Caden Friesen

3/5/21

Project Summary

This project's aim was to solve some general inconveniences while cooking. Some oven timers are very quiet and don't show the seconds so having a small portable timer to display this info that can also be heard from a long distance is a very useful thing to have. Another problem solved by this was the issue of needing to check if water is boiling constantly. Being able to be across a room and have an alarm ring when a pot of water has reached a rolling boil is a very useful thing for cooking efficiency and takes a general focus task off the hands of the chef.

This project went through 3 main phases not counting documentation. The first phase involved general research and the beginnings of blocks. Blocks in the project were put together but the code used for them was separated and the blocks were not interconnected. The speaker for example could be used but not in tandem with the timer. The second phase of the project was combining all the codes and pieces with buttons to actually drive it all. This phase went smoothly although the actual circuitry was challenging to keep organized. The third phase was the design of the enclosure used to house the project and figuring out how to attach the pieces without messing up the circuit. This was challenging at times especially figuring out how to get wiring through holes in the box without taking apart the whole system. Sometimes parts of the project needed to be added or changed, usually revolving around how things were wired so that they did not interfere with each other but in the end everything came together smoothly.

This project really taught me lots of nice technical skills I will be able to use in future projects. Learning how to 3d print was interesting and satisfying to do especially once the box all fit together. I also learned some basic PCB design and I am excited to actually print a board in the future. I believe that I learned a lot about project management and time management too. On the next page I included my project timeline that guided me through the semester. I believe it really helped keep the project on track the whole time.

1	**Project Initiation**			
1.1	Make Block Diagrams	Caden Friesen	1/14/21	1/15/21
1.2	Plan Schedule	Caden Friesen	1/15/21	1/15/21
1.3	Research Parts	Caden Friesen	1/16/21	1/18/21
1.4	Order Parts	Caden Friesen	1/18/21	1/20/21
2	**Project Work**			
2.1	Build Timer Block	Caden Friesen	1/21/21	1/28/21
2.2	Code Timer Part of Arduino	Caden Friesen	1/21/21	1/28/21
2.3	Test Timer Block	Caden Friesen	1/21/21	1/28/21
2.4	Design Boiler Circuit	Caden Friesen	1/29/21	2/3/21
2.5	Build Boiler Prototype	Caden Friesen	1/29/21	2/3/21
2.6	Code Boiler Part of Arduino	Caden Friesen	1/29/21	2/3/21
2.7	Test Boiler Block	Caden Friesen	1/29/21	2/3/21
2.8	Design Speaker Circuit	Caden Friesen	2/4/21	2/10/21
2.9	Build Speaker Circuit	Caden Friesen	2/4/21	2/10/21
2.11	Code Speaker Part of Arduino	Caden Friesen	2/4/21	2/10/21
2.12	Test Speaker Block	Caden Friesen	2/4/21	2/10/21
2.13	Design Enclosure	Caden Friesen	2/11/21	2/17/21
2.14	Make Switches in Circuit	Caden Friesen	2/11/21	2/17/21
2.15	Pull Together Arduino Codes	Caden Friesen	2/11/21	2/17/21
2.16	Test Switches	Caden Friesen	2/11/21	2/17/21
2.17	Build Enclosure	Caden Friesen	2/18/21	2/24/21
2.18	Finalize Interior Circuit	Caden Friesen	2/18/21	2/24/21
3	**Project Presentation and Documentation**			
4.1	Final Verification Speaker	Caden Friesen	2/25/21	3/4/21
4.2	Final Verification Boiler	Caden Friesen	2/25/21	3/4/21
4.3	Final Verification Timer	Caden Friesen	2/25/21	3/4/21
4.4	Documentation and Videos	Caden Friesen	2/25/21	3/4/21
4.5	Prepare for Presentation	Caden Friesen	2/25/21	3/4/21
4.6	Create Final Video	Caden Friesen	3/5/21	3/11/21

Figure 1: Project Timeline