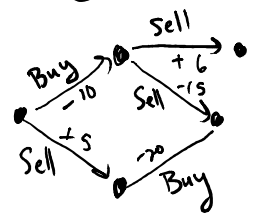


Dijkstra

Good: Fast! $O(m \log n)$ run time

- Bad: • Need to maintain global heap (impossible for internet)
- Fails with negative weights (see HW)

Financial Transactions:



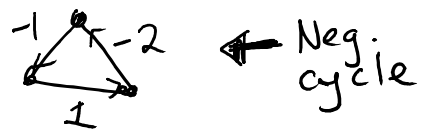
Bellman-Ford

(actually used for internet routing!)

- Dynamic Programming
- Slower but no global heap, negative weights OK.

Bellman Ford:

Input: directed graph $G=(V,E)$, edge weights l_e , vertex $s \in V$, assume no negative cycles



Output: Shortest paths from s to all other $v \in V$