Chess Evaluation Function

- Scoring scale: (score > 0, white is ahead; score < 0, black is ahead)
- $0 < |\text{score}| \leq 5$, represents an even score
- $5 < |\text{score}| \leq 15$, represents slightly better
- $15 < |\text{score}| \leq 30$, represents much better
- $|\text{score}| > 30$, represents a “should win”
- Material is given roughly $5 \times$ the standard accepted piece worth, example: A Queen is worth 49, a knight 18 and a pawn 5.
- The function first evaluates material, as you would expect.
- Board control. I calculate 'board control' to be the sum of the squares that a the player controls - by either legally being able to move there, or legally be able to attack that square. Each square that falls within this criteria, the player is given +1 points.
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- This happens to be an indirect way to account for things like development, as you will invariably control more squares with your pieces developed, then not. Center squares controlled get +1 bonus. Surprisingly, just this function + material balance evaluates very well.
- A few special end game 'adjustments' - Examples: advanced pawns are given +1, +2 or +3 bonus, depending on what rank they are on. Heavy pieces are given a bonus in the end game.
- For all stages of the game, there are other things I check for; forks, king safety, etc. (This is just all I could fit on the slide.)
- No game-tree stuff yet.
Chess Evaluation Function

- Evaluation results
  - Board 1: 69
  - Board 2: 62
  - Board 3: -31
  - Board 4: -35
  - Board 5: 19
  - Board 6: 16
  - Board 7: 28
  - Board 8: -24
  - Board 9: -18

- Evaluation results
  - Board 10: 15
  - Board 11: 16
  - Board 12: -8
  - Board 13: -9
  - Board 14: 4
  - Board 15: 5
  - Board 16: 9 - (evidently, this is not "unclear" to my eval function :)}