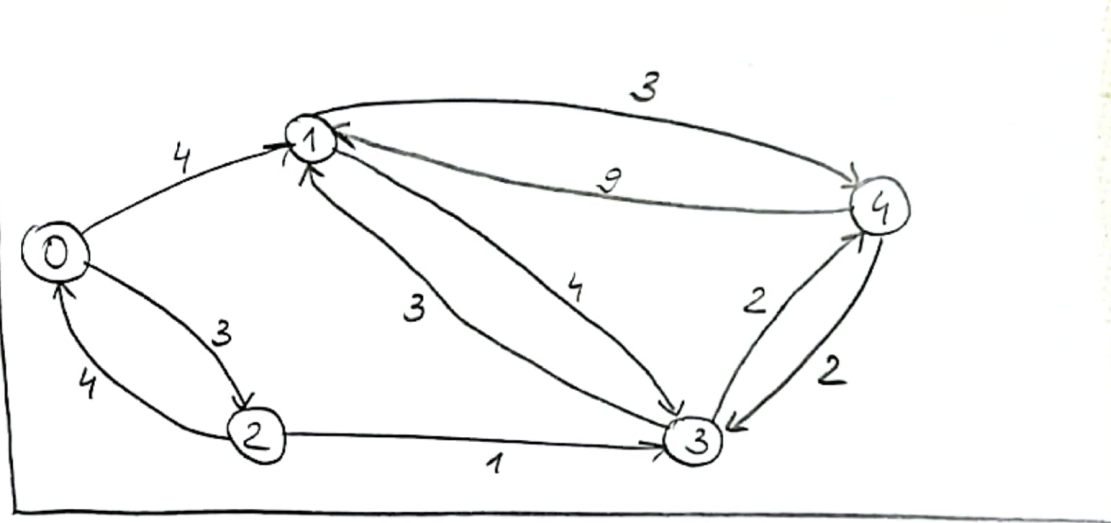


Dijkstra's algorithm =

$s=0$, $t=4$

Both s and t are in the graph }
 There are no negative cost edges } \Rightarrow
 \rightarrow the algorithm can be applied



	priority-queue	next	dist	cost	vertex	neighbour	found
init	$\leftarrow (0, 4) \leftarrow$	{ 0: None, 1: None, 2: None, 3: None, 4: None }	{ 0: ∞ , 1: ∞ , 2: ∞ , 3: ∞ , 4: 0 }	—	—	—	False
i1	$\leftarrow (3, 1) \leftarrow$	{ 0: None, 1: 4, 2: None, 3: None, 4: None }	{ 0: ∞ , 1: 3, 2: ∞ , 3: ∞ , 4: 0 }	0	4	1	
i12	$\leftarrow (2, 3) (3, 1) \leftarrow$	{ 0: None, 1: 4, 2: None, 3: 4, 4: None }	{ 0: ∞ , 1: 3, 2: ∞ , 3: 2, 4: 0 }			3	

	priority-queue	next	dist	cost	vertex	neighbour	found
i ₂₁	← (3, 1) ←	{0: None, 1: 4, 2: 3, 3: 4, 4: None }	{0: ∞, 1: 3, 2: 3, 3: 2, 4: 0 }	2	3	1	
i ₂₂	← (3, 1) (3, 2) ←					2	
i ₂₃						4	
i ₃₁	← (3, 2) ←	{0: 1, 1: 4, 2: 3, 3: 4, 4: None }	{0: 7, 1: 3, 2: 3, 3: 2, 4: 0 }	3	1	0	
i ₃₂	← (3, 2) (7, 0) ←					3	
i ₃₃						4	
i ₄₁	← (7, 0) ←	{0: 2, 1: 4, 2: 3, 3: 4, 4: None }	{0: 6, 1: 3, 2: 3, 3: 2, 4: 0 }	3	2	0	
	← (6, 0) (7, 0) ←						

priority-queue	next	dist	cost	vertex	neighbour	found
<div> <div>← (7, 0) ←</div> </div>						
i=1			6	<u>0</u> (= start)	2	<u>True</u>

$vertex == 0 == s \Rightarrow$ the algorithm stops. We reached the start vertex and found the minimum cost walk from s to t .

$dist[0] = 6 \neq \infty \Rightarrow$ the vertex s is accessible from the vertex 0

Using the "next" dictionary we build the walk from s to t .

$s = 0$, $next[0] = \underline{2}$, $next[2] = \underline{3}$, $next[3] = \underline{4}$, $next[4] = None$

\Rightarrow We get the walk:

$0 \xrightarrow{3} 2 \xrightarrow{1} 3 \xrightarrow{2} 4, \underline{cost = 6}$