

# Advanced Direct Modeling in T-Splines & Parametric Design

**Alex Lobos**

Rochester Institute of Technology | @lobosdesign





## About the speaker

**Alex Lobos focuses in design, technology and emotional attachment as means to elevate quality of life.**

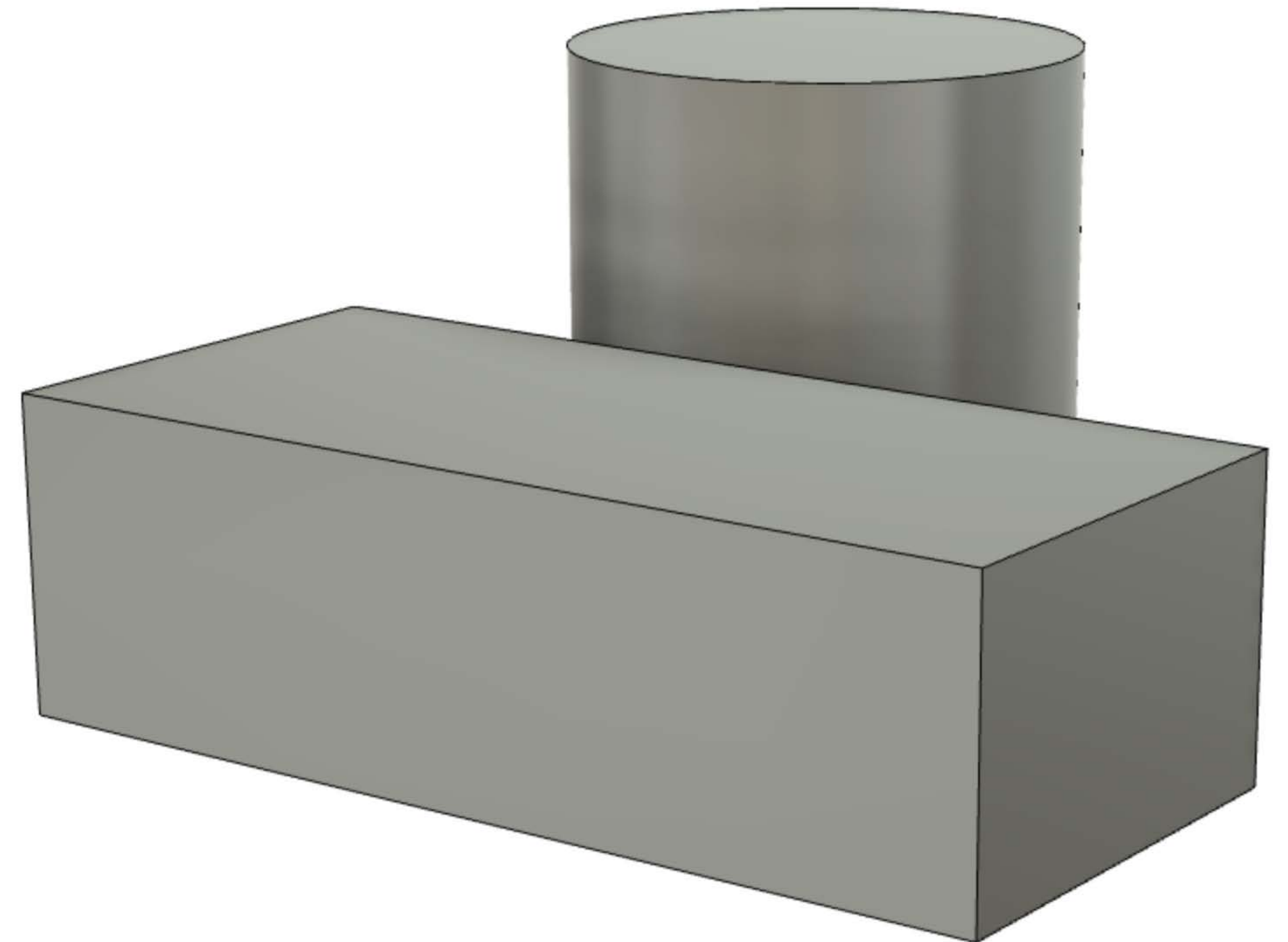
**He is Professor and Graduate Director of Industrial Design at Rochester Institute of Technology (RIT) and a Research Fellow Emeritus at Autodesk.**

# Sequential Modeling

**Traditional CAD uses a linear sequence of steps, in which different details of a design are provided to the computer separately.**

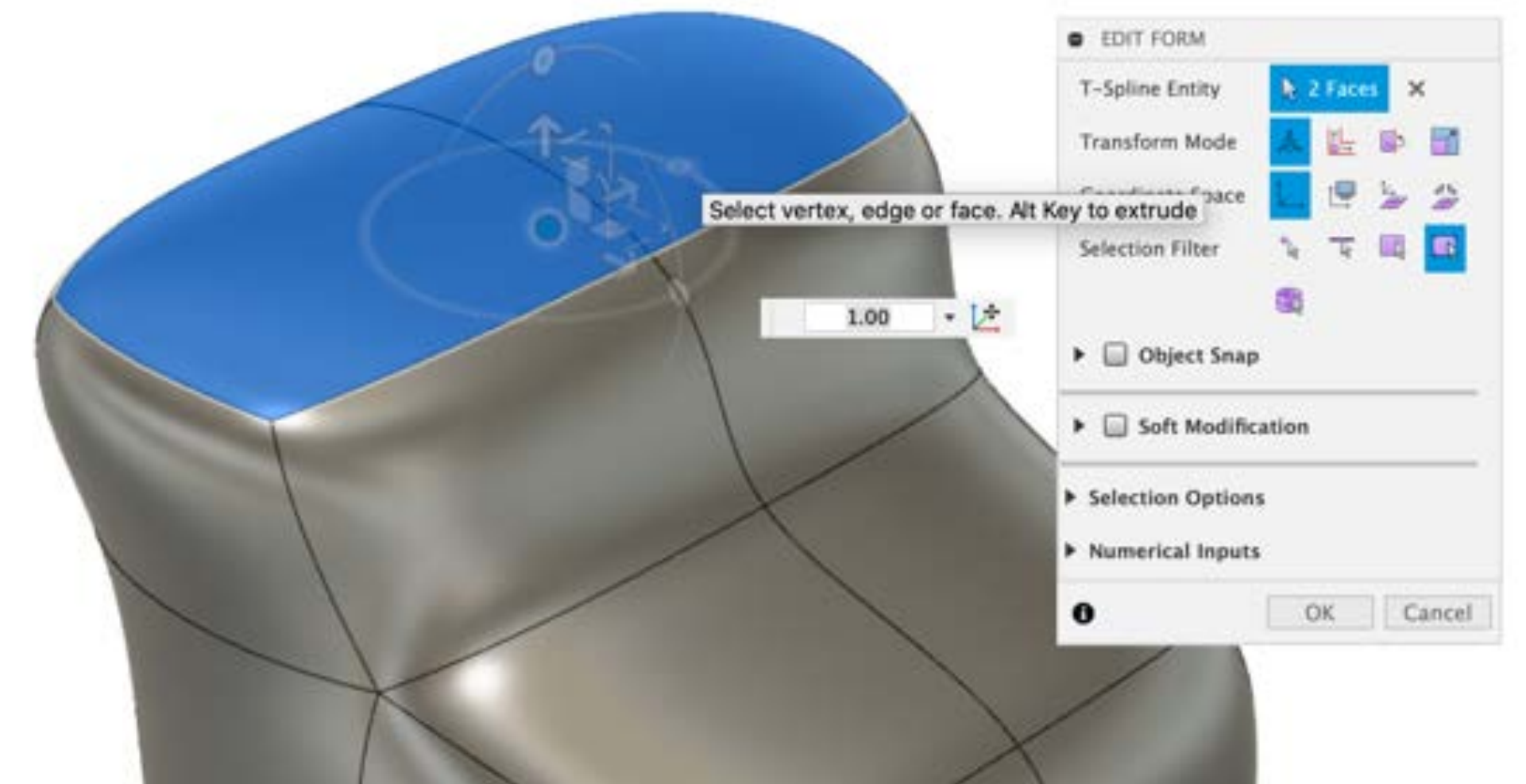
**This workflow involves:**

- Selecting a plane**
- Drawing a 2D sketch**
- Feature to create 3D body**



# Direct Modeling

Direct modeling allows to edit geometry in real-time, using gestures that mimic how objects are moved in real life: pull, push, rotate, stretch, compress, etc.



# Benefits of Direct Modeling

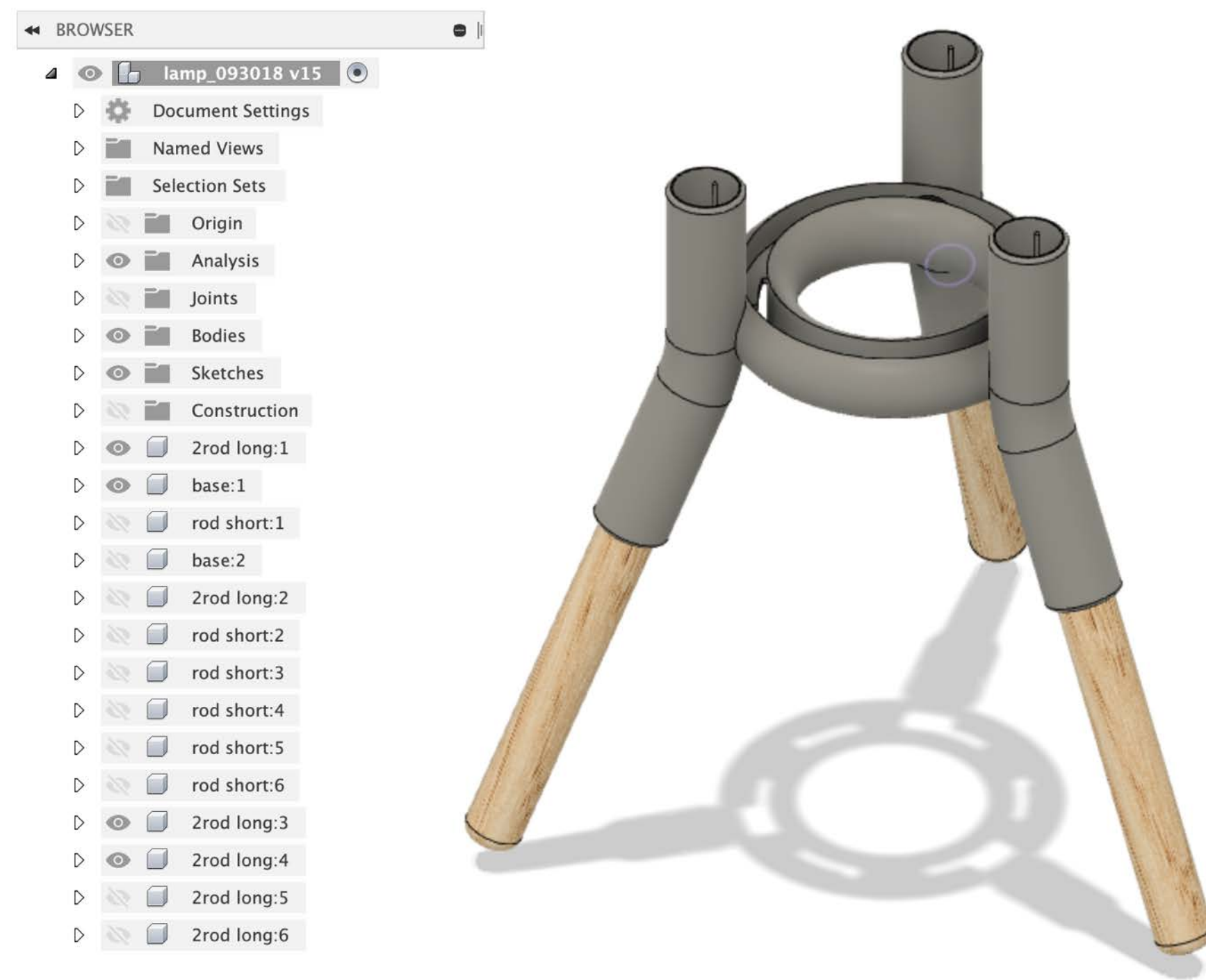
Removes  
unnecessary  
steps

Works with  
natural gestures

Discovery of  
subtle changes

Promotes a  
sense of “flow”





## Parametric

It allows to capture history of every component in a design. As features are created, they are linked to each other, creating a history timeline. It's easy to go back to any step in the timeline and make edits that update the entire model.



## T-Splines

It provides great flexibility for modeling. It helps to maintain surface continuity. Modeling history is limited or non-existing, which makes editing hard. It might also limit exporting data to engineering applications.

Direct Modeling is possible in  
both Parametric & T-Splines



Stool  
(T-Splines)

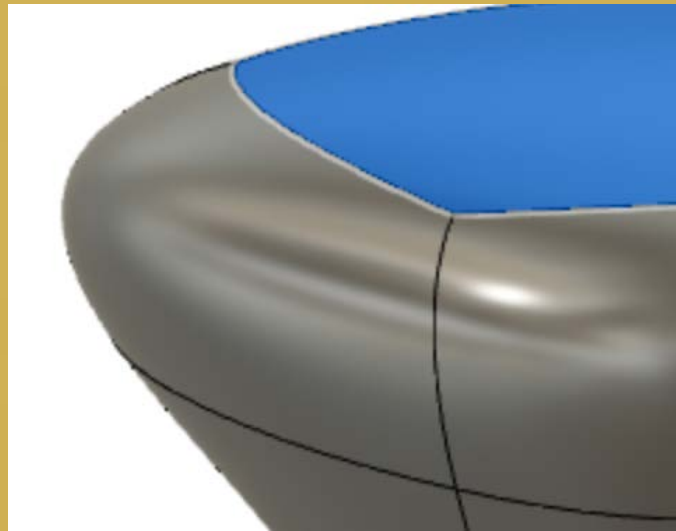


Stand Mixer  
(Parametric)

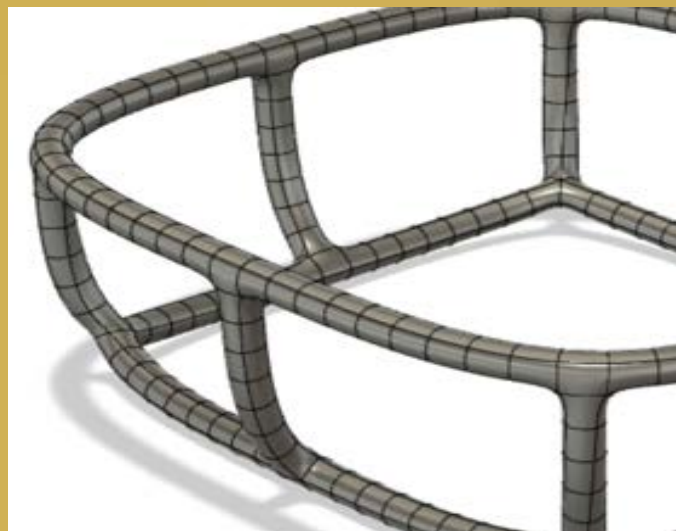


# Key Features

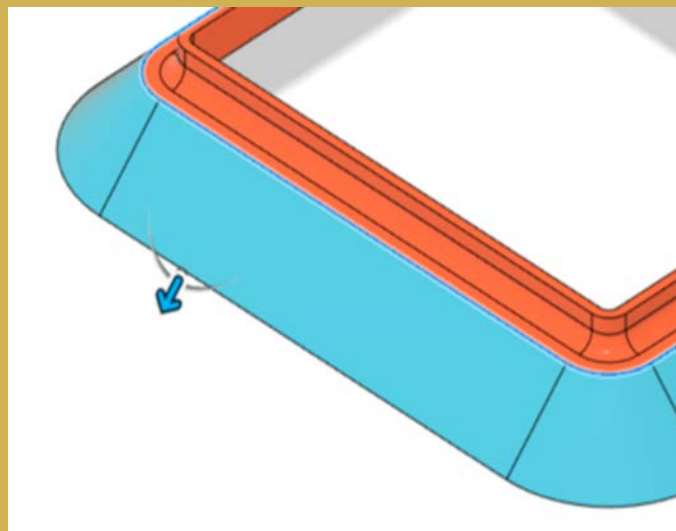
Edit Form



Pipe



Ruled  
Surface



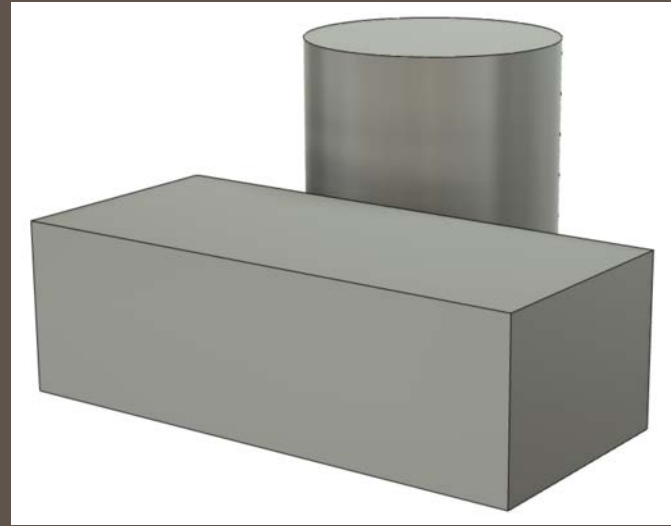


Watch step-by-step video:  
[youtu.be/u0GE0D8bzAA](https://youtu.be/u0GE0D8bzAA)

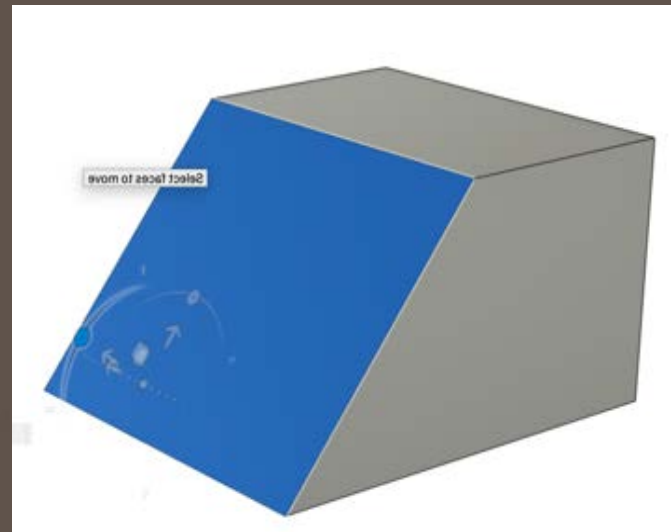


# Key Features

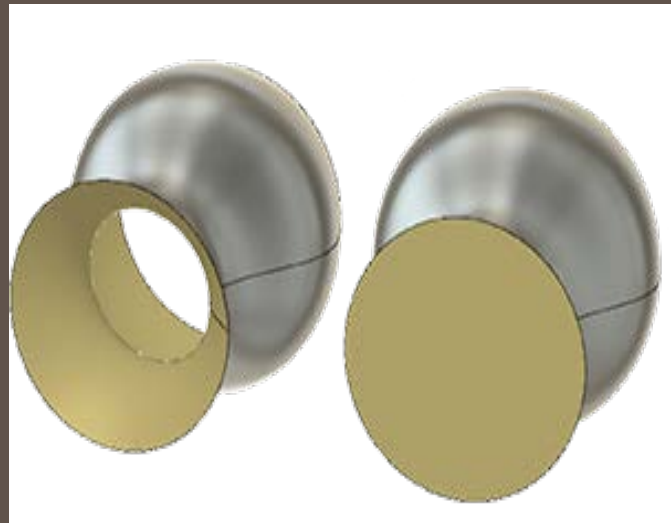
Primitives



Move Face



Patch



Watch step-by-step video:  
[youtu.be/7aHlH0eDL78](https://youtu.be/7aHlH0eDL78)







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