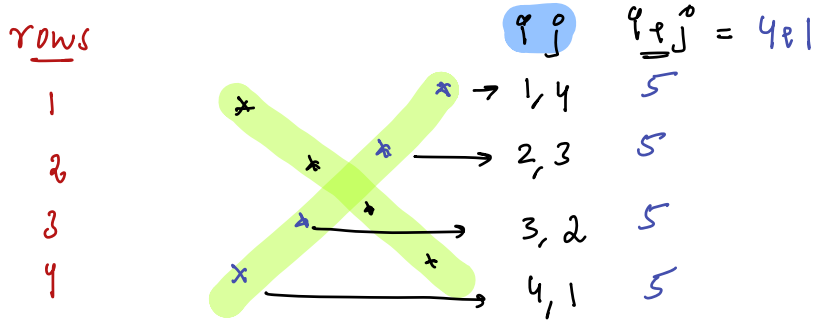
N=6

		1	2	3	4	5	6
row	1	x	x	x	x	x	x
	2	x	x	-	-	-	x
	3	x	-	x	-	-	x
	4	x	-	-	x	-	x
	5	x	-	-	-	x	x
	6	x	x	x	x	x	x

row number & col number
if same

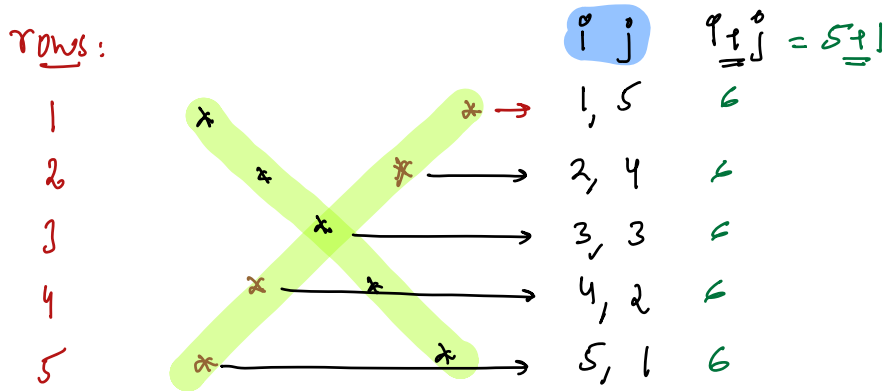
// Pattern-17 :

N=4: cols: 1 2 3 4

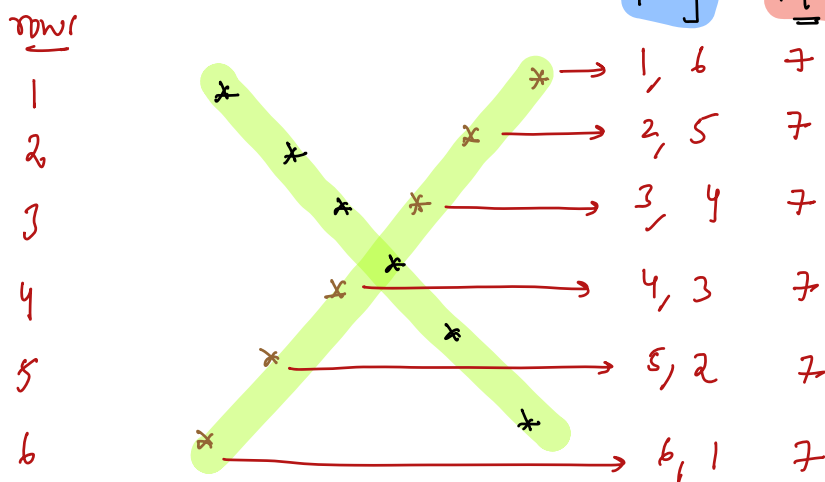


→ Left → Right ⇒ (i=j)
 → Right → Left ⇒ (i+j = N+1)

N=5: cols: 1 2 3 4 5



N=6 cols: 1 2 3 4 5 6 i j i j = 6+1



→ Functions: → { Don't keep answers in Public Chat }

↳ 9th / 10th / 11 / 12

Input

Input → Output

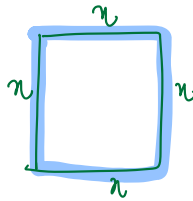
$$f(n) = n^2 + 2n \rightarrow n=4 \rightarrow 24$$

$$sq(n) = n^2 \rightarrow n=5 \rightarrow 25$$

$$root(n) = \sqrt{n} \rightarrow n=49 \rightarrow 7$$

$$area(r) = \pi r^2$$

$$psq(n) = 4n$$



$$f(x, y) = x^2 + 2y$$

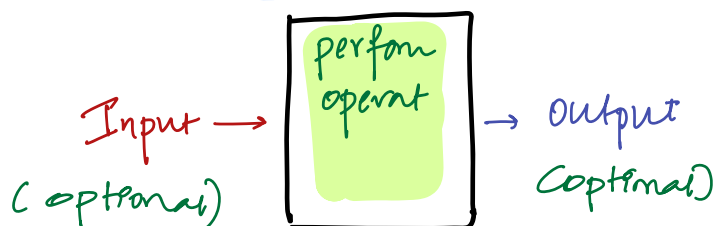
$$f(3, 4) = 3^2 + (2)(4) \rightarrow 17$$

$$f(5, 4) = 5^2 + (2)(4) \rightarrow 33$$

$$sum(n, y) = n + y$$

<u>Input</u>	→	<u>Output</u>
$\frac{n}{10}$		$\frac{y}{20}$
		30

// function name



→ After break:

10:18 pm → 10:28 pm

Functions :

// Syntax:

<return type> funname(<Input>) {

return output;
}

{ type of data our function returns }

} operations

{ output has no type }