Lecture 36

CSE 331

Nov 30, 2016

Quiz 2 on Monday

note ☆   stop following   **7 views**

Quiz 2 in two weeks

A gentle reminder that quiz 2 will be in class on **Monday, December 5** from **1-1:10pm**.

The first two questions will be T/F without justification (so like two from Q1 on sample final- @735) and the third question will be T/F with justification (so like one from Q2 on sample final- @735).
#pin

quiz2

edit · good note | 0   Updated 14 minutes ago by Atri Rudra

Official Feedback forms

note ☆

Actions ▾

Incentive for filling in the course evaluations

You must have received an email about filling the course evaluation forms. I believe this is the link:

https://buffalo.campuslabs.com/courseeval/

Taking a leaf out of Geoff's playbook, here is my offer to incentivize you guys filling in the course evaluation form:

- If **at least 85%** of you fill in the course evaluation form, then I will release one T/F (without justification) question on the final exam (which corresponds to Q1(a): see @735 for the format).
- If **at least 95%** of you fill in the course evaluation form, then I will release one T/F (without justification) question and one T/F (with justification) question (corresponding to Q1(a) and Q2(a) respectively: see @735 for the format).
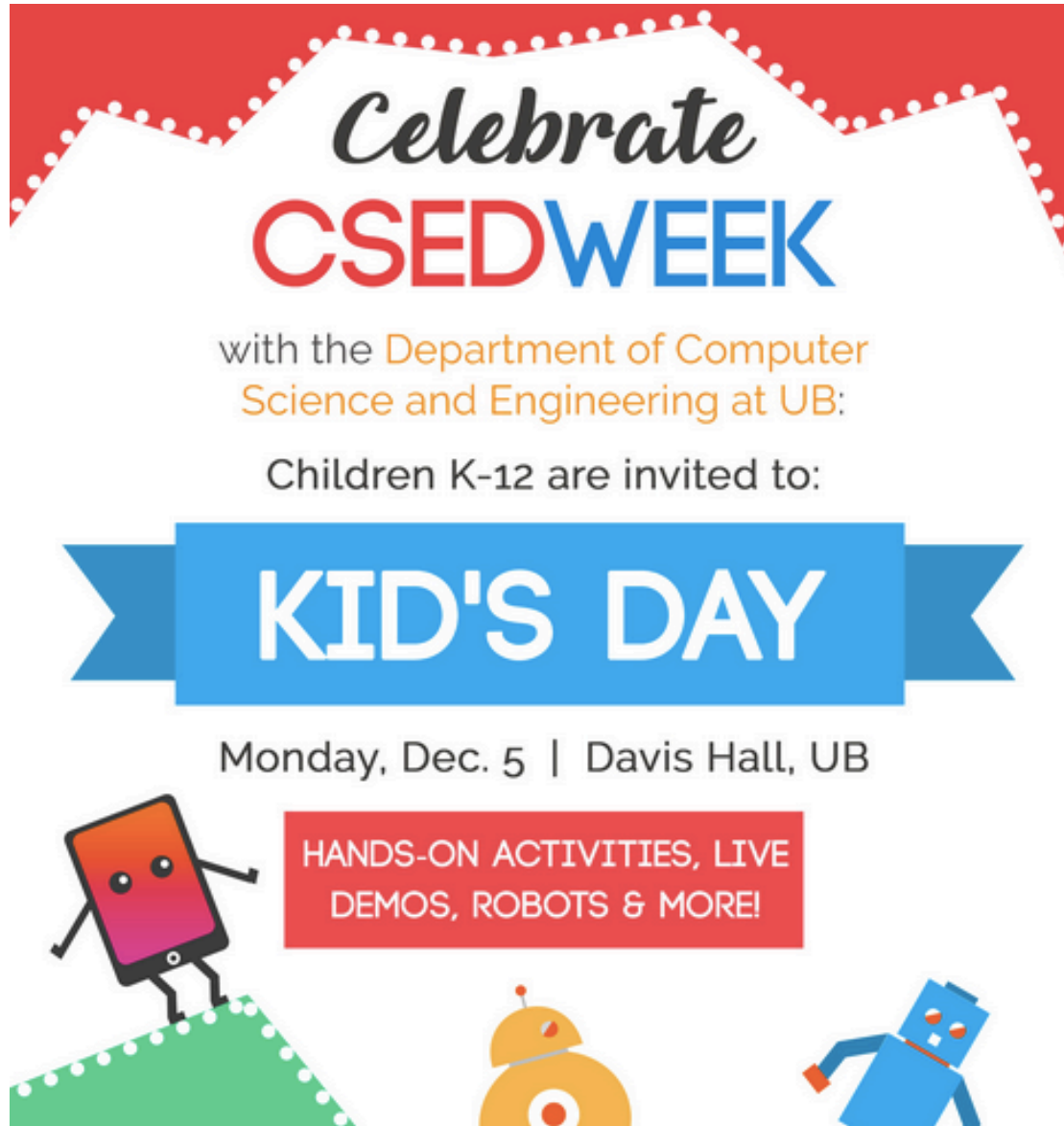
Of course if < 85% of you fill in the course eval form, then no question gets released. The current percentage of you who have filled in

Course Evaluations

🧪 **Active**

12 Days Remaining
Ends 12/11/2016 at 11:59 PM EST

📊 **Results**

Available 12/25/2016 at 11:59 PM EST

🥧 **45%**

Response Rate

👤 **175**

Enrolled Students

final   logistics

We need volunteers!

Scheduling to min idle cycles

n jobs, i^{th} job takes w_i cycles

You have W cycles on the cloud

What is the maximum number of jobs you can schedule?

When to use Dynamic Programming

O(nW) runtime

Richard Bellman

There are polynomially many sub-problems

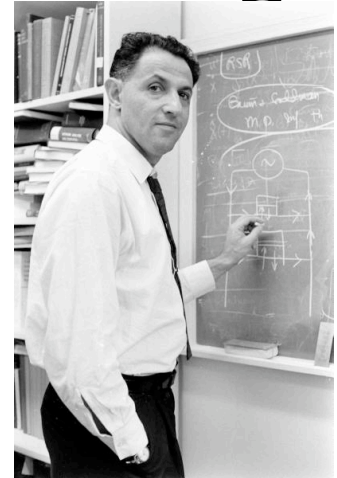$$OPT(j,W') \quad 0 \leq j \leq n, 0 \leq W' \leq W$$

Optimal solution can be computed from solutions to sub-problems

$$OPT(j, W') = \ldots$$

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

$OPT(j,W')$ only depends on $OPT(j-1, 0), \ldots, OPT(j-1,W)$

Is $O(nW)$ polynomial time?

n jobs, i^{th} job takes w_i cycles

NO.
Pseudo-polynomial

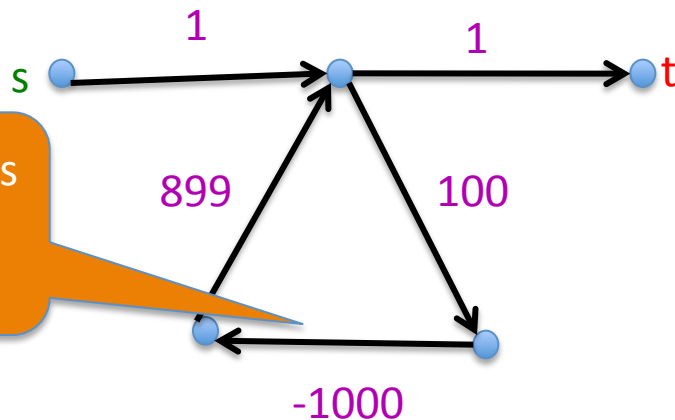You have W cycles on the cloud

log W bits needed

What is the maximum number of jobs you can schedule?

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

Today's agenda

Dynamic Program for shortest path

May the Bellman force be with you