# The Algorithm

Define .

We reduce this to a max flow problem. We construct a graph. There is a source , which goes to nodes (first layer), each node of which then goes to nodes (second layer), then this second layer goes to nodes (third layer), which finally go to a sink . We label each node in the first layer as for candidate . We label each node in the second layer as , meaning candidate is available at timeslot . We label each node in the third layer as for recruiter . The edge capacities from to the first layer are all . There is an edge from to every node in the first layer, and all of their edge capacities are . There is an edge from a node in the second layer to a node in the third layer if and only if recruiter is qualified to interview candidate and that recruiter is available at timeslot ; the capacities for all these edges are . There is an edge from every node in the third layer to ; the edge capacities for all these edges are . Run Ford-Fulkerson on this graph. If the max flow is less than the number of candidates , then there is no interview schedule where every candidate gets interviewed; if the max flow is equal to , then there is.