When I was a child, I dreamed to have a fantasy skateboard as my birthday gift. That’s why, I decided to create a skateboard by using SolidWorks as my final personal project for this Engineering design class. I design to create a regular skateboard deck with the long road wheel. In this way, this skateboard not only can using as daily transportation on the road, but also can using for skateboard skill competition.
I used a lot of features of SolidWorks to create different parts of skateboard. For example, I used Spline, Dynamic Mirror, and Extruded Boss/Base to create a baseplate of skateboard. And then I used Hole Wizard Property Manager and add new plane to model to create pin hole and pivot cup hole on the baseplate. Moreover, I use Fillet Edges to fix each edge of baseplate. For deck part, I used Smart Dimension, Dynamic Mirror, creating three planes to make the arc of deck. And then use the Loft Surface, Trim surface and Thicken to finish the major body of deck. Hanger is one of the most important part of skateboard. Basically, I creates two plane, and use the Loft Boss/Base to do the major part of hanger. After that, I creates an ellipse in other plane for Lofted Cut, and use the Extruded Cut to create an axis hole. The last part of my design is long board wheel, and this wheel can help the skateboard to achieve the maximum speed on the some roughly road during traffic. I use Revolve, Cir Pattern and Boss Extrude to create a pattern of
hub of wheel. After that I used Dynamic Mirror and Sketch to create tire of wheel. Finally, I use Mate tool and Smart Fasteners to assemble all 12 parts of my skateboard.

The hardest part of this project is hanger and baseplate, which need several different plane and lots of skill and tools to complete it.

More than that, I learn from SolidWorks portion of class that we have to be patience when we deal with the very complex stuff. Also, the creation of new stuff also is the most important foe the professional engineer. We need to be carefully for every step of our design and the prototype.
Reference
