Acoustic Guitar

Liam Carr
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Prof. Ritter
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I chose to make a guitar because playing guitar is a passion of mine. I also figured that it would be a challenge to make a guitar in Solidworks because the general shape is not one that I have made in Solidworks before and there are many parts that go into the final assembly. The final project assembly consisted of six string parts, a body (with the bridge), a neck (with frets), and the guitar head (with all the tuning appliances), for a total of nine parts. These parts all together required that I use sketching (to get the general design of each part), extruded bases (to create the strings, body, neck, and head of the guitar), extruded cuts (to make the hole in the body and the holes in the tuning pins), shelling (to make sure that the body of the guitar was hollow), mirroring (to make sure that the head and body are proportional), patterning (to make sure that the frets and tuning pins are spaced properly), and mating (to make sure that everything in the assembly would stay in place and the shape would not be altered).

The hardest part for this model was getting the strings put in the assembly properly. The strings were very easy to make, but since I made each one a separate part it was challenging to get them all lined up and get the same spacing between each of them. That wasn’t even the hardest part when it came to putting them in the assembly. It was really easy to make the strings go across the neck, but what was hard was when I had to make the strings go across the head of the guitar. I ended up having to make my final assembly a part to do this, and then pack and go the original assembly, which is why the parts submitted will not have the strings across the head. However, I was able to render the final assembly as a part, which is why the pictures in the write-up have strings across the head of the guitar head.

This portion of the class taught me how to develop CAD models, which is a very important skill to have when working in the engineering field. The Solidworks portion of this class has prepared me for the field that I am going to be working in and made me think differently about the various designing aspects of things like this.