Bluetooth Setup

In this portion of the workbook we will be setting up our Bluetooth dongle. This will allow the Arduino to communicate wirelessly with the Raspberry Pi.

\*Fill in the missing information for later use\*

1. Gather Materials
   1. Arduino
   2. Raspberry Pi
   3. Bluetooth dongle
   4. Breadboard
   5. Jumper wires (x 3)
2. Connect the Bluetooth dongle to the Arduino
   1. Plug your Bluetooth dongle into a single column of holes on the breadboard. This means if the power is plugged into e6, ground is plugged into e7 and so on.

*Note: GND means Ground, Vcc means Power, TXD transmits information, RXD receives information.*

* 1. Connect a jumper wire from the (+) column to the hole adjacent to the dongle’s power pin.
  2. Connect a jumper wire from the (-) column to the hole adjacent to the dongle’s ground pin.
  3. Connect a jumper wire from digital pin 0 on the Arduino (Rx) to the hole adjacent to the dongle’s TXD pin.
  4. Connect a jumper wire from digital pin 1 on the Arduino (Tx) to the hole adjacent to the dongle’s RXD pin.
  5. Ask an instructor to double check you have it setup correctly.
  6. Plug your batter pack into your Arduino

*Note: Double check you have the power connected to power and ground to ground. Otherwise, you might break your parts.*

1. Connecting your Raspberry Pi to the Bluetooth Dongle.
   1. Open a command line terminal on your Raspberry Pi.
   2. To enable Bluetooth, enter:
      1. sudo systemctl enable bluetooth
   3. To start Bluetooth:
      1. sudo systemctl start bluetooth
   4. To create the channel, we will communicate with the Arduino on:
      1. sdptool add –channel=1 SP
   5. To find our specific Bluetooth dongle:
      1. sudo hcitool scan
      2. write down MAC address XX:XX:XX:XX:XX:XX where X’s are numbers
   6. Click the Bluetooth symbol in the top menu bar
      1. Click “Add Device” and add yours

Note: Password is 1234

* + 1. Pair with your device
  1. To open our program to make our dongle trusted:
     1. sudo bluetoothctl
     2. trust XX:XX:XX:XX:XX:XX
     3. exit
  2. Finally, connect to your dongle:
     1. sudo rfcomm connect 0 XX:XX:XX:XX:XX:XX

bluetooth schematic

Your finished product should look something like this. The color of your Bluetooth dongle will most likely be different. Don’t worry, it will work the same.

