

We here at Magniity are pleased to teach the people of what we know. We want our students to make use of the information in this document to perform 3D-Designing in an efficient manner.

This document is a guide for the people who want to use Fusion 360, for 3D-Designing.

**Disclaimer:** - This guide is for teaching purpose only, and doesn't contain all the information about Fusion 360. It is designed for beginner's and explains only a select features of Fusion 360.

1. **Opening Fusion 360:-** It is similar to opening any other software, start by locating the software in the start menu of the windows system and double click on it.

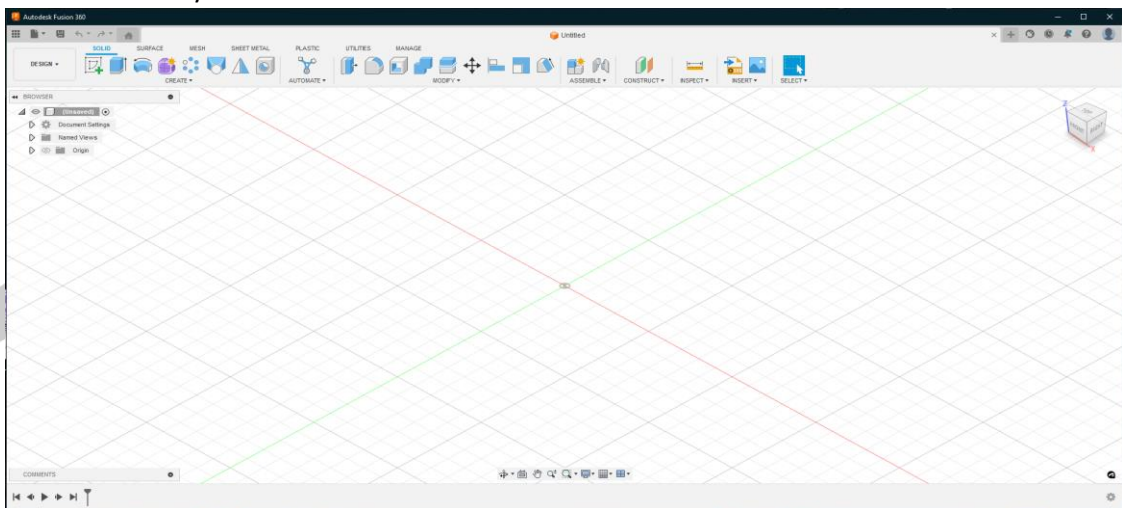


Fig 1. Dashboard

2. **Creating a Project Folder:-** It is good to have an organised project directory. We will create a folder and name the folder with our project name.

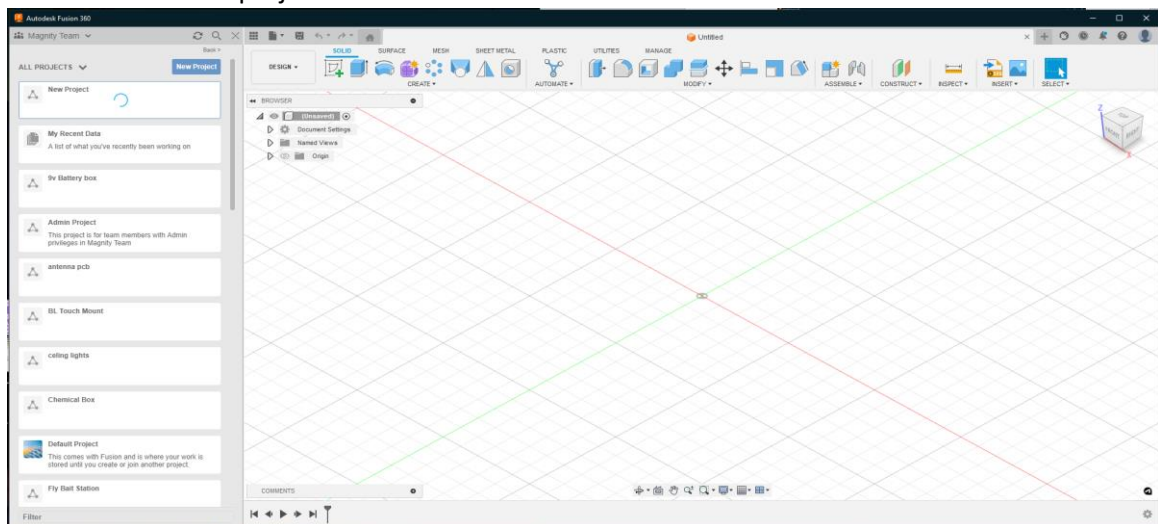


Fig 2. New Folder



3. **Creating a Part:** - Once project folder is created, the next step is to create a design file. To do that double click on the newly created folder and press the “+” icon on the top. Save the file with the shortcut “ Ctrl+S “. This will give a prompt to name the file, where you will enter the name of the part being designed.

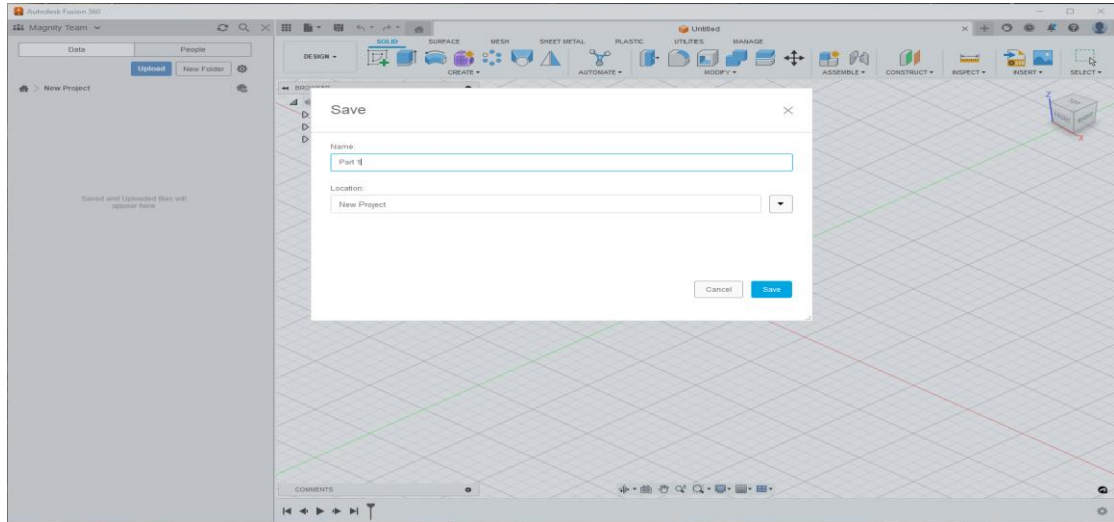


Fig 3. New Part

4. **Enabling Cheat Mode:** - Once a part file has been created. We have 2 ways of working.
- Making use of other's design.
  - Making everything from scratch and being professional.

Fusion 360 has an excellent feature known as **capture design history**. This feature allows the user to trace the steps he has taken and allows others to know how you made a particular design file. This feature is **very useful for professionals**.

But as you all are **learners** we **recommend to turn of this feature** in every design file to make life easier. Disabling this feature enables the user to do these certain things.

- Copy the bodies from other files.
- Copy Sketches.
- Move Objects more freely.
- Stop accidental design changes.

This feature can be disabled by right clicking on Document settings and selecting “Do not capture design history”.

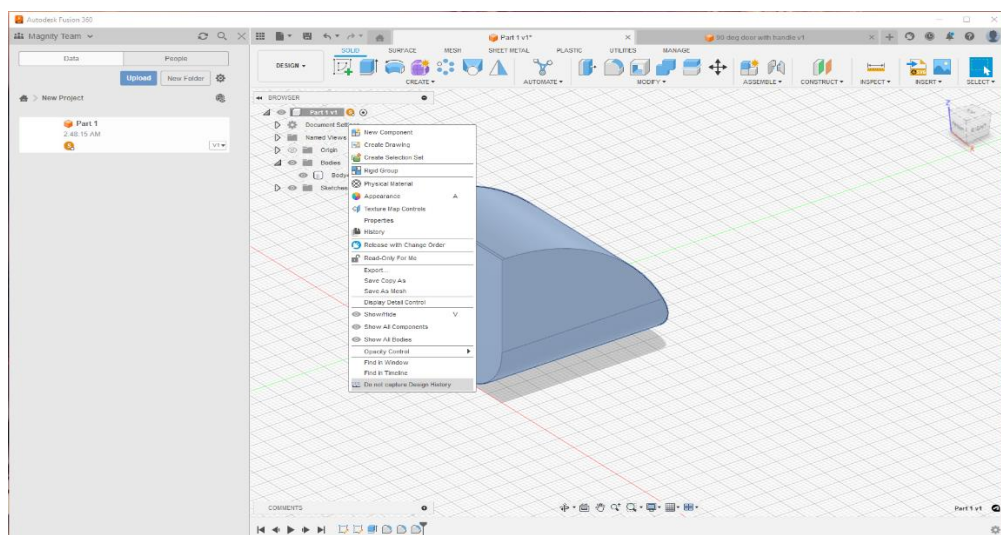


Fig 4. Do not capture design history





# Fusion 360 Main tools

1. **Sketch:** - Any 3D-Design starts from 2D Drawing. Sketch is the feature which allows us to draw in any 2 dimensions. To use sketch. Click on sketch icon and select the plane. Start drawing.

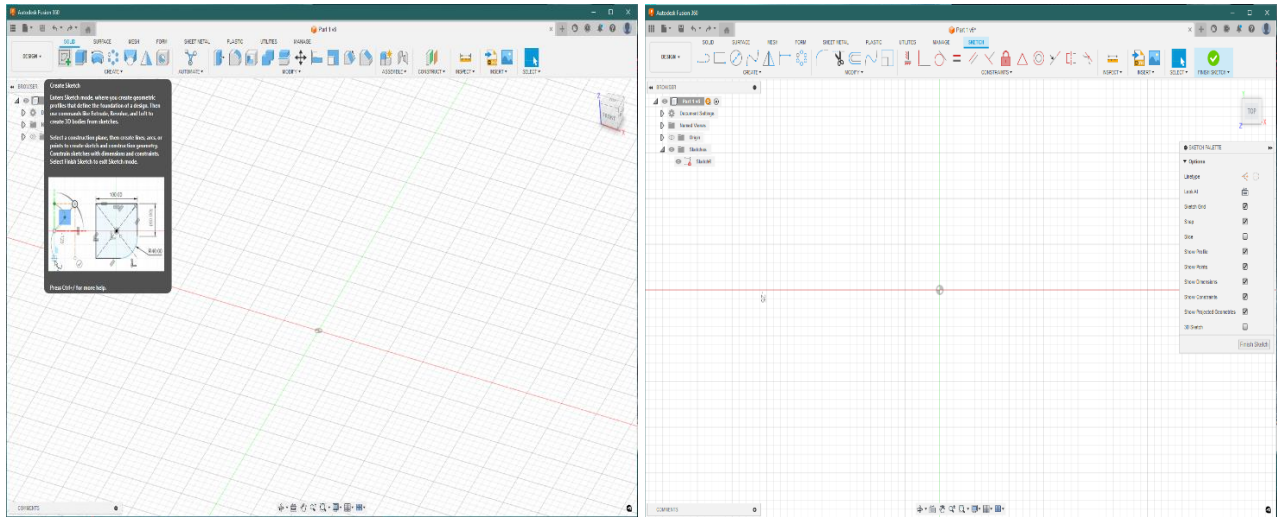


Fig 5. Sketch

2. **Extrude:** - Any Face can be extended perpendicularly inwards or outwards using extrude.

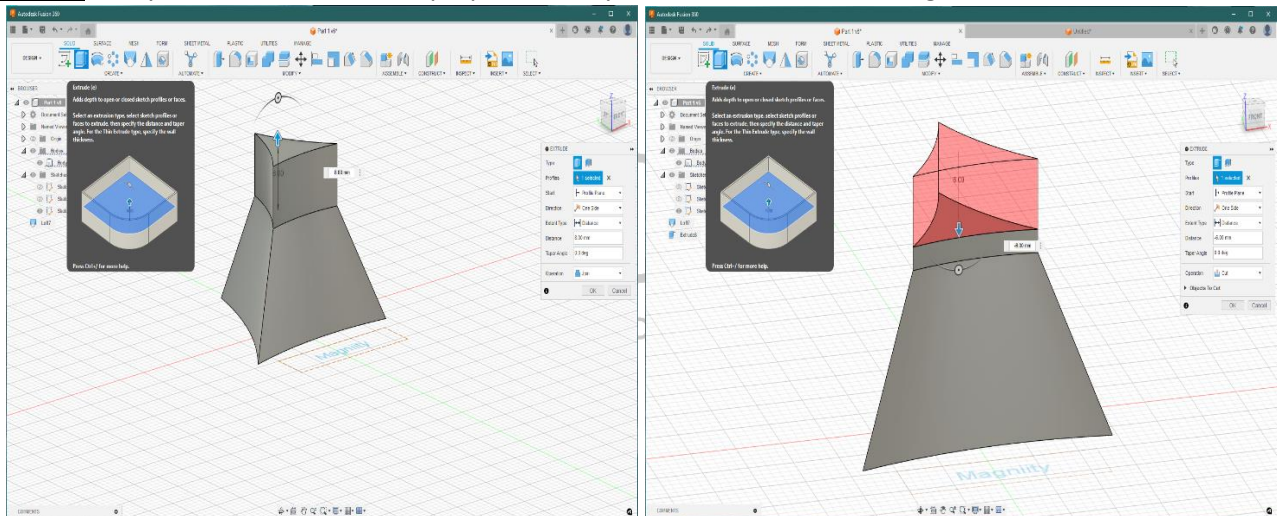


Fig 6. Extrude

3. **Press and Pull:** - Any Face can be extended inwards or outwards as per the design and inclination of the adjacent faces.

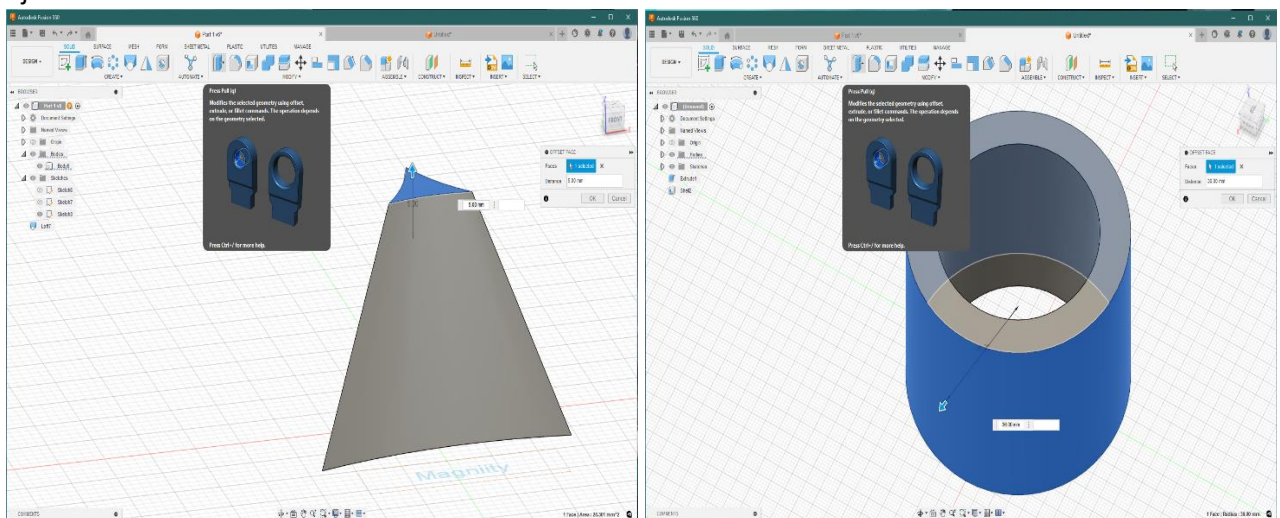


Fig 7. Press and Pull



4. **Circular Pattern:** - Any object, body, face or pattern can be replicated at equal distances around an axis point.

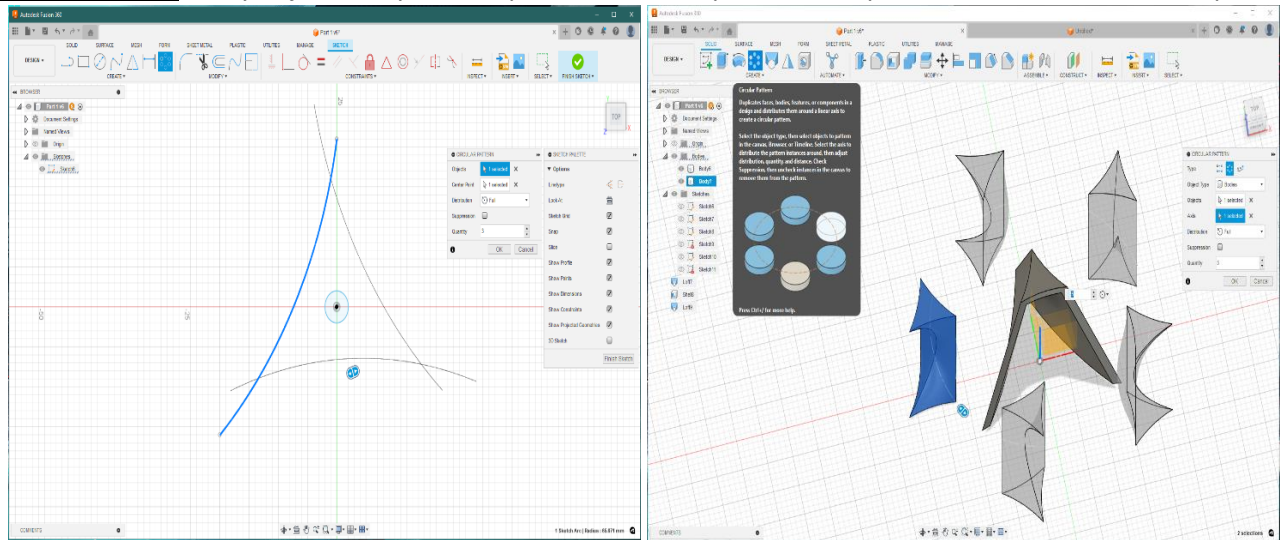


Fig 8. Circular Pattern

5. **Rectangular Pattern:** - Any object, body, face or pattern can be replicated at equal distances along 2 axis.

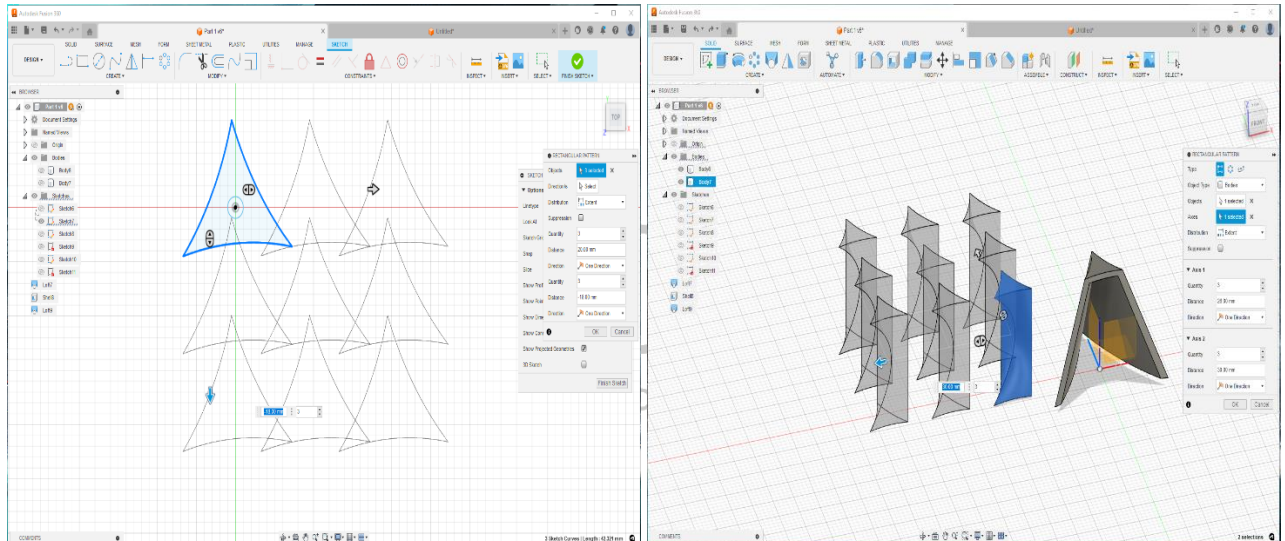


Fig 9. Rectangular Pattern

6. **Mirror:** - Any object, body, face or pattern can be mirrored along a line, axis, or a face.

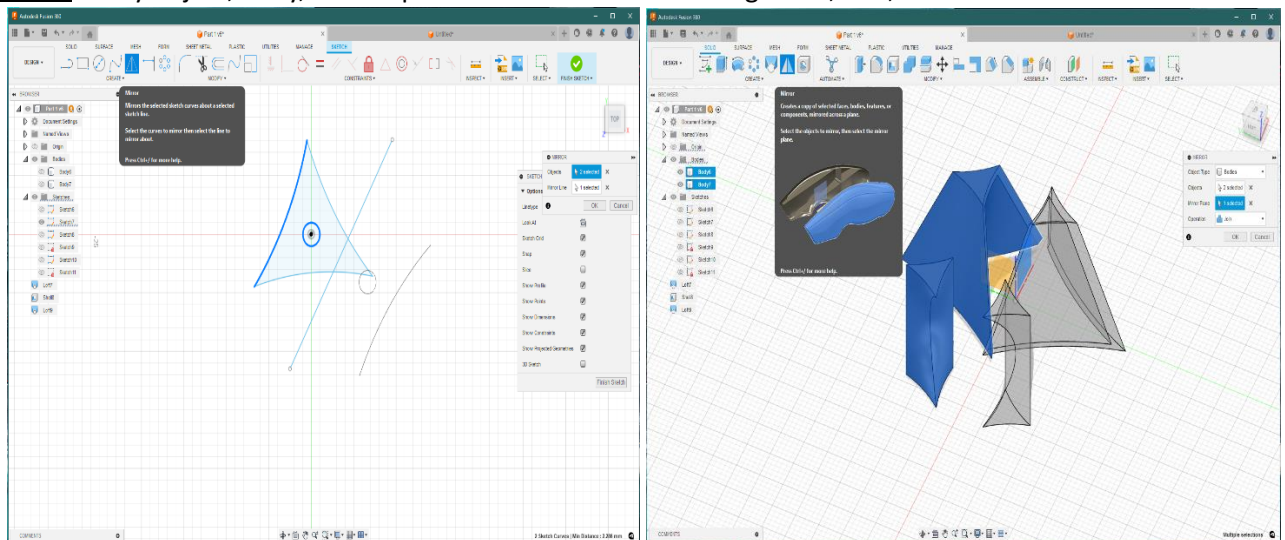


Fig 10. Mirror





7. Shell: - Any Object/Body can be hollowed out using shell feature. This is very useful, as it is used to reduce plastic volume.

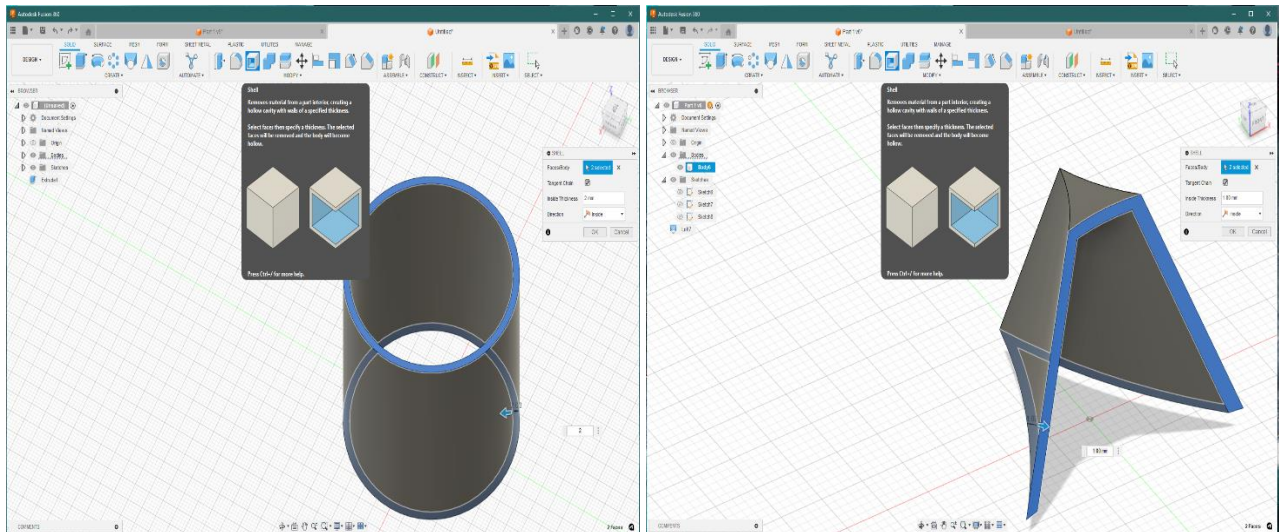


Fig 11. Shell

8. Fillet: - Any edge, can be rounded off. For various design reason's.

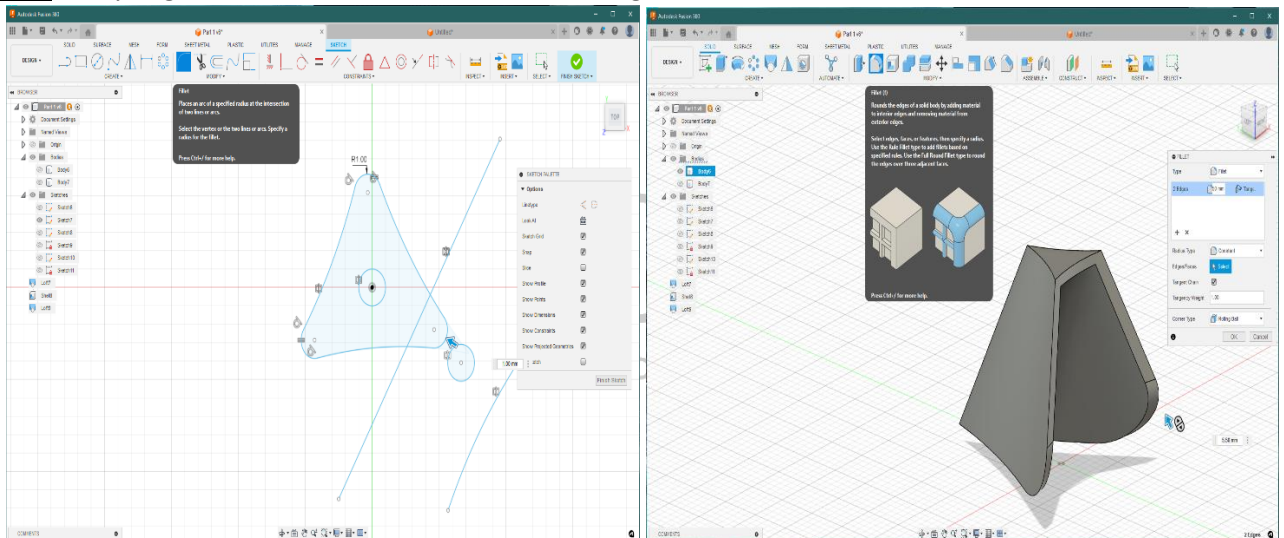


Fig 12. Fillet

9. Combine: - Any object/body can be attached or cut off using combine feature.

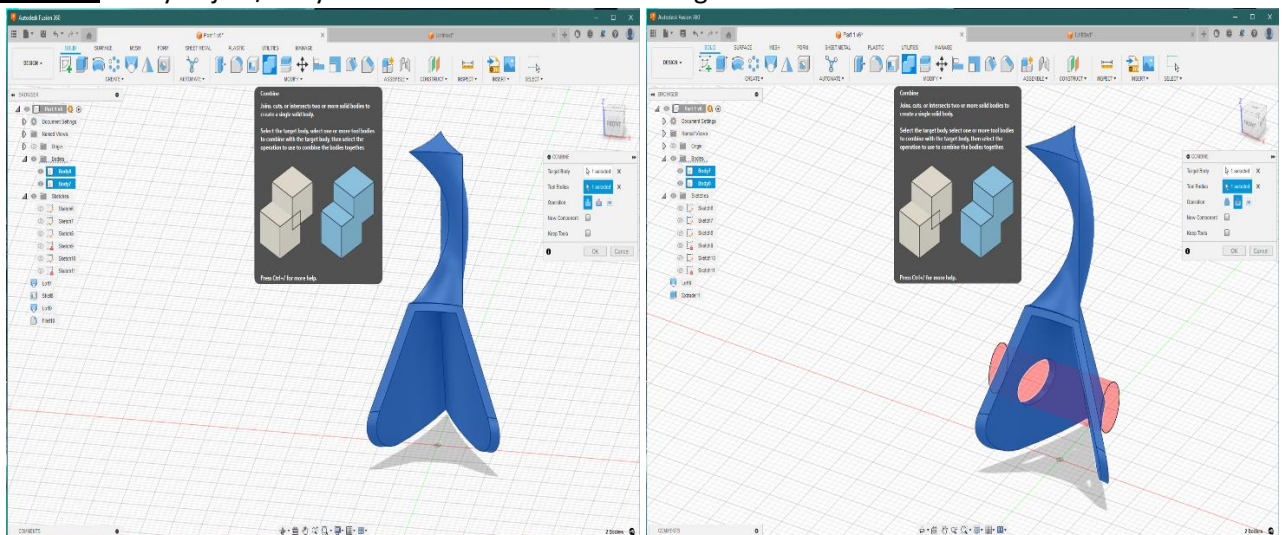


Fig 13. Combine





10. **Split**: - Any Object/Body can be cut along a face or feature using split feature.

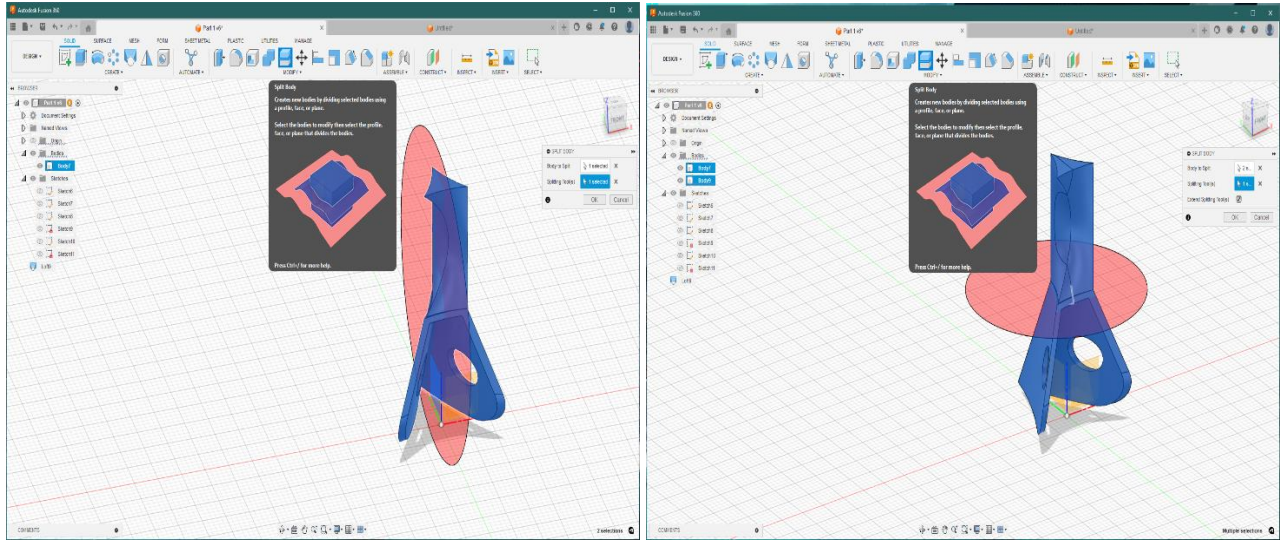


Fig 14. **Split**

11. **Align**: - Any component or a body can be aligned based on their features.

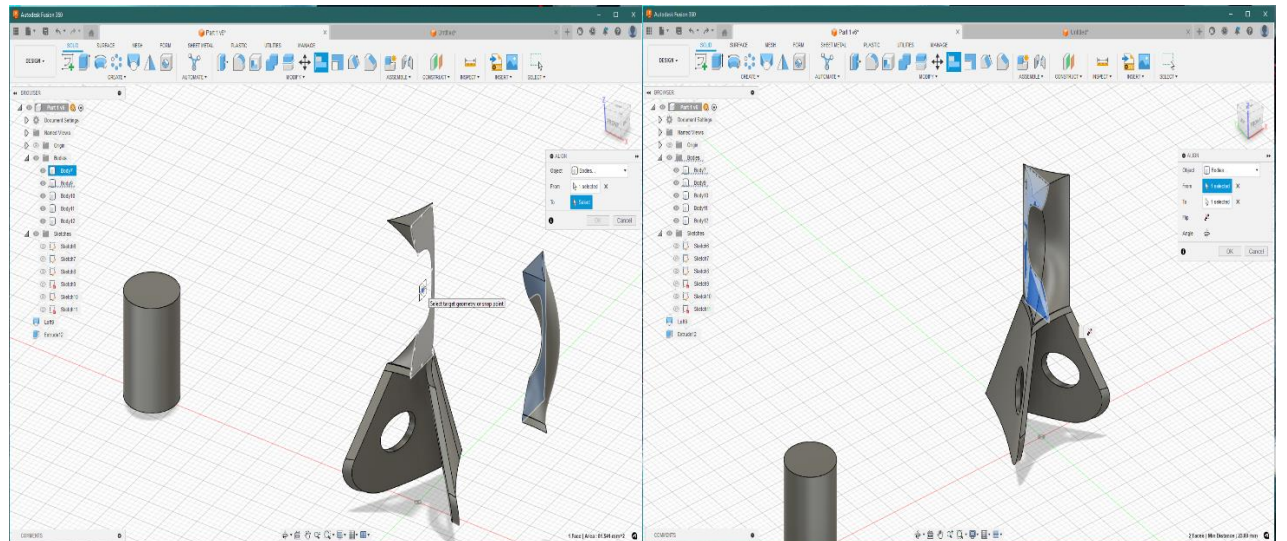


Fig 15. **Align**

12. **Scale**: - Any object/body or sketch can be scaled in any manner.

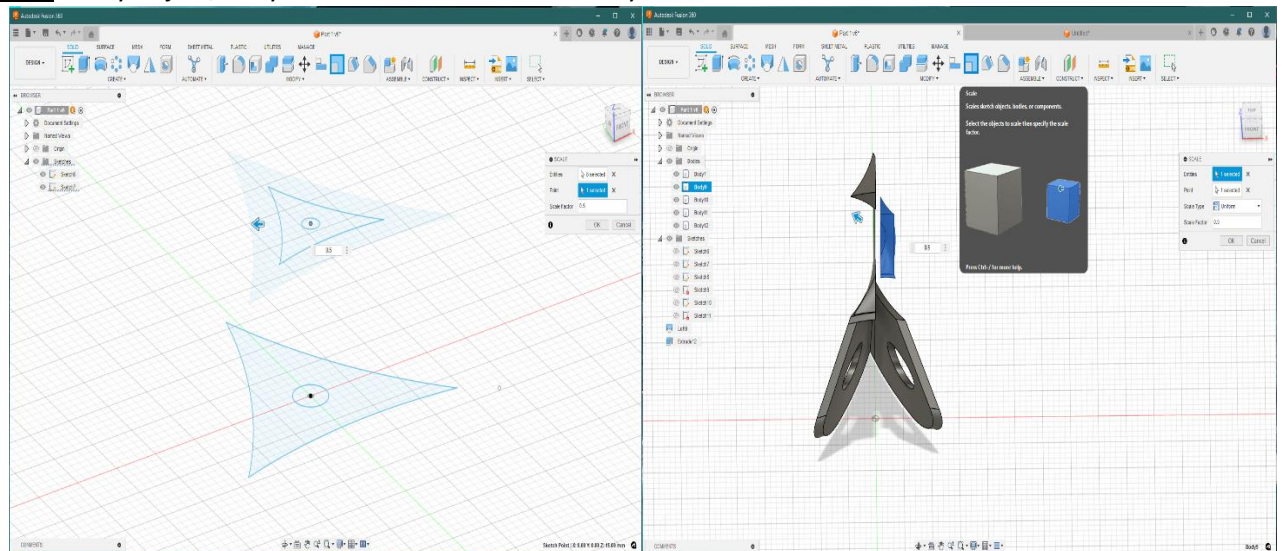


Fig 16. **Scale**





13. Move: - Any object/body or sketch can be moved or rotated in any direction.

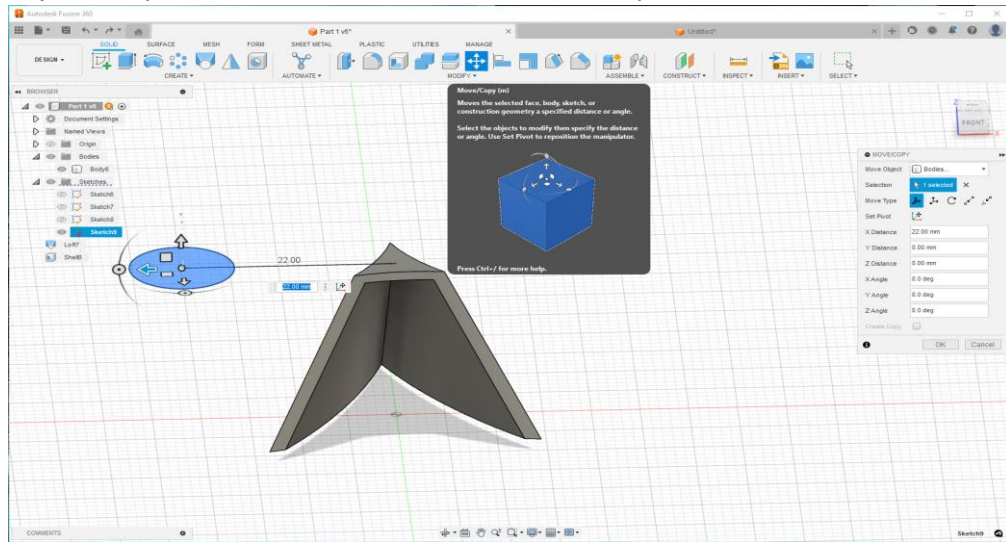


Fig 17. Move

14. Loft: - This is a useful tool to make complex structures with shape transitions. Such as vases, aerofoils etc.

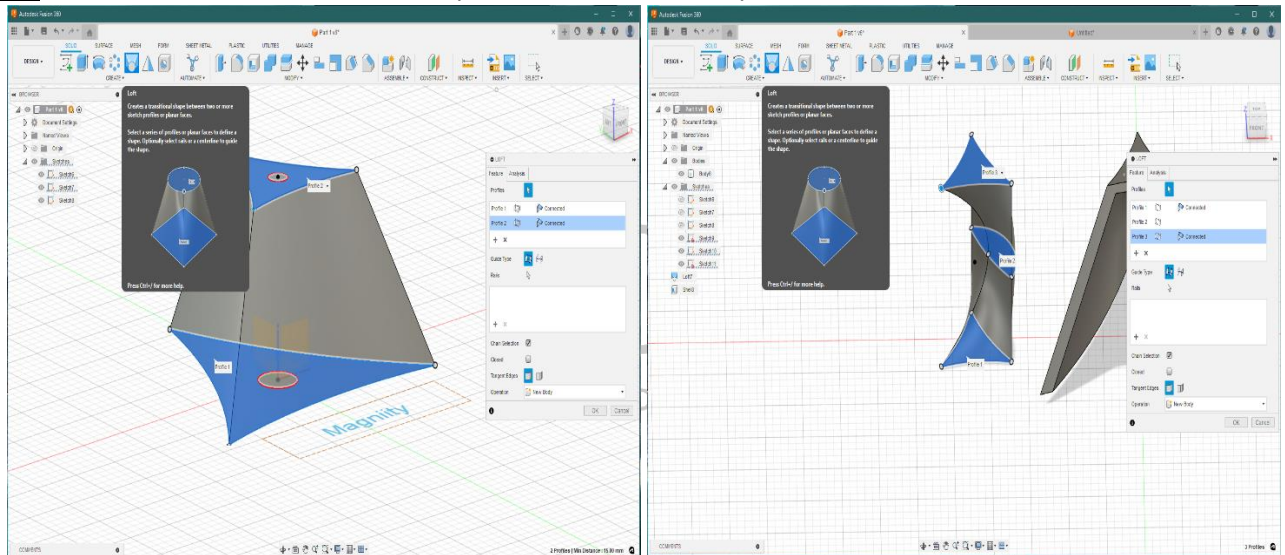


Fig 18. Loft

15. Emboss: - This is a useful tool to add 3D text to the given files. **NOTE:- ONLY FEW FONT TYPES WORK.**

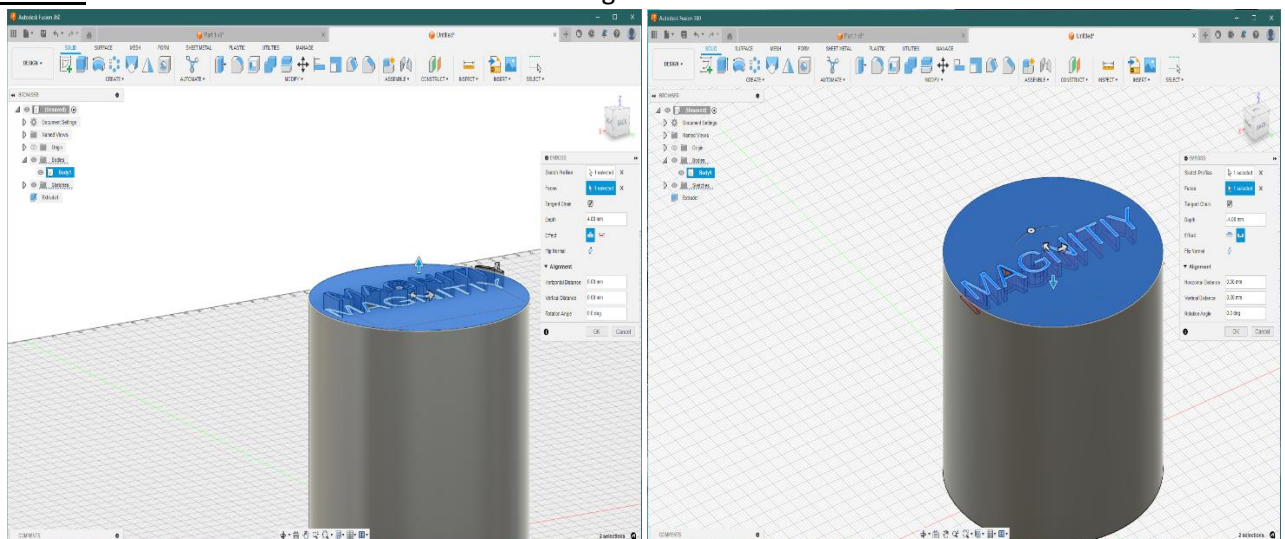


Fig 18. Emboss



16. Inspect: - This is a useful tool to know the dimensions of the models.

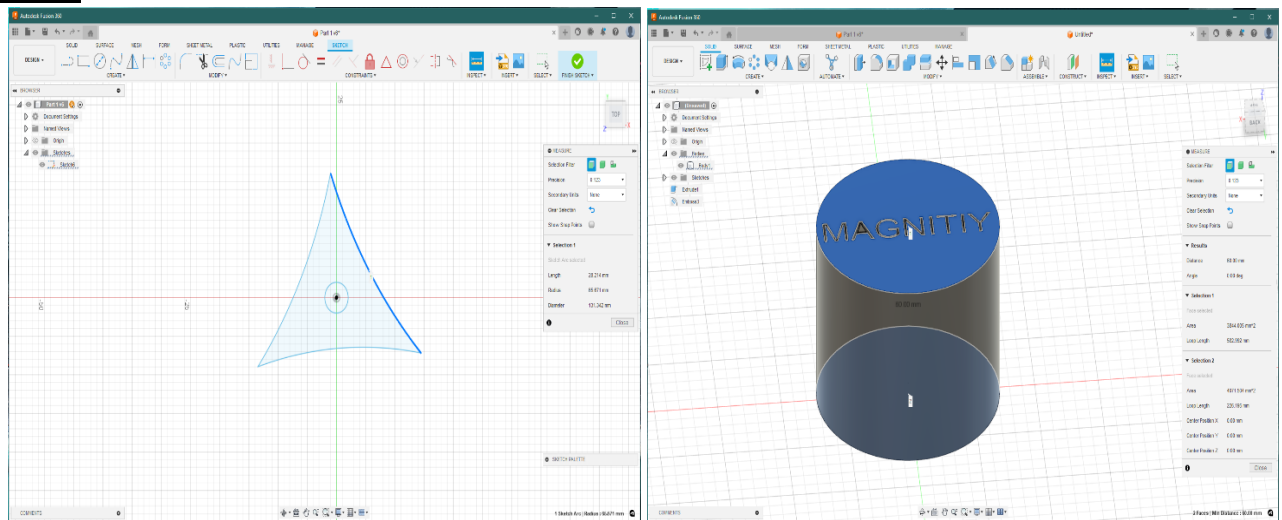


Fig 19. Inspect

17. Trim: - This is used to remove excess drawing lines in sketch mode.

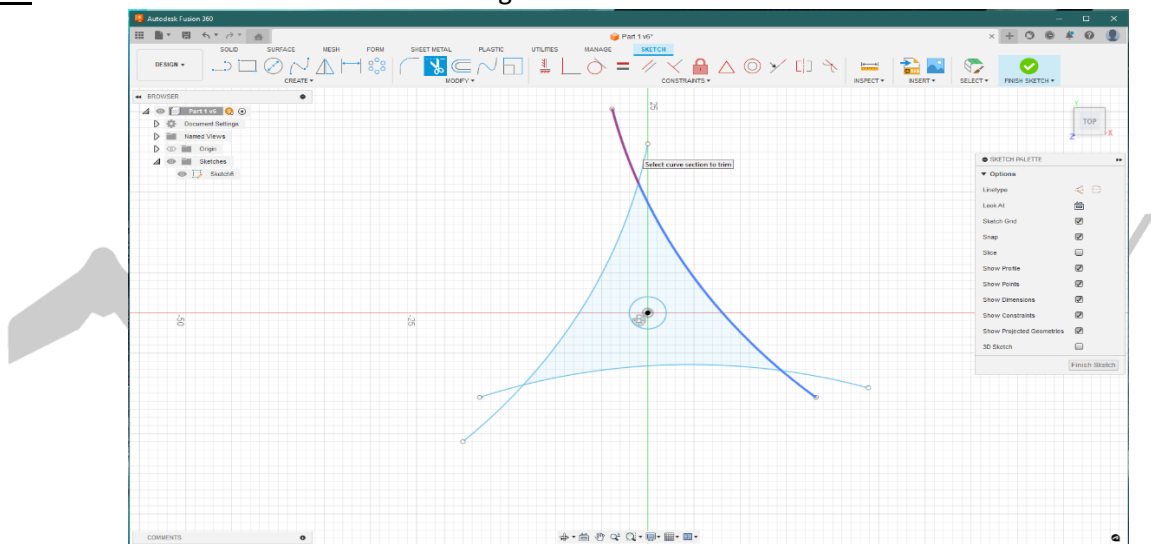


Fig 20. trim

