Lecture 39

CSE 331

Dec 8, 2023

Final exam post

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Final exam post

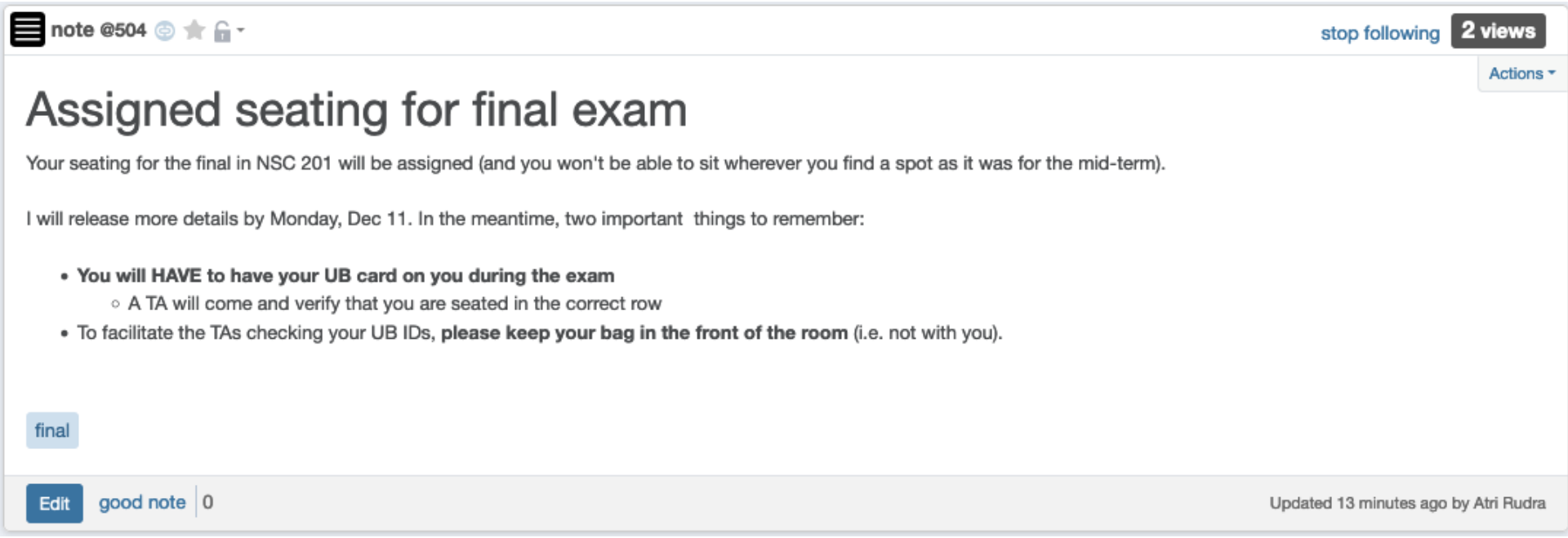
I'll start off with some generic comments:

- The final exam will be based on all the material we will see in class up to NP-completeness of k-colorability (we'll finish that stuff by either Friday, Dec 8 or Monday, Dec 11).
  - In case you want a head-start we will cover Sections 8.1-8.4 and Section 8.7 in the textbook. For the rest the schedule page details what sections of the book we have already covered.
  - I know this does not give a huge lead time into the final exam but unfortunately since we are running one lecture behind previous years means less lead time than in previous years.
- Exam will be from **12:00pm to 2:30m** on Wednesday, **Dec 13** in class (**NSC 201**). Note that the exam will be for 2.5 hours and *not 3 hours* as it says on HUB.
  - ~~I will post the makeup final exam time (due to exam conflicts-- see @447) by Monday, Nov 20.~~ If you had emailed me about a conflict with the final exam time (see @447), I have emailed you back the details on the timing of the makeup final exam.
- **DO NOT FORGET TO BRING YOUR UB CARD TO THE EXAM** (@504)

Next are comments related to **preparing for the finals**:

1. Take a look at the sample final (@503) and spend some quality time solving it. Unlike the homeworks, it might be better to try to do this on your own. Unlike the sample mid-term, this one is an actual 331 final exam so in addition to the format, you can also gauge how hard the final exam is going to be (your final exam will be the same ballpark). However as with the sample mid-term, you make deductions about the coverage of topics at your own peril (but see points below). Once you have spent time on it on your own, take a look at the sample final solutions (@503).
2. The actual final will have the same format as the sample final: The first question will be T/F, 2nd will be T/F with justification, the rest of the three will be longer questions and will ask you to design algorithms (parts of them might be just *analyzing* an algorithm.)
3. For the T/F questions (i.e. the first two questions), anything that was covered in class or recitations or piazza is fair game. If you want to refresh your memory on what was covered, take a look at the schedule page. If you want quick summaries of (almost all) the lectures, review the lecture notes or slides or videos.
4. To get more practice for the T/F questions, review all the T/F polls on piazza (@60)
5. For the remaining 3 questions, one will be on greedy algorithms, one will be on divide and conquer algorithms and one will be on dynamic programming. However, note that Chapter 2 and 3 in the book are basic stuff and almost any question in the final could fall under the purview of those two chapters. There will be **at least** one T/F and one T/F with justification Q for the NP-complete material so y'all should definitely focus on those as well but I will not ask any "proof based" Qs on that material.
6. In previous finals, like your mid-terms, there have been questions that are either straight lifts from homeworks or are closely related and this trend will continue in the actual exam (though to a lesser extend then the mid-term). This means that you should review your homeworks (all of them) before the exam. Also make sure to review the support pages and recitation notes.
7. If you are short on time and you are prioritizing the topics to study, keep points 5 and 6 above in mind.
8. Sections in the book that were not covered at all in the class but were handed out as reading assignments or recitation notes: I can also ask any direct questions from them. In addition, it might be useful to read them to get a better feel for the material. In any case once you have read the material covered in class a couple of times, it might do your brain some good to read some different material.
9. You can bring in two 8.5"X11" review sheets (you can use both sides on both). Use this judiciously: they can be a very useful tool to note down some weird things you have a hard time remembering and/or noting down specific

Bring UB card to final exam!


note @504

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Actions

Assigned seating for final exam

Your seating for the final in NSC 201 will be assigned (and you won't be able to sit wherever you find a spot as it was for the mid-term).

I will release more details by Monday, Dec 11. In the meantime, two important things to remember:

- **You will HAVE to have your UB card on you during the exam**
  - A TA will come and verify that you are seated in the correct row
- To facilitate the TAs checking your UB IDs, **please keep your bag in the front of the room** (i.e. not with you).

final

Edit good note 0

Updated 13 minutes ago by Atri Rudra

Project Survey Out!

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Project survey now open!

As a reminder that in addition to P4+5 coding and reflection problems, y'all all need to fill in a survey.

The survey was originally supposed to go out Friday at noon but I decided to release it earlier just in case if there are any issues, there is enough time to fix.

The instructions are at the bottom of the survey page. The only place where I can potentially see issues happening is if I uploaded incorrect group information (unlikely but possible). If so, please let me know ASAP.

Note: If a group member resigned the course they would still show up and this is not a bug. Make sure you give them all 0s so that you get credit for working in a smaller group.

Also note that you will rate yourself AND two other group members.

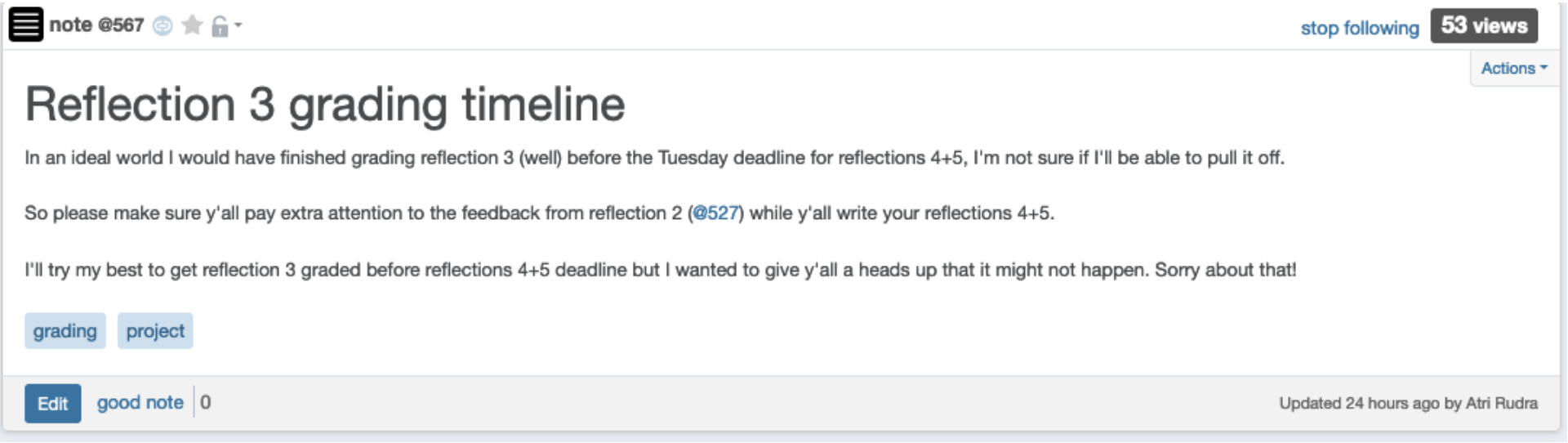
I do not control the actual submission site so sooner I get bug reports the better! In particular, *if I get a bug report after Friday 5pm, I cannot guarantee any fixes before the deadline*. Note that I do **not** expect there to be bugs but some changes were made recently to the website and I'm just being cautious here!

So please check out the system at your earliest convenience and if you spot any issues, please report back in the comment section below-- thanks!

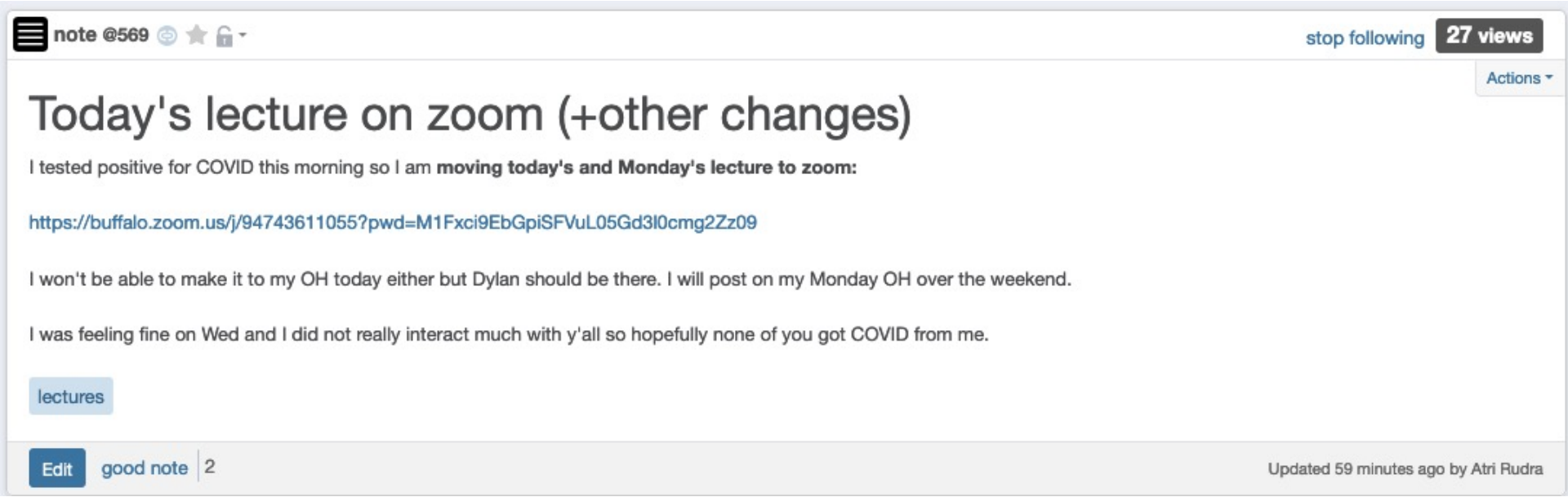
project

Edit good note 0 Updated 43 seconds ago by Atri Rudra

Timeline on reflection 3 grading



Monday lecture on zoom as well



Questions?

Question 2 (Syke(s) you out)

NRMP
National Resident Matching Program

$$Y \leq_P X$$

Arbitrary Y instance

Pre-process the input

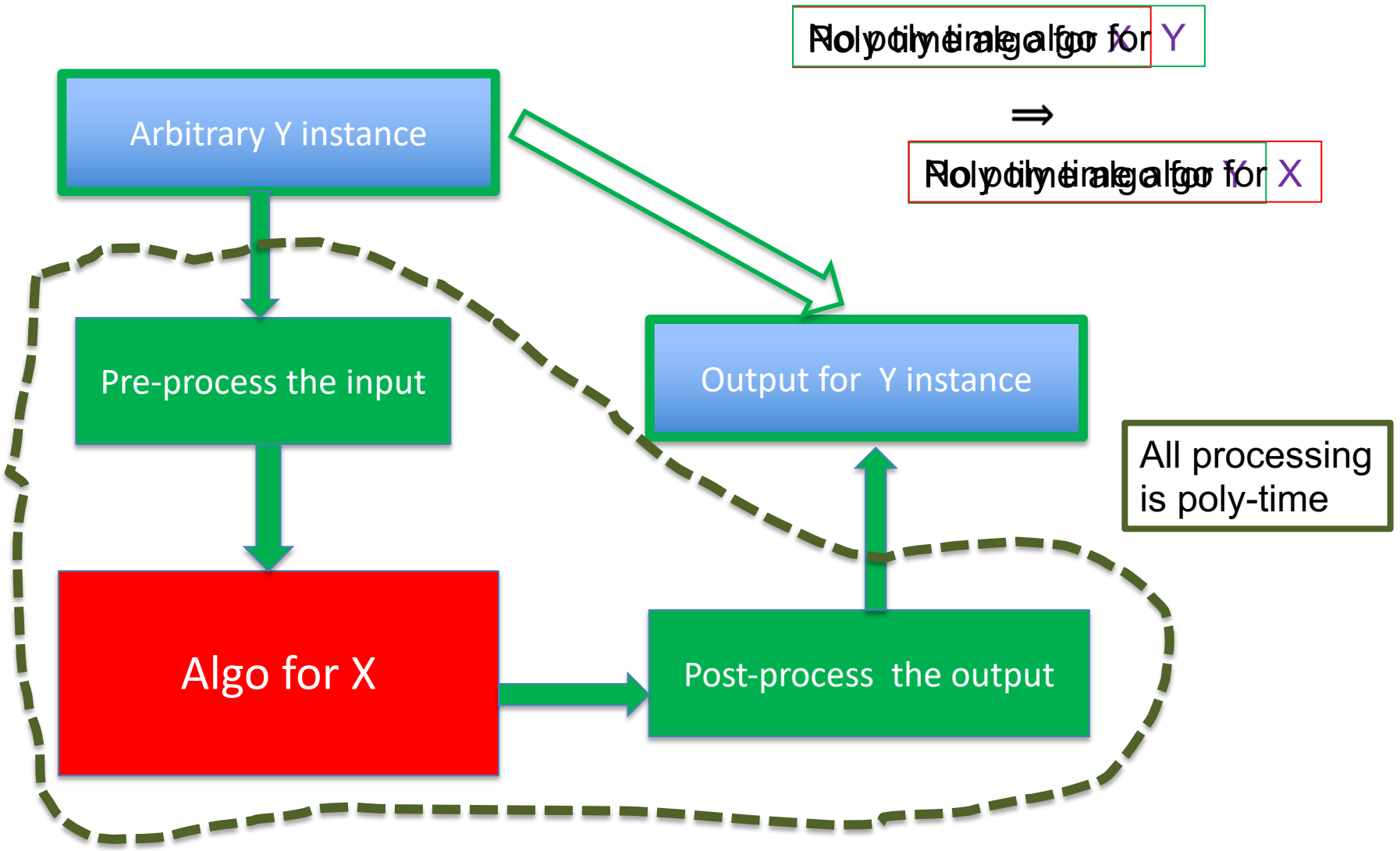
Algo for X

Post-process the output

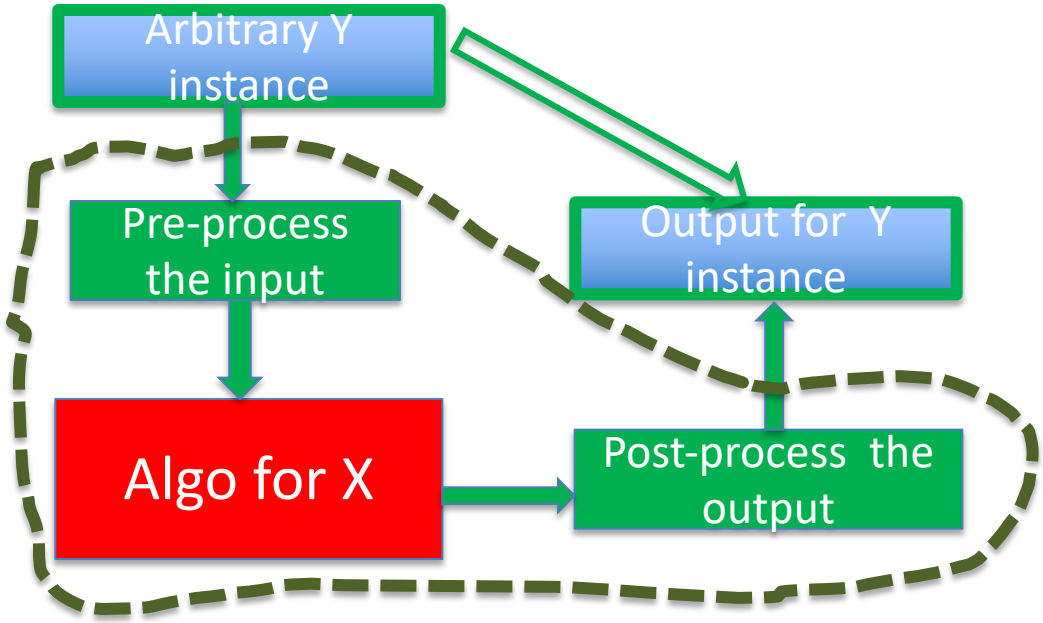
Output for Y instance

All processing is poly-time

Implications of $Y \leq_P X$



Independent Set $\leq_P$ Vertex Cover



AlgoIS (G,k)

G' = G

k' = n-k

b = AlgoVC(G',k')

return b

Questions?

Today's agenda

NP-completeness of k-colorability