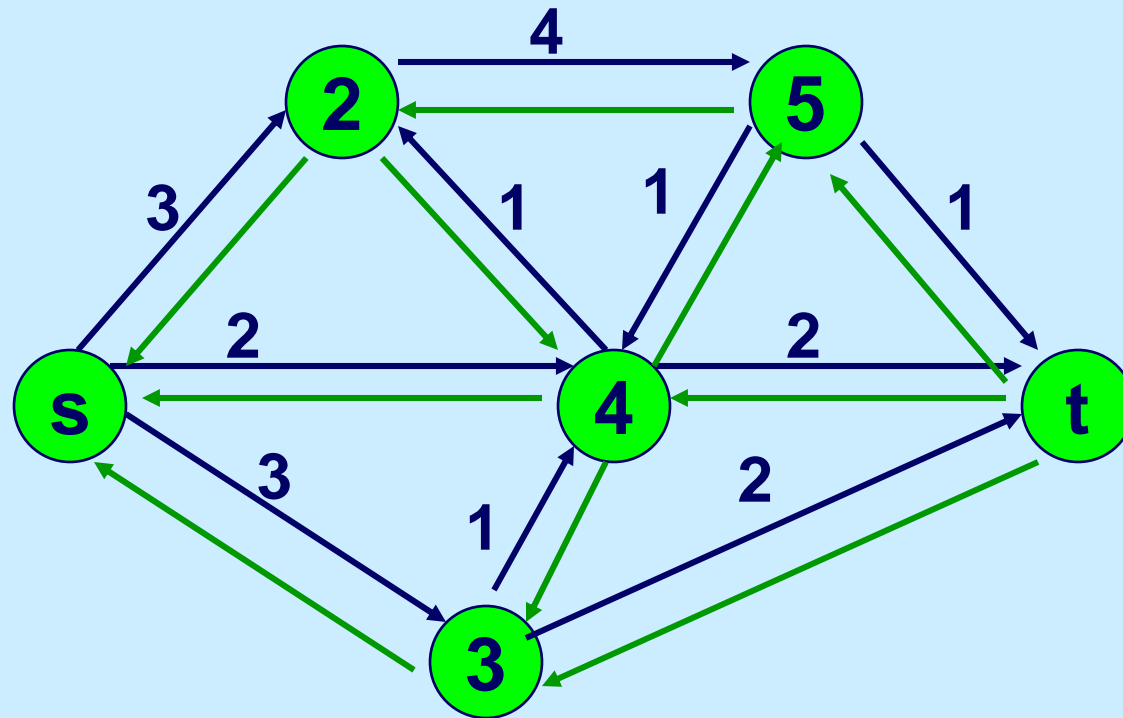

15.082 and 6.855J

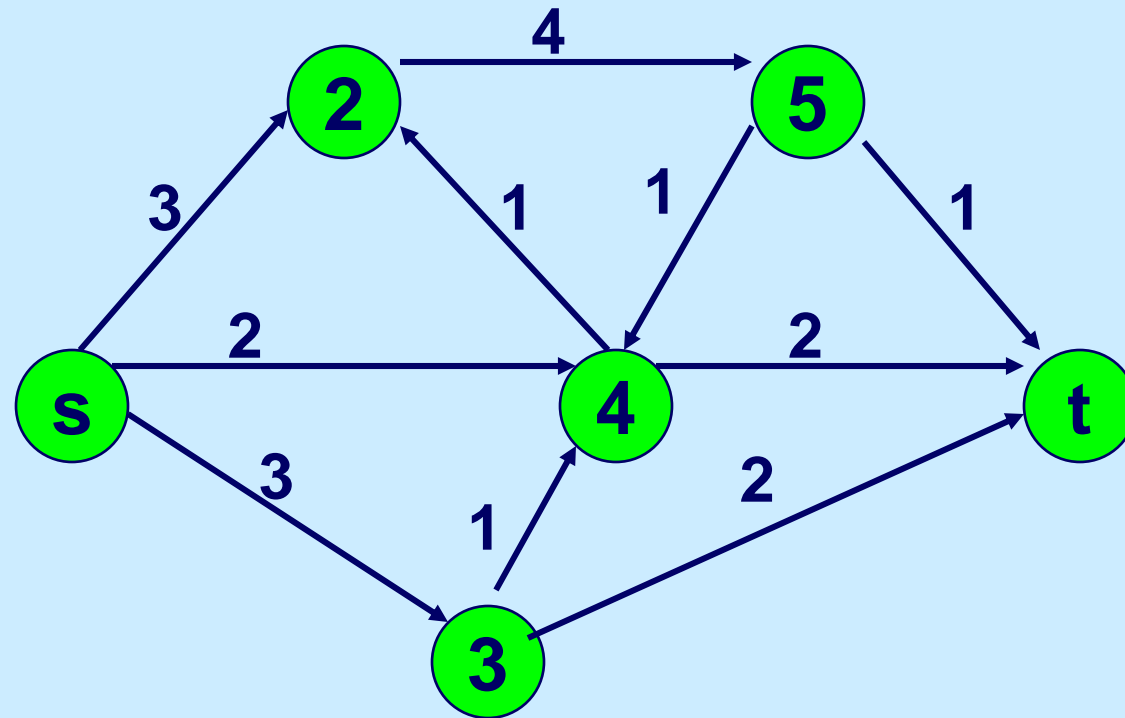
**The Ford-Fulkerson Augmenting
Path Algorithm for the Maximum
Flow Problem**

Ford-Fulkerson Max Flow



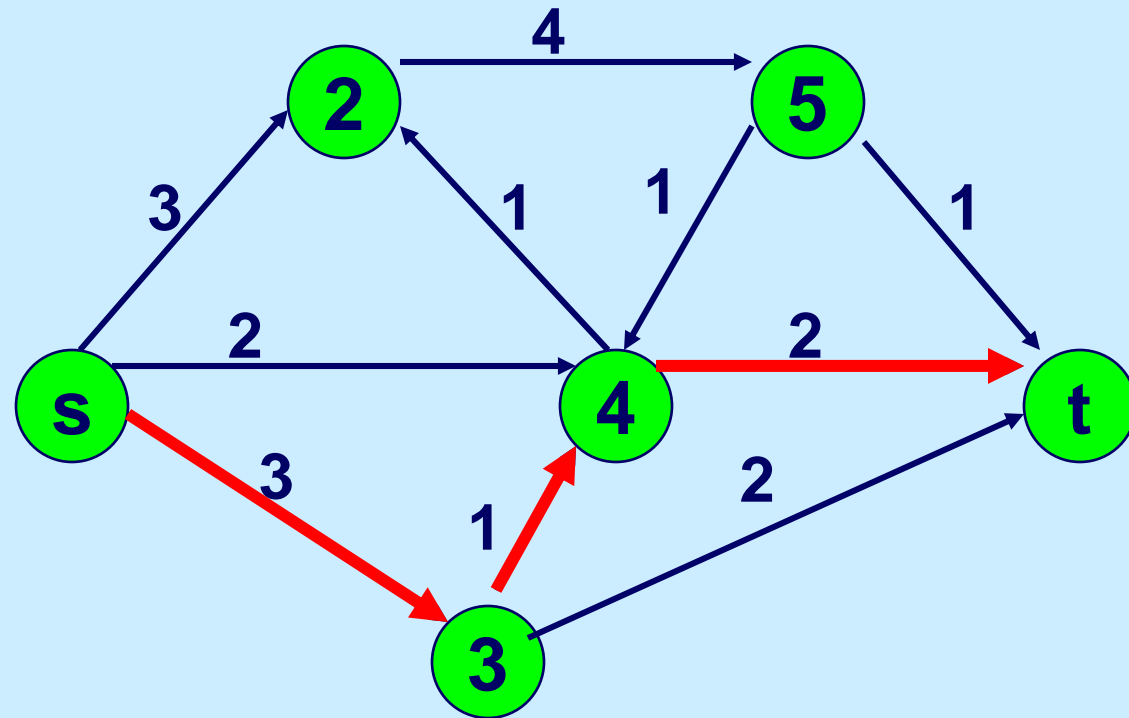
This is the original network,
plus reversals of the arcs.

Ford-Fulkerson Max Flow



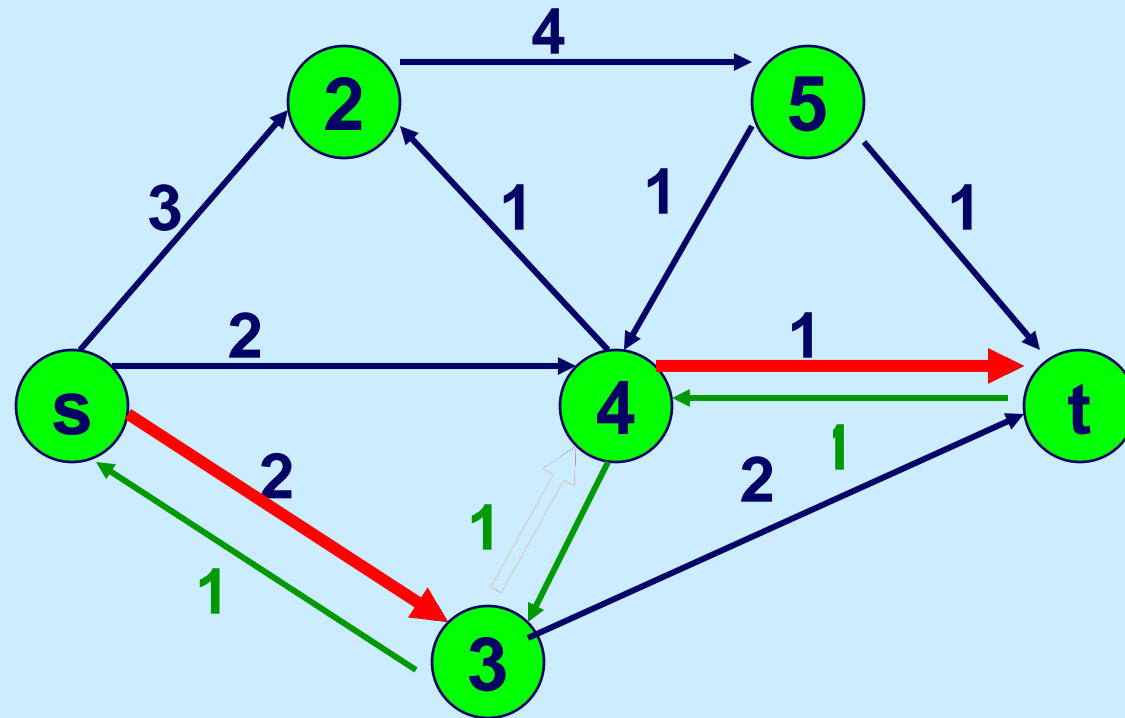
**This is the original network,
and the original residual
network.**

Ford-Fulkerson Max Flow



Find any s-t path in $G(x)$

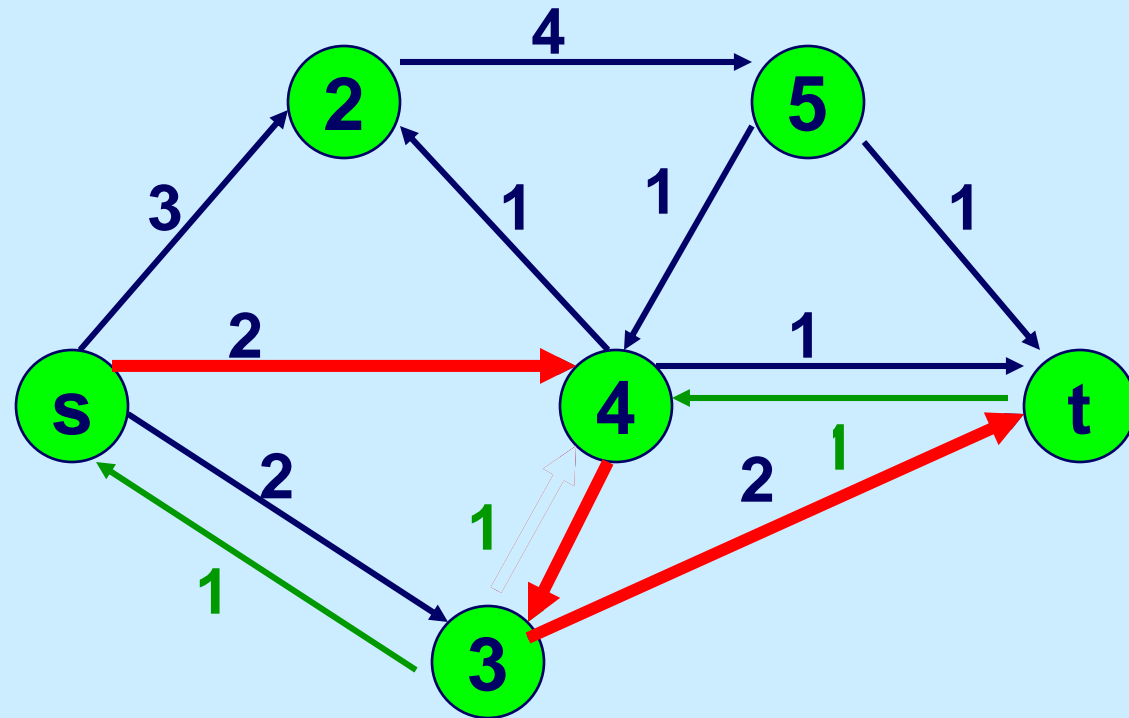
Ford-Fulkerson Max Flow



Determine the capacity Δ of the path.

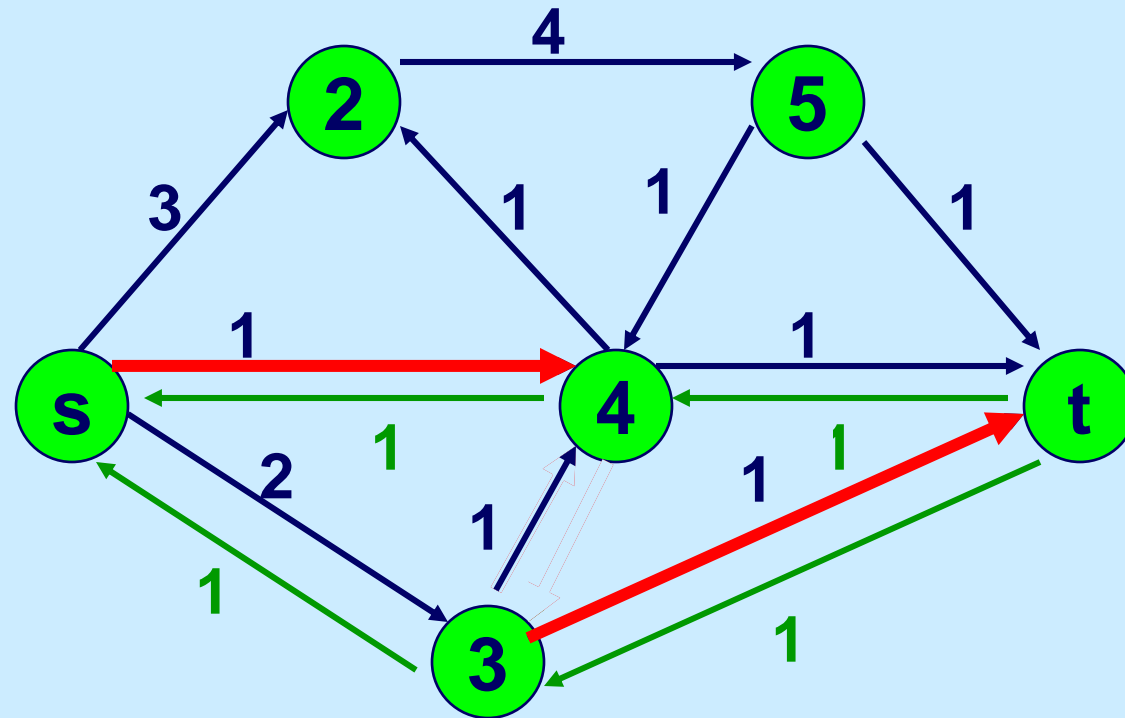
**Send Δ units of flow in the path.
Update residual capacities.**

Ford-Fulkerson Max Flow



Find any s-t path

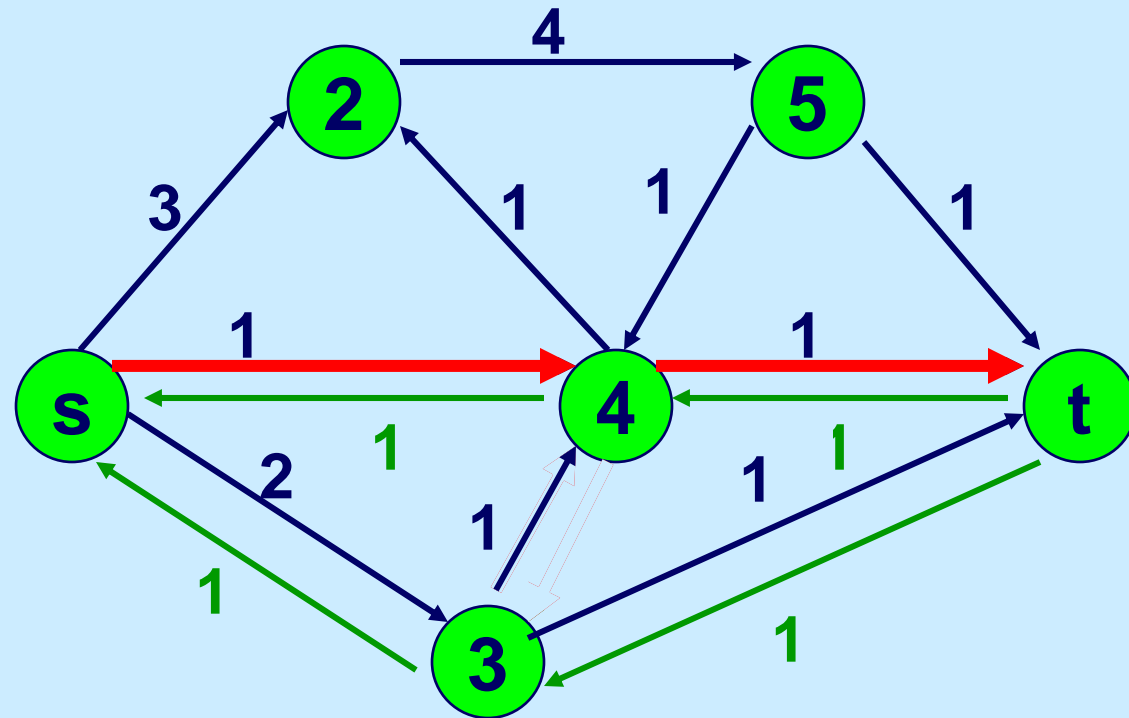
Ford-Fulkerson Max Flow



Determine the capacity Δ of the path.

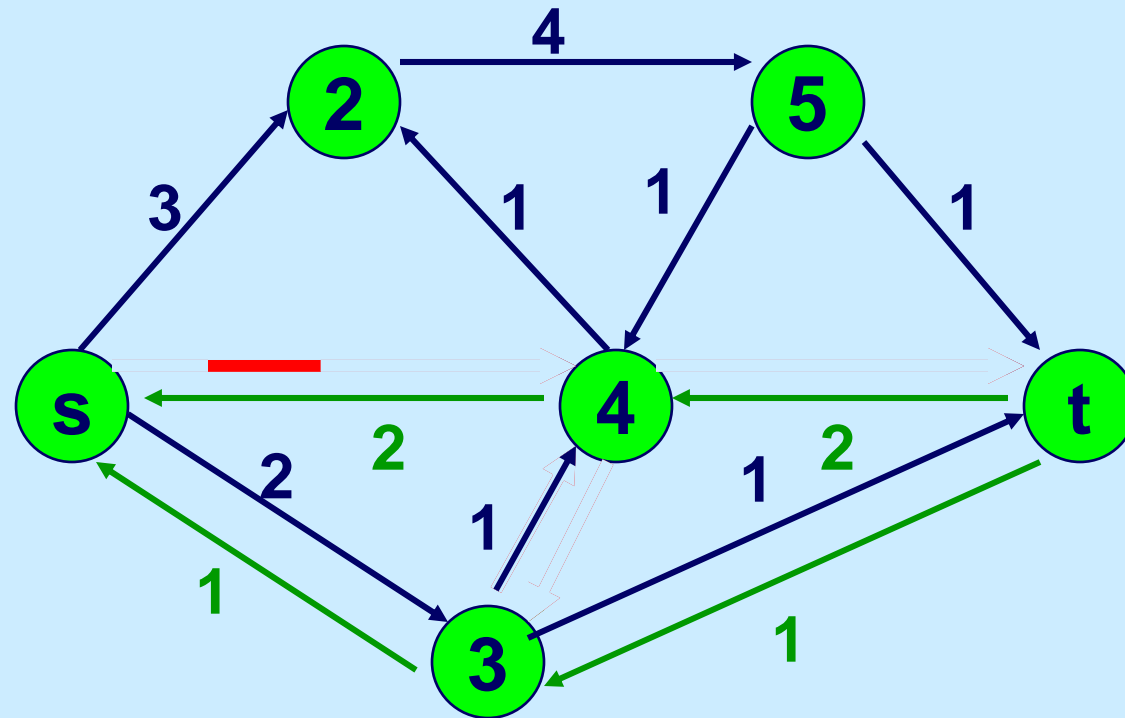
**Send Δ units of flow in the path.
Update residual capacities.**

Ford-Fulkerson Max Flow



Find any s-t path

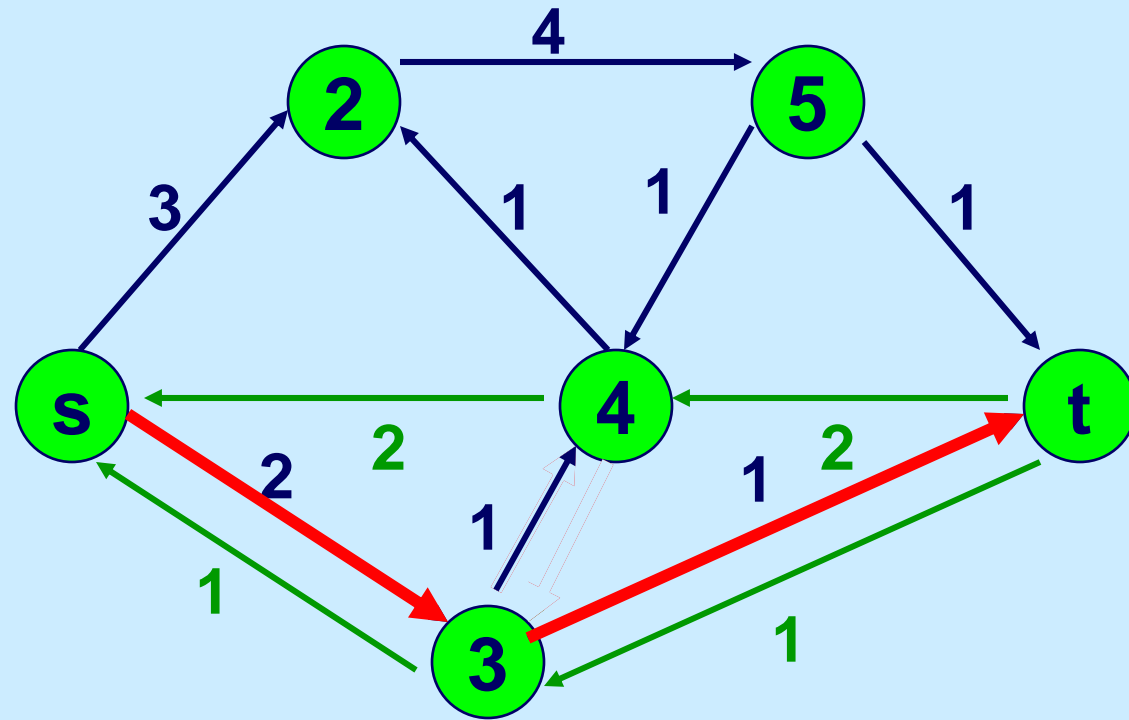
Ford-Fulkerson Max Flow



Determine the capacity Δ of the path.

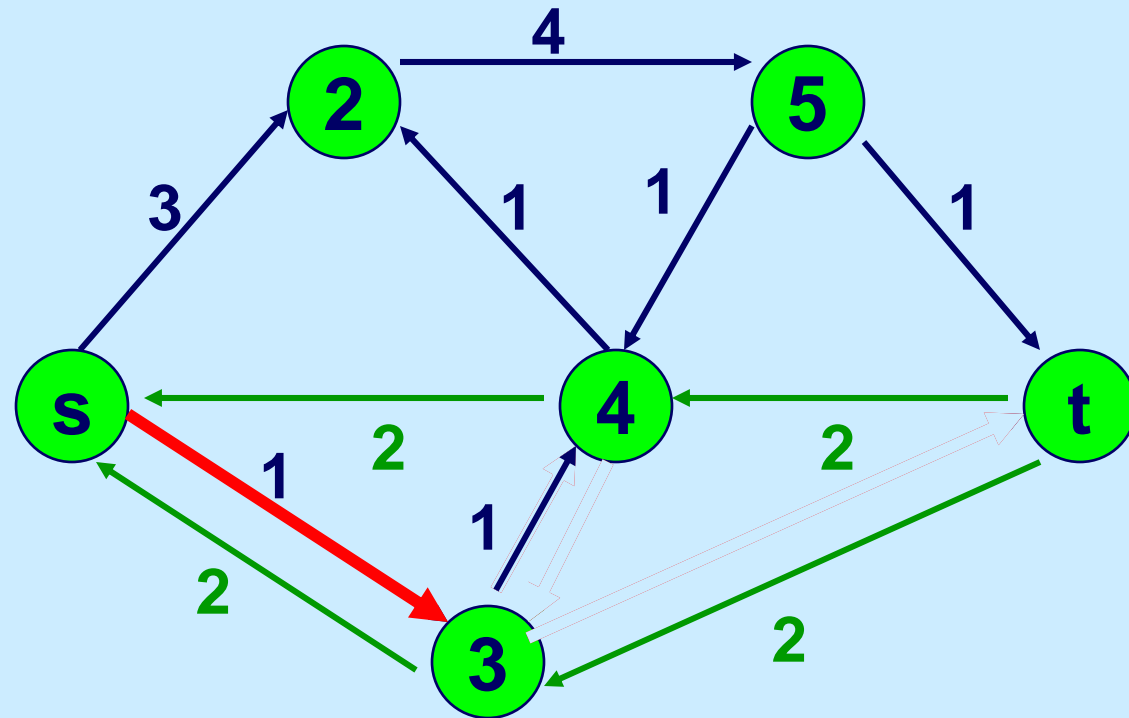
**Send Δ units of flow in the path.
Update residual capacities.**

Ford-Fulkerson Max Flow



Find any s-t path

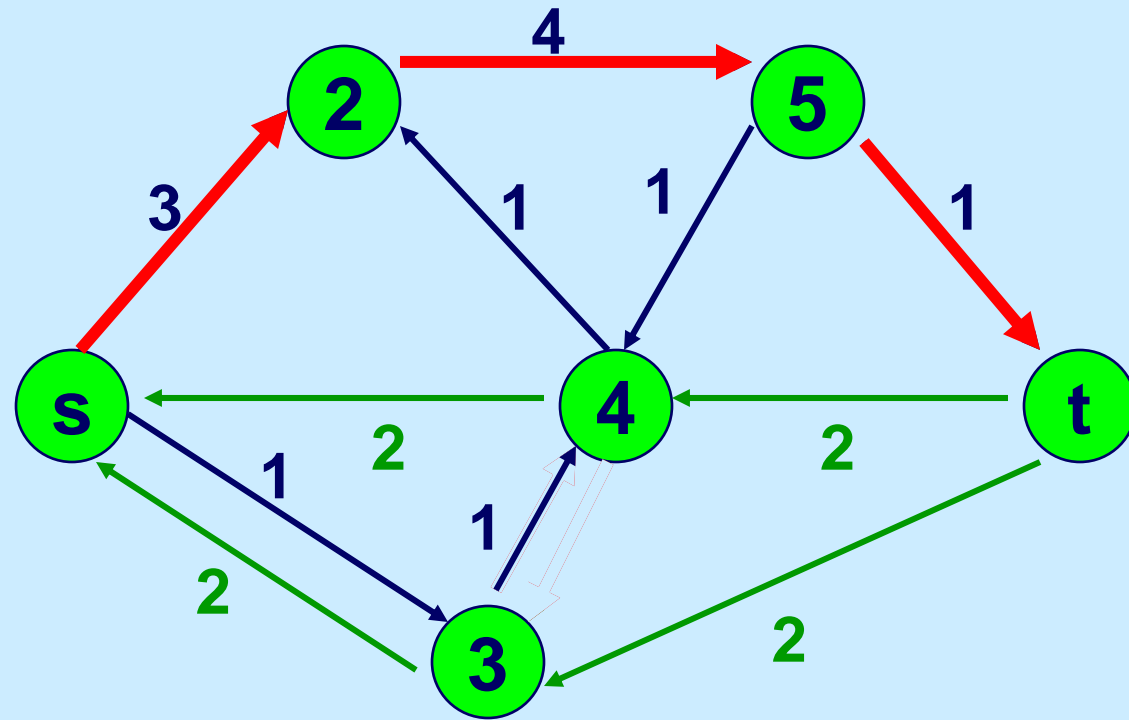
Ford-Fulkerson Max Flow



Determine the capacity Δ of the path.

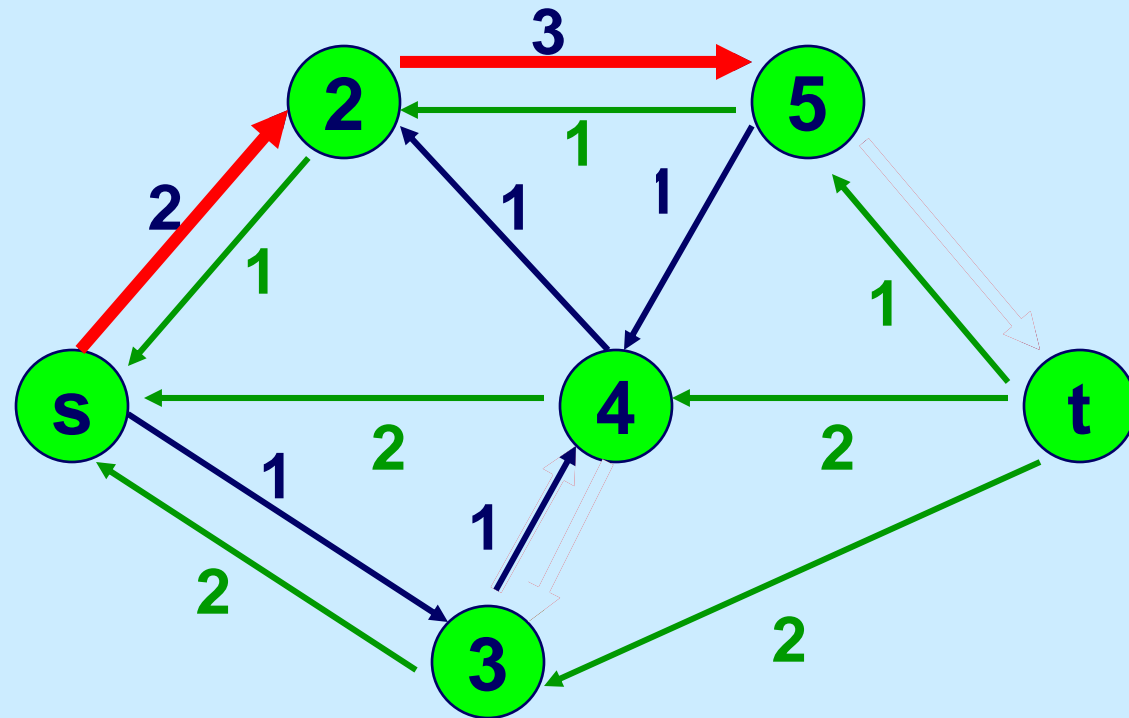
**Send Δ units of flow in the path.
Update residual capacities.**

Ford-Fulkerson Max Flow



Find any s-t path

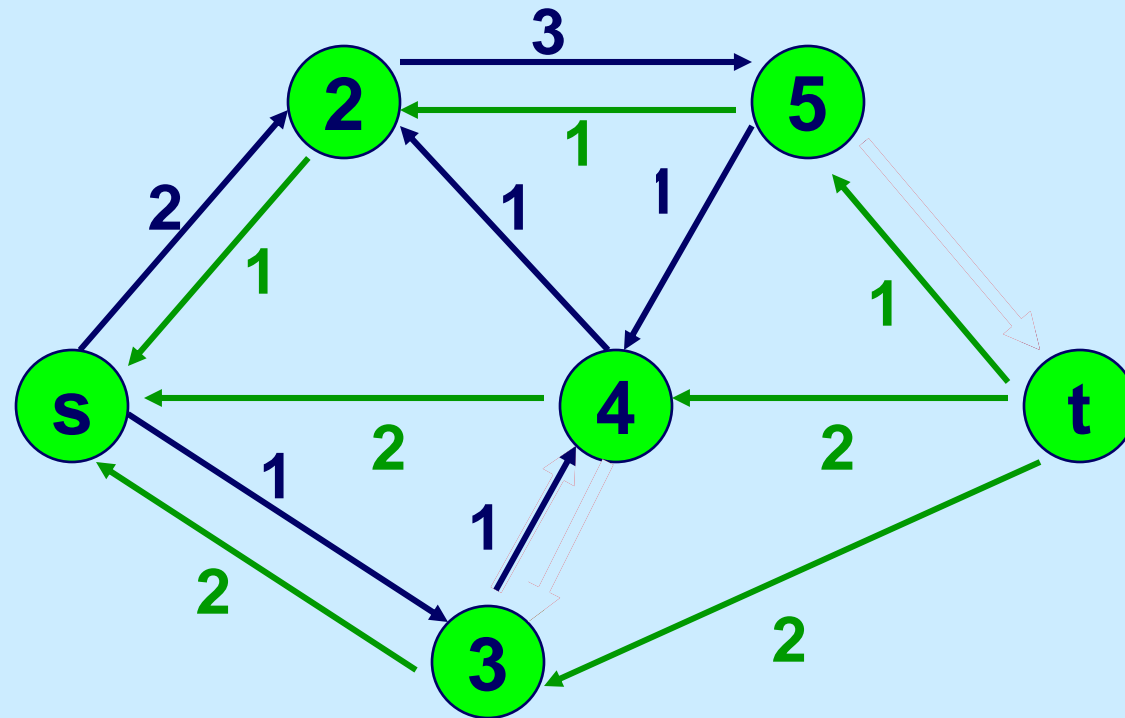
Ford-Fulkerson Max Flow



Determine the capacity Δ of the path.

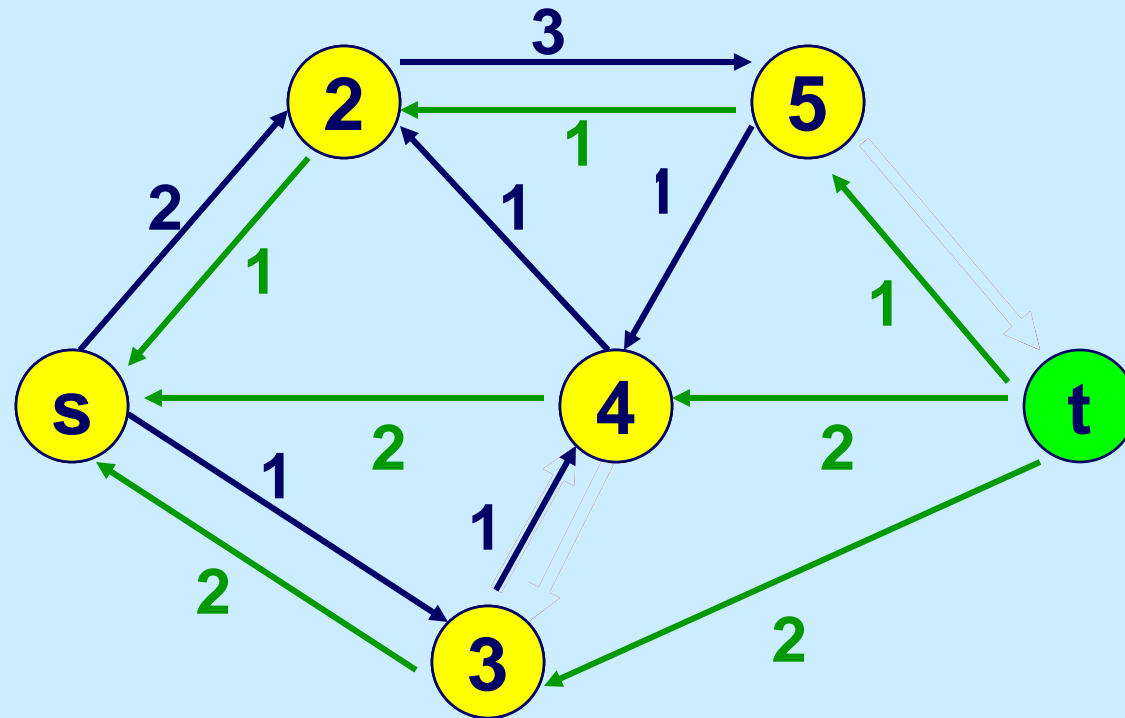
**Send Δ units of flow in the path.
Update residual capacities.**

Ford-Fulkerson Max Flow



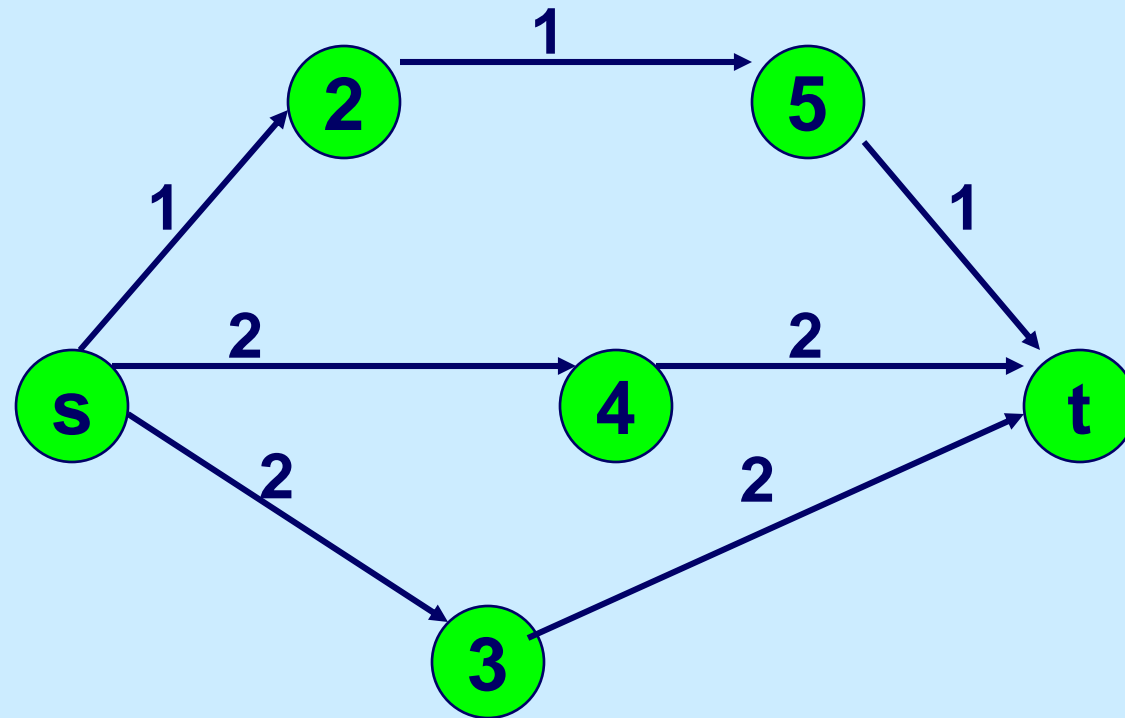
There is no s-t path in the residual network. This flow is optimal

Ford-Fulkerson Max Flow



These are the nodes that are reachable from node s .

Ford-Fulkerson Max Flow



Here is the optimal flow