Lecture 33

CSE 331

Apr 21, 2021

A couple announcements

- Last day to fill video project surveys!
  - By 8pm!

- NO lecture on FRIDAY (April 23)
  - Enjoy!
  - I may announce HW 7 today
    - Same deadline; you'll have more time

Give feedback!

Shortest Path Problem

Input: (Directed) Graph G=(V,E) and for every edge e has a cost c_e (can be <0)
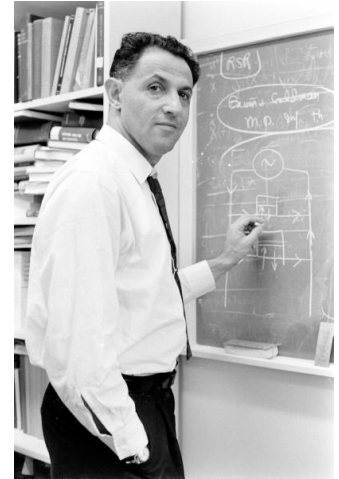
t in V

Output: Shortest path from every s to t
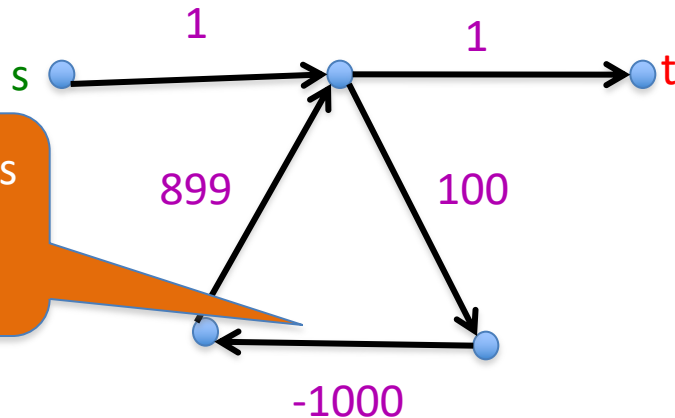
Shortest path has cost negative infinity

Assume that G has no negative cycle

1

1

899

100

s

t

-1000

When to use Dynamic Programming

Richard Bellman

There are polynomially many sub-problems

Optimal solution can be computed from solutions to sub-problems

There is an ordering among sub-problem that allows for iterative solution

Today's agenda

Bellman-Ford algorithm