MeshCut

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Project Overview

- Goal: Render realistic slicing of materials
- Tools: Building on MeshEdit GUI from Project 2 to create an interactive cutting interface
- Parameterize the material modeled by the mesh, angle of the cut, etc.

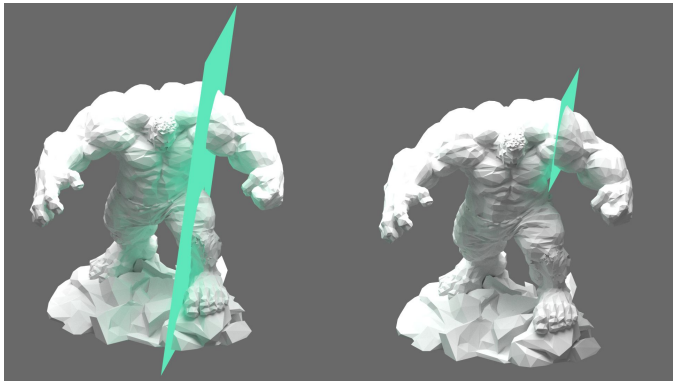
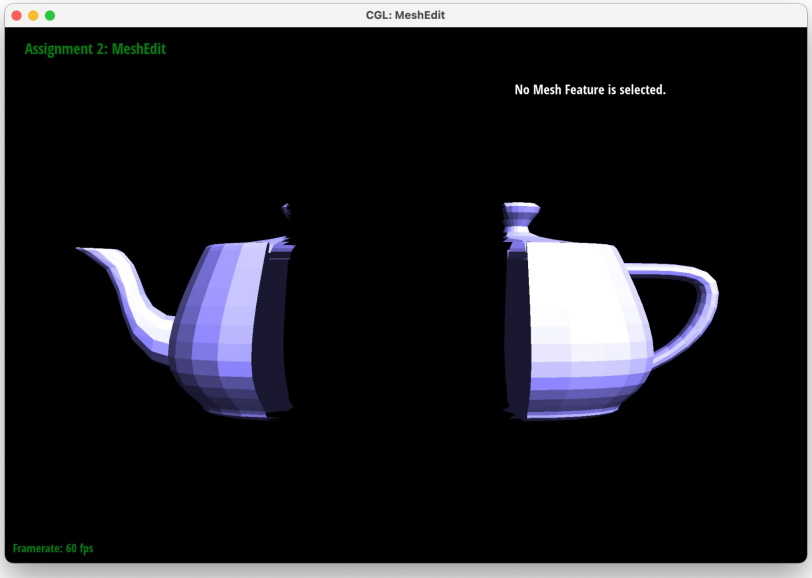


Image pulled for inspiration

Image: https://blog.prusa3d.com/cut-stl-models-3d-printing-meshmixer_7652/

Current Progress: Clean Cuts

- Given a mesh, can we give it a simple vertical cut
- Work with half-edge / mesh data structures to simulate a basic cut
    - Preparation for more advanced angles and materials



Progress

- Have a basic framework for cutting a mesh by removing and moving existing primitives
- Next steps:
  - Parameterize the cutting plane with mouse coordinates
  - “Stickiness slider” to parameterize the mesh’s resistance to the cut
- Stretch goal
  - Animating the cut - how does the material readjust after cuts of different speeds?
  - May require more robust force simulation