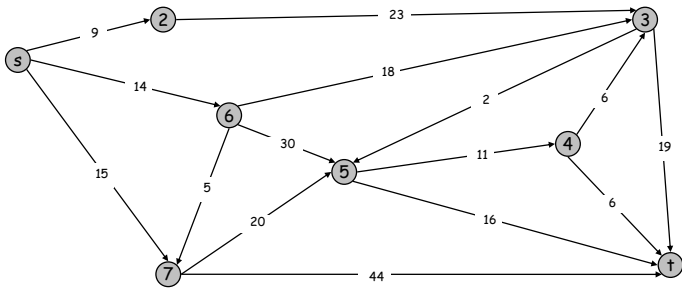


Dijkstra's Shortest Path Algorithm

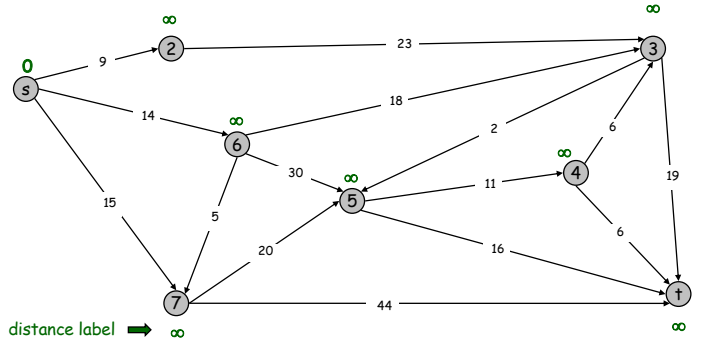
Find shortest path from s to t.



1

Dijkstra's Shortest Path Algorithm

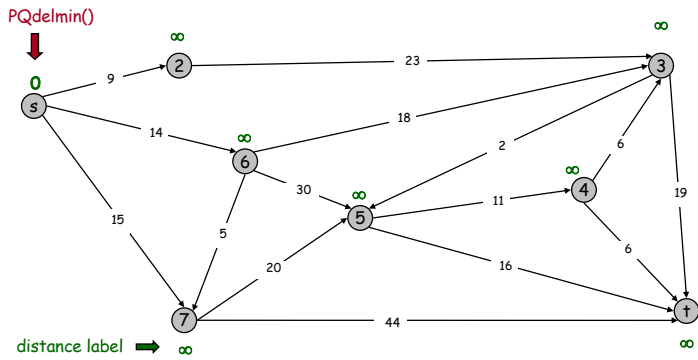
S = { }
PQ = (s, 2, 3, 4, 5, 6, 7, t)



2

Dijkstra's Shortest Path Algorithm

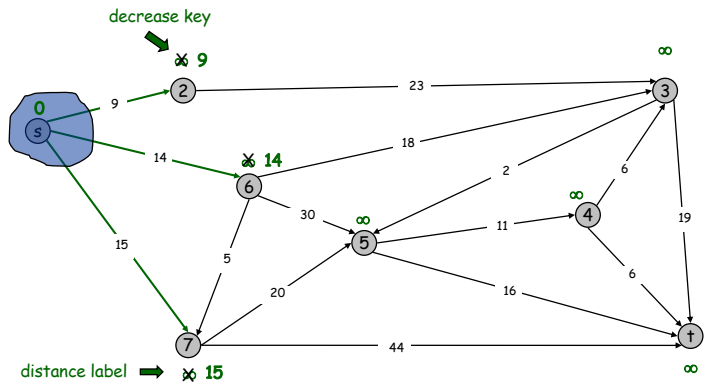
S = { s }
PQ = (2, 3, 4, 5, 6, 7, t)



3

Dijkstra's Shortest Path Algorithm

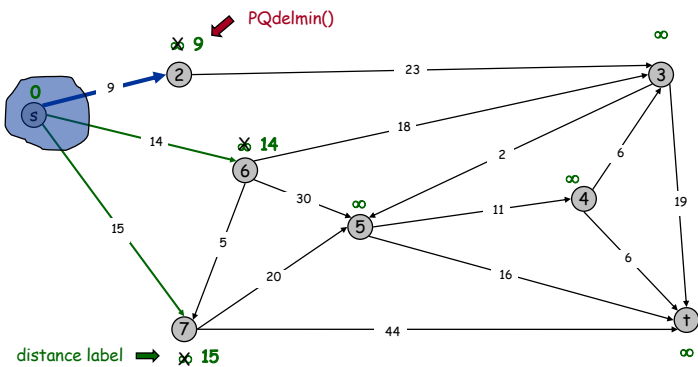
S = { s }
PQ = (2, 6, 7, 3, 4, 5, t)



4

Dijkstra's Shortest Path Algorithm

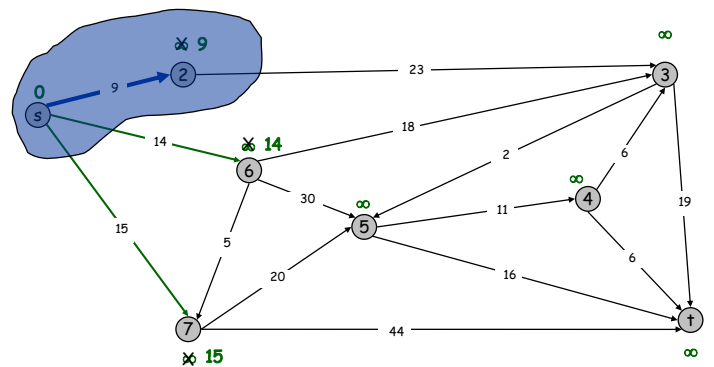
S = { s }
PQ = (2, 6, 7, 3, 4, 5, t)



5

Dijkstra's Shortest Path Algorithm

S = { s, 2 }
PQ = (6, 7, 3, 4, 5, t)

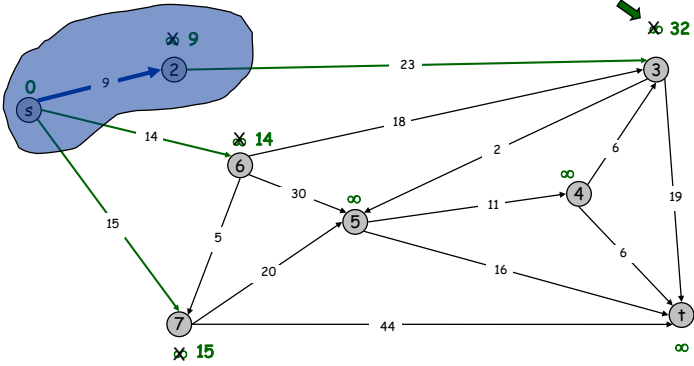


6

Dijkstra's Shortest Path Algorithm

$S = \{s, 2\}$
 $PQ = (6, 7, 3, 4, 5, t)$

decrease key

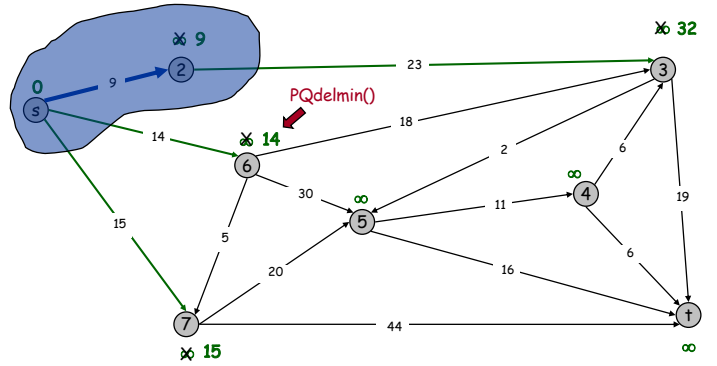


7

Dijkstra's Shortest Path Algorithm

$S = \{s, 2\}$
 $PQ = (6, 7, 3, 4, 5, t)$

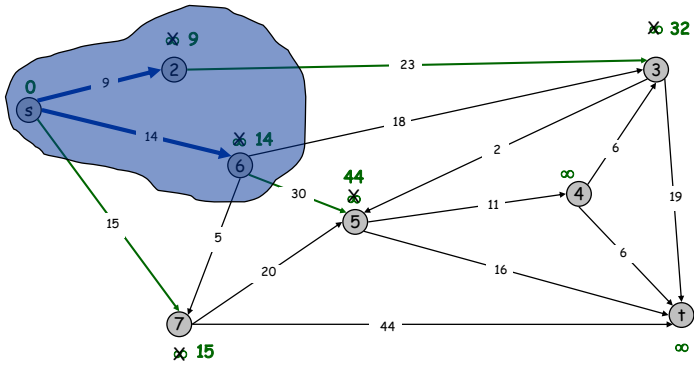
PQdelmin()



8

Dijkstra's Shortest Path Algorithm

$S = \{s, 2, 6\}$
 $PQ = (7, 3, 5, 4, t)$

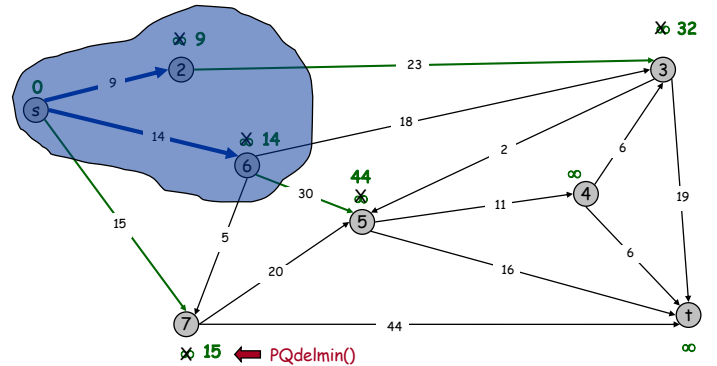


9

Dijkstra's Shortest Path Algorithm

$S = \{s, 2, 6\}$
 $PQ = (7, 3, 5, 4, t)$

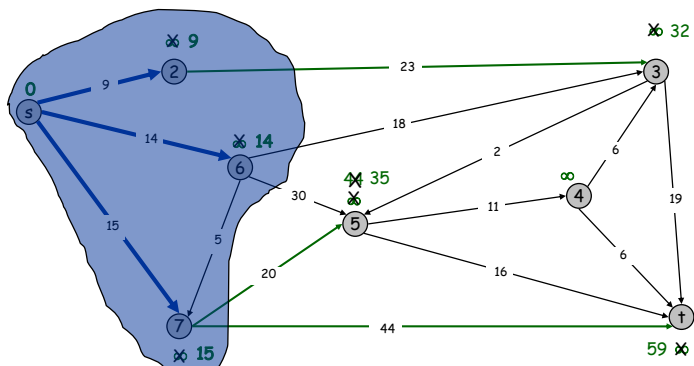
PQdelmin()



10

Dijkstra's Shortest Path Algorithm

$S = \{s, 2, 6, 7\}$
 $PQ = (3, 5, t, 4)$

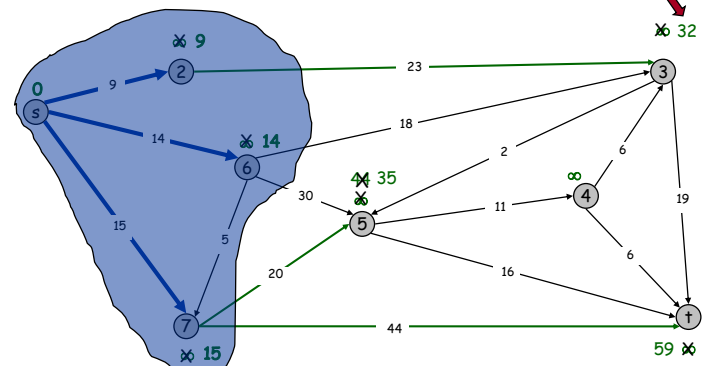


11

Dijkstra's Shortest Path Algorithm

$S = \{s, 2, 6, 7\}$
 $PQ = (3, 5, t, 4)$

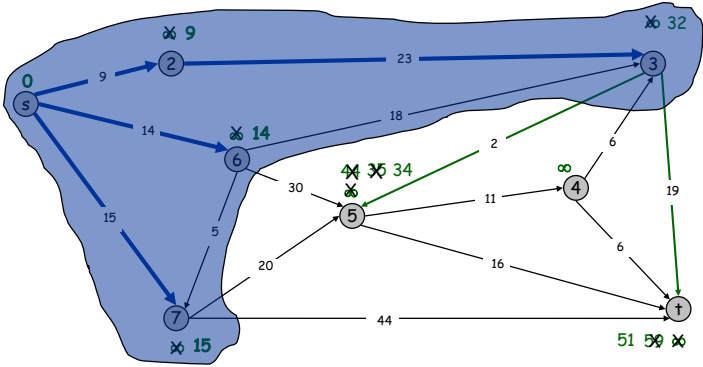
PQdelmin()



12

Dijkstra's Shortest Path Algorithm

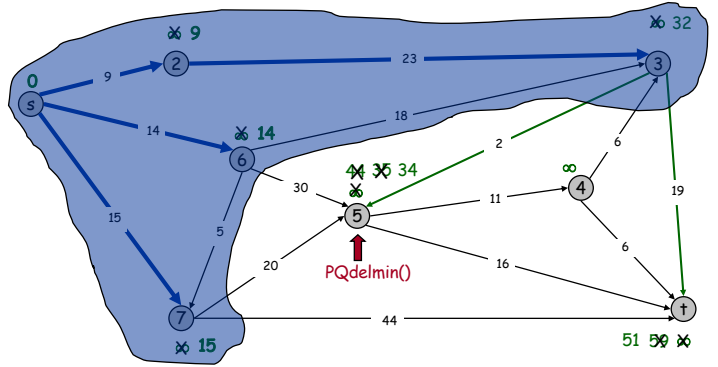
$S = \{s, 2, 3, 6, 7\}$
 $PQ = (5, t, 4)$



13

Dijkstra's Shortest Path Algorithm

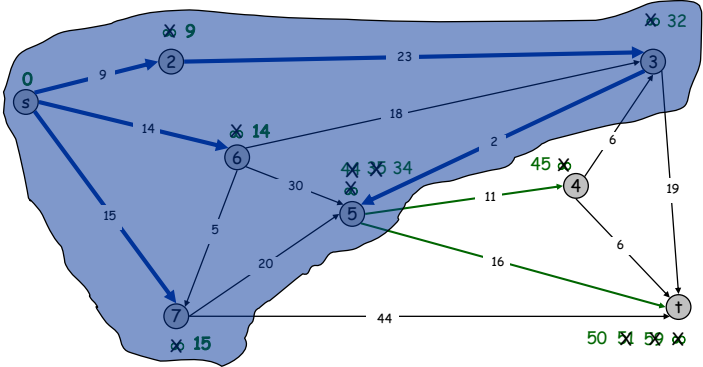
$S = \{s, 2, 3, 6, 7\}$
 $PQ = (5, t, 4)$



14

Dijkstra's Shortest Path Algorithm

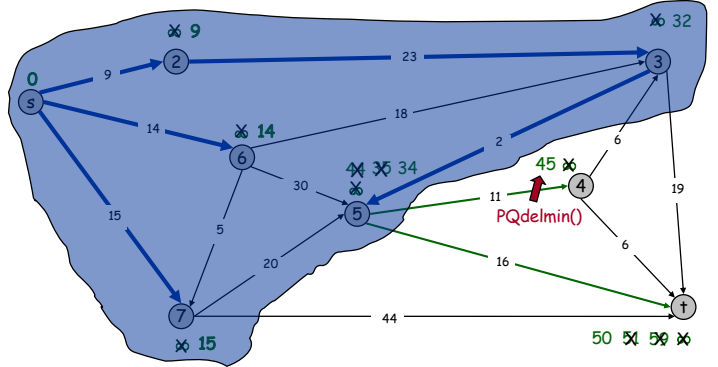
$S = \{s, 2, 3, 5, 6, 7\}$
 $PQ = (4, t)$



15

Dijkstra's Shortest Path Algorithm

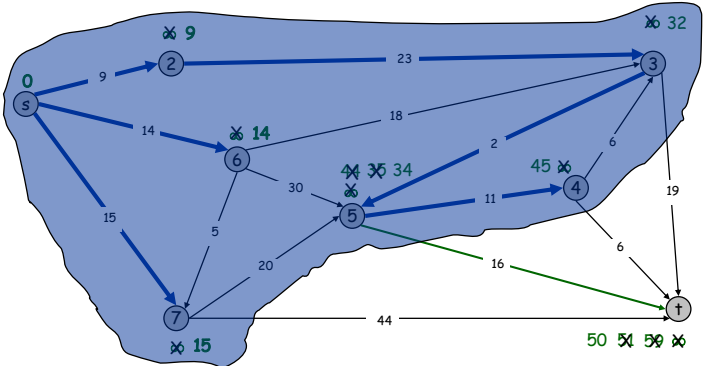
$S = \{s, 2, 3, 5, 6, 7\}$
 $PQ = (4, t)$



16

Dijkstra's Shortest Path Algorithm

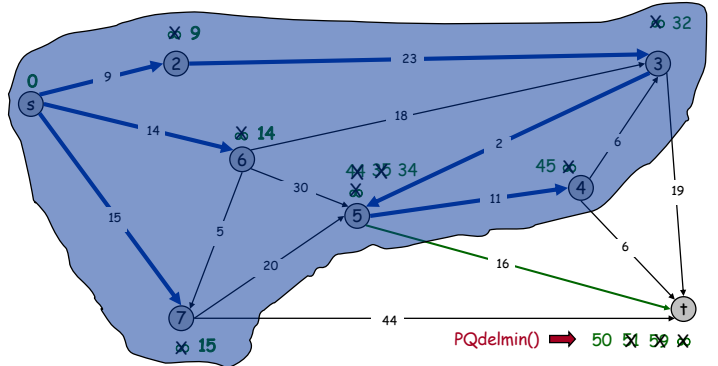
$S = \{s, 2, 3, 4, 5, 6, 7\}$
 $PQ = (t)$



17

Dijkstra's Shortest Path Algorithm

$S = \{s, 2, 3, 4, 5, 6, 7\}$
 $PQ = (t)$



18

Dijkstra's Shortest Path Algorithm

S = {s, 2, 3, 4, 5, 6, 7, t}
 PQ = ()

