15.082J & 6.855J & ESD.78J
Visualizations

Dijkstra’s Algorithm
An Example

Initialize
Select the node with the minimum temporary distance label.
An Example

Initialize

Select the node with the minimum temporary distance label.
Update Step

Graph with weighted edges:

- Node 1 is marked as visited.
- Paths and weights:
  - 0 to 1: 2
  - 1 to 2: 2
  - 2 to 4: 4
  - 4 to 6: ∞
  - 3 to 5: 3
  - 5 to 6: ∞
  - 1 to 3: 4
  - 3 to 1: 4

Node 1 is updated.
Choose Minimum Temporary Label
The predecessor of node 3 is now node 2
Choose Minimum Temporary Label
d(5) is not changed.
Choose Minimum Temporary Label
Update

d(4) is not changed
Choose Minimum Temporary Label
d(6) is not updated
Choose Minimum Temporary Label

There is nothing to update
The predecessors form a tree

The shortest path from node 1 to node 6 can be found by tracing back predecessors.

All nodes are now permanent