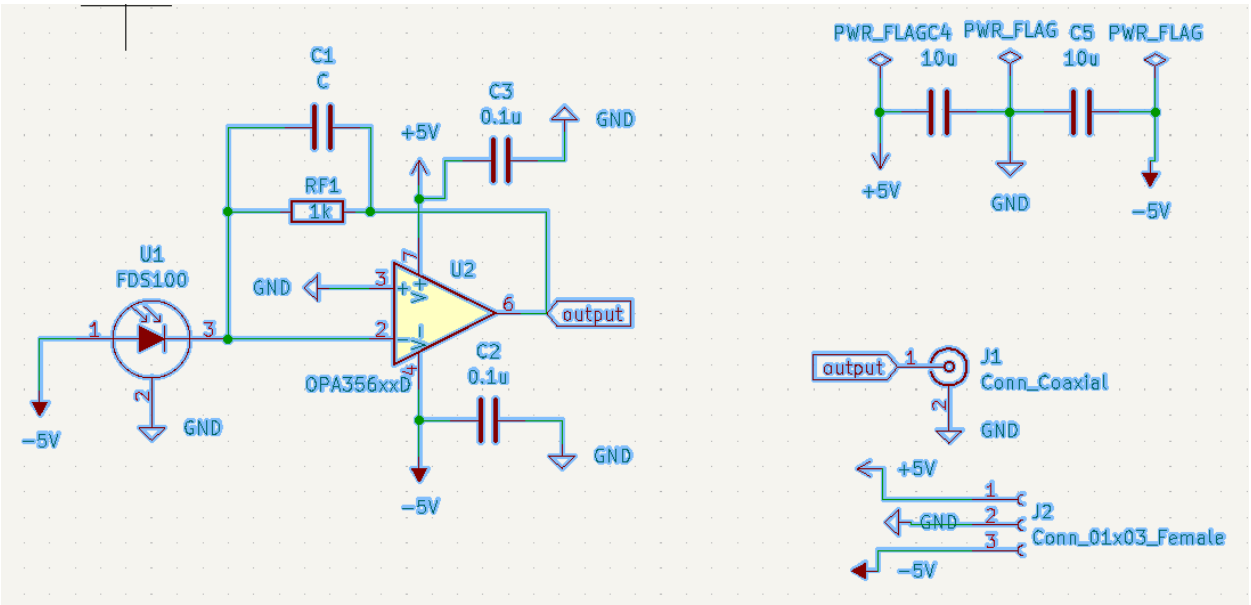
1/12/2023

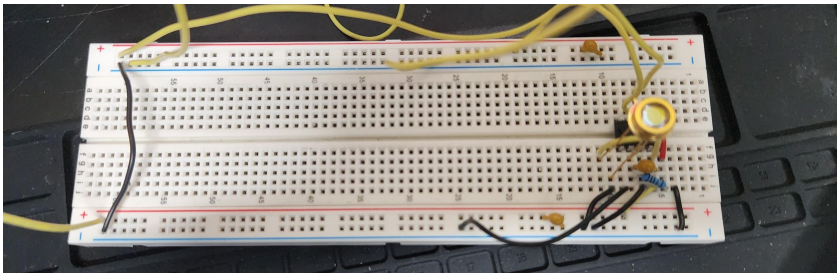
During today's lab session, I had two primary objectives:

1. Test and measure the circuit output in the oscilloscope
2. Edit the PCB design to filter out AC fluctuations at the input (using a capacitor)

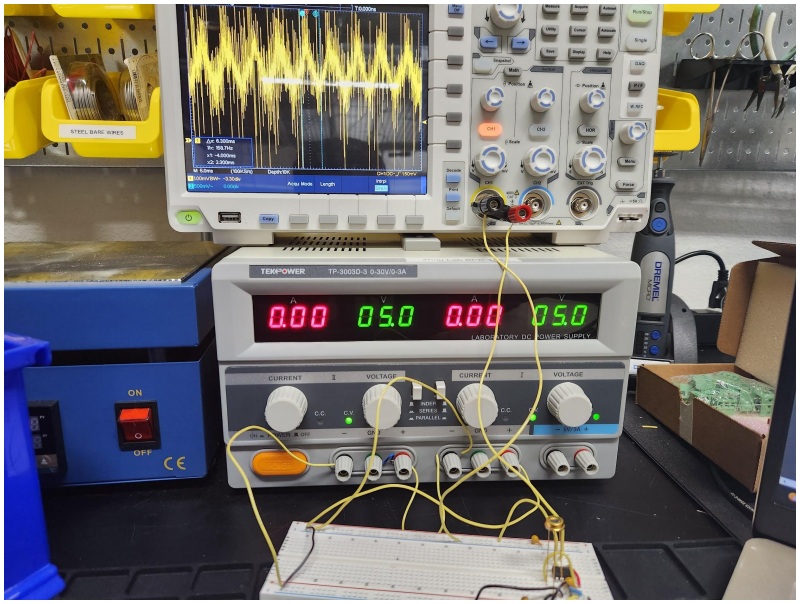
For the first objective to be completed, I followed the circuit schematic that was designed by Dr. Yan Zhou, which is pictured below:

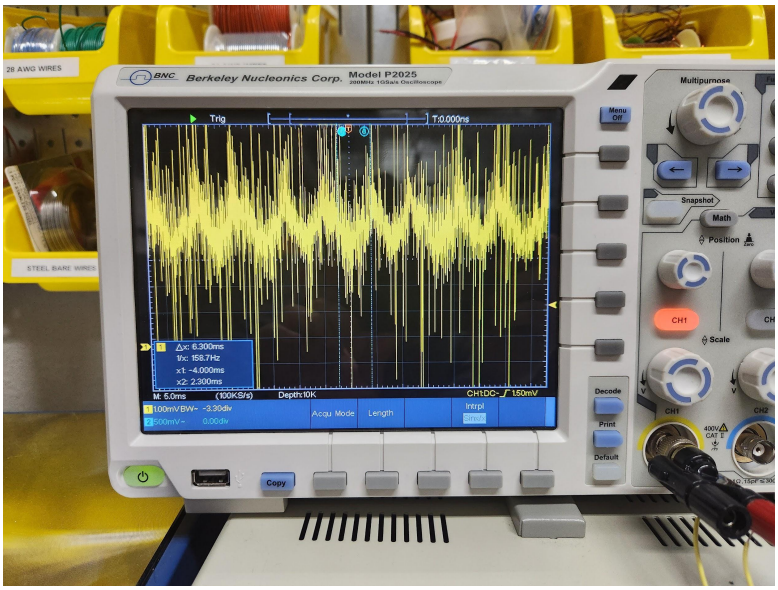


This time, we added a capacitor at the input signal (C1). We wanted this addition to allow for faster signal processing at extremely high frequencies. At this point, I copied the schematic on a breadboard with an LF356N amplifier and a photodiode. The circuit is picture below:

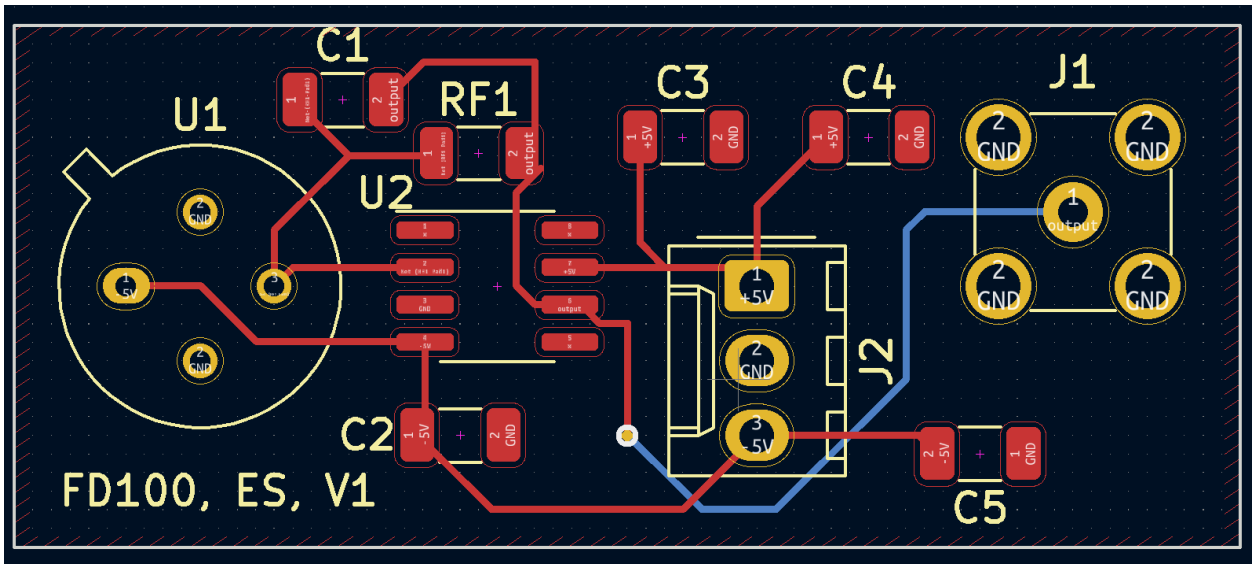


For various reasons, the signal was much noisier, including the fact that the oscilloscope was not grounded and that the photodiode could be receiving other signals aside from the light in the room. The signal is provided below (with a +-5V bias voltage):





From this point, we added the capacitor (C1) into the PCB board. The resulting board was slightly modified to yield the following result:



Our next step is to upload the notes/upload all the designs to github, update my schedule for next week, and waiting for Dr. Zhou to verify/publish the PCB for printing.