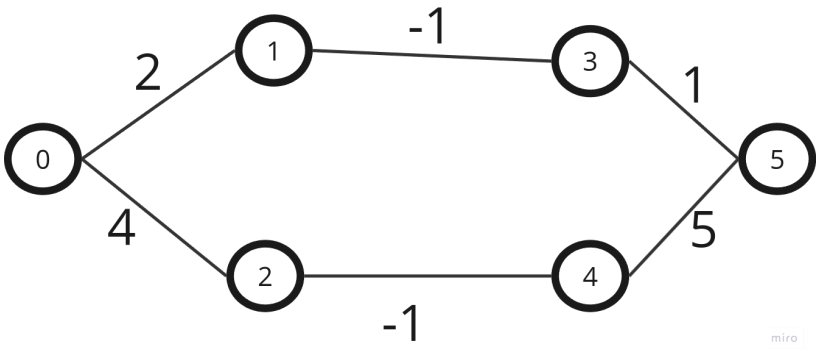
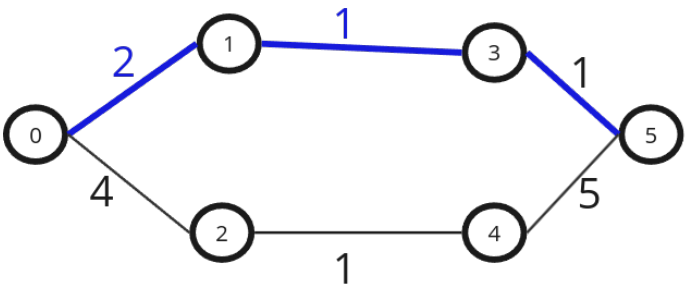
Example #1:

n=6
source=0
destination=5
target=15
[[0,1,2],[0,2,4],[1,3,-1],[2,4,-1],[3,5,1],[4,5,5]]



compute the shortest path with all -1 weights which are set to 1 (the minimum possible weight).:



d0: array of distances with all -1 weights which are set to 1:

0	2	4	3	5	4
0	*1*	*2*	*3*	*4*	*5*

shorest path=4, difference to target=15-4=11

d1: array of distances while adjustement (not used yet)

0	+∞	+∞	+∞	+∞	+∞
0	*1*	*2*	*3*	*4*	*5*

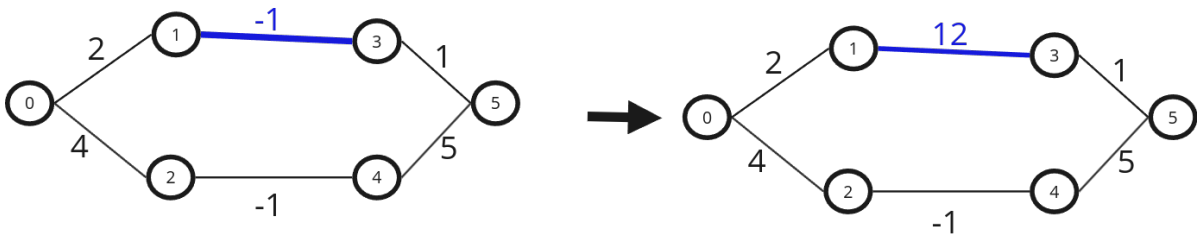
adjust the -1-weighted edges:

after running Dijkstra on node 0, d1 will be:

d1: array of distances while adjustement

0	2	4	+∞	+∞	+∞
0	*1*	*2*	*3*	*4*	*5*

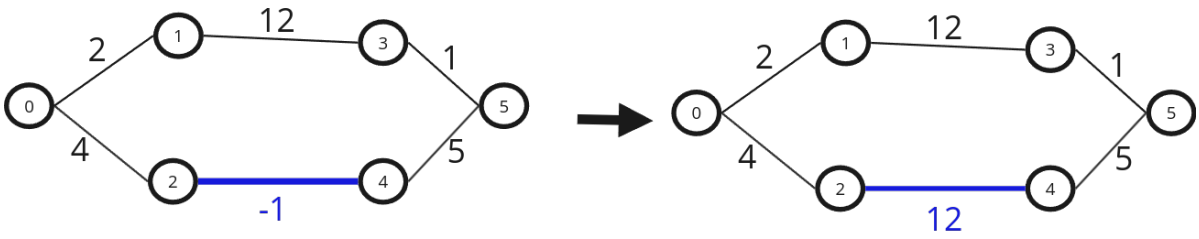
new wheight of edge(1,3):
=difference+d0[3]-d1[1]
=11+3-2=12



d1: array of distances while adjustement

0	2	4	14	+∞	+∞
0	*1*	*2*	*3*	*4*	*5*

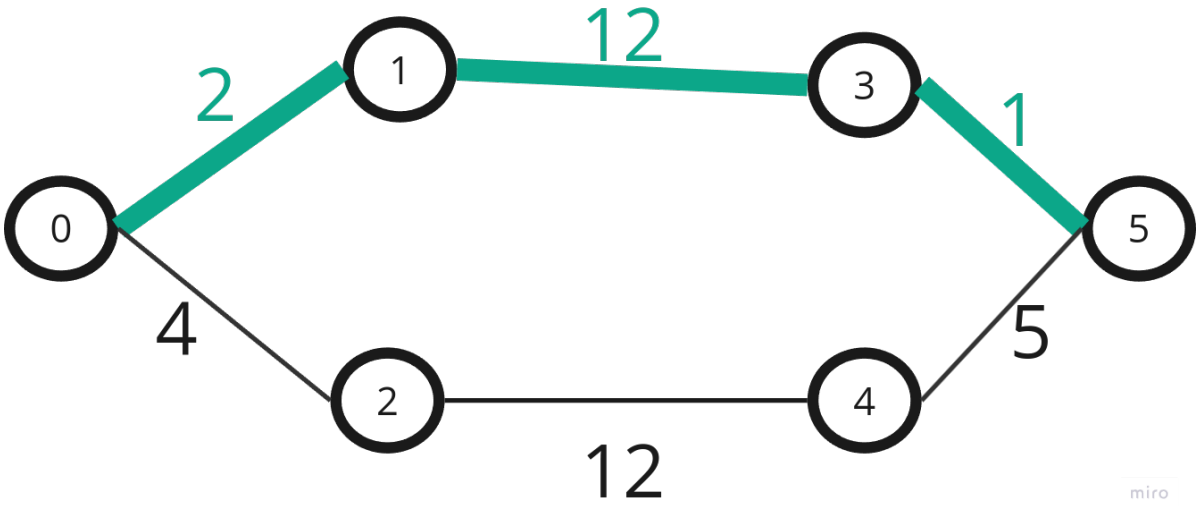
new wheight of edge(2,4):
=difference+d0[4]-d1[2]
=11+5-4=12



d1: array of distances while adjustement

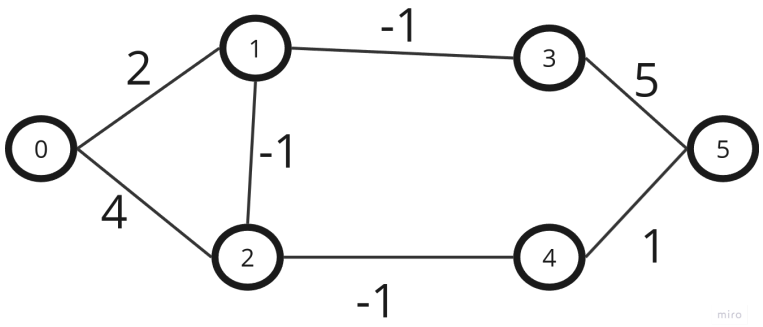
0	2	4	14	16	15
0	*1*	*2*	*3*	*4*	*5*

target

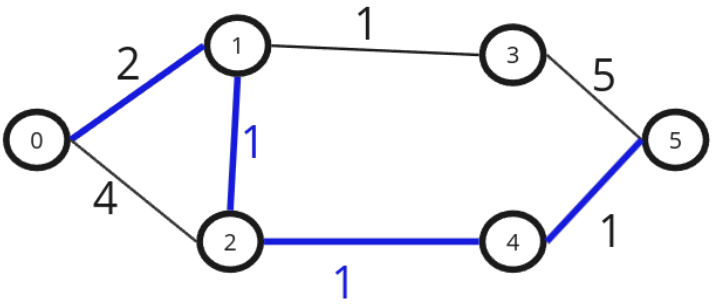


Example #2:

n=6
source=0
destination=5
target=15
[[0,1,2],[1,2,-1],[0,2,4],[1,3,-1],[2,4,-1],[3,5,5],[4,5,1]]



compute the shortest path with all -1 weights which are set to 1 (the minimum possible weight).:



1

d0: array of distances with all -1 weights which are set to 1:

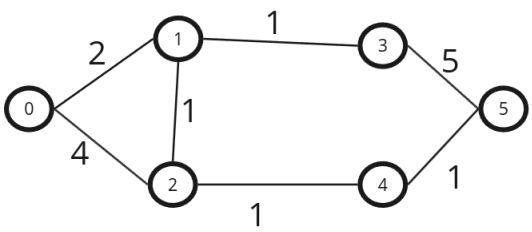
0	2	3	3	4	5
0	*1*	*2*	*3*	*4*	*5*

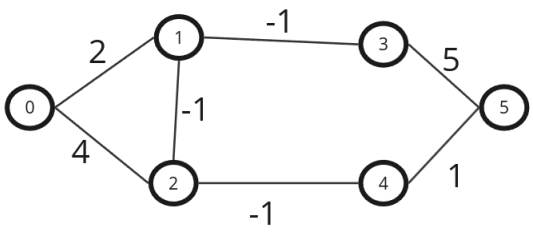
shorest path=5, difference to target=15-5=10

d1: array of distances while adjustement (not used yet)

0	+∞	+∞	+∞	+∞	+∞
0	*1*	*2*	*3*	*4*	*5*

adjust the -1-weighted edges:



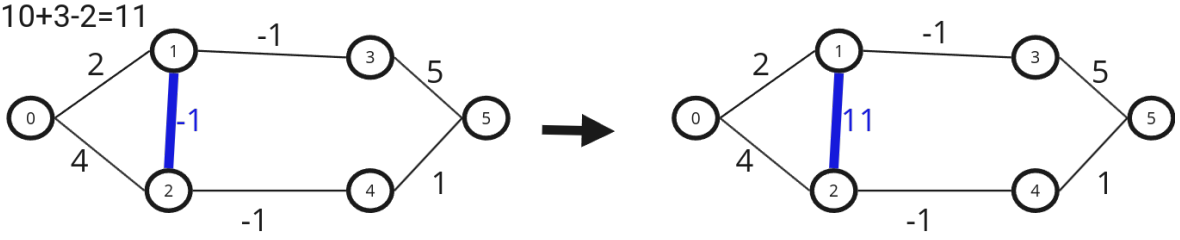


after running Dijkstra on node 0, d1 will be:

d1: array of distances while adjustement

0	2	3	+∞	+∞	+∞
0	*1*	*2*	*3*	*4*	*5*

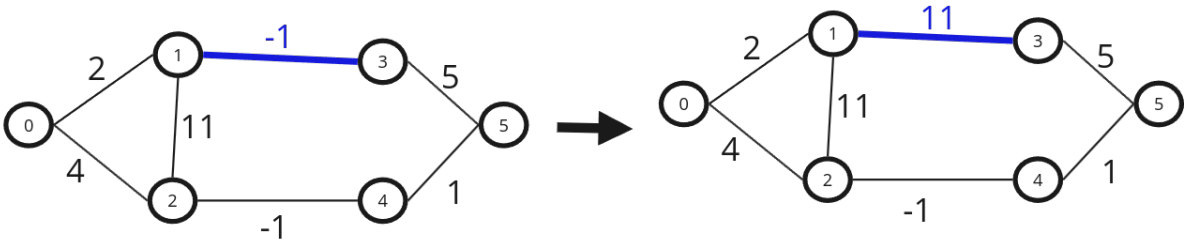
new wheight of the edge(1,2)
=difference+d0[2]-d1[1]
=10+3-2=11



d1: array of distances while adjustement

0	2	4	+∞	+∞	+∞
0	*1*	*2*	*3*	*4*	*5*

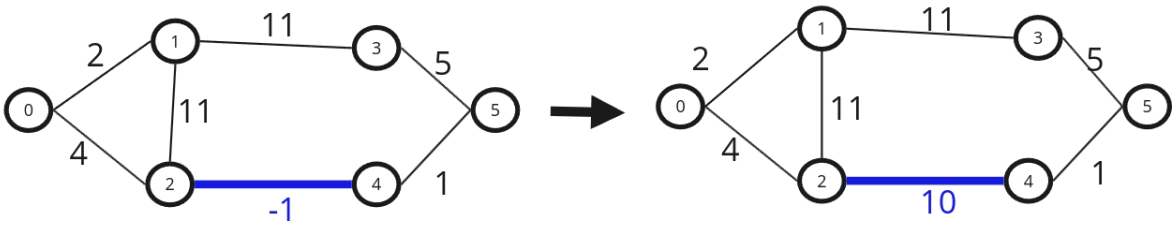
new wheight of the edge(1,3)
=difference+d0[3]-d1[1]
=10+3-2=11



d1: array of distances while adjustement

0	2	4	13	+∞	+∞
0	*1*	*2*	*3*	*4*	*5*

new wheight of the edge(2,4)
=difference+d0[4]-d1[2]
=10+4-4=10



d1: array of distances while adjustement

0	2	4	13	14	15
0	*1*	*2*	*3*	*4*	*5*

target