Last time

- Logistics
  - http://courses.cs.cornell.edu/courses/cs2800
  - Read syllabus
  - Sign up for Gradescope and Piazza
  - Schedule 1/2 hour per lecture review time

- Lecture etiquette
  - No screens
  - No crosstalk
  - Ask questions

- Course skills/goals:
  - Definitions: Every term is clearly defined
  - Proofs: Every statement is made irrefutable
  - Abstraction: Arguments are made simple

- Announcements
  - First homework on Piazza by Monday, due 2/4 at 5PM
  - Feedback forms on Piazza
  - Background survey on Piazza
- $x \in S$: “$x$ is in $S$” or “$x$ is an element of $S$”.
- Examples: let $A := \{1, 2, 3\}$; let $\mathbb{N} := \{0, 1, 2, \ldots\}$
- $\emptyset$ (or $\{\}$): the empty set; for all $x$, $x \notin \emptyset$.
- $\{x \mid P\}$: “the set of all $x$ such that $P$” (set comprehension)
  - $y \in \{x \mid P\}$ if and only if $P$ is true (when $y$ is plugged in for $x$)
- $\{x_1, x_2, \ldots\}$: the set containing only $x_1, x_2, \ldots$
  - $y \in \{x_1, x_2, \ldots\}$ if and only if $y = x_1$ or $y = x_2$ or $\cdots$
- $A = B$: “$A$ equals $B$”
  - for all $x$, if $x \in A$ then $x \in B$ and if $x \in B$ then $x \in A$
- $A \subseteq B$: “$A$ is a subset of $B$”
  - for all $x \in A$, $x \in B$
- $2^A$: “the power set of $A$”
  - the set of all subsets of $A$
  - $2^A := \{B \mid B \subseteq A\}$