

SUMMARY: LAB_3

Maximum value of variable **j** (inner for-loop)

	i					
row_1	*	*	*	*	*	*
row_2		*	*	*	*	*
row_3			*	*	*	*
row_4				*	*	*
row_5					*	*
row_6						*

No. of *
6
5
4
3
2
1

$$1 + 6 = 7$$

$$2 + 5 = 7 = 6 + 1 \quad \longrightarrow \quad \textcolor{red}{i} + \textcolor{green}{j} = \textcolor{blue}{n} + 1$$

$$\mathbf{L}_{\textcolor{brown}{j}} = \textcolor{blue}{n} + 1 - i$$

condition for inner for loop: $j \leq n + 1 - i$

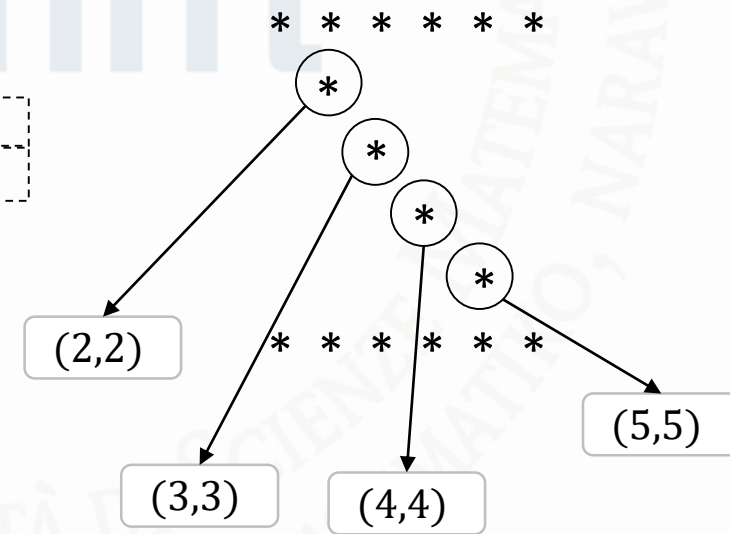
$$n = 6$$

- i
- 1
- 2
- 3
- 4
- 5
- 6

	j	j	j	j	j	j
	=	=	=	=	=	=
	1	2	3	4	5	6
i = 1	*	*	*	*	*	*
i = 2	*					*
i = 3	*					*
i = 4	*					*
i = 5	*					*
i = 6	*	*	*	*	*	*

Diagram illustrating the iterative step of the Floyd-Warshall algorithm. The matrix shows distances between nodes 1 to 6. The current iteration is for $k=5$, indicated by a dashed box around the 5th column and the row $i=5$. The matrix shows distances between nodes 1 to 6. The row $i=5$ is updated based on the 5th column. The final result shows the shortest path from node 1 to node 6 is 1-2-3-4-5-6 with a distance of 6.

$$i + j = n + 1$$



1.inner FOR:

 $1 \leq j < i$

2.inner FOR:

 $i \leq k \leq n$

if-statements