Introduction

Welcome to CS 2102!

Who I Am — Prof. Ashlie (Ben) Hocking

- Earned my Masters and PhD in CS from UVA
  - Earned a Masters in Astrophysics from GSU and a BS in Physics from GT
- Work full-time at Dependable Computing on safety-critical systems
  - Autonomous drones, avionics, automobile systems, nuclear reactors, syringes(?)
- Formal methods is my primary focus — built on top of discrete math
- I love all kinds of math

Course Objectives

- Introduction to discrete mathematical structures, including
  - propositional, predicate, and constructive logic,
  - formal and informal proof construction and checking,
  - set theory,
  - finite automata,
  - inductive definitions,
  - formal languages, and
  - aspects of computational complexity, and some of their applications.

Evaluation

- Homework will be worth 40%
- Exams will be worth 60%
  - Exam 1 (15%) will be on February 26th
  - Exam 2 (15%) will be on April 4th
  - The final exam is worth 30%
- Collaboration: Homework assignments and exams are individual evaluations, but you are encouraged to work on basic concepts with colleagues
- Exams will be open note

Tools we will be using in this class

- Git
- Visual Studio Code
- Lean

Git

- Git is a version control system useful in a variety of contexts, especially in software
- The repository for this class will be at https://github.com/kevinsullivan/cs-dm-dev
- Here are useful resources for learning git: https://try.github.io/
- Understanding git will not help you on the exam, but will help you keep up to date on course material, and will help you in the software industry in general

Visual Studio Code and Lean

- Demonstration

Class experiment

- There's an old expression: You can fool all of the people some of the time, and you can fool some of the people all of the time
- How many of you have heard of this expression?
- How many of you think you understand what it means?
- How many think the first half of the expression means:
  - That there exists a time *t* at which all people can be fooled (or, there exists something about which all people can be fooled)?
  - That for all people there's a time *t* at which you can fool them (or, for all people, there exists something they can be fooled about)?
- How many think the second half of the expression means:
  - That there exist people who can be fooled all of the time?
  - That you can always find someone who can be fooled?

Assigned Reading to be done by Thursday

- Go to https://kevinsullivan.github.io/cs-dm-dev/
- Read up through 2.4.6 (don’t stop until you get to 2.4.7)

Fin