Lecture 5:
3D Modeling and Tools

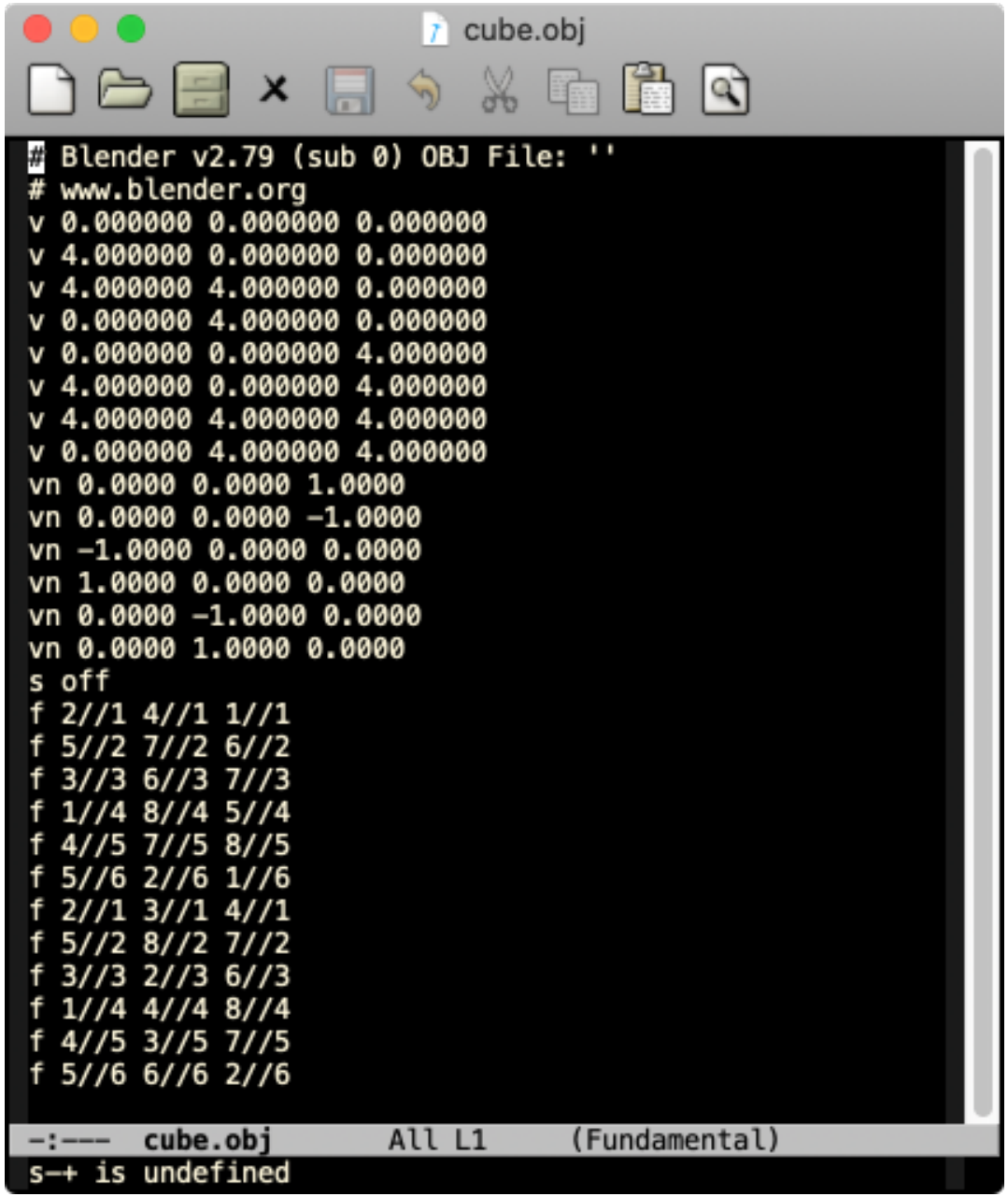
September 8, 2020

OBJ Format - Review

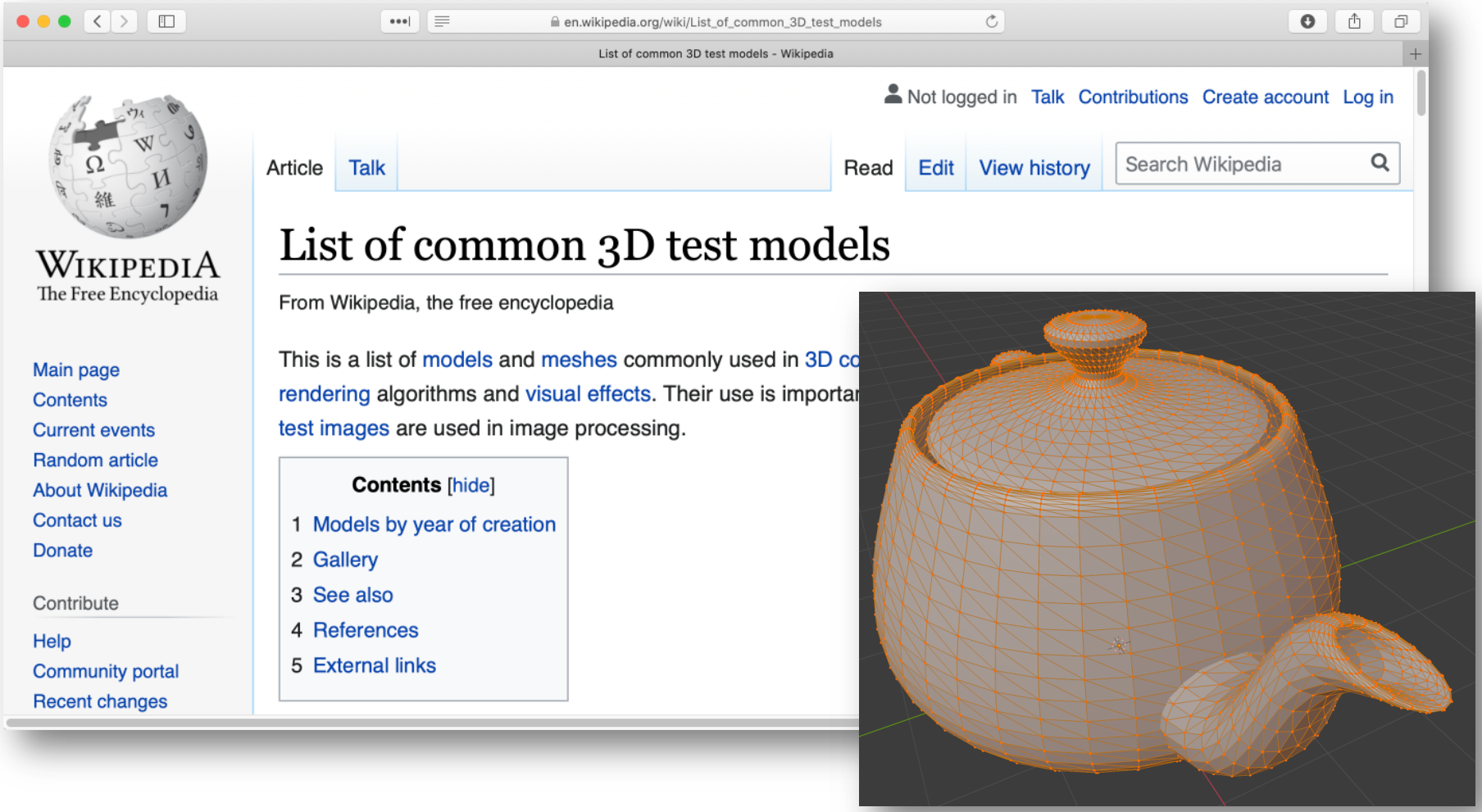
OBJ Basics

PARTS:

1. Header Comment
2. Vertex Listing
3. Vertex Normals
4. Smoothing Directive
5. Face Listing

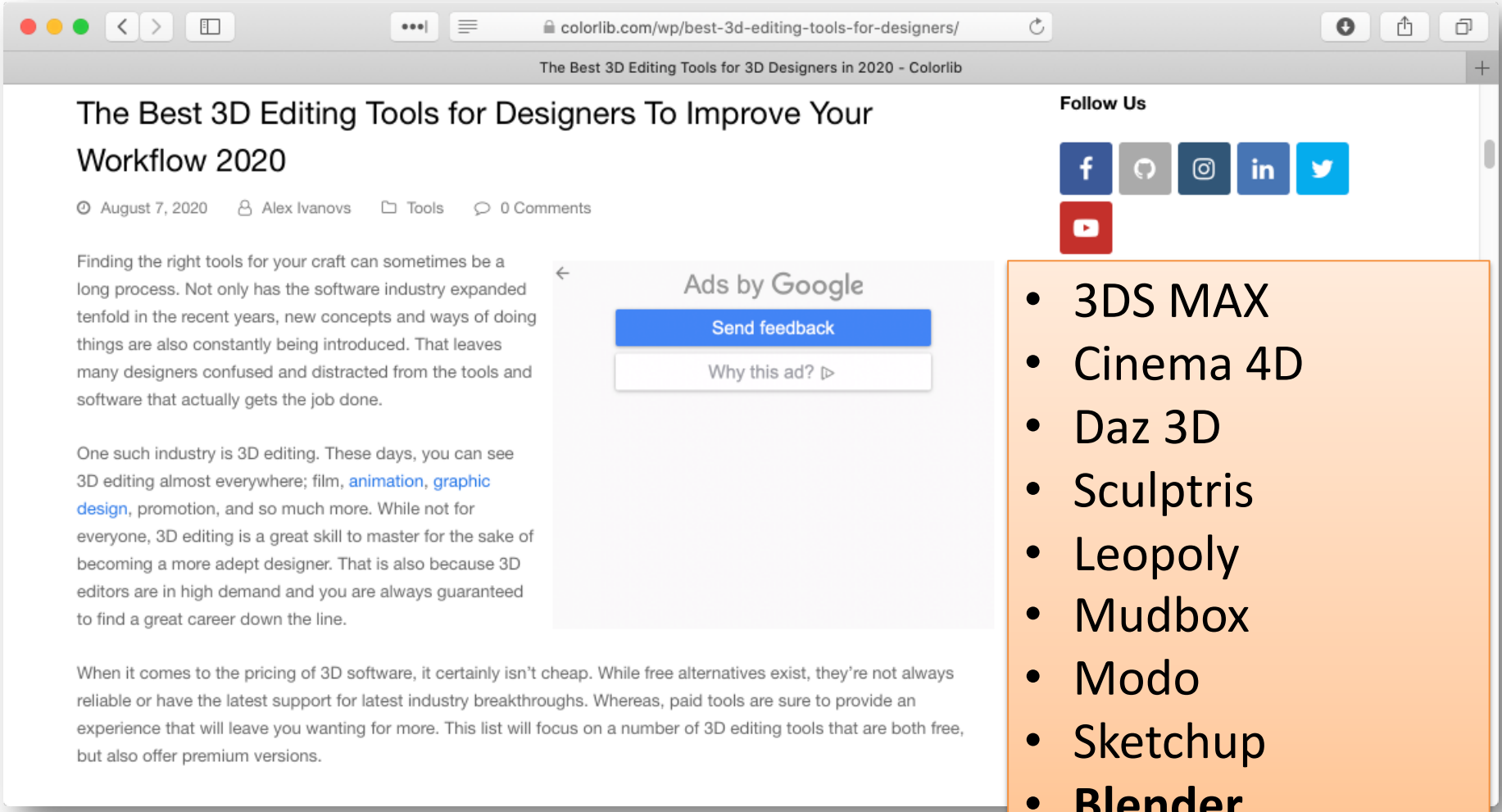


Polygons (Lots of Polygons)



- Until recently 3D: object = polygons

Many 3D Tools

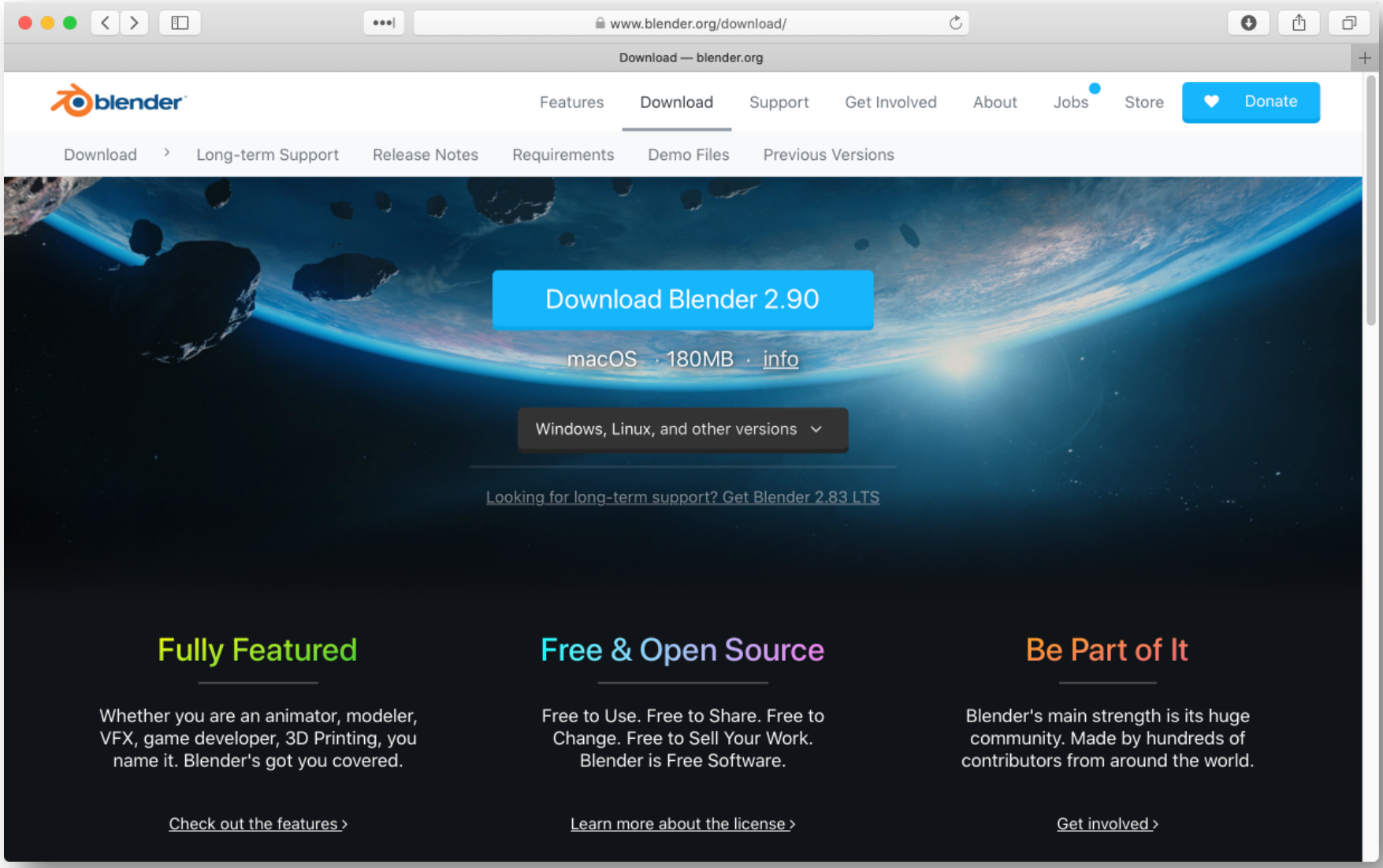


- 3DS MAX
- Cinema 4D
- Daz 3D
- Sculptris
- Leopoly
- Mudbox
- Modo
- Sketchup
- **Blender**
- …

Blender – First Glance

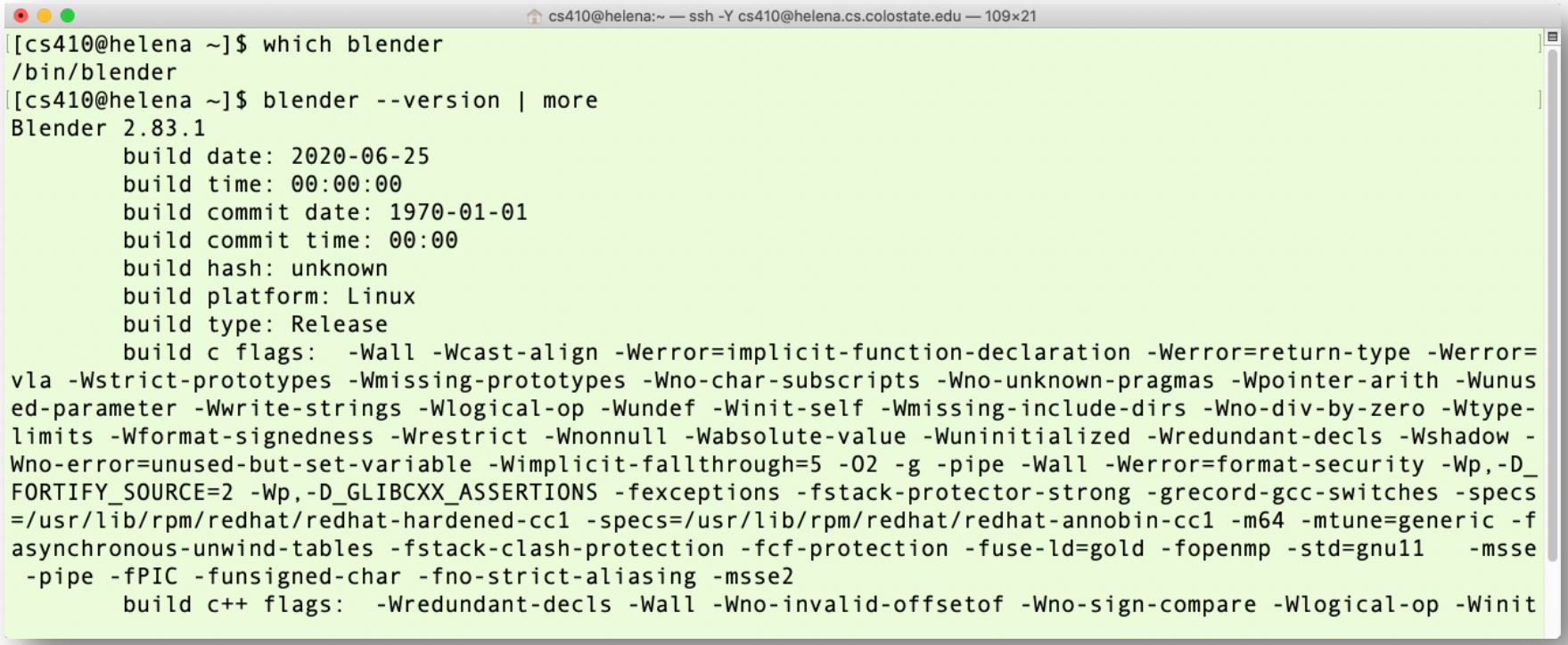
Interface makes PhotoShop looks simple ☹

Downloading Blender



Blender on CS Machines

- Blender is available on CS Dept. Machines.
- Remote execution may be slow.



Why Blender Now?

- You will want a way to view and compare 3D models store in wavefront OBJ format.
- Blender can do this easily
  - Like buying a jeep for the seat – but …
  - .. Blender is now solid on Mac, Linux, Windows
  - Other options really are not, e.g. SketchUp
- Also … as we move through the semester
  - Many concepts will now be 'visible' in Blender
    - Camera, Materials, Lights, etc.

Blender Intro Goals 1

- Basic 3D navigation
- Three button mice and hitting the ground
  - I don't mean hitting the ground running
  - I just mean hitting the ground (ouch)
  - It takes practice to simply manipulate the view
- Practice, having a good view is worth it!

Blender Intro Goals 2

- Load one – or two – OBJ files
- Move objects in ‘world’ coordinates
  - Modifier key ‘G” - See results in OBJ file
- Edit faces and watch output in OBJ file
  - Start making sense of what is in these files.
- About triangles
  - What does it mean to represent a face

Blender Intro Goals 3

- A complementary view of camera modeling
- There is a camera (of course) in Blender
- It can be manipulated
  - So many ways to place the camera
  - Let us consider only one – match user view
- Camera used to render 2D views of a scene
- A consumers view of rendering

Blender and CS410 Expectations

- Expertise using Blender itself not a goal
  - Questions about using Blender not on exams
- Blender basics almost essential
  - You can view and build models many ways
  - But it is hard to imagine something better
- Key concepts illustrated with Blender
  - Both in lecture and then possibly on exams

Blender is relatively new to CS410.
Most students get what they want/need.
And this matters … Blender is a lot of FUN!