CS313H
Logic, Sets, and Functions: Honors
Fall 2012

Prof: Peter Stone
TA: Jacob Schrum
Proctor: Sudheesh Katkam

Department of Computer Science
The University of Texas at Austin

Good Morning, Colleagues

Good Morning, Colleagues

Are there any questions?

Logistics

- Don't shun the book

Logistics

- Don't shun the book
- Module C1 is longer than most

Survey Reactions

- Homeworks are deliberately harder because you have more time (mostly same as non-honors)

Survey Reactions

- Homeworks are deliberately harder because you have more time (mostly same as non-honors)
- In-class problems vary in difficulty — we spend different amounts of time on them

Survey Reactions

- Homeworks are deliberately harder because you have more time (mostly same as non-honors)
- In-class problems vary in difficulty — we spend different amounts of time on them
- "Dismissing" things to Piazza — time management issue

Survey Reactions

- Homeworks are deliberately harder because you have more time (mostly same as non-honors)
- In-class problems vary in difficulty — we spend different amounts of time on them
- "Dismissing" things to Piazza — time management issue
- "Advantage" of students who have seen material before should be diminishing

Survey Reactions

- Homeworks are deliberately harder because you have more time (mostly same as non-honors)
- In-class problems vary in difficulty — we spend different amounts of time on them
- "Dismissing" things to Piazza — time management issue
- "Advantage" of students who have seen material before should be diminishing
- Manage your sleep and time

Survey Reactions

- “I don’t like the way we start so abruptly with "Good morning... Any questions?" Often I don’t have a list of specific questions in mind but if we spent a few minutes briefly overviewing the new material we were supposed to have picked up in the module, the context would bring up questions.”

Some questions

- 5-color theorem better as induction

Some questions

- 5-color theorem better as induction
  - Removing vertex of **min** degree (not max as on webpage)

Some questions

- 5-color theorem better as induction
  - Removing vertex of **min** degree (not max as on webpage)
- Modern day Königsberg any better? (Nick Walther)

Eulerian and Hamiltonian Graphs

1. Eulerian Path?

Eulerian and Hamiltonian Graphs

1. Eulerian Path?
2. Eulerian Circuit?
3. Hamiltonian Path?
4. Hamiltonian Circuit?

More Fromal Eulerian Graph Proof

If every vertex in a connected graph has even degree, then the graph is Eulerian.

- Module gave a "proof" that included "continue until you run out of edges."

More Fromal Eulerian Graph Proof

If every vertex in a connected graph has even degree, then the graph is Eulerian.

- Module gave a "proof" that included "continue until you run out of edges."
- Lets make it more formal

More Fromal Eulerian Graph Proof

If every vertex in a connected graph has even degree, then the graph is Eulerian.

- Module gave a "proof" that included "continue until you run out of edges."
- Lets make it more formal
- Induction on the number of vertices

More Fromal Eulerian Graph Proof

If every vertex in a connected graph has even degree, then the graph is Eulerian.

- Module gave a "proof" that included "continue until you run out of edges."
- Lets make it more formal
- Induction on the number of vertices
- Induction on the number of edges

More Fromal Eulerian Graph Proof

If every vertex in a connected graph has even degree, then the graph is Eulerian.

- Module gave a "proof" that included "continue until you run out of edges."
- Lets make it more formal
- Induction on the number of vertices
- Induction on the number of edges
- Consider the longest simple path $W = v_0, ..., v_r$ (there are a finite number of these paths, so the longest one certainly exists; if it's not unique pick any old one). Prove that W is an Eulerian circuit.

Assignments for Thursday

- Module C1