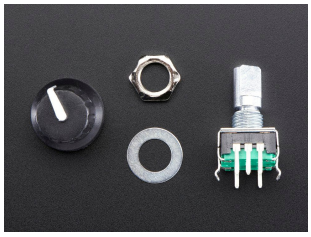
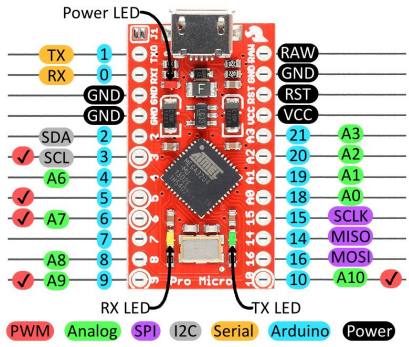
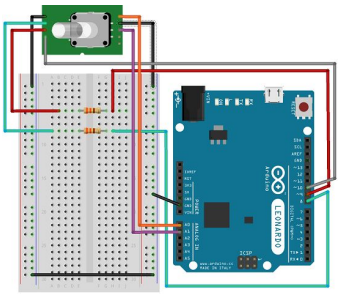
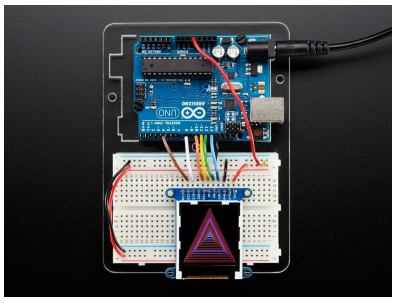
- **03-FunctionProposal.pdf**
- **Graham Widmann**
    - Hardware
        - Inputs
            - Push buttons
                - Used to activate different tools within photoshop and and switching between functions
                - https://www.arduino.cc/en/Tutorial/Button
                - What they do - Buttons will be programmable or set.
                    - Back - button to go back to the previous screen
                    - Brush - tool in photoshop
                    - Pen - tool in photoshop often used
                    - Selection tool - always used
                    - Move tool - never not used
            - Rotary encoder
                - Used to adjust hardness and sizes for brushes and +
                - http://howtomechatronics.com/tutorials/arduino/rotary-encoder-works-use-arduino/
                - https://www.adafruit.com/product/377?gclid=EAIaIQobChMIib3I8rSB2QIVEbnACh36IA-mEAYYASABEgJup_D_BwE
                - 
            - Linear SoftPot (Ribbon Sensor)
                - Used to select tools or change colors rapidly
                - https://www.adafruit.com/product/178
        - Processing
            - Arduino Pro Micro
                - Easily programmable to a keyboard for the push buttons
                - Has enough ports to hook up screen, push buttons, and rotary encoder, (Ribbon sensor is possible but 100% going to be in use)
                - https://www.sparkfun.com/tutorials/337

- 

- 
- Outputs
  - Adafruit 1.44" Color TFT LCD Display with MicroSD Card breakout - ST7735R [ADA2088]
    - This will show the user what tool is being used along with color and size/ hardness value.
    - Reason:
      - This screen is small enough to fit the form factor that I am attempting to build. It will also allow me to show what tool is being used at the moment and will allow the user to see what color is being painted using the color screen. Default will be white on a black screen.
    - https://www.amazon.com/gp/product/B00SK6932C/ref=oh_aui_detailpage_o04_s01?ie=UTF8&psc=1
    - https://www.adafruit.com/product/2088
    - https://learn.adafruit.com/adafruit-1-44-color-tft-with-micro-sd-socket
    - 

        - Neopixel Strand
            - Will provide lights and illumination for the device.
            - https://www.adafruit.com/product/1138
    - Power
        - Not needed because this will be plugged into a computer for communication. All power will be pulled from here.

- Software
    - HID software
        - This will allow my keys that I program to communicate as shortcuts in photoshop, InDesign, and Illustrator.
            - These keys will act just like a keyboard and will make my programming easy since there are shortcuts to many of the tools I look to control.
        - https://www.sparkfun.com/tutorials/337
    - Serial Communication
        - This should allow me to communicate with the computer and determine whether it is plugged into a mac or a pc.
        - https://www.arduino.cc/reference/en/language/functions/communication/serial/
    - Arduino IDE
        - Programming language so I can communicate to the Arduino.
        - https://www.arduino.cc/en/Main/Software
    - Adafruit gfx
        - Will allow me to talk to the screen from the arduino.
        - https://learn.adafruit.com/adafruit-gfx-graphics-library/overview
    - Strandtest Neopixel
        - Helps with coding Neopixels.
        - https://learn.adafruit.com/neopixel-painter/test-neopixel-strip