Aeromodelling Club
IIT Kanpur

Semester Project 2021

CAD FUSION 360

Project Mentors

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Content

- Workspaces
- Design
- Assembly
- Drawing
- Animation
- Simulation
- Generative Design
- Airfoil DAT to spline
- Assignments
- Designathon

Workspaces

Main Focus :-

- Design
- Animation
- Simulation
- Drawing
- Generative design

Design Workspace

❖ Solid Modelling

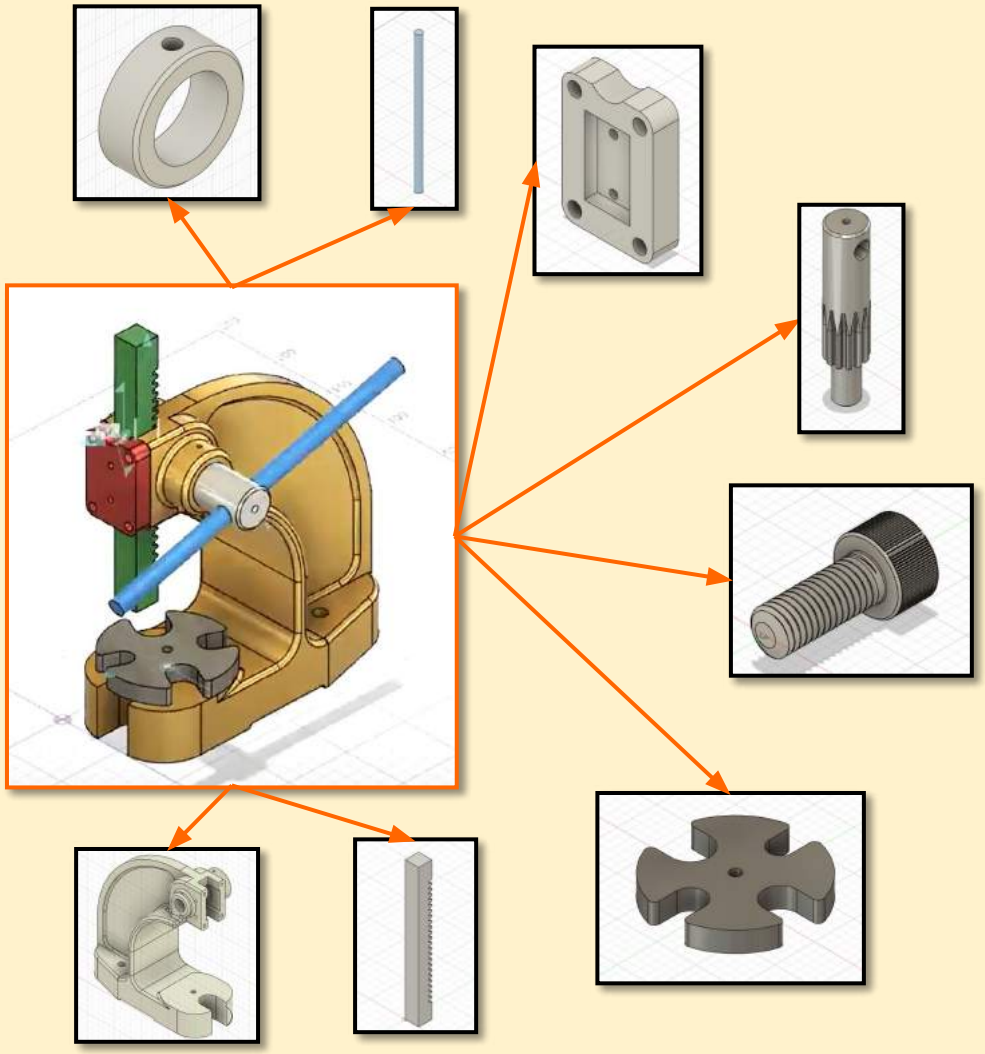
❖ Surface Modelling

Assembly

An **Assembly** is a collection of different parts that function as a single design in Fusion 360. Each design can contain:

- A single component comprised of bodies.
- An assembly of components and nested subcomponents.

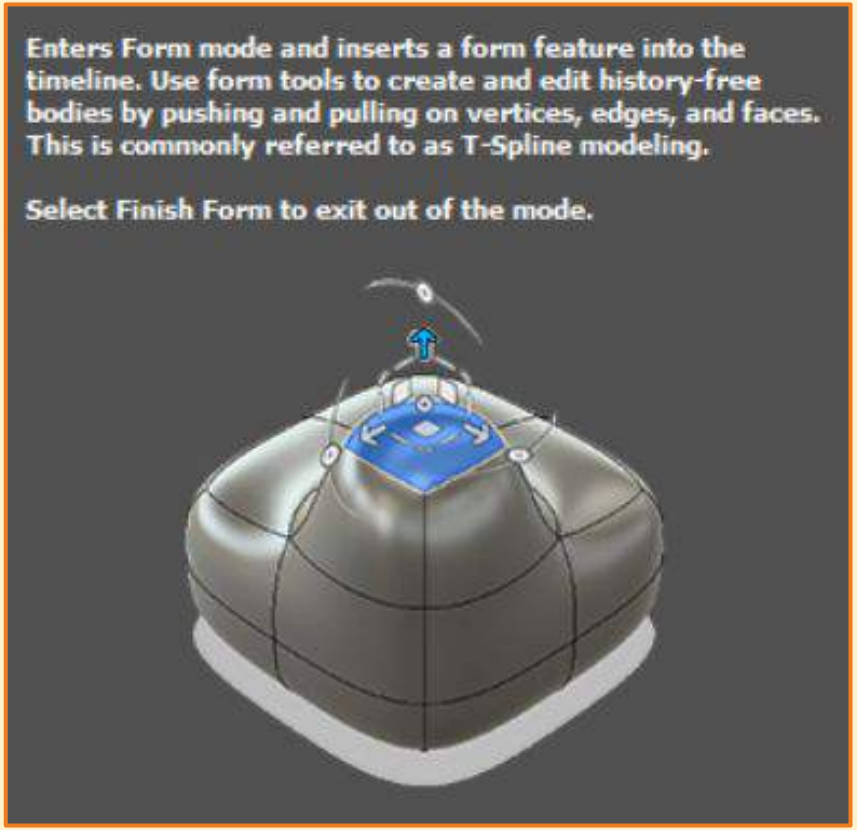
When you create a new component in a Fusion 360 design, it becomes an assembly. You can define relationships between components in a design using the position, joint, and motion features.



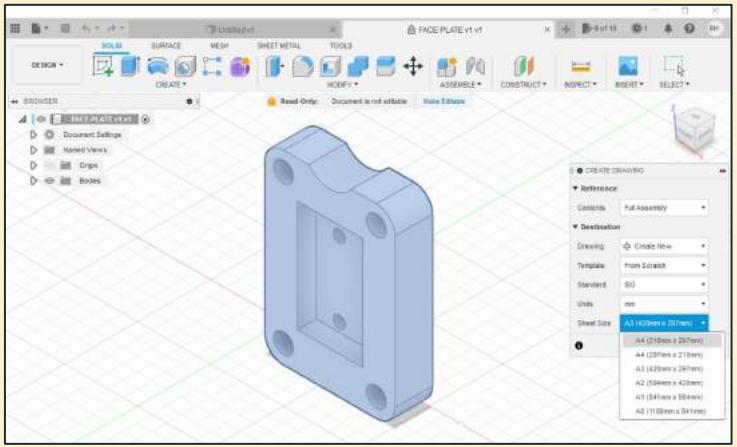
FreeForm Modelling

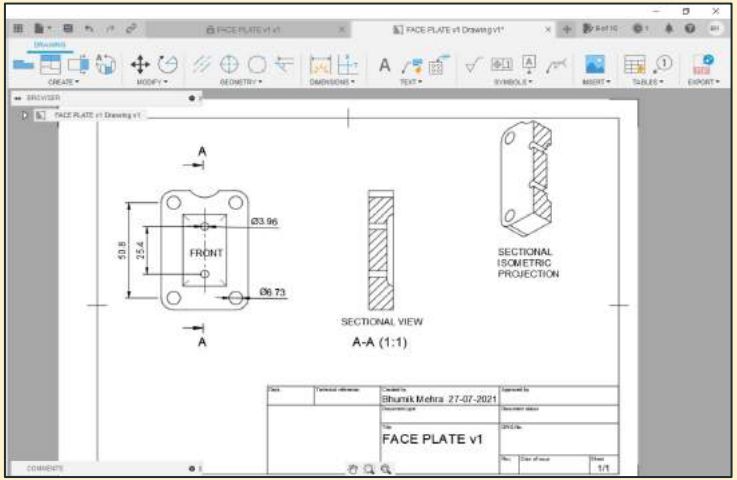
FreeForm Modelling

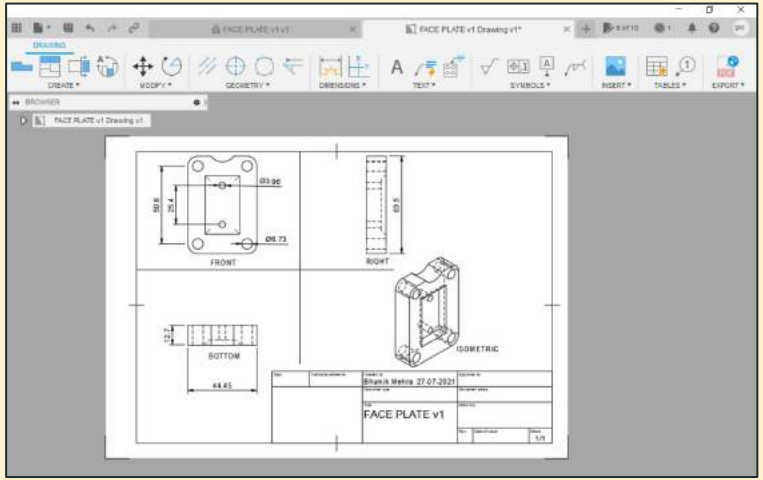
In the **Form** contextual environment in Fusion 360, you can create organic T-Spline designs with tools that are similar to sculpting clay.
You can push and pull faces, edges, and vertices on T-Spline bodies.
This environment lets you take a more fluid, artistic approach in the early conceptual stages of a design compared to the more traditional parametric design tools in the **Solid** and **Surface** tabs.



Drawing Workspace

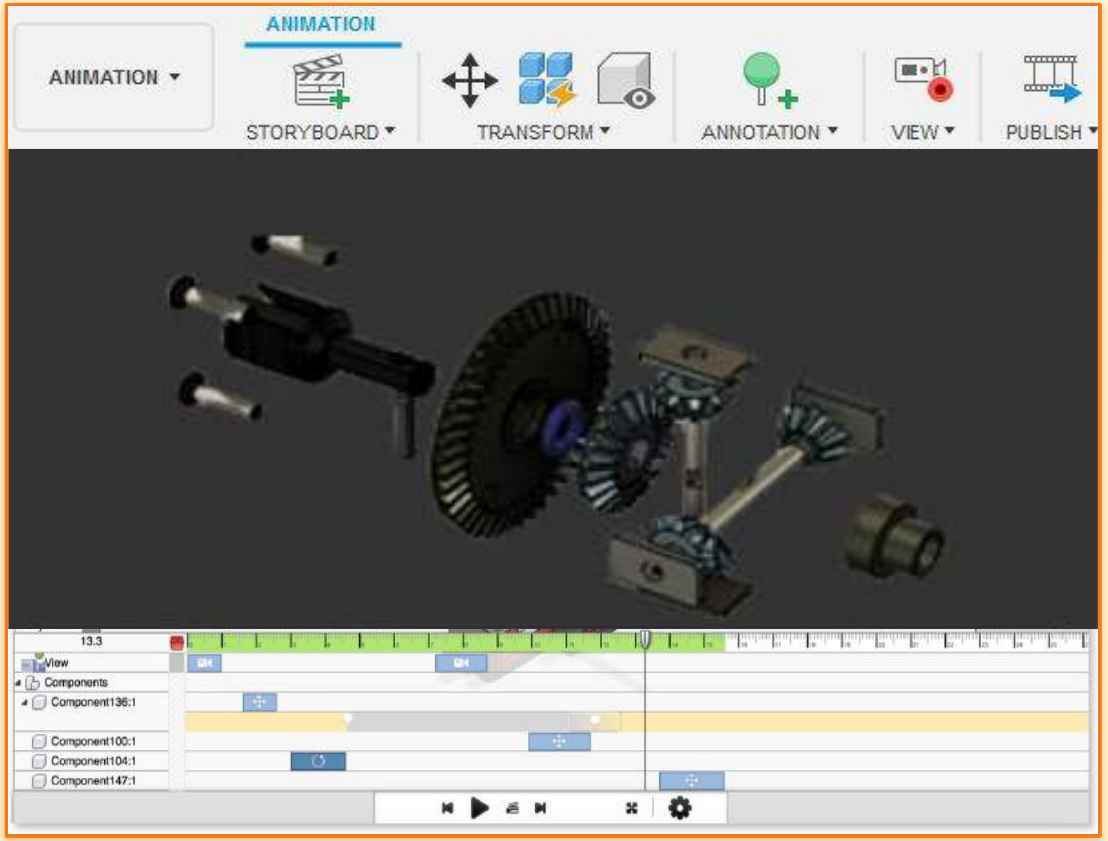


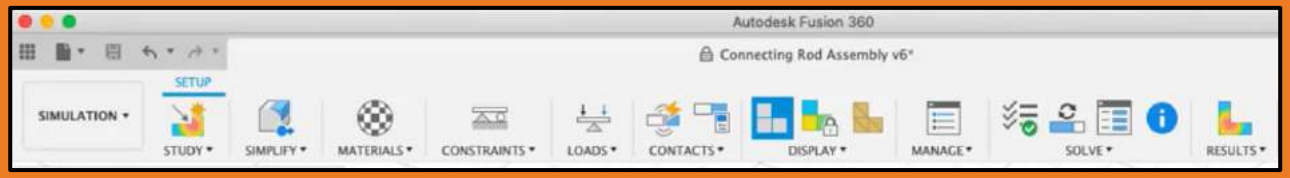


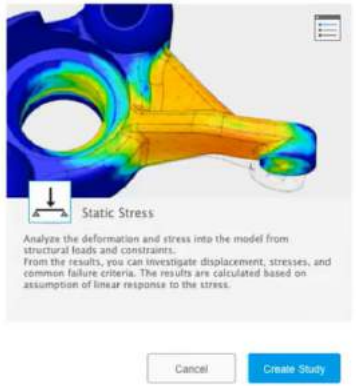


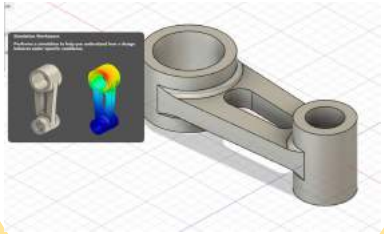
Animation Workspace

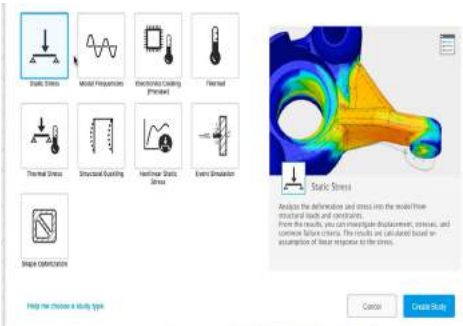
Use the Animation workspace to create exploded views and to animate parts and assemblies. The use of Animation is to evaluate and communicate design functionality and illustrate assembly.







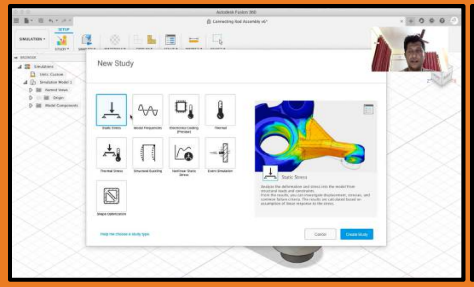


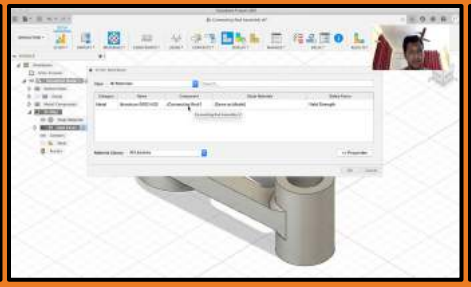


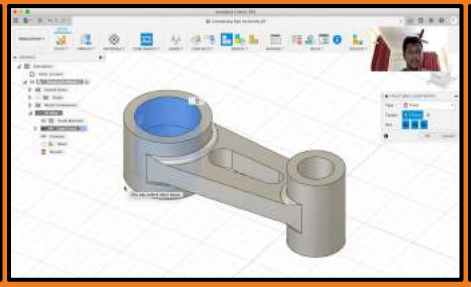
Simulation Workspace

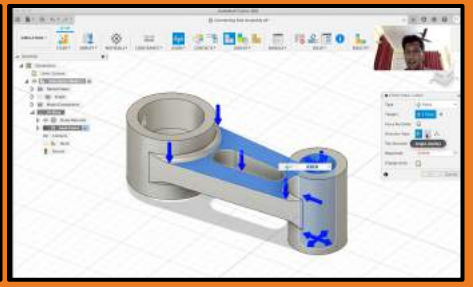
Simulation Workspace

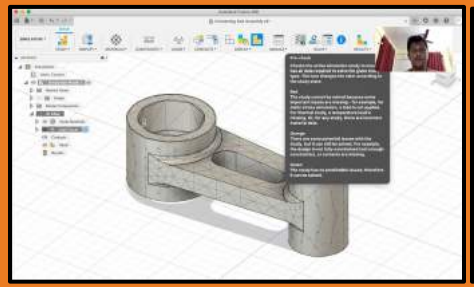
Simulation is essential for designers to justify their design with a given set of criteria.
Fusion 360 is in-built with simulation.
The simulation uses finite element analyses to predict performance.

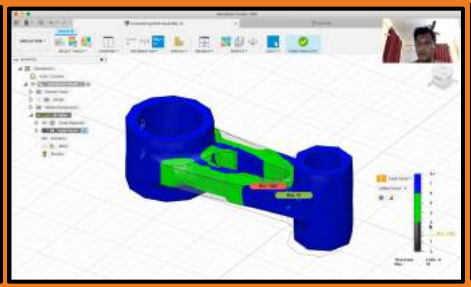

New Study

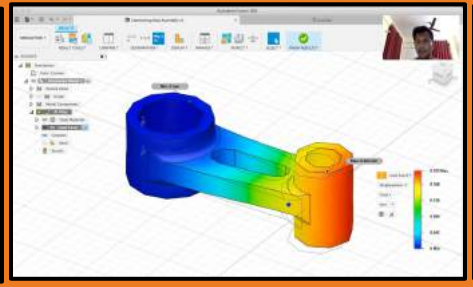


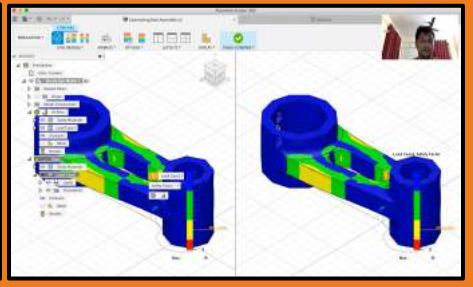


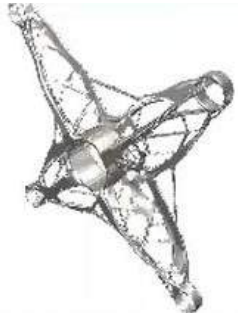


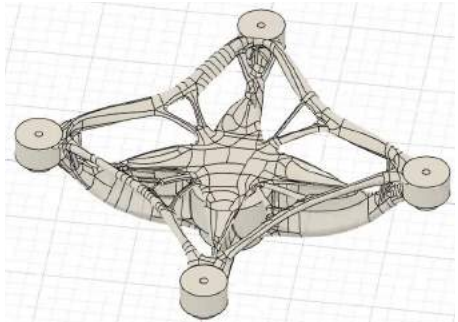








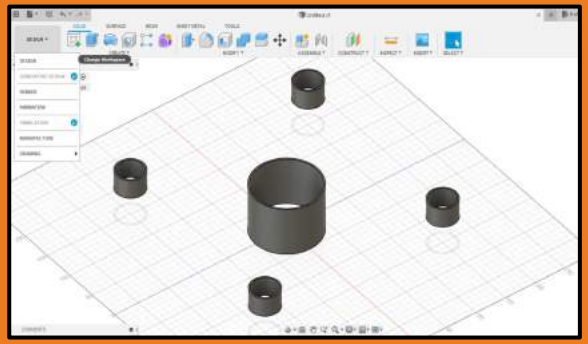


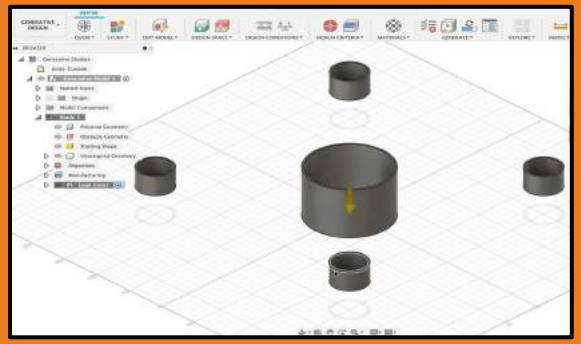


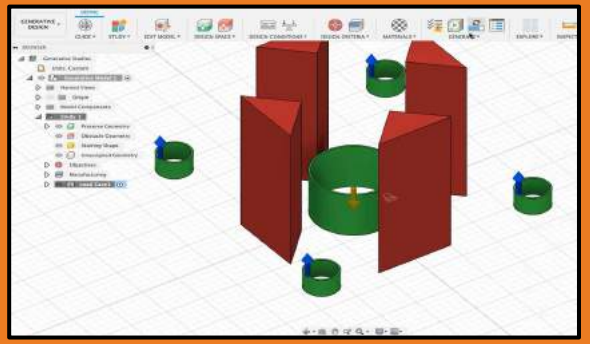
Generative design Workspace

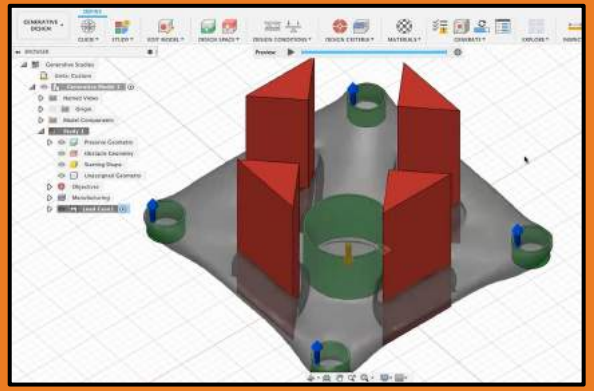
Generative Design Workspace

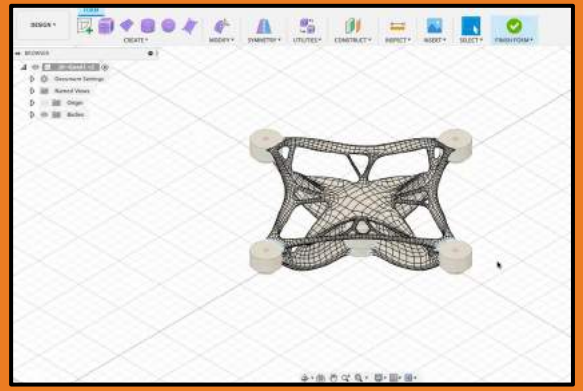
Generative Design lets you define a design problem through goals and constraints and yields a collection of designs that meet your requirements. Then you can inspect the designs to select the one you desire the most and is optimal for your work.

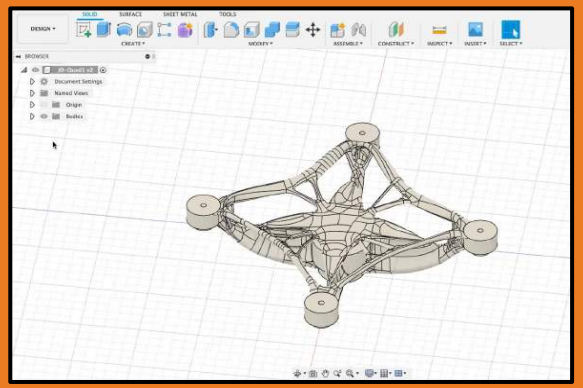












Airfoil DAT to spline

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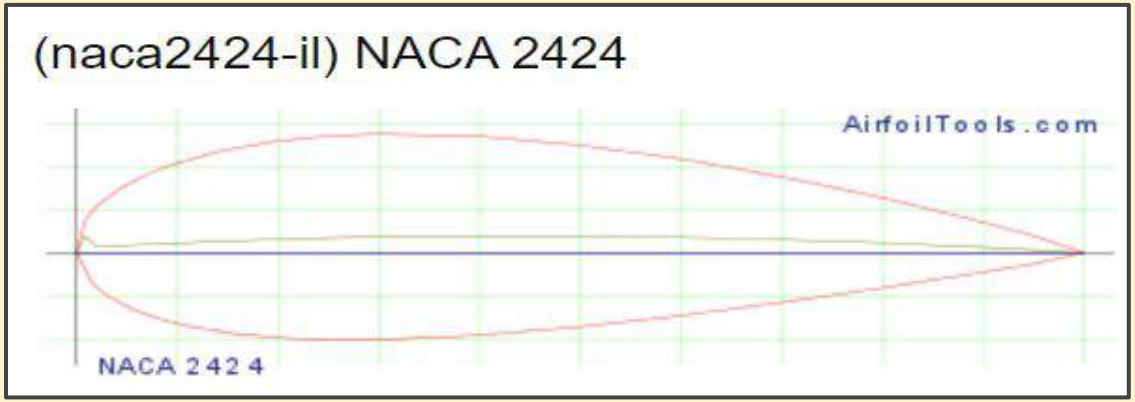

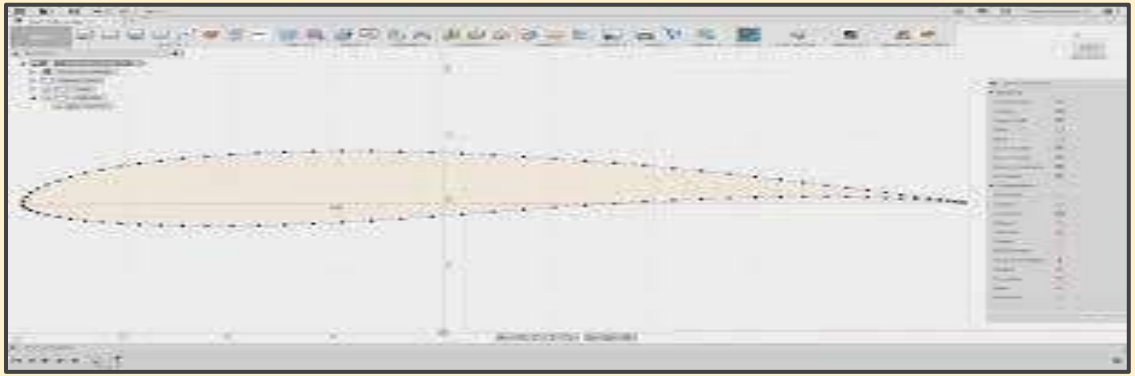

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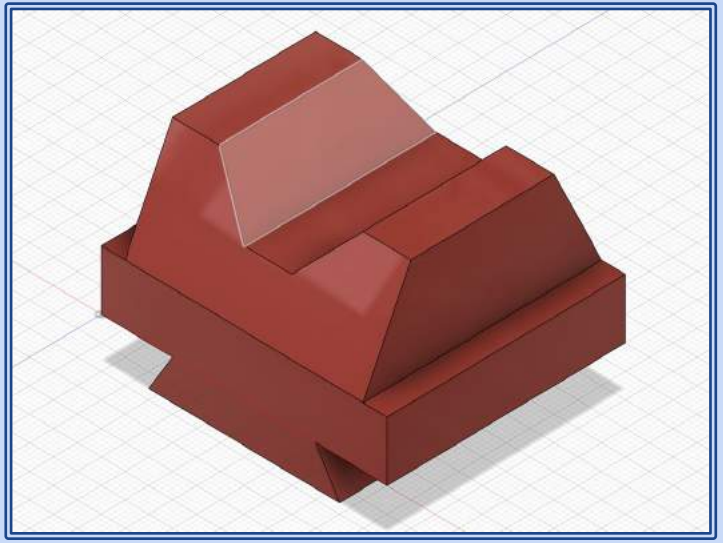
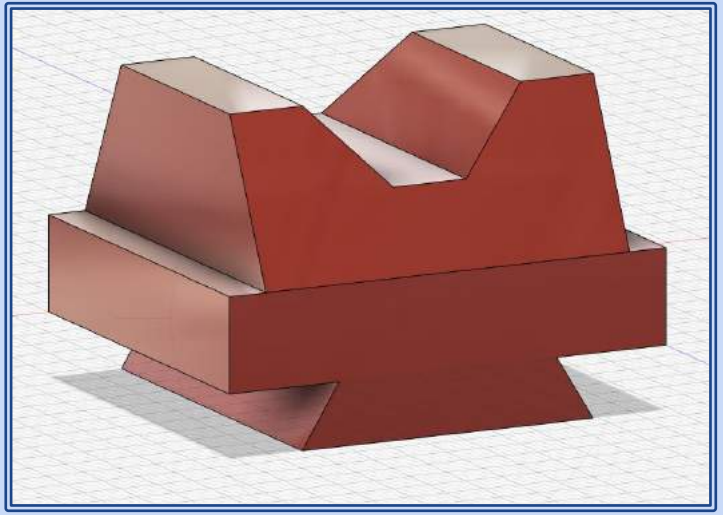
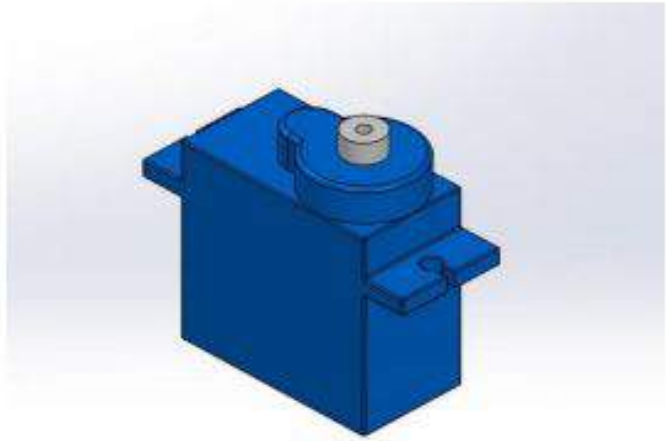




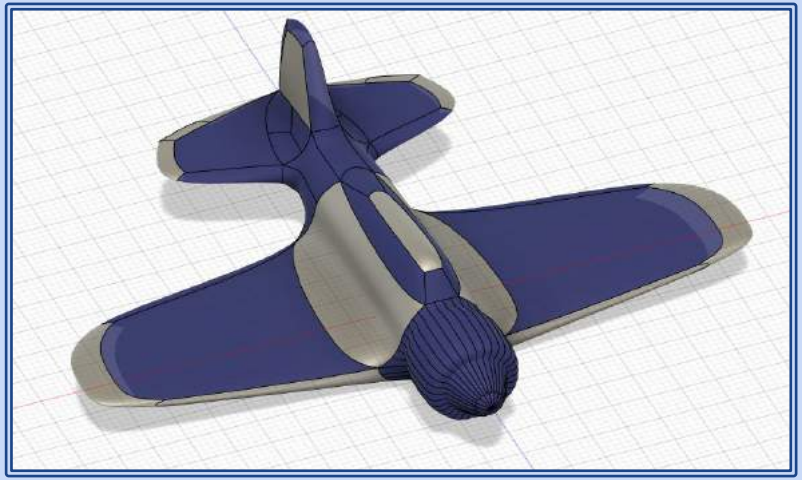
❖ ASSIGNMENT 2

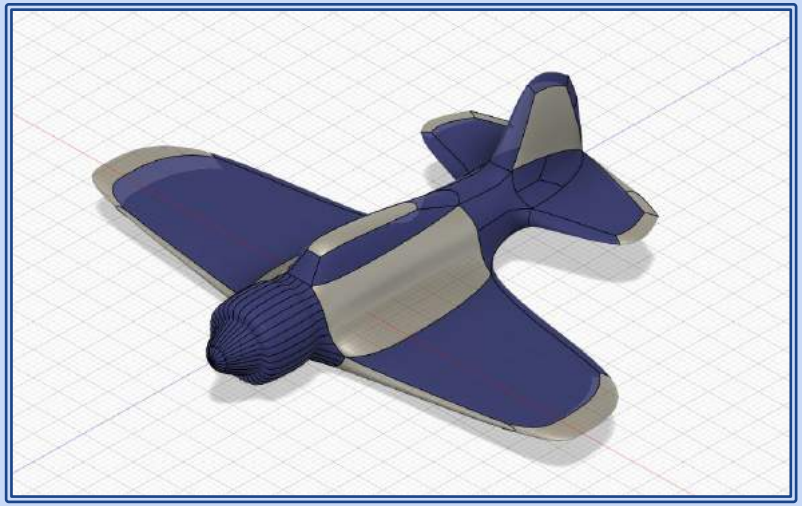
1) Servo motor



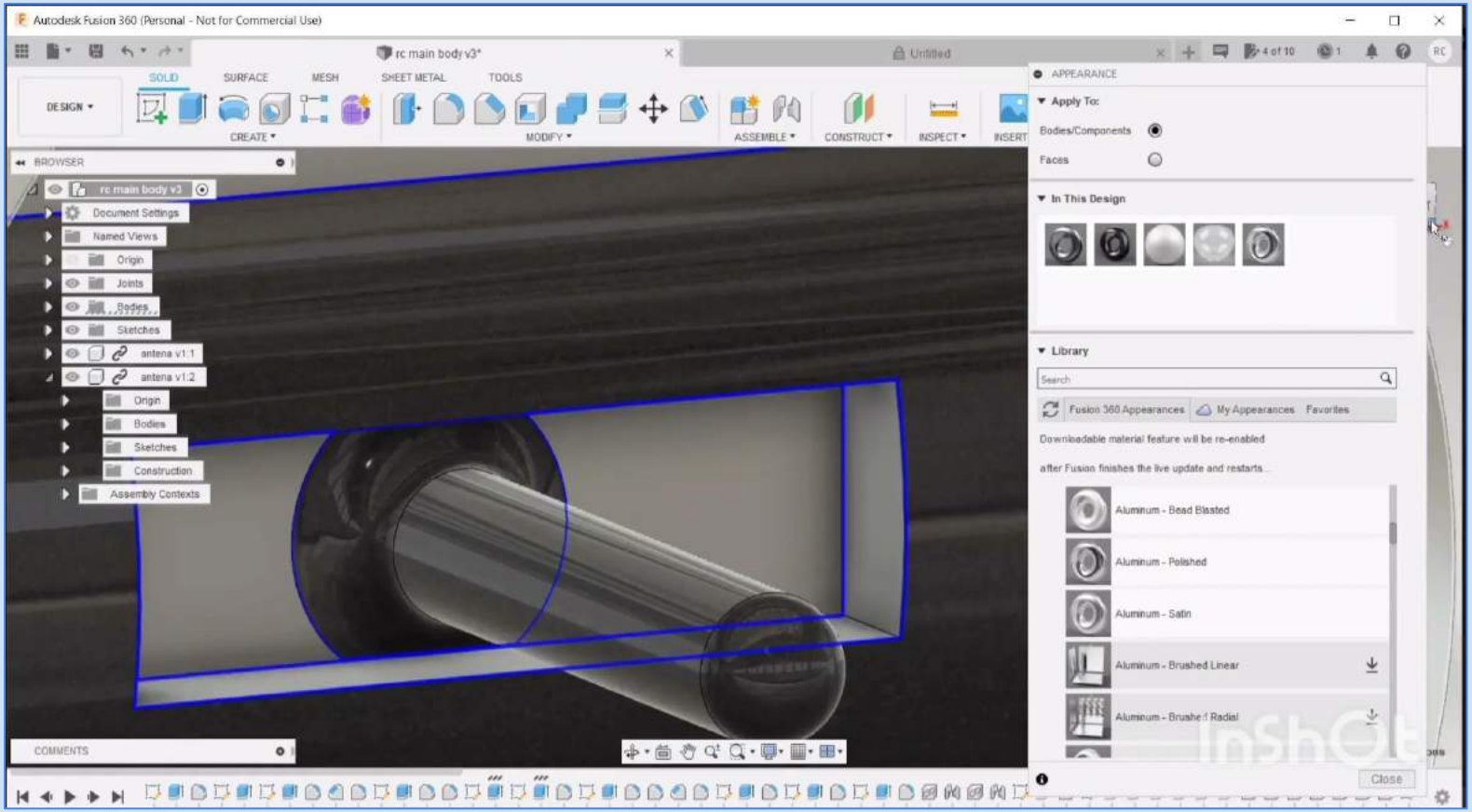
2) Radio controller

ASSIGNMENT 3

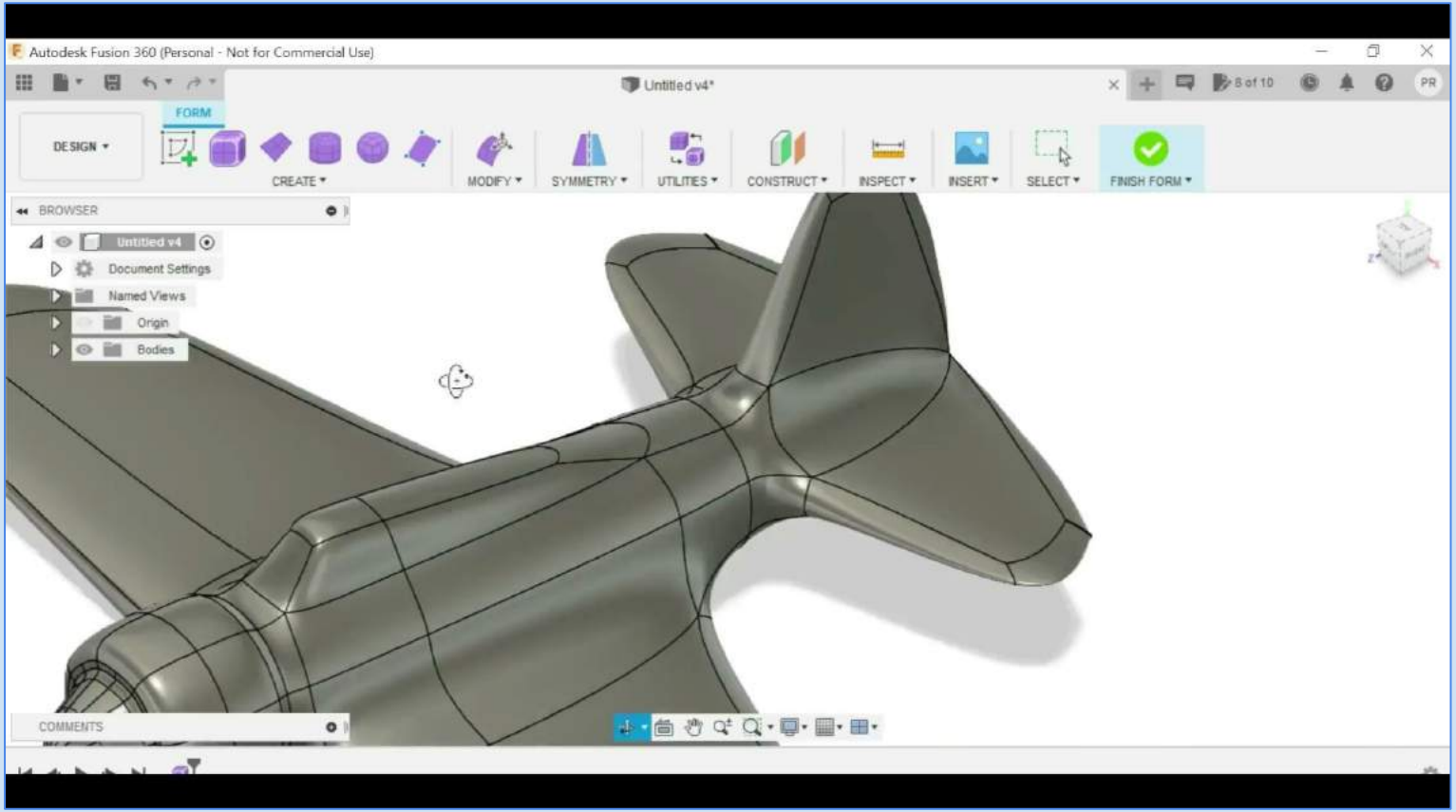




Remote controller



Aircraft


Autodesk Fusion 360 (Personal - Not for Commercial Use)
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DESIGN
CREATE
MODIFY
SYMMETRY
UTILITIES
CONSTRUCT
INSPECT
INSERT
SELECT
FINISH FORM
BROWSER
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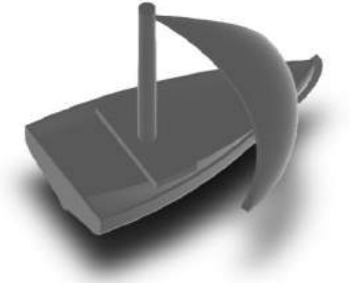
Document Settings
Named Views
Origin
Bodies
COMMENTS

Designathon



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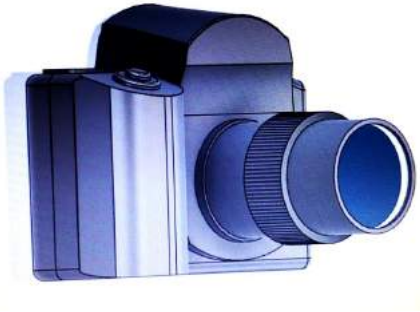

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THANK YOU

CAD Designing