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Self-Assessment

My contribution to our Music Maker project was to create a board for our piano, and to implement saving and loading for our software. Creating the board required me to program a MikroElektronika board to use a USB interface. I also had to connect the board to buttons and to have the buttons work with the physical piano keys that were made. This is where my main issues occurred as the parts did not come in time. I tried to implement a foil switch using tinfoil and wires as a remedy to the part problem, but this caused more issues. I think the issues were brought about by me thinking of using a button debouncing solution, when instead I probably should of set up an ADC interrupt structure.

Saving and loading for our software required creating a system in which our Unity Objects could be written to a file and then loaded from said file. The main issues I ran into with this was because Unity does not have much file utilities built into it. Our final solution ended up being writing the prefab type to a file and then when we load them in, we immediately place them into the Unity Objects. This sounded simple but required time due to the connections between the objects to be made. I got to build on my abilities of working with hardware because this was the first project where I hand picked out parts for the project. The issues we ran into with hardware taught me that the leadup time for projects is important, and backup solutions must be planned out ahead of time. I also got to build on my foundation of Unity skills because our final software is using Unity. The main things I learned was working with the frontend of the program, in the past I only worked on the backend.

We accomplished creating a music teaching program that is easy to use. It is color themed and built so that kids could use it with little help from their parents. This allows kids to learn by themselves instead of requiring a teacher. We also got a physical piano structure printed out that mechanically is like a piano. Our group work strategy was based off business strategies, every person had a focus for the project. Adam and Jason focused on software, Eric focused on the piano, and I focused on the hardware. We learned through groupwork that communication is paramount to keep the project on schedule and able to be finished.

The strategy of separating on coming together with key parts was successful and I believe heavily benefited us during the corona outbreak and class time issues. What ended up not being successful was that we could not help each other out much just do to how focused each aspect was. An example of this is that when I ran into hardware issues, I had to reach out to my friends in EE and CE for help just due to our team not having much hardware experience. Compared to my teammate’s effort, I believe my final product was on the low end, but my actual effort was similar. In the end, I only got to contribute to saving and loading because my hardware efforts kept running into dead ends and issues. For actual effort while they were working on features, I was working on solutions to the hardware problems and this was mainly brought about by my lack of experience and the isolation.