# Project Summary

Laser chess is a game similar to chess where you move pieces in order to shoot your laser off the mirrored side of the pieces to kill to opponent’s king. If a piece gets hit by the laser on a non-mirrored side, it gets killed and the laser is stopped. For a turn, you can move a piece one space in any direction or turn a piece 90 degrees. For our modeling projecting we will be checking if it is possible for the laser to reach the king, killing it, in one move on a 5x4 board. 4 mirrored pieces will be randomly placed on the board to help direct the laser to the king.

# Propositions

P(x,y),(o) , every piece has an (x, y) position, (o) orientation.

* Ex: P(1,1) (NW) would be True for a piece in the position (1,1) with an orientation of NW
* o can be northwest (NW), southwest (SW), southeast (SE) and northeast (NE), which describes the side with the mirror

L(x,y), (d), laser has an (x, y) position and (d) for the direction of the laser.

* Ex: L(2,3) (N) would be True if the laser went true the position (2,3) going towards N.
* d direction can be north (N), south (S), east (E), west (W)

K(x,y)  opponents king that has a position (x, y).

G is the proposition for game over.

* Ex: G is True if the opponent's king is hit by the laser

# Constraints

G only holds when the laser and the king have the same position.

* G (K2,2 ∧ L2,2, N)

A piece can’t move to a position where there is another piece.

The laser always starts at the same position with the same orientation.

* L(0,0) (E)

The king always starts on the same x coordinate.

* K(4, y)

The laser keeps going in the same direction until it hits a mirror side of piece, goes out of bounds, hits the king, or hits a non-mirror side.

* Ex: L(2,3) (E) ∧ P(2,3)(NW)  L(2,3)(N)

A piece can only move to one adjacent square or rotate 90 degrees.

The 4 pieces must be on the board

Only one piece can be at a certain position at a time

# Requested Feedback

1. *Does the code seem to be going in the right direction?*
2. *Does implementing classes the way we did work even though the piece object won’t evaluate to a Boolean, but the components of the object will evaluate to Boolean?*
3. *Did you find any syntax errors?*