

**Solution.** We can apply the Edmonds-Karp Algorithm to get the maximum flow in  $O(mn^2)$  time. With this, we simply construct the residual network  $F$ , and perform a BFS/DFS to find all the vertices that are reachable. These will be the *saucy* vertices as any edges that bottleneck the flow to the maximum will need to occur after them. Similarly, if we reverse our network and apply the same process, treating  $t$  as a source and  $s$  as a sink, then we can apply the same logic to find the *sinky* vertices. The remaining ones will be *saunky*.