

Checkers Customer Requirements

An autonomous system is desired that is inexpensive, quiet, robust, fast, efficient, safe, and user-friendly that will play a game of checkers on a given game board against a human opponent. The system needs to have at least one closed-loop controlled DC motor subsystem demonstrating smooth motion. The system should be able to detect the locations of the pieces on the game board and move them to their desired location as determined by the user (via a designed GUI) and the system logic. Captured pieces can be removed by the user.

Upon completion of the game, the system will declare a winner, either on the GUI or via hardware at the discretion of the system designers, while the user will reset game board and place the pieces back where the system needs them to be to play the next game.

The game board will be approximately 16"x16" with each space approximately 2" square in size, creating an 8x8 board. The game pieces will be approximately 1.5" in diameter.

Connect 4 Customer Requirements

An autonomous system is desired that is inexpensive, quiet, robust, fast, efficient, safe, and user-friendly that will play a single game of Connect 4 on a given (horizontal) game board between a user and your system. Your system needs to have at least one closed-loop controlled motor subsystem, and have that system demonstrate smooth motion. The system should be able to detect the locations of the "coins" on the game board and move them to their desired location on the gameboard as determined by the user (via a GUI) and the system logic.

Upon completion of the game, the user will clear the gameboard and place the pieces back where the system needs them to be to play the next game. At that time, the system must display, either on the hardware, or the GUI that the games have been completed, and declare a winner (if is determined) or a draw/tie.

The game board will be approximately 16"x16" with each space approximately 2" square in size, creating an 8x8 board, but only a 7x6 space will be needed. The game pieces will be approximately 1.5" in diameter.