

# Recursion

4-18-2012

# Opening Discussion

- Minute essay comments:
  - Recursive function to fill blanks in minesweeper.
  - How often do you use this?
  - Checking syntax in BASIC.
  - Are light sabers or laser guns (as in Star Wars) possible?
  - Lasers instead of kitchen knives and scissors?
  - Following laser based missile defense?
  - Will this class learn to skate?
  - Tracing Fibonacci

# More

- Exploring web development without CS.
- Go to a Ke\$ha concert?
- In class code commenting tool for in class.

# Towers of Hanoi

- A classic example of recursion is solving the Towers of Hanoi.
- This game is generally made with disks and three pegs.
- You need to move the disks from one peg to another.
  - Can only move one disk at a time.
  - Can't place a disk on one smaller than it.
- Solution to  $N$  disks: move  $N-1$  disks, move 1 disk, move  $N-1$  disks.

# Mazes

- My favorite example is mazes.
- Consider a maze as a 2-D grid with each square either filled or not.
- Now the challenge is to find the length of the shortest path through the maze.
- How do you do that?

# Minute Essay

- What questions do you have about stuff?
- Remember to turn in assignment #3 today.