12/8/2023

Spoke with Will (brother)

Explained conceit of project, mentioned I was thinking perhaps weather based inputs. Listed sensors that I could probably use. We both liked the idea of the rain sensor. He mentioned cars whose headlights have windshield wipers - combining the idea of rain (input) and light (output). This pushed my thinking toward some kind of model car to control the lights/outlets. It could have functioning headlights and windshield wipers.

12/11/2023

Spoke with John (friend)

Explained the assignment and what I had come up with so far. He had a couple of ideas. He mentioned motion detection and IR detection. He seemed to be thinking about home security. I'm now thinking of a "smart porch" controller. If it detects rain, the light is turned on. Perhaps a heater is activated? The car's headlights and wipers will turn on as well. If it gets hot enough, the light will turn off and a fan will turn on. Light color or brightness could reflect temperature. A button press could turn it to motion detect mode. When motion is detected, a commotion will occur (flashing lights?). The OLED can display current atmospheric data/mode.

12/12/2023

Spoke with Jeff (step-dad)

We talked about everything outlined so far. He made several suggestions involving tracking and displaying current weather. Much of it would be difficult to accomplish with current time constraints and knowledge, but it gave me an idea for the OLED. I can create bitmaps to display current temperature and precipitation conditions, similar to the weather channel. A sun if it's warm and dry, a winter jacket if it's cold and dry, a rain cloud if it's warm and wet, and a snowflake if it's cold and wet. We also spoke about the timeline and trying to do too much. He suggested to outline a "bare minimum" of what I would like to accomplish while leaving room for more if I have the time.

12/15/2023

Spoke with fellow students and instructors

I now have a solid idea of what I am doing and what sensors to use to accomplish this. My components will include the BME280, primarily for temperature, a photosensor to determine light levels, a rain sensor, a motion sensor to detect motion in “away” mode, an OLED to display data, two servos to operate the windshield wipers, neopixel lights to operate as headlights, buttons for away mode and cycling the OLED display, and of course the Hue lights and Wemo outlets. These will be mounted in various places on the car and the data they collect will affect lights (on/off and brightness based on light levels or presence of rain, flashing if in away mode and motion is detected), a fan to represent AC, and a lava lamp to represent a heater. Instructors pointed me in the right direction to operate the components we haven’t used before. Additionally, I had decided to use the laser printer to cut a wooden “windshield” and engrave it with “Deep Dive.” JP from class suggested I instead use acrylic and light it from below. I will hopefully have time to accomplish this, and also print acrylic covers for the rest of the model car.