

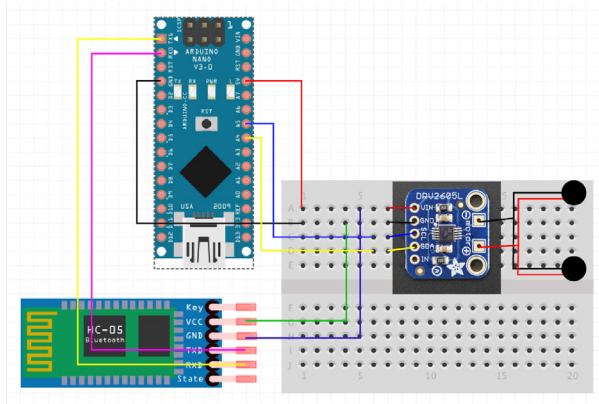
DECEMBER 2019



BLUETOOTH CHIP CHANGE

After 3 trying months of using and attempting to establish a connection with the SparkFun chip, we established that there weren't enough resources for us to achieve the product that we desired using this chip. As a result, we opted to switch out the 3-in-1 chip for 3 separate components. The Arduino nano would replace the Arduino Uno requirements (except it would be of a smaller size), the HC-05 would act as our bluetooth module, and an external battery would serve as our power source. In just a few weeks, the team was able to establish a reliable connection to the HC-05 and proceeded to explore how we could send data in real time (item taking up the bulk of the time). The newly updated materials list is seen below.

Skarfun chip did not have enough resources to follow and would easily burnout, as a result we decided to switch it out for HC-05



Material List:

- Arduino Nano
- HC-05
- Small Sized Breadboard
- Adafruit haptic driver
- 2 vibration motors

3D MODEL CHANGES - EXTERNAL POWER SOURCE

Prototype 9 was created to account for more components that will be held within the back of the neckband. The back of the neckband was increased in size as the amount of chips went from 4 to 6.

Prototype 9

- Printer: Ultimaker
- Materials: Flexible TPU 95 (Thermoplastic polyurethane) and water dissolvable PVA
- Purpose: Iteration on Prototype 4, accounting for user testing response and the need to have the model in pieces for insertion of parts as well as the external use of a battery pack.



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AMALGAMATION OF APPLICATION FUNCTIONALITIES INITIATED

Collecting the navigation + bluetooth + multithreading for Alpha

- Debugging each code base and making sure they are stable enough to show off the functionality for alpha

Arduino code can at this point handle local vibration tests but is still not connected via bluetooth

- The arduino automatically iterates through a set of vibrations that demonstrates the difference between each vibration

3D MODEL SIZE ADJUSTMENT

Prototype 10 consisted of changes made to the 3D model of the neckband; more specifically, in the area of the neckband arms. The team decided to add gooseneck tubing in order to allow the user to place the neckband arms in the desired collar bone area more easily, providing a semi-custom fit.

Prototype 10

- Printer: Ultimaker
- Materials: Flexible TPU 95 (Thermoplastic polyurethane) and water dissolvable PVA
- Purpose: Iteration on Prototype 9, accounting for the need for the neckband arms to be bigger in size and the need to have the model in pieces for insertion of parts.

