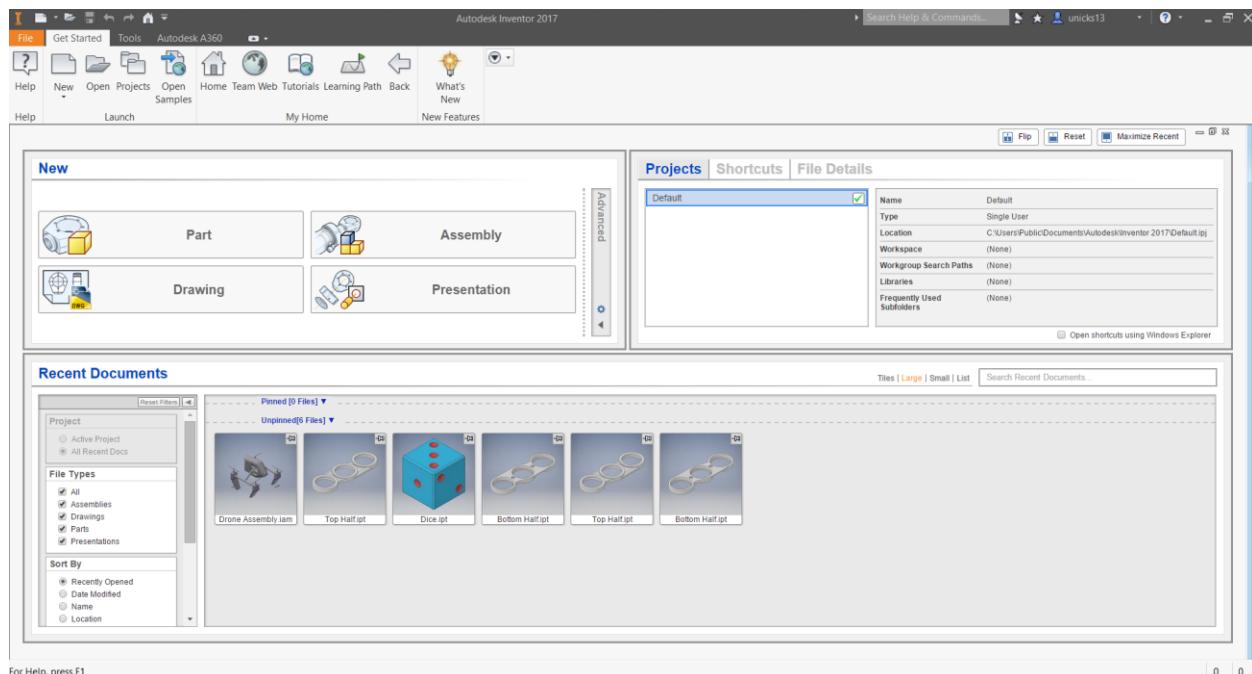


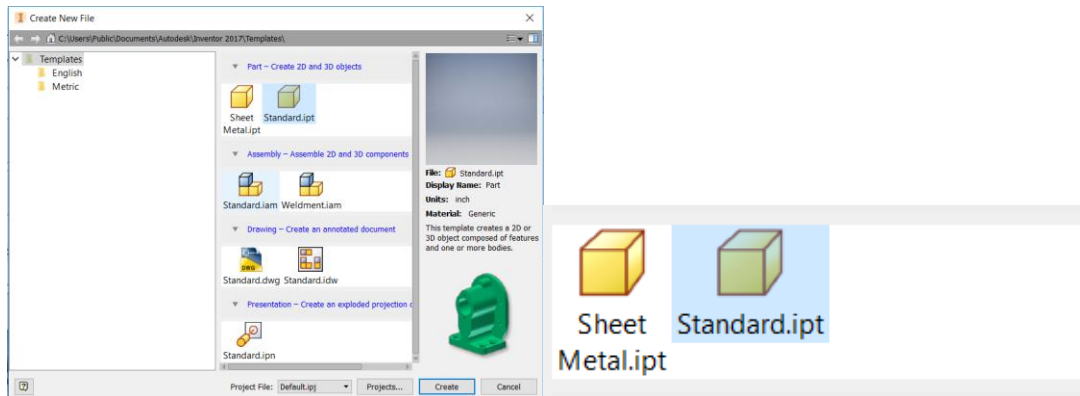
3D Modeling Tutorial: Introduction to Inventor

Inventor is a tool that can be used to create shapes and objects that are mainly used in industry. (Ex. Machines, tools, and components of machines) Although these are the type of structures mainly made in Inventor, more complex and unnatural shapes such as animals, faces, and bushes are possible to make if one uses the appropriate tools in the program. In this tutorial, we will be starting with the most basic of tools and hopefully give you a good idea of what the program is like.

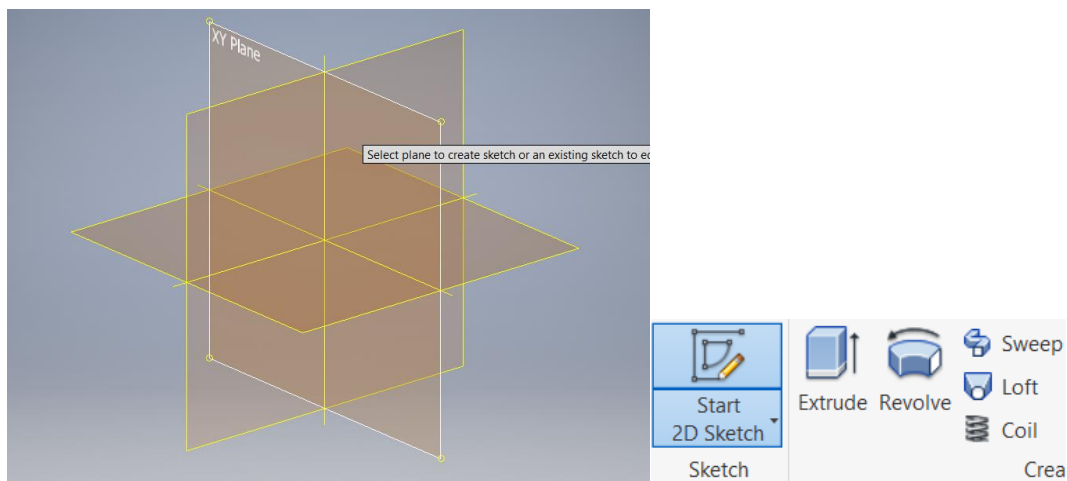
Open Autodesk Inventor (version year) by clicking on its icon in the start menu. If it is not in the start menu, go to (All apps->Autodesk->Autodesk Inventor). Once the program is open, the Inventor Tab should look something like this.



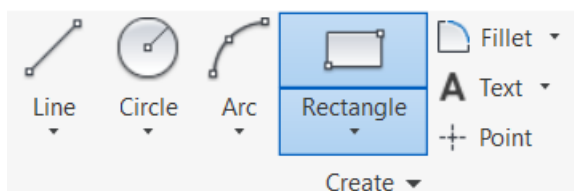
To open a new file, click on “New” in the top left side of the tab and open a new file as a “Standard.ipt” file.



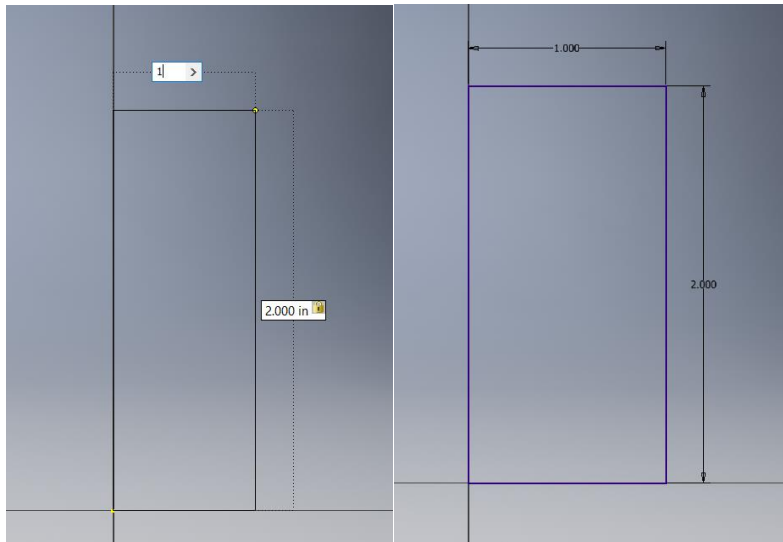
Every 3-dimensional object in Inventor starts off as a 2-dimensional drawing. This can be done by selecting “Start 2D Sketch in the top left of the Inventor Tab and clicking on any of the planes that appear on screen.



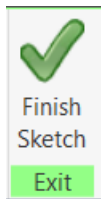
Now that we are in a 2D sketch, we can start off by creating a simple rectangle shape. To do this, select the “Rectangle” tool in the “Create” tab.



The rectangle can be physically placed by clicking and dragging the rectangle, or if you want a precise value, you can type what you want the measurements to be by clicking on the dimensions and typing the values you desire.



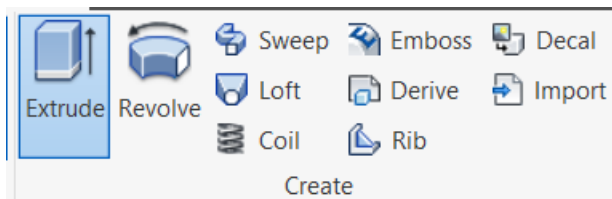
To finish the sketch, click the big green checkmark on the “Exit” tab to exit sketch mode.



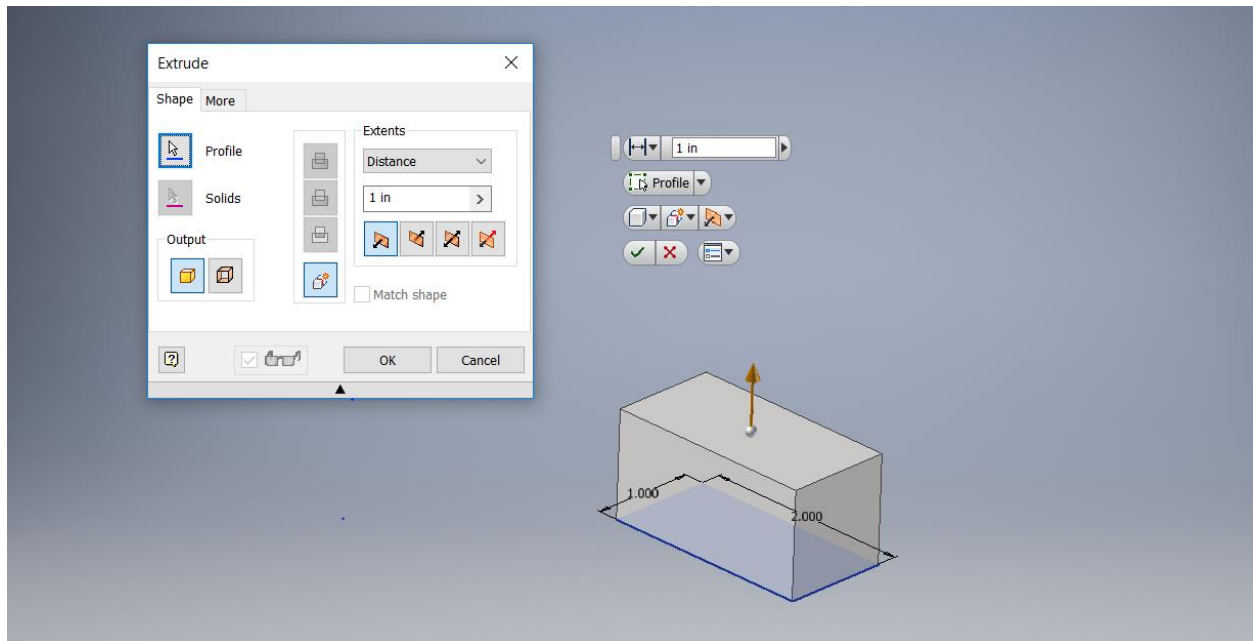
Now that the 2D sketch is finished, different uses of this sketch with different tools in Inventor will be shown below.

Extrude:

This tool is used to “pull” a 2D sketch in the axis that was not yet used in the sketch, as it is only a 2-dimensional sketch. This tool is located under the “create” tab.

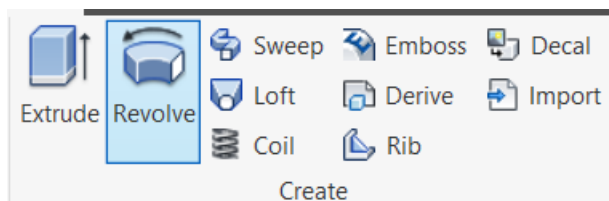


The amount of extrusion can be entered in as a number, or purely based on ones interpretation of how much it needs to be extruded.

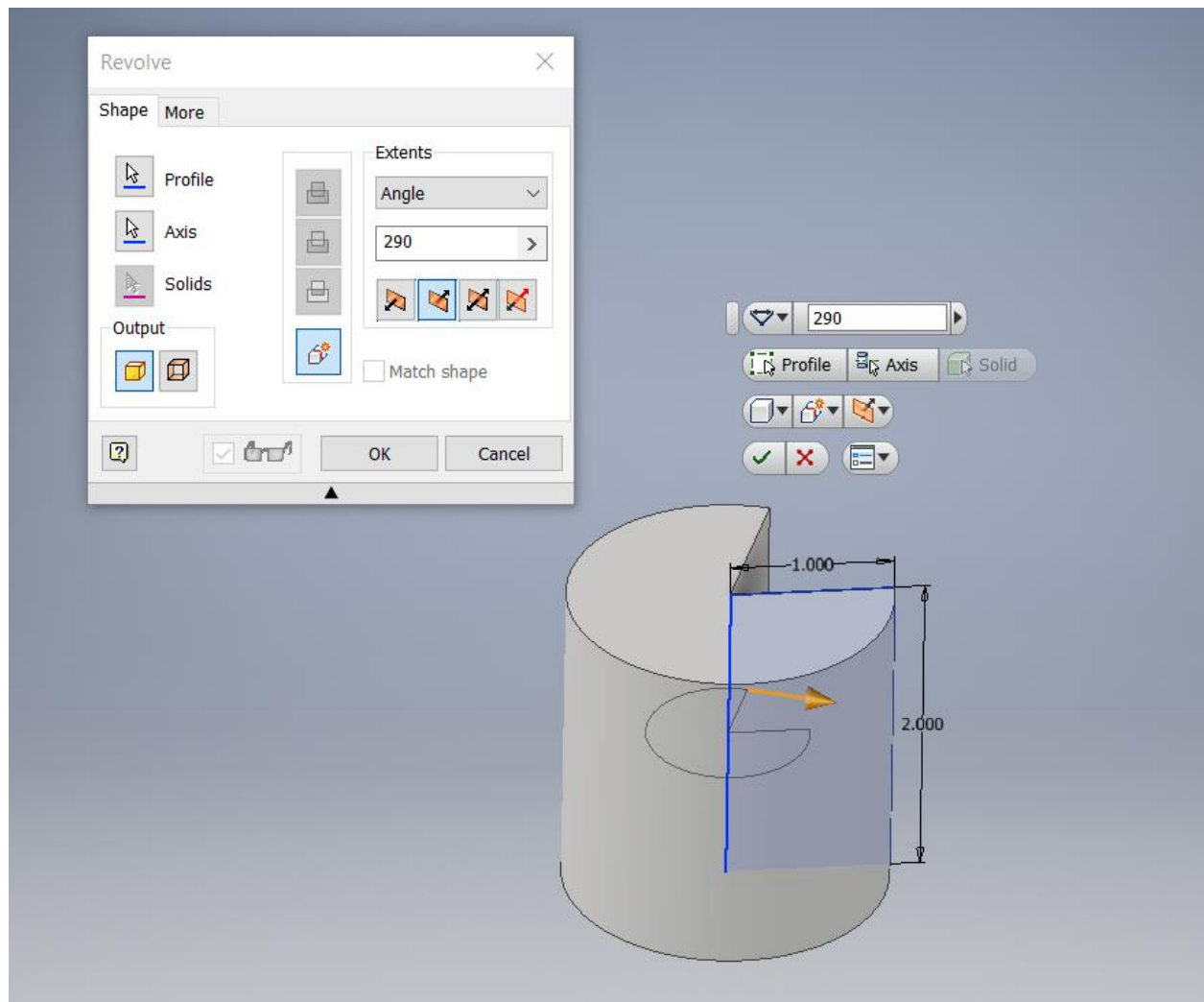


Revolve:

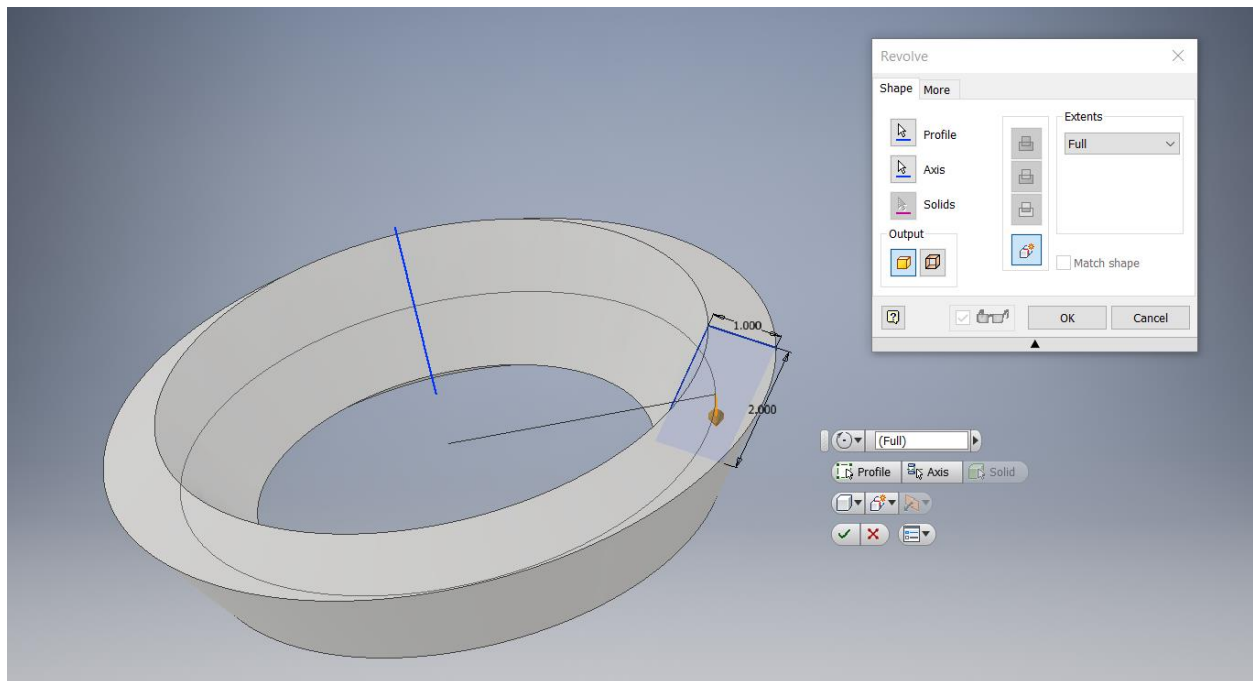
The revolve tool is used to revolve a 2-dimensional sketch around a 1-dimensional axis. It is found under the same tab as the Extrude Tool.



Select the Object as the “Profile” in the window that appears, and select the axis that you want it to rotate around as the “Axis” in the Revolve window. The angle that is revolve is automatically 360 degrees, but this can be modified too.

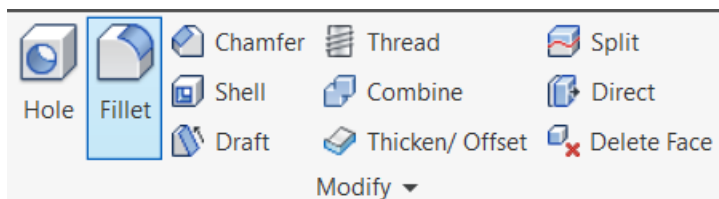


Note that the axis does not have to be a part of the 2D sketch you want to revolve. An example is shown below.

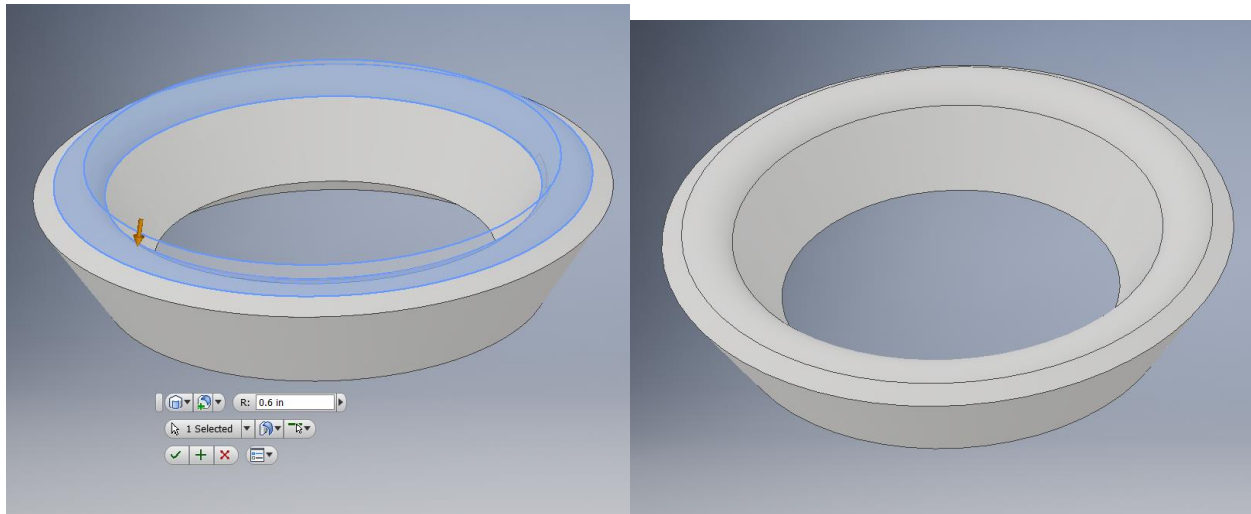


Fillet/Chamfer:

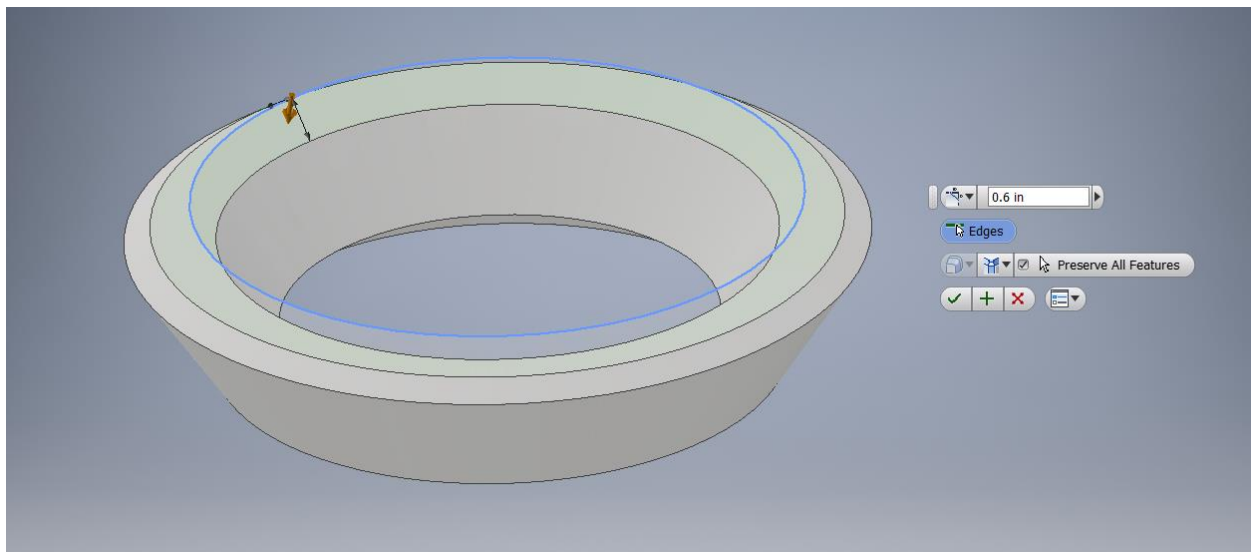
These 2 tools are used to modify existing 3D models and not 2D sketches. They are located under the “Modify” tab.



Fillet is a way to “smooth” the edges of 3D Objects. The amount you fillet by can be changed by typing in a value into the window that appears. However, if a fillet interrupts another feature of the model, an error will stop you from being able to fillet.



Chamfer is the same thing as fillet, except the difference is that Chamfer adds a ridge instead of a smooth surface.



Hopefully the skills outlined above can get you started on making your first object in Inventor.