Dijkstra's Shortest Path Algorithm

Find shortest path from s to t.

\[ S = \{ \} \]

\[ PQ = \{ s, 2, 3, 4, 5, 6, 7, t \} \]

distance label

distance label

distance label

distance label

distance label
Dijkstra's Shortest Path Algorithm

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

Dijkstra's Shortest Path Algorithm

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

decrease key

Dijkstra's Shortest Path Algorithm

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

delmin

Dijkstra's Shortest Path Algorithm

S = \{ s, 2 \}
PQ = \{ 3, 4, 5, 6, 7, t \}
Dijkstra's Shortest Path Algorithm

$S = \{ s, 2, 6 \}$
$PQ = \{ 3, 4, 5, 7, t \}$
Dijkstra's Shortest Path Algorithm

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

Dijkstra's Shortest Path Algorithm

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

delim

Dijkstra's Shortest Path Algorithm

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

Dijkstra's Shortest Path Algorithm

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

delim
Dijkstra’s Shortest Path Algorithm

\[ S = \{s, 2, 3, 4, 5, 6, 7\} \]
\[ PQ = \{t\} \]

Dijkstra’s Shortest Path Algorithm

\[ S = \{s, 2, 3, 4, 5, 6, 7\} \]
\[ PQ = \{t\} \]