

# Light-Up Learning Keyboard (LULK)

## Project

The motivation

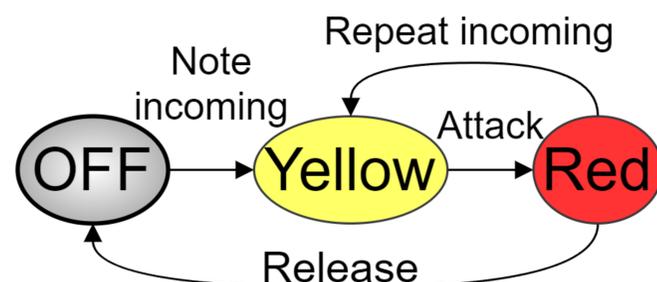
- To learn piano on your own
- To learn intuitively with a visual system
- To learn without additional materials

What this project does

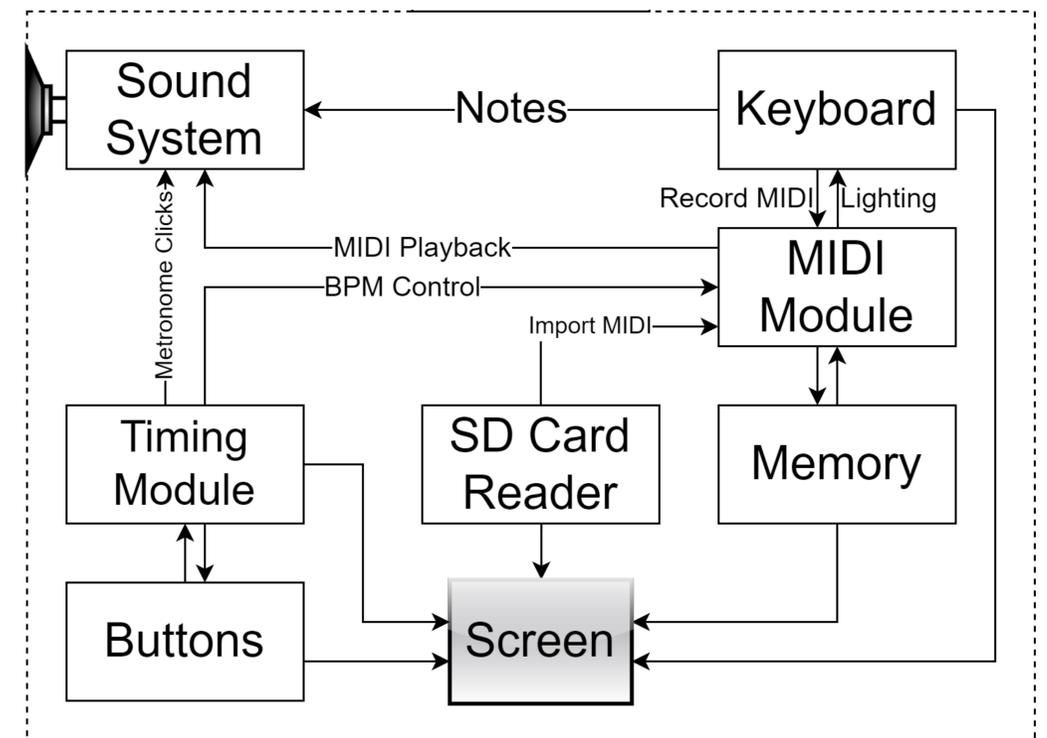
- Practice is plug-and-play
- Let the keyboard do the work
- Gives you flexibility to learn whenever and wherever

## Methods

- Data is tracked for each key
- Force Sensing Resistors record the pressure applied to keys
- The analog value of each key exponentially decays as it is pressed
- A stack tracks the availability of audio generators
- The system can run on its 73 Wh battery through a DC/DC converter
- The system can read MIDI files from a micro SD card
- MIDI playback controls the LEDs using a state machine



## System



## Conclusion

- LULK guides your fingers to the music
- The portability and autonomy of LULK allow greater independent learning
- LULK provides customizability
- Being good at something is fun, and LULK aims to bring fun to the learning process as well
- There is so much that can be added to LULK to further the ability of those learning piano