Work Completed

The main goal for this week was to complete the track system and have it ready for attachment and testing of the motors. Therefore, the machine shop was the location for most of the work completed for this week. The main focus of design was the attachment of the fabricated screw actuator to the completed screw actuator’s carriage. This was to be done using aluminum stock found in the scrap area of the machine shop. The designs for the pieces required were drawn up in my lab notebook and are recreated below:
After the designs were drawn up and after discussion with Rich and Serge, the pieces were machined from aluminum stock found in the scrap area of the shop. The pieces are pictured below:
Above, the piece is fitted into the carriage of the completed screw actuator using the already provided bolts that were part of the screw actuator that was provided from the senior design stockroom. The next piece that will be fabricated is the holder for the motor that will attach to the other side of the actuator carriage shown above. The design for the holder is seen in the pictures in the beginning of the report.

After painting the track ball blue to hopefully diminish the glare produced, we concluded that the track ball responded similar to when it was not painted. Therefore, using yellow paint, we provided a color contrast that would allow for the optical mouse to track the movement of the ball. After testing the track ball, the contrasting was successful. The track ball moved perfectly with the optical mouse. After applying many coats of clear protective coating to protect and allow for a smoother rolling in the internal structure. However, the mouse speed setting on the computer must be set to slow speed because the optical mouse responds so well and quickly to the track ball movement, that at higher speeds, it is difficult to control the cursor. Below is the painted track ball.
Project Review

Progress for the seventh week was tremendous for the track system. The designs were drawn for the pieces that needed to be fabricated. Also, most of the pieces were fabricated to allow for the track to be put together. Only minor adjustments remain for the other two projects as well as minor adjustments for the track system. This week will be mainly focused on putting together the track system, testing it with the motors, and programming the microchip.

Hours Worked

Week #7 Total Hours: 14 hours