Deciding upon an object to recreate in Solidworks took a great deal deliberation before I finally settled on a Schrader valve. Cycling is something that I personally have a great deal of interest in and I’ve found that the Schrader valve is an extremely underappreciated device that is an integral part in moving anything with one to eighteen wheels. It constantly holds a steady pressure within the tire and allow it to easily be filled or deflated with the push of the center pin. I decided to create the valve to help the general population understand the complexity of something that we take for granted every day.

Before creating the valve I first had to find blueprints or in the least the basic dimensions for the most common type of Schrader valve. I was surprised to find little to no data on the topic and had to scavenge over one and a half class periods in order to gather all the necessary information to create it. After making the basic dimensions of each part I had the task of threading the external shell. In order to do this I had to learn how to use the swept cut tool and had to watch many different tutorials before I could grasp the concept of how to create threads.

The Schrader valve is a commercially available product, but it is so often overlooked that information was difficult to come by, so many of the dimensions were created by viewing a photo and scaling the model by eye.
By creating this project I learned several new techniques, but most importantly I learned how to use my time effectively. I quickly found that there are many ways to crate features, but some are much more time efficient than others. It was evident that putting some thought into how the part would be made would save time overall when compared to creating the part with no preparation.

-Picture of full assembly with innertube
More angles of complete assembly

Outer housing that contains the valve
Inner housing (on left) that is placed within the outer housing and rests where the eighteen degree angles coincide.

Pin (on right) is located within the inner housing and is pressed to allow air to flow into and out of the innertube.