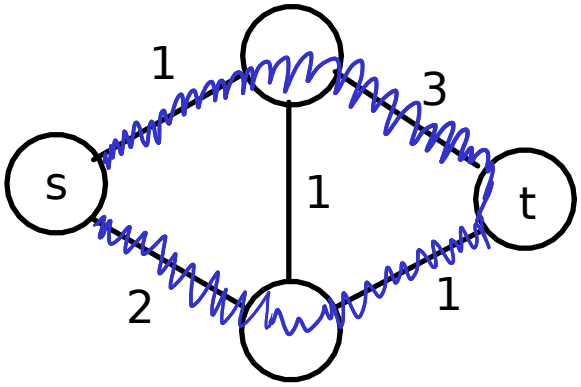
Problem Set 8

CS 331

Due Wednesday, April 22

1. Given an undirected graph with positive edge weights, a source s, and a sink t, find the shortest path from s to t and back to s that uses each edge at most once. Aim for $O(E \log V)$ time, although $O(EV)$ time will get most of the credit.



Hints: Look for an "augmenting path," inspired by Ford-Fulkerson but slightly different. And to get the desired runtime, you may need to use a potential function.

2. See the Jupyter notebook on the website.