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Q1

We can first construct a corresponding flow network by letting the N computers as N vertices. Therefore, for this question Computer 1 (node 1) will be the source, and the Computer N will be the sink. First check if there is a path from node 1 to node N , if no such path exists, no edges need to be removed to disconnect (already disconnected) node 1 to node N . Therefore we have converted this problem to minimum S-T cut problem where the node 1 is S and node N is T in this case. First run Ford-Fulkerson Algorithm (given the graph, node 1 and node n) to obtain the max flow of the graph which is also the minimum total cost of cutting edges (max-flow min-cut theorem). Then find the residual graph of the flow network. Find the all the vertices that are reachable from node 1 in the residual graph (stored in a list L). All the edges from the vertices in L (reachable) to vertices which does not exist in L are the minimum cut edges.