CS10
The Beauty and Joy of Computing
Lecture #25: Tree Recursion
2010-11-29

MS Kinect = BODY I/O
The newly released (and much-hyped) Microsoft Kinect system for the XBOX 360 used controller-free body motions to control games, music, and movies.

xbox.com/kinect/

Review: What’s in a Strong Solution

- For every position
  - Assuming alternating play
    - Value
      - for player whose turn it is
        - Winning (exists losing child)
        - Losing (all children winning)
        - Tying (3 losing child, but 3 tying child)
        - Drawing (can’t force a win or be forced to lose)
    - Remoteness
      - How long before game ends?

Let’s write code to determine value!

- P = Position
- M = Move
- We only need 3 blocks to define a game
  - Do Move M on Position P
  - Generate Moves from Position P
  - list of Moves
  - Primitive Value of Position P
    - (win, lose, tie, undecided)

Review: Example: 1, 2, ..., 10

- Rules (on your turn):
  - Running total = 0
- Rules (on your turn):
  - Add 1 or 2 to running total
- Goal
  - Be the first to get to 10

- Example
  - Ana: “2 to make it 2”
  - Bob: “1 to make it 3”
  - Ana: “2 to make it 5”
  - Bob: “2 to make it 7” → photo
  - Ana: “1 to make it 8”
  - Bob: “2 to make it 10” I WIN!

7 ducks (out of 10)