- **03-FunctionProposal.pdf**
    - Hardware - Create a comprehensive list of the hardware your device will require to function.
        - Inputs - List the hardware inputs will the user interact with. You must include at least on non-push button/switch sensor.
            - CHENBO(TM)Digital Load Cell Weight Sensor 20KG
                - This is the actual device used to measure the weight of the fish caught. I plan to mount it into the plastic portion of the device and use a rod and hook to hold the fish on.
                - https://www.amazon.com/dp/B076P8G8B6/ref=asc_df_B076P8G8B65351989/?tag=hyprod-20&creative=395033&creativeASIN=B076P8G8B6&linkCode=df0&hvadid=228860412633&hvpos=1o4&hvnetw=g&hvrand=9174702882583663 26&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9010853&hvtargid=pla-391309017493
                - https://morf.lv/strain-gauge-based-weight-sensor-load-cell
        - Processing - Describe the processing platform will your device use. This should be the least expensive/complicated platform possible. You are limited to the following processors: ATTiny85, Arduino Pro Mini/Micro, Teensy 3.2, Adafruit Huzzah, or Raspberry Pi Zero W (requires approval)
            - Arduino Pro mini 5V
                - The advantage of this processor is that it has a voltage regulator built into it, so I won't have to worry about that. Also, the sensor that I am getting requires 5V of power and this processor will allow 5V and 3.3V power unlike some of the others. The screen I am using only requires 3.3V so I'll have a port for each.
                    - The sensor I am using uses the analog inputs and needs 5V. The teensy for instance only supplies 3.3V to each analog port which won't work for me.
                - However, it does require an external source in order to program and change the code which is one more thing that will have to go onto it.
                - https://www.amazon.com/Arduino-Pro-Mini-5V/dp/B00VKIGF4G/ref=sr_1_5?s=electronics&ie=UTF8&qid=1517190697&sr=1-5&keywords=arduino+pro+mini
                - https://github.com/sparkfun/Arduino_Pro_Mini_328
                - https://learn.sparkfun.com/tutorials/using-the-arduino-pro-mini-33v
        - Outputs - What outputs will your device use communicate with the user? You must include a graphical screen and are limited to the following options (1, 2, 3, 4, 5)
            - Adafruit 1.44" Color TFT LCD Display with MicroSD Card breakout - ST7735R [ADA2088]
                - This screen will display the information on each lake regarding limits and such so that the fisherman can know what the regulations are. It will also display the weights of each fish put onto the scale.
                - https://www.amazon.com/gp/product/B00SK6932C/ref=oh_aui_detailpage_o04_s01?ie=UTF8&psc=1

        - https://learn.adafruit.com/adafruit-1-44-color-tft-with-micro-sd-socket/drawing-bitmaps
        - https://learn.adafruit.com/adafruit-1-44-color-tft-with-micro-sd-socket/downloads

- Power - Explain the hardware necessary to power your device. Devices must be powered via LiPo batteries, and should be rechargeable and monitor for low power conditions.
    - PowerBoost 500 Charger – Rechargeable 5V Lipo USB Boost @ 500mA+
        - Boosts battery power from 3.7V in Lipo battery to 5V for use on programming board and fits well with the battery that I have picked out as they are made from the same manufacturer
        - https://www.adafruit.com/product/1944
            - 2 good videos on this link as well
    - **TP5410 - LiPo Charger/Boost Converter**
        - Purchase Source: https://www.ebay.com/itm/191990401129
        - Documentation: https://www.youtube.com/watch?v=aND0j2Y2IkM
    - Lithium Ion Battery - 1Ah
        - To be honest I don't really know how much power this will give, but I think this in about the max that I will need. In the link I provided, there are many more (smaller) batteries with the same connection points that will fit well with what I've picked out.
        - https://www.sparkfun.com/categories/54?page=all

- Software
    - Create a comprehensive list of software that you will use to develop your hardware. Include any libraries, drivers, etc. not listed in hardware.
        - Fusion 360
            - Create case and layout parts
        - Arduino
            - To write all code and put in libraries