

CS302 HW9

Problem 1

Consider the directed capacity graph given by $V=\{0, 1, 2, 3, 4\}$, $E=\{[0,1:3], [0,3:3], [1,2:4], [1,3:2], [2,4:4], [3,2:3], [3,4:2]\}$ where $[i,j:c]$ is shorthand for edge $[i,j]$ having capacity c .

Apply the Edmonds-Karp algorithm (BFS) to determine the maximum flow from vertex 0 (source) to vertex 4 (sink). Process lowest numbered vertex first in case of a tie. For each step of the algorithm, sketch the augmenting path and the flow associated therewith as well as the total flow and residual capacity graphs. See the maxflow example handout.

Determine min cut sets S and T . Hint: These are the sets of vertices reachable respectively from the source the sink in the residual capacity graph left by the maximum flow computation.