Engineering Notebook - ABCD

11-1-16: Team Meeting 1

Team meeting to create a work plan. We agreed to meet every Tuesday at 2:30. We also agreed on a meeting on Thursday (the 3rd) at 2:30, where we will brainstorm some preliminary designs. Since everyone has to have a separate design and program for their final product, we have each person working separately and then coming together to share ideas and compare strategies. Collin is in charge of overseeing work done on the engineering notebook, even though we all will add entries. Ben will text people to make sure everyone is doing their work. Ben will provide guidance with AutoDesk Inventor if people need help, Dan and Collin will provide guidance with the circuitry as needed, and Aron will provide guidance with programming as needed. Aron and Ben will oversee work done on the final report and Dan and Collin will oversee work done on the final presentation. We came up with a schedule of when to have each phase of the project done.

* Aron H

11-3-16: Team Meeting 2

This meeting was to look at some brainstorming ideas. Everyone was told to bring three ideas to present to the group and we all shared and we all had a very similar designs. The two common themes were just a normal wand and something that had to do with spinning the want so that the message was produced in a circle. We talked a little bit about using a rubber band on the inside to provide movement. We talked about the number of LED’s that we would ideally have on the wand. Our plan is to have preliminary designs in autodesk by our next meeting so that we can stay on schedule.

* Collin Longenecker

11-8-16: Team Meeting 3

During this meeting, we each showed our in-progress autodesk designs. Aron and Dan are leaning towards a handheld or string-held wand that is swung or waved back and forth, while Ben and Collin are looking at a wand that spins all the way around. Collin’s will be powered by an electric motor, while Ben will try to make his manually-powered. After making suggestions for each other, we agreed to try to have our designs finished by next Tuesday (11-14) so that they can be turned into Esther for printing next Wednesday (11-15). We also made great progress on the arduino code, thanks to Aron’s great code that uses a matrix of 1s and 0s to represent the message, and then tells the LEDs to flash in that pattern. It looks like we’ll all use this sort of template for our individual projects, but change it to add specific messages or other alterations.

* Ben Stutzman

11-15-16 Team Meeting 4

The main objective of this meeting was to finalize the bill of materials. Since we already had a list of the materials we needed, all that was to find them online. We looked at sparkfun’s website for all the materials. Collin will add the motor and transistor after talking to Esther about it. Everyone spent some time on their individual designs or arduino codes. Ben has made a lot of progress on his arduino code. Collin is nearly done his design. We have pushed back the deadline for submission of our designs for 3d printing to Monday, the 21st. We will have a meeting Sunday the 20th at 2:30 pm to go over final designs before Monday.

* Dan Hackman

12-1-16 Team Meeting 5

Team meeting to begin putting together the circuits. This meeting was made difficult by the fact that not everyone had their cases printed. We need the cases in order to solder the LEDs while they are in place so that they are the correct distance apart. Ben made the most progress on his circuit, but nobody finished today. Aron spent a lot of time filing his case today to fix the mistake that the printer made. We scheduled a meeting on Tuesday to continue working on the circuits.

* Aron H

12-6-16 Team Meeting 6 (This past Tuesday when we played Christmas music)

Ben and I were in here for a very long time working on soldering the rest of our wands together. There were a lot of issues this day. Ben had to correct a problem because he broke two of the pins on his chip and had to get a new one. He also accidentally burnt out two of his LED’s and obviously had to replace those. I was working on soldering my battery, switch, voltage regulator, and LED’s. It was very difficult to fit everything into my case but eventually it all worked out. Aron came and worked on his soldering for a little bit. We decided that we should probably meet again on thursday to work on finishing up the project.

* Collin L

12-8-16 Team Meeting 7

We made a lot of progress assembling our wands in this meeting. Ben’s wand is completed and working, after fixing the program to make the words right-side up. We realized that the diagram of the ATtiny84 we were using had the pin numbers backwards, but fortunately not mixed up any more than that, so it wasn’t too hard to fix in Arduino. We’ve had some problems with the pins on the sockets and chips, as Ben broke two pins on his socket earlier this week and Aron broke a pin on his chip today, but Ben found a replacement socket and Aron soldered an LED lead to his pin to make it work. Aron’s wand is now functional as well, he just has to fit everything inside and get the lid on his case. Collin edited the arduino code so it will work for his 10 LEDs instead of 11, and troubleshot with a couple of LEDs that weren’t lighting up. Dan began his soldering process and is already most of the way there. We will all hopefully be ready to explain our finished wands to Esther in class tomorrow, and will be working on the paper (Aron and Ben) and presentation (Collin and Dan) this weekend.

* Ben Stutzman

12-12-16 Team Meeting 8

We met real quick after the ESW meeting to take a few pictures to perfect our powerpoint. We went to the bathroom to take long exposure pictures of Ben’s wand. We also uploaded all of our wand designs to the powerpoint along with pictures of the final product.

* Collin Longenecker