

# Heuristic Analysis

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## First Heuristic: Number of legal moves

The first heuristic is simply taking number of legal moves for the player, offering a light-way of estimating the length of the game and the chances in it:

```
float(len(game.get_legal_moves(player)))
```

## Second Heuristic: Number of legal moves adjusted

The second heuristic is an enhanced version of the first heuristic. It subtracts the number of moves from the opponent from the own possible legal moves.

```
own_moves = len(game.get_legal_moves(player))
opp_moves = len(game.get_legal_moves(game.get_opponent(player)))
return float(own_moves - opp_moves)
```

This approach is still very light-weight and scales very well.

## Third Heuristic: Position evaluation

The third heuristic evaluates the position of the player, estimating that a *bad position* is one where position of the player is on the very outside.

```
w, h = game.width / 2., game.height / 2.
y, x = game.get_player_location(player)
return float((h - y)**2 + (w - x)**2)
```