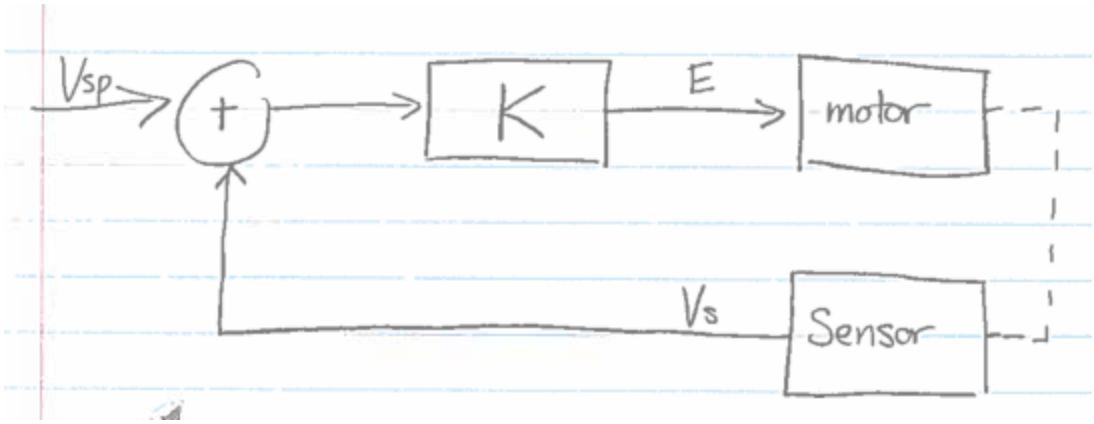
Light tracking motor using flywheel technology

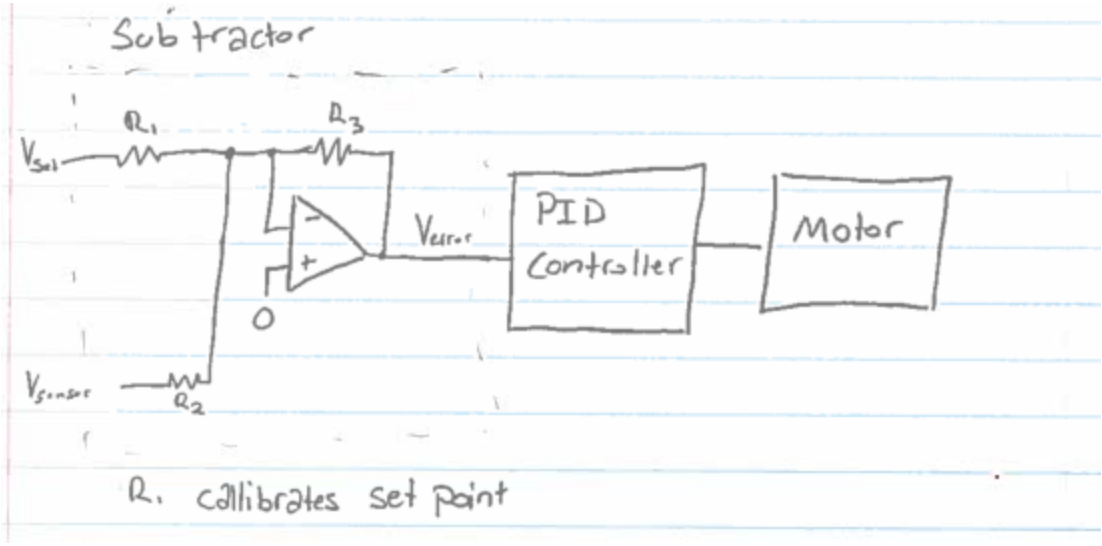
For Lindsey and Jiaying's Signals and Systems final project, we will be creating a motor & flywheel assembly hanging off of a string that will track a location of a light. We will framing this as a controls problem using analogue components (circuits). We will be collecting measurements at various system points in order to illustrate the system response to our controller. We will then explain these in a blog post along with a video of our motor & flywheel tracking a light source.

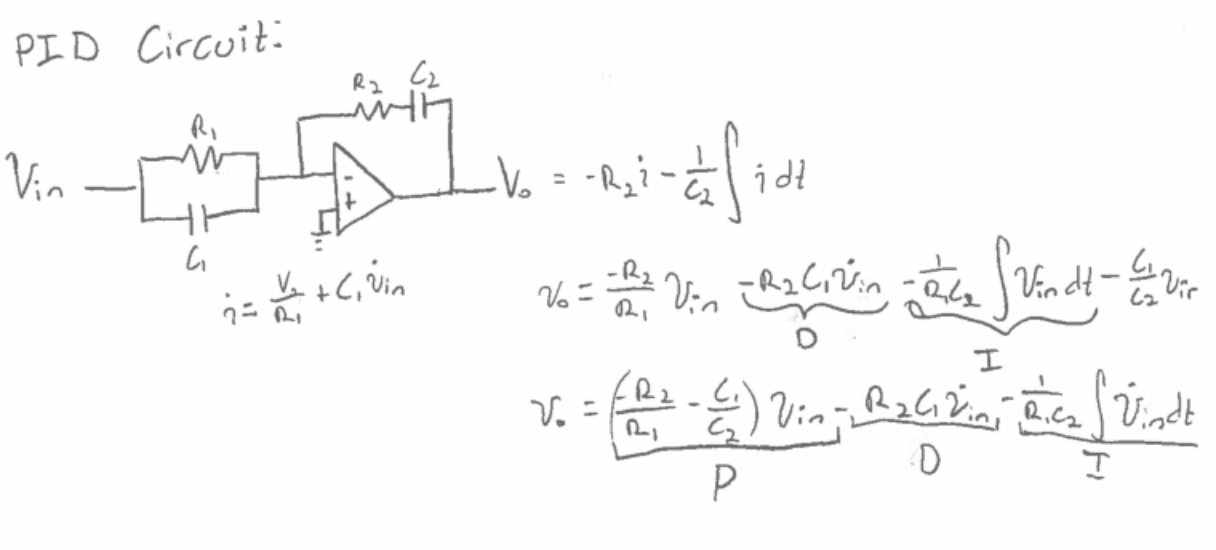
The main components are:

- The control system diagram shown :



- Circuit diagram :





- Video of the project

Data collection:

We will be collecting the voltage of the photoresistor and our set point over time in these following cases:

- Only proportional control
- Only integral control
- Only derivative control
- Combination of the three

After experimentally tweaking PID K values individually, getting a sense of how the system works, and analysing those results. We'll use our knowledge to come up with appropriate K values for Kp, Ki, and Kd and create what we believe to be the best PID controller using the combination of the three.

The analysis and write up will present our data and our analysis of the system based on what we've learned on SigSys. And pictures.