

Wizards' Chess

Group 21



Meet the Team



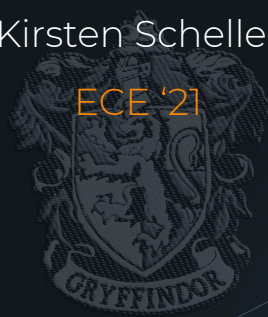
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MAE '21



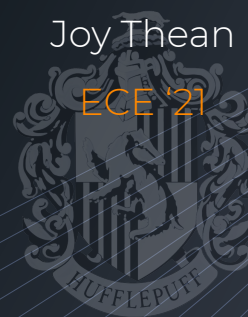
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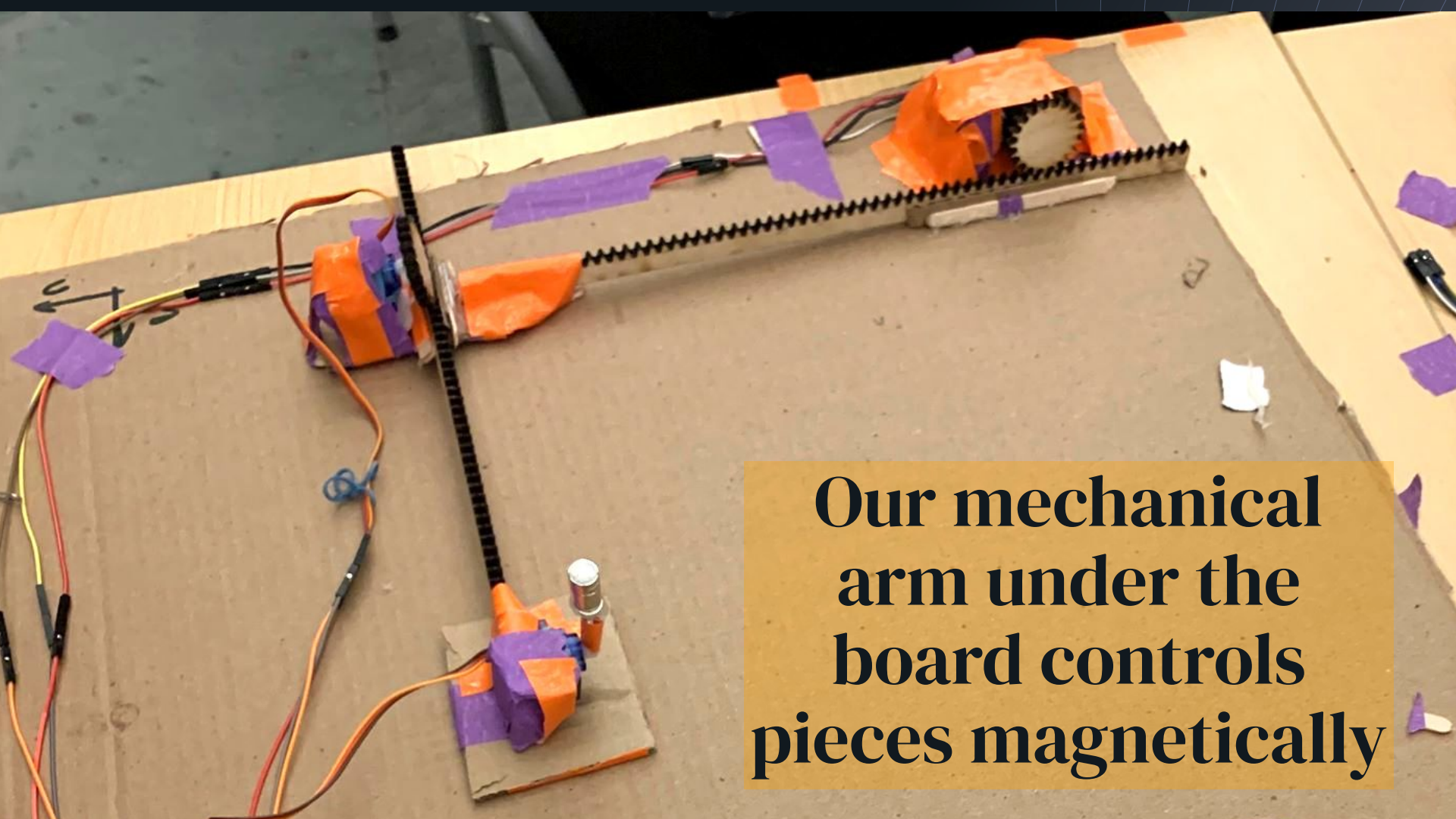
Our Wizards' Chess **magically** moves chess pieces through voice command

Just like the chess board in Harry Potter, our chess game listens for speech-recognized chess commands and moves the pieces accordingly.

The board is set up “**double decker**” style, with a mechanical arm underneath and a chessboard on top of it.

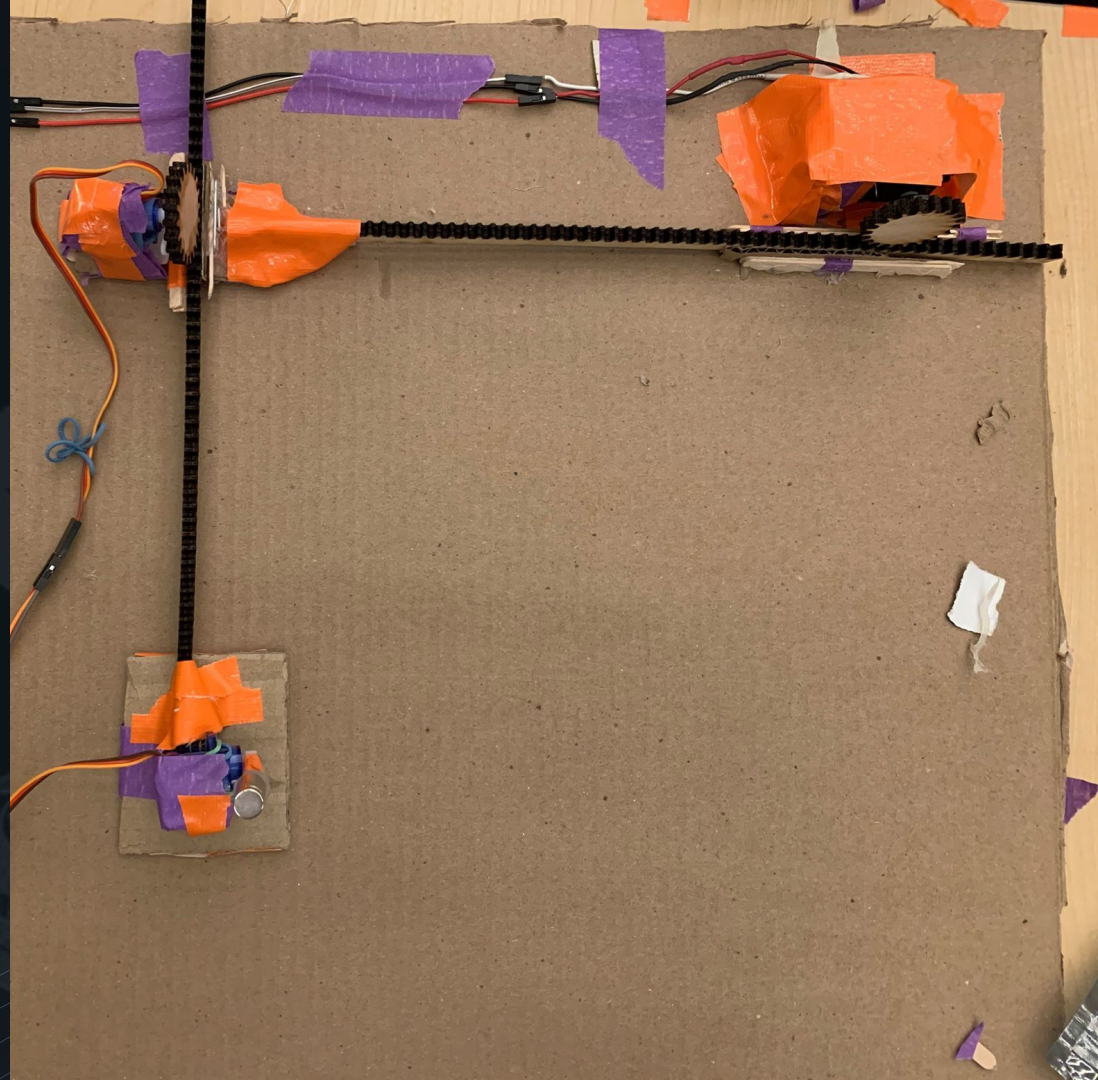
In our implementation, we used Python to store all the game details and then send data to the Arduino for movement implementation.





**Our mechanical
arm under the
board controls
pieces magnetically**

We use two
continuous rotation
servos for moving
pieces up and down
the board and one
micro servo with a
magnet to attach to
the piece being
moved



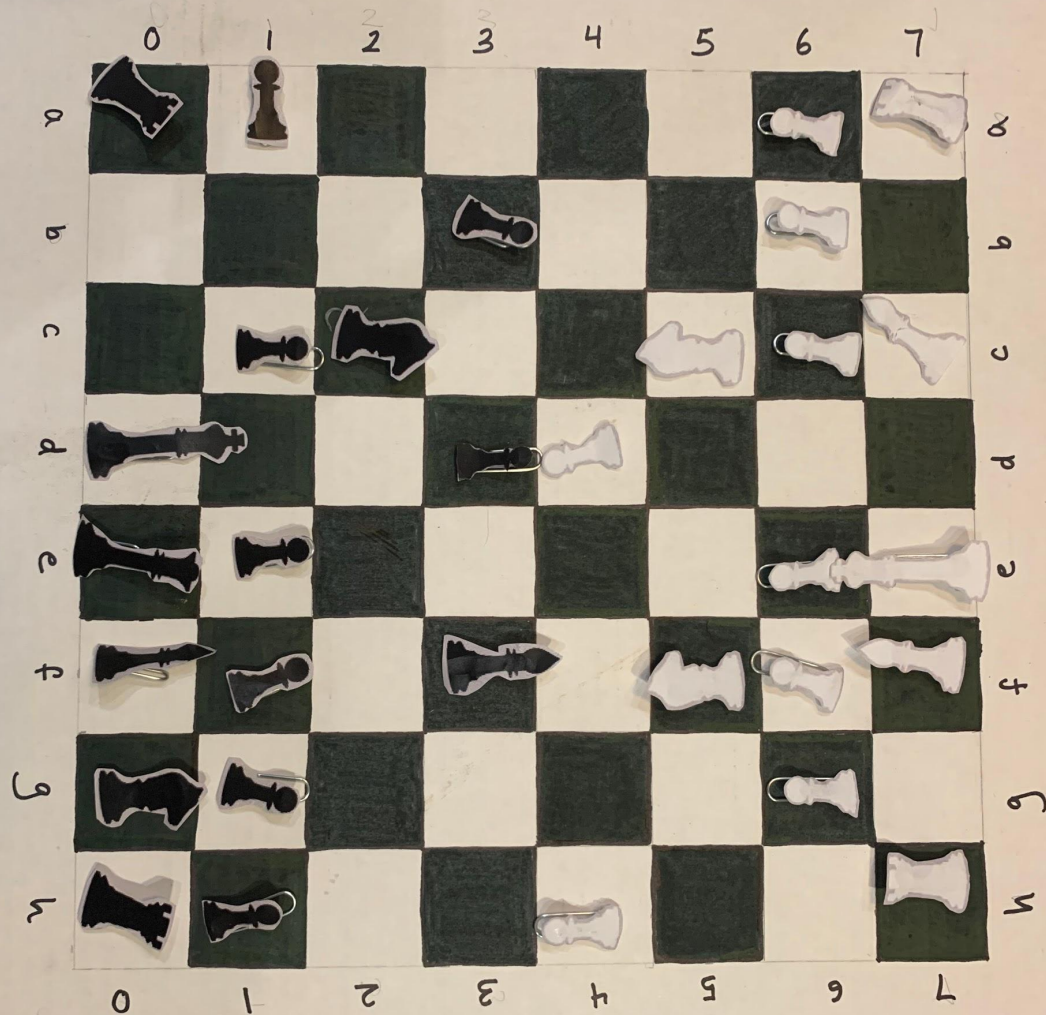
Arduino

- Listens for serial input from Python
- Uses servos to move both horizontally and vertically, accordingly

Python

- Stores 2D array of board coordinate system and pieces
- Prompts user and listens for speech with adequate error checking and responds to user's inputs (both visually and audibly)
 - Sends data about movement to Arduino via serial port

**We use
python and
arduino
serially to
control the
arm**



Our game allows
visually or physically
impaired to play a
game of chess
without having to
actually move
pieces.

The computer prompts
and re-prompts based on
user input and audibly
calls out the state of the
game.

Coding logic for capturing opponent pieces and what that would physically look like

Optimize path of knight piece (avoiding other pieces in the L path)

Get actual pieces with a strong magnetic base

More testing for smoother piece movements

Next Steps



Thank you to
Cornell Maker Club
and all **volunteers!**