**Raspberry Pi to Bluetooth Module(s)**

The first Bluetooth master module connects to these pins: 2 GPIO(key and state), VCC(3.3V for this), TX, & RX. We need female to female jumper dupont wire cables to be able to connect them together.

The second Bluetooth master module connects to these pins: 2 GPIO(key and state), VCC(3.3V for this), TX, & RX. Since some pins only have 1, we will need to use a USB to TTL to be able to connect the 4 that aren’t the GPIO pins. The two GPIO pins just get connected the same way as above.

From what I gather, there isn’t a way to connect multiple slave bluetooth modules to 1 single master module which is why we need 2 of each.

**Rotary Encoder to Arduino**

The order of the pins is different on the arduino and encoder so we need male to female jumper dupont wire cables to connect them together. The VCC (5V), GND, 4 GPIO pins (U, I, A, and B) are what need to be connected between the two.

**Bluetooth Module to Arduino**

The bluetooth slave module connects to the same pins as on the pi: 2 GPIO(key and state), VCC(3.3V for this), TX, & RX. For the same reason as the encoder, we need the male to female jumper dupont wire cables to connect them together since the order is different.

There will be two wheels each with the encoder, arduino, and bluetooth module on them so it's the same for both wheels

**Materials I think we’d need besides the encoders**

[HC-05 Bluetooth module (4)](https://www.amazon.com/DSD-TECH-HC-05-Pass-through-Communication/dp/B01G9KSAF6/ref=sr_1_3?keywords=hc-05&s=electronics&sr=1-3)

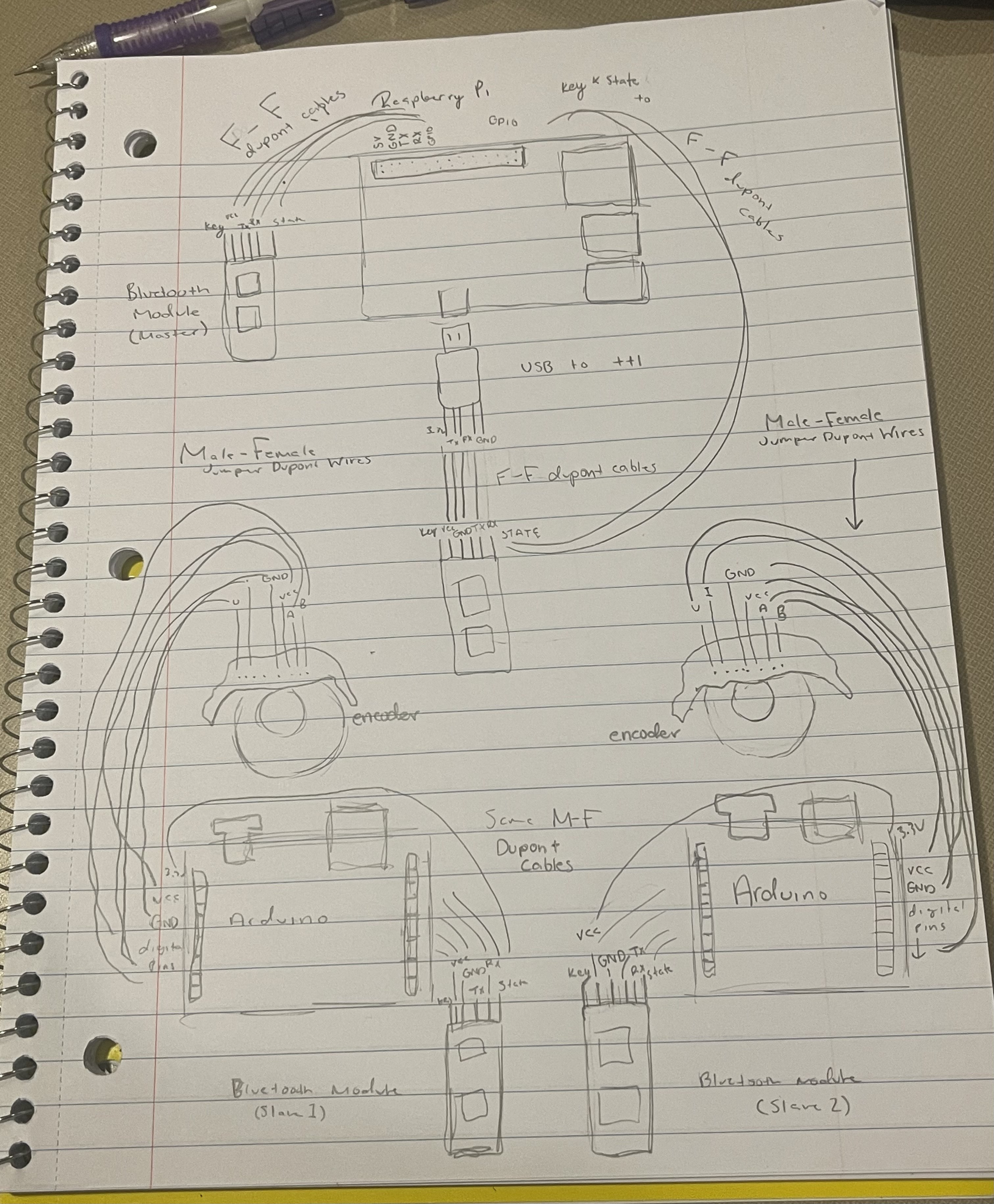
[USB to TTL Adapter (1)](https://www.amazon.com/HiLetgo-CP2102-Converter-Adapter-Downloader/dp/B00LODGRV8/ref=sr_1_1_sspa?keywords=usb+to+ttl&s=electronics&sr=1-1-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&psc=1)

Arduinos(or raspberry pi’s both would work) (2)

[Female - Female Jumper dupont wire cables (8 individual ones but they sell packs)](https://www.amazon.com/dp/B077N58HFK/ref=twister_B0788M1LZB?_encoding=UTF8&psc=1)

[Male - Female Jumper dupont wire cables (24 individual ones but they sell packs)](https://www.amazon.com/GenBasic-Solderless-Dupont-Compatible-Breadboard-Prototyping/dp/B077N643L7/ref=sr_1_13?keywords=female%2Bto%2Bfemale%2Bdupont%2Bcables&s=electronics&sr=1-13&th=1)

**Drawing of how this would be setup**

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