Violin
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This is a view of the whole violin.

This is a view of the peg box of the violin, with the pegs and the upper part of the finger board.

This is one of the violin pegs.

This is the peg box of the violin.

This is a view from above of the whole violin.

This is a side view of the whole violin.
I picked to make this object in Solidworks because I am a violinist; I thought that it would be the most suitable object for me to make, and I was right. I really enjoyed making this violin in Solidworks. Considering that I enjoy playing the violin so much that I decided to make it my minor, I believe that it was a very good idea for me to make a violin in Solidworks. I have been playing the violin since I was roughly 5 years old, and I have enjoyed every moment that I have been playing the instrument. This is why I decided to make a violin for this project.

For this project, the only thing that I really used to guide me in the process of making the violin was my own violin. I used the extrude feature to make the base of the violin out of the general outline of it. Then, I made curved lines using the spline feature across the top of one side of the base. Then, made a plane on top of the base and used the convert entities feature to get the shape of the violin onto that plane. Then, I extruded down to the face of the violin. After this, using the curved lines, I extrude-cut up to get rid of the excess, and there was the curved surface of the violin. Then, I mirrored this curved surface onto the opposite side of the violin.

I used the loft feature to make both parts of the neck. I made rectangle-like shapes (some curved sides since it is the neck of the violin), and then I made some smaller rectangle-like shapes in a plane somewhat farther up, and then I lofted between these two shapes, leading to the neck of the violin being created. I also used a lot of fillets all over the violin. For example, I used them a lot on the peg box of the violin to make the edges smooth. I also used them on the ends of the pegs to make them smooth as well, along with all over the body of the violin to avoid any sharp edges.

Another feature that I used was mates when making the assembly. I mated the pegs with the holes in the peg box for the pegs using the Coincident mate. I also used the lock mate to lock the String Holder, Chin Rest and the Bridge in place along the body of the violin.

The hardest part of this model to complete was the body of the violin. Creating the curved surfaces on the front and back of the body was very complicated. I had to use a very (seemingly to me at least) non-conventional way of making curved surfaces. As far as I can see, I learned all of the features that I used in the making of this violin in class. I didn’t learn any new features in the process. From the Solidworks portion of this class, aside from actually learning how to use Solidworks, I learned that if you can think of something, you can probably make it in Solidworks if you put yourself to it, you may just have to come up with some unconventional ways of making certain parts that cannot be made by regular means.