Lecture 3

CSE 331

Aug 30, 2024

Participate on Piazza

https://piazza.com/buffalo/fall2023/cse331/

Read the syllabus CAREFULLY

Syllabus Quiz

Options

View handin history

🕐 Due: **December 10th 2024, 11:59 pm EST (UTC -05:00)**

📅 Last day to hand in: **December 10th 2024, 11:59 pm EST (UTC -05:00)**

No graded material will be handed back until you pass the syllabus quiz!

Academic Integrity

Question 1: Sharing my answers to this syllabus quiz with other 331 students

○ Is OK if I do it to help out a friend

○ It does not matter since there is no grade attached with it

○ Is an academic integrity violation and should not be done

○ Is an academic integrity violation but I can take the chance

Q1 on HW 0 will be graded as usual

HW 0 is out

As I had mentioned in class on Monday, HW 0 has been out. Here is the direct link to the HW 0 page:

http://www-student.cse.buffalo.edu/~atri/cse331/fall24/hws/hw0/index.html

Couple of things to note:

- Autolab will not start accepting HW 0 submissions until 11:45pm tonight
- You should also be able to get to the HW0 page from the "Homeworks" dropdown menu from the top navbar.
    - Heads up going forward-- you might need to (force) reload the 331 webpage and/or clear recent history in case the most recent HW link does not appear directly in the navbar.

homework0

Submission requirements

Submission

Grading Guidelines

We will follow the usual grading guidelines for non-programming questions. Here is a high level grading rubric specific to part `(a)` of this problem:

1. `Proof idea`: `10` points.

and here is the high level grading rubric for part `(b)`:

1. `Proof idea`: `20` points.
2. `Proof details`: `20` points.

You need to confirm that you followed the requirements

Homework 0, Question 1(a)

Collaboration

You can collaborate on this question with up to two (2) more CSE 331 students. However, you cannot work with someone else outside of your group for the other questions on HW 0.

Submit part (a) and (b) separately for Q1

You need to submit **two (2) PDF** files for Q1 to Autolab: one for part **(a)** and one for part **(b)**. While you can assume part **(a)** as a given for part **(b)**, to get credit for part **(a)** you have to submit your solution for part **(a)** separately from part **(b)**.

Make sure you submit the correct PDF to the correct submission link on Autolab. If you do not (e.g. if you submit your Q1(a) PDF to Q1(b)), then you will lose ALL points.

We recommend that you typeset your solution but we will accept scans of handwritten solution-- you have to make sure that the scan is legible.

Acknowledgment of CSE 331 instructions

By clicking the check mark below, you confirm that you have read and understood the instructions in HW 0 (as well as the CSE 331 homework policies). **Note that not following the instructions could result you getting a ZERO (0) on the entire problem** *even if your actual solution is technically correct* (*After clicking this check-box you cannot later claim that you missed reading an instruction.*)

☐ You confirm that you have read and understood the instructions in HW 0 (as well as the CSE 331 homework policies)

☐ You confirm that you have explicitly stated your collaborator(s) in your submission

Submitting your PDF

Upload your **PDF** submission here: Browse... No file selected.

Acknowledgment of CSE 331 instructions

By clicking the check mark below, you confirm that you have read and understood the instructions in HW 0 (as well as the CSE 331 homework policies). **Note that not following the instructions could result you getting a ZERO (0) on the entire problem** *even if your actual solution is technically correct* (*After clicking this check-box you cannot later claim that you missed reading an instruction.*)

☐ You confirm that you have read and understood the instructions in HW 0 (as well as the CSE 331 homework policies)

☐ I affirm that I have complied with this course's academic integrity policy as defined in the syllabus.

SUBMIT

Please do keep on asking Qs!

The only bad question is the one that is not asked!

More C++ Office hours

Actions ▾

C++ Office hours

~~Sorry for the late notice but we have finalized the C++ office hour for Wed, Aug 27:~~

Here are the times for the C++ OH:

- Wed, Aug 27: 12-12:50pm (Vincent)
- Fri, Aug 30: 12-12:50pm (Andrew)
- Fri, Aug 30: 1-2:20pm (ester)
- Tue, Sep 3: 2-2:50pm (Vincent)

~~*(Based on the results in @15 so far, we will likely have one office hour on either Th or Fri and one more on Tue next week. We'll finalize those times by **9pm on Wed, Aug 28** as on the input in poll in @15 at 5pm tomorrow (Aug 28).)*~~

Note that unless specified otherwise, all C++ office hours will be in Salvador Lounge (which is the open space on the 2nd floor in Davis Hall next to the glass wall).

BEFORE you come to the C++ OH, you are expected to run the set of instruction given in @14. I.e. **please do NOT come to the OH and ask the TA for help to do the entire setup**. *However,* It is **perfectly fine** to come to the TA and say I am stuck at this specific step in the instructions and the TA will be happy to help you out.

office_hours

Edit   good note | 0   Updated 20 hours ago by Atri Rudra

TA office hours (starting Tue)

Finalized by Sunday

Details will be posted on piazza

OH next week
dedicated to help
with proofs

Two comments on Programming

Programming is worth about 15% of your final grade

Algorithm design/proofs are worth about 80% of your final grade

Invest your time wisely

On Wednesday:

Input: A program P and input I

Output: Yes if P terminates on I
           No otherwise

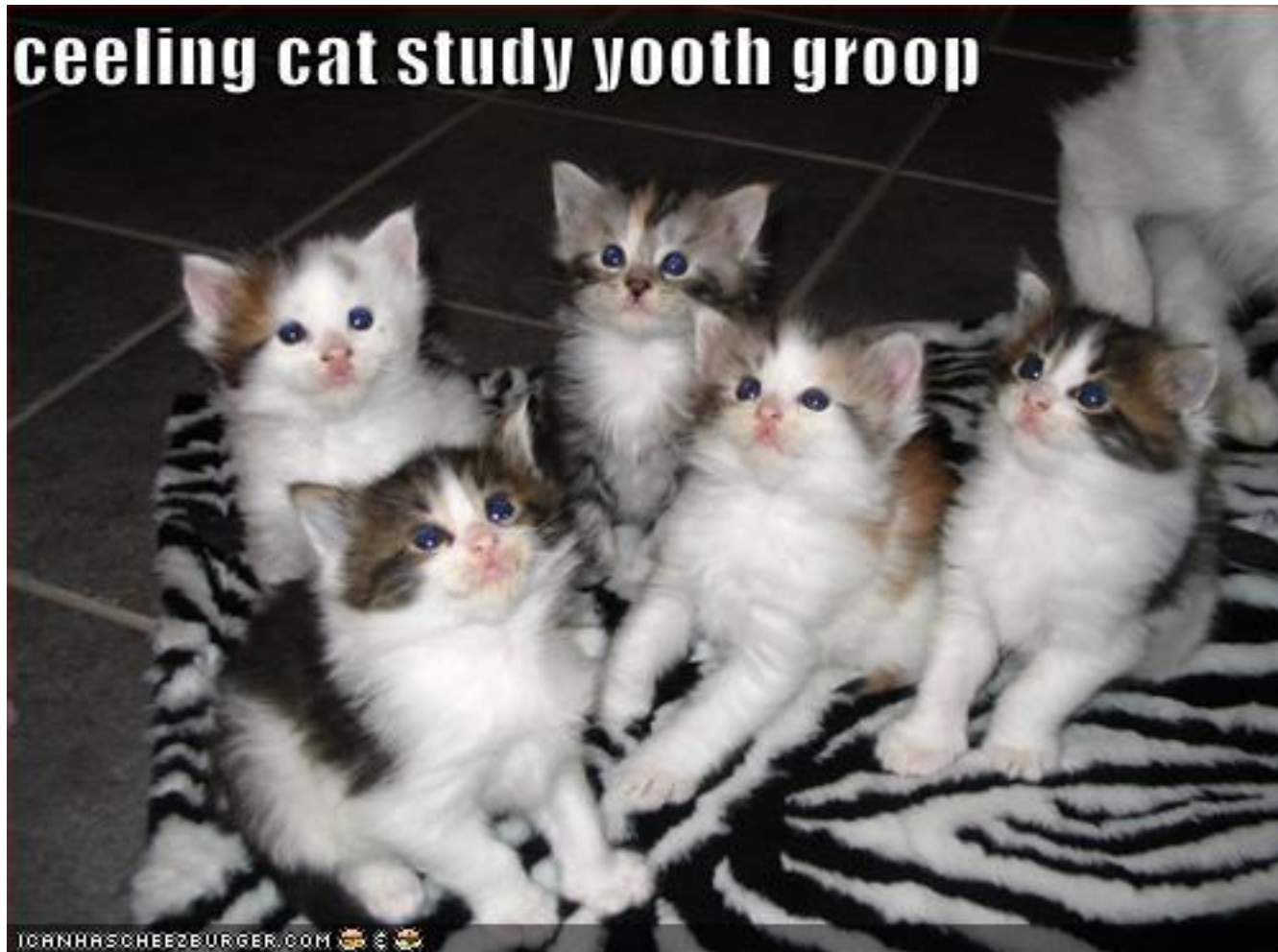Theorem: There is no magic box A' for ver 2 (as long as A' terminates)

Questions/Comments?

Finish off the proof on the board…

Remember: Stick with your group

Common solution: Let's build an app for that!

Where's Street Bump being used?

549 trips, 37,016 bumps, 0 potholes filled, and 0 roadway problems identified

99 bumps reported in 101–199 Curtis Dr, Truro, NS almost 6 years ago

What's Street Bump?

Street Bump is a crowd-sourcing project that helps residents improve their neighborhood streets. Volunteers use the Street Bump mobile app to collect road condition data while they drive. The data provides governments with real-time information to fix problems and plan long term investments.

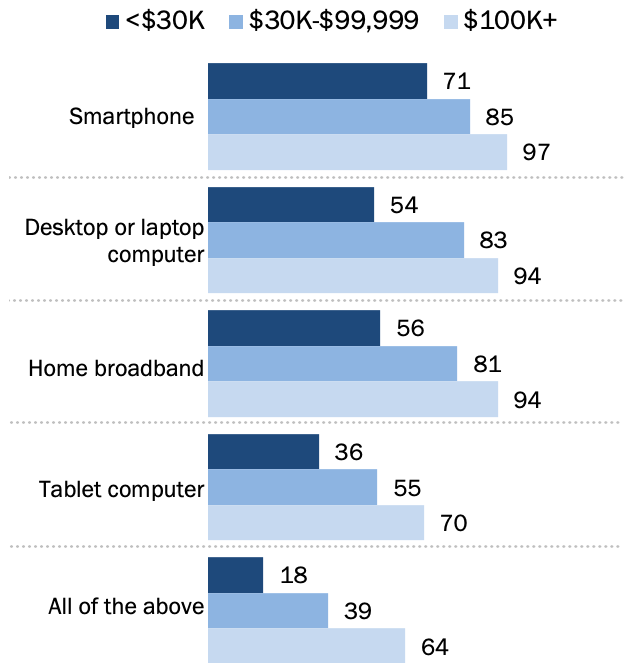Want to use Street Bump to improve your community? Contact Us

Potential issues?

The smartphone blind-spot

Many of us in CSE assume that "everyone" has smartphones

More generally, we assume "everyone" has access to the Internet

## Lower-income Americans have lower levels of technology adoption

% of U.S. adults who say they have the following …

■ <$30K   ■ $30K-$99,999   ■ $100K+

	<$30K	$30K-$99,999	$100K+
Smartphone	71	85	97
Desktop or laptop computer	54	83	94
Home broadband	56	81	94
Tablet computer	36	55	70
All of the above	18	39	64

Note: Respondents who did not give an answer are not shown.
Source: Survey conducted Jan. 8-Feb. 7, 2019.
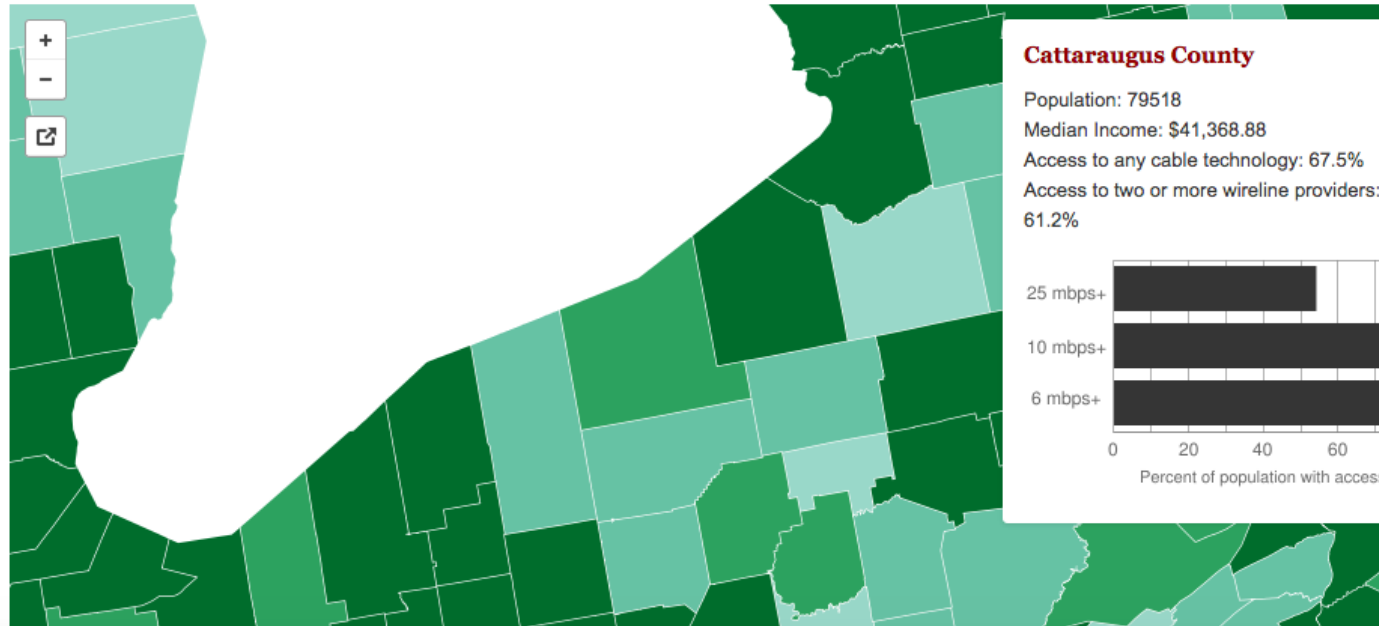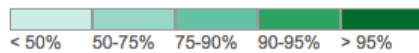
PEW RESEARCH CENTER

Broadband access

https://assets.bwbx.io/images/users/iqjWHBFdfxIU/iZSjibxE1KJs/v1/800x-1.jpg
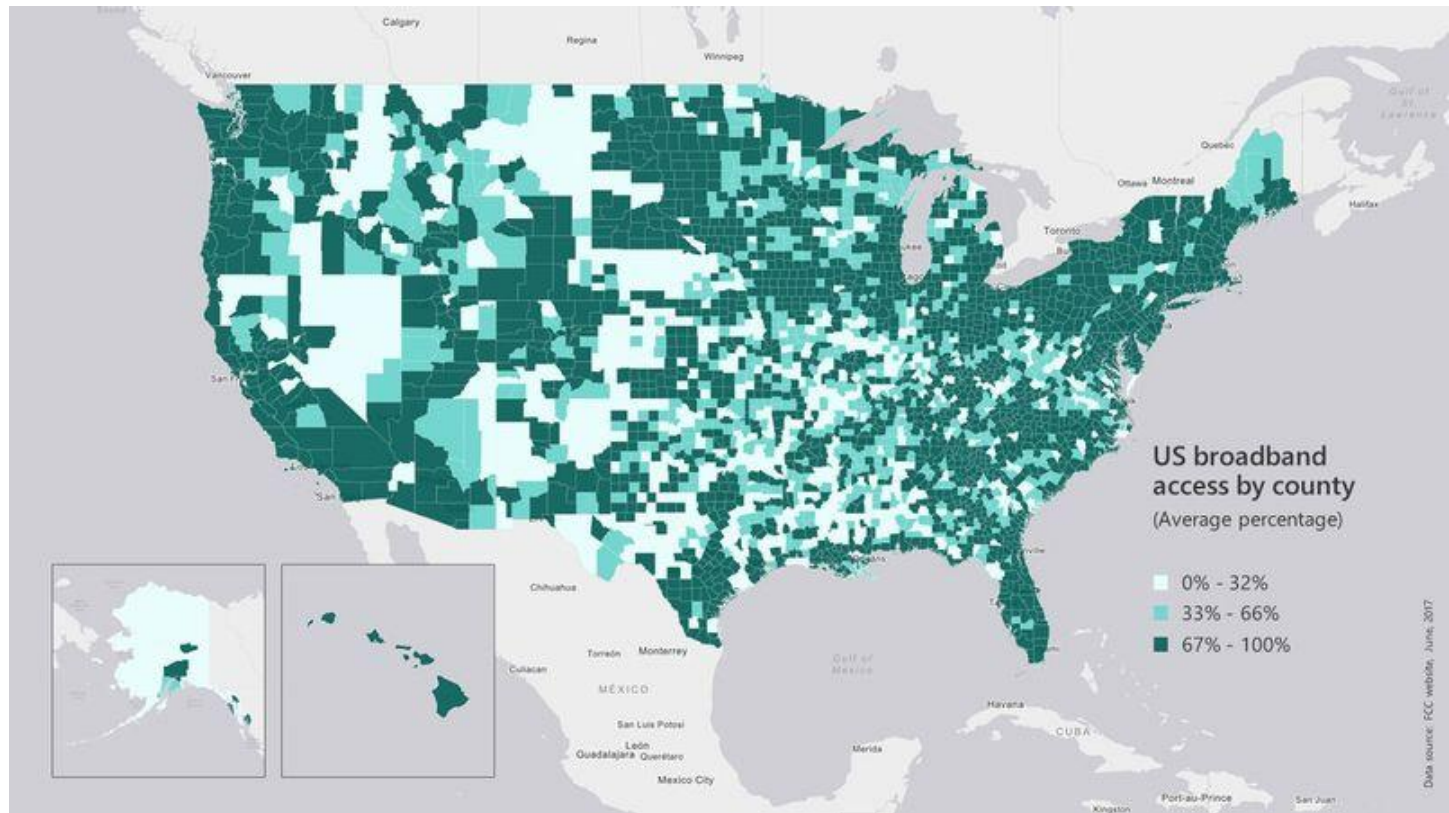
Erie county is reasonably good
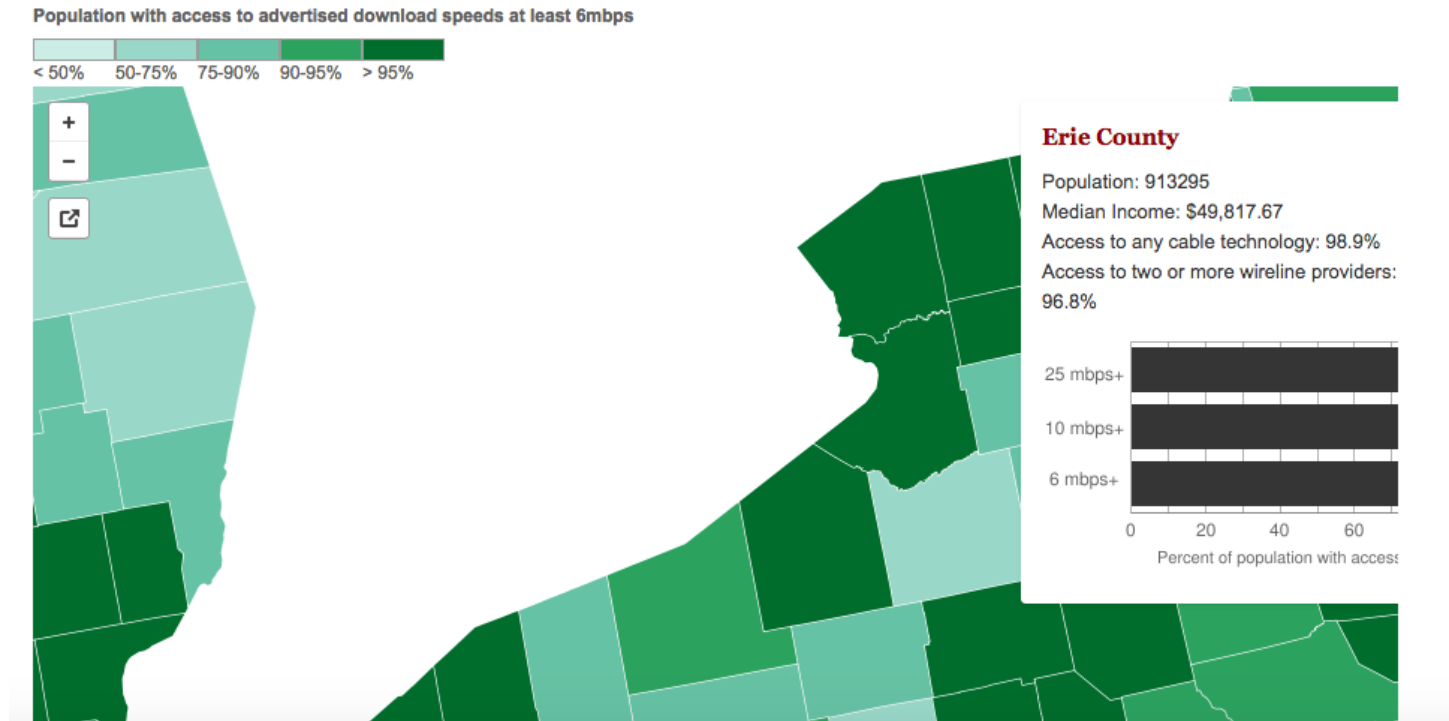
Population with access to advertised download speeds at least 6mbps

< 50% 50-75% 75-90% 90-95% > 95%

Erie County

Population: 913295
Median Income: $49,817.67
Access to any cable technology: 98.9%
Access to two or more wireline providers: 96.8%

25 mbps+
10 mbps+
6 mbps+

0   20   40   60

Percent of population with access

http://www.governing.com/gov-data/broadband-speeds-availability.html

One county over

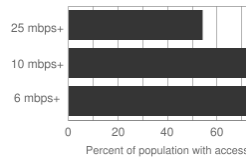http://www.governing.com/gov-data/broadband-speeds-availability.html

Make broadband more available

Cattaraugus County

Population: 79518
Median Income: $41,368.88
Access to any cable technology: 67.5%
Access to two or more wireline providers: 61.2%

BOTH technical and societal issues

Say you are tasked to come up with the infrastructure

Erie County

Population: 913295
Median Income: $49,817.67
Access to any cable technology: 98.9%
Access to two or more wireline providers: 96.8%