Final Screenshots
Note: Radii values to filleted edges will differ slightly from hand sketch values.
Note: Dimensions relative to filleted edges will differ slightly from hand sketch values.
Post Assignment Analysis

Changes from Peer Review of Drawing

After James looked over my drawing he found a few errors that I had missed. He noticed that one of my dimensions was cut off, I did not have the part number filled in, one more orthographic view was necessary, and one of my perimeter holes was not shown as extruded on the drawing. I was able to go back to the lab and easily correct all of these mistakes. I reviewed his drawing in return and noticed that his hole callouts were not completely accurate. He was missing a few dimensions on the smaller hole on top and the depth of his large top hole was too deep. The rest of his drawing was completed nicely.

Lessons and Discoveries Learned

There were two main lessons I learned from this process. The first is that a good hand sketch will save a lot of time going back to the lab or machine shop to get key dimensions. The first sketch I created was disproportional and missing dimensions so I ended up redoing the sketch and wasting a few hours in the process. I developed a logical process for creating my part, but lacked a few dimensions to complete a certain action so I was forced to save my part and return to the lab after finding the necessary dimension. The second lesson was how important the timing is when using the shell feature. I tried to use the shell feature at the end of my design tree and it ran into all sorts of problems. With the help of Brittany I was able to identify the geometries that were preventing the shelling process and by adding a few lines to my first sketch I shelled my part just before adding the slanted hole. I will definitely keep this in mind for any feature projects. The only big discovery I had on the project was how to define an angled plane. It was tricky at first, but I stumbled upon an easy way to define the direction of the planes.