Team members:

Connor Pargman, Calvin Molitor, Aratrik Dasgupta, Juyee Vang

Core Concept:

Remake the game arcade game stacker using a 8x8 led matrix and 2 buttons, 1 for game logic and one for restarting the game.

Core Component and other hardware:

NeoPixel NeoMatrix 8x8 - Adafruit
(https://www.adafruit.com/product/1487)

Arcade Button with LED - 30mm Translucent Red
(https://www.adafruit.com/product/3489)

Tactile Button switch (6mm) - Adafruit
(https://www.adafruit.com/product/367)

Breakdown of roles:

Connor Pargman - Game Logic, implementing stacker game logic. Game will have a 1x3 matrix of “blocks”, The matrix will move left to right. Have to get input from the button to stop the matrix where it is at on the row. Once that happens a new matrix spawns one level up and the player must stop it on top of the previous matrix of blocks. Similar to the arcade game below. Also will be 3d printing a box to hold the components, buttons and game screen

Calvin Molitor - Display handling software. Game logic will fill a frame buffer with 24bit data for each LED, and the software will output a 64x24bit sequence on a single pin

based on the frame buffer. Timer interrupts will be used to refresh the display on regular intervals.

Aratrik Dasgupta - Input handling. There will be 2 buttons, one for the game control and one for reset, start and stop. Button clicks will be detected with timer interrupts.

Juyee Vang - Hardware creation and testing. Initially setup all of the hardware on a breadboard with both a 3.3V and 5V rail. Solder all of the components if they do not come pre-soldered. Test code and find bugs in the software.