

The team has come up with five recommendations for future iterations of this project:

1. **Note Feedback System:** The ability for the controller to know when notes are played by the user was out of scope for this iteration. A future iteration could expand the current design to allow for this feedback system. This could allow for better duets with user and piano and open up teaching functionality to the system, allowing the piano to tell the user if they hit the wrong note in a song. Could also be used to record songs played by the user to be played back later.
2. **Pedal Actuation:** Having the device be able to hit the pedals on its own without the user having to do it would allow the standalone playing of the piano to operate better.
3. **Software Improvement and Accessibility Integration:** A team of computer science or software engineering students could make an entire project out of better using MIDI files, storing them more effectively and implementing the accessibility features in software. As it stands right now, only a basic accessibility features are available. If a way to divide any song into left and right hands and have the piano play one and the user the other, lots of software will need to be developed.
4. **Mechanical Advantage Actuation of Keys:** By using a mechanical advantage more control over the note playing could be achieved. Intelligent design of this system could allow for playing of both softer and louder notes with more control. The current design allows for limited volume control and there is a large opportunity for improvement.
5. **Expand current system to all 88 keys:** Currently the system can only play 24 keys, and expanding the design to the whole piano would be a large undertaking requiring a larger budget. The current design is modular and we did budget the system out to cost around \$850 if you had to rebuy everything. Some considerations would have to go to the weight of the entire system with 88 solenoids and the wiring of everything as well.