Universität Bielefeld

CITEC
Cognitive Interaction Technology
Cluster of Excellence
Bielefeld University

Tutorial

Getting Started!

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Blender is the free and open source 3D creation suite. It supports the entirety of the 3D pipeline—modelling, rigging, animation, simulation, rendering, compositing and motion tracking, even video editing and 2D design. [1]

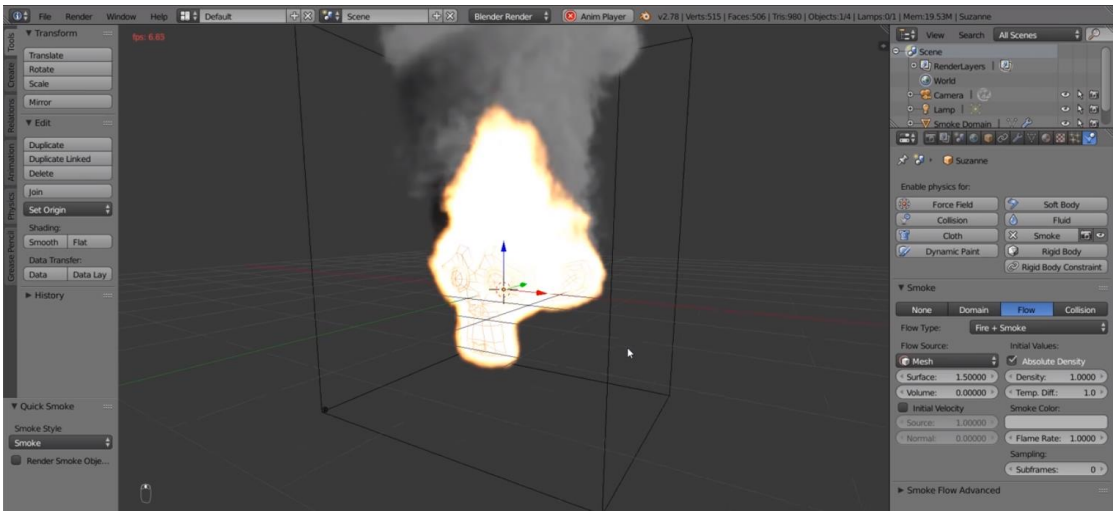
It is best to practice Blender through seeing videos. Sometimes, what you read from tutorial is difficult to gasp rather than if you see it in video. There is a very good series to start blender “Blender Guru”. It will cover Interface understanding, modelling of an object, creating materials for object and add lightening to the object. These basic features cover 80% of 3D requirements. Here it follows 80/20 rule, in which 80% of results come from 20% of features. So, either its VR, animation or 3D printing, 20% features (Modelling, lightning and Materials) will do 80% of your work. [2]

Followings [2] are the systematic phases to learn Blender:

Understanding the interface of blender and shortcuts to get started:

https://www.youtube.com/watch?v=JYj6e-72RDs

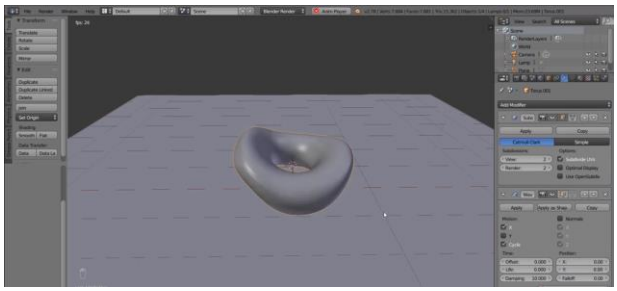
Basic understanding of using interface | Creating a fiery monkey head



How to scale, rotate and move an object:

https://www.youtube.com/watch?v=s05DiCEDVGE

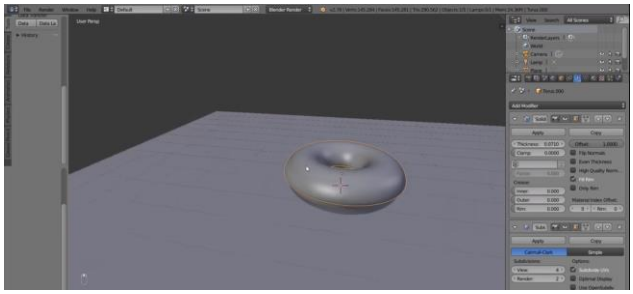
Making a donut object | Allow a donut to dance like a worm



Edit mode (Most common functionality) of Blender:

https://www.youtube.com/watch?v=qqeNA_4O0Qg

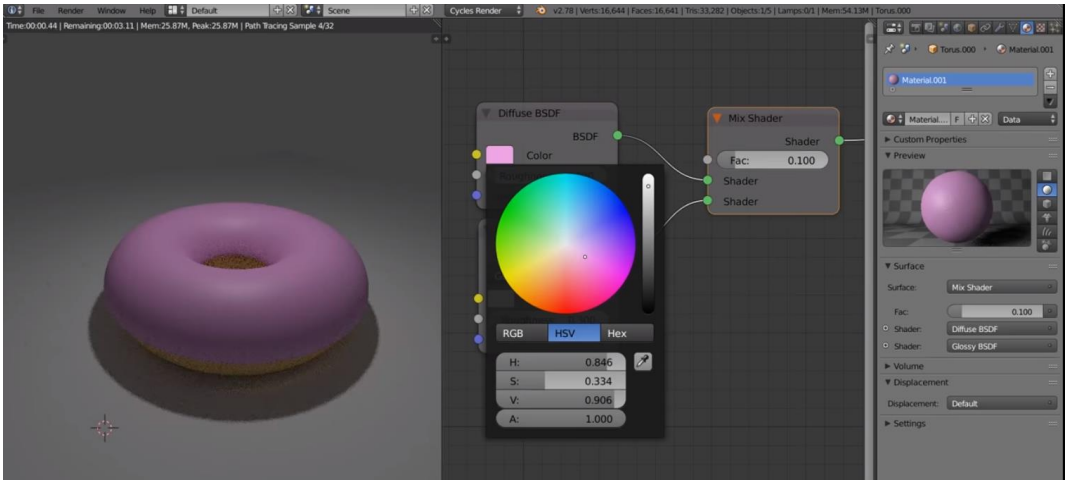
Changing the shape of object | Creating icing for donut object | Creating infinite tower of donuts

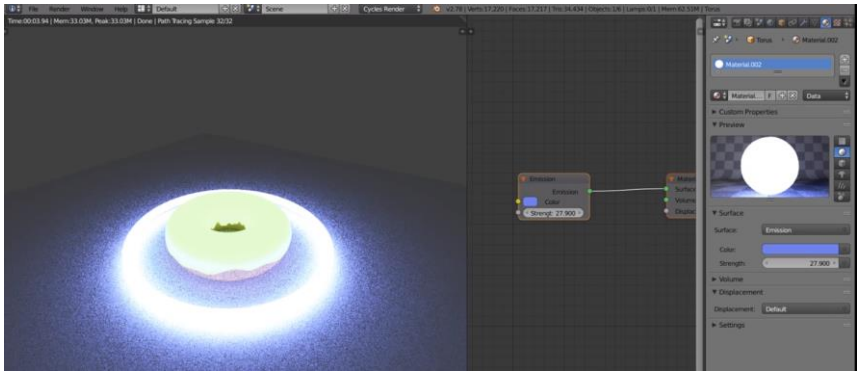


Adding materials to object:

https://www.youtube.com/watch?v=f5Gb1VK98Wc

Adding color and shading to object | Making object resemble to real world | Making icing of donut like a jelly

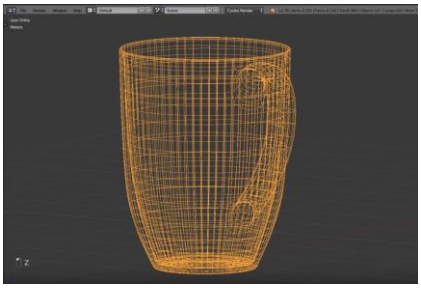


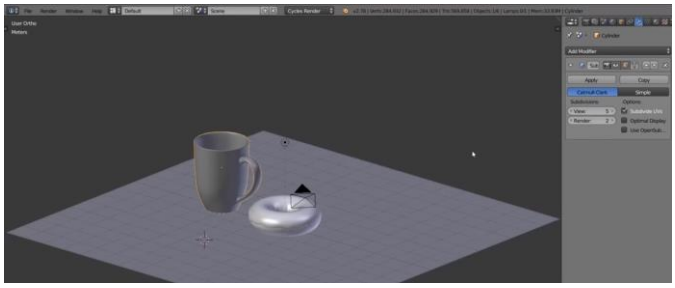


Modelling an object from scratch:

https://www.youtube.com/watch?v=ZtSh4Yedafg

Modelling a mug from an image | Using tools like loop cuts, insetting, extruding | How to shatter your mug

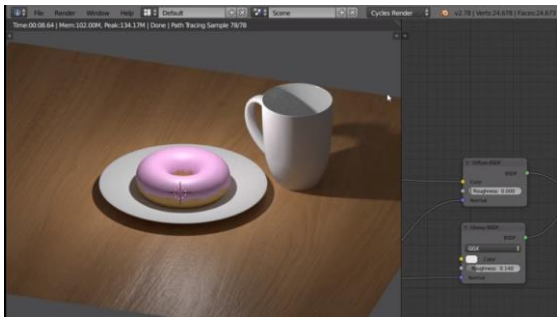


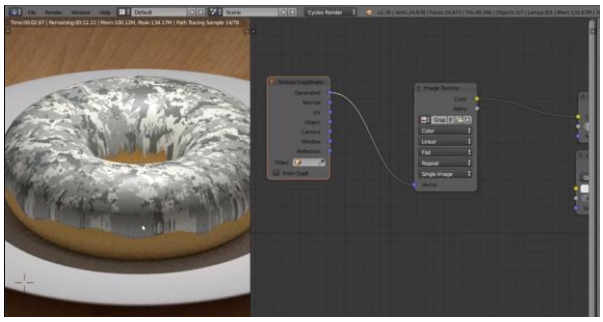


Texturing of object:

https://www.youtube.com/watch?v=izqZe8s_Jmw

Adding texture to feel real e-g wooden table | Adding image texture

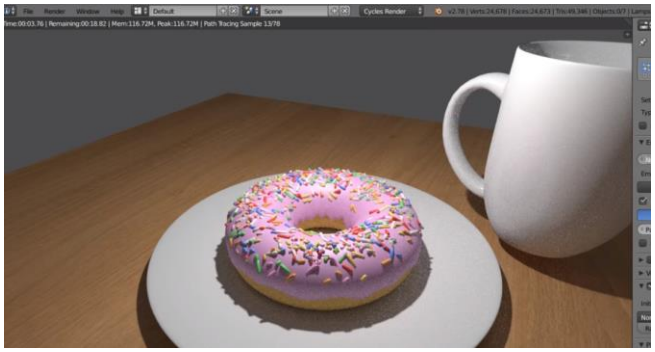


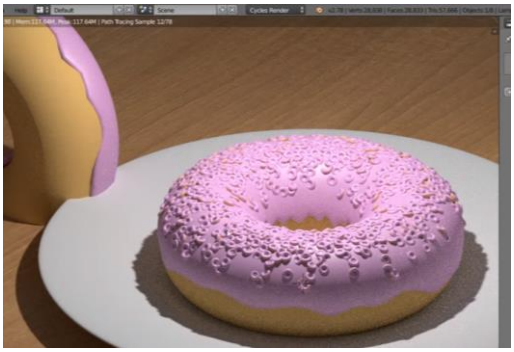


Particles (Making grass, rocks etc.) in Blender:

https://www.youtube.com/watch?v=4_niVFliJ0E

Adding particles to make sprinkles on our donut icing | Donuts sprinkles on a donut itself

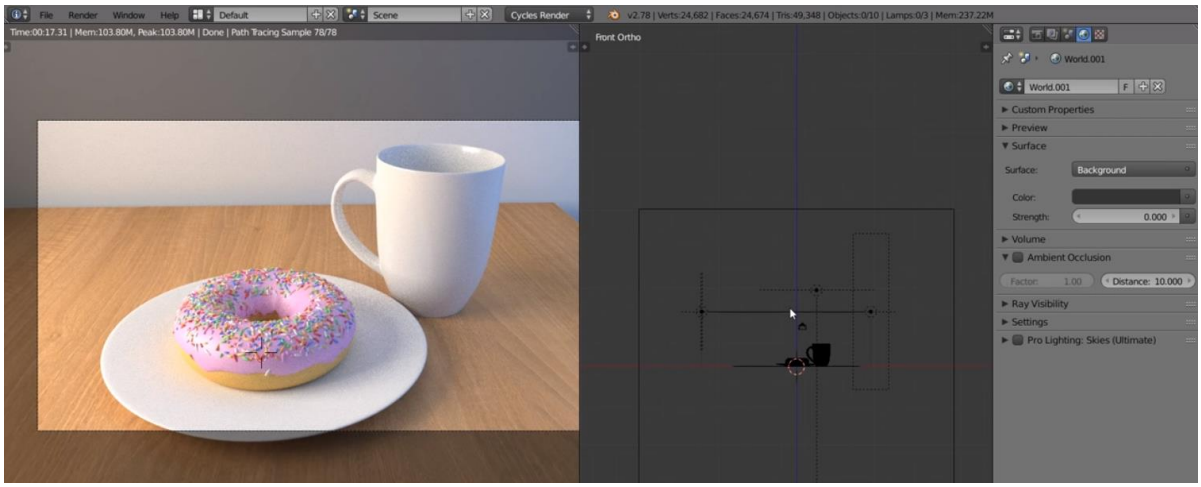




Lightening of objects:

https://www.youtube.com/watch?v=0rbPwn-I0oM&t=1091s

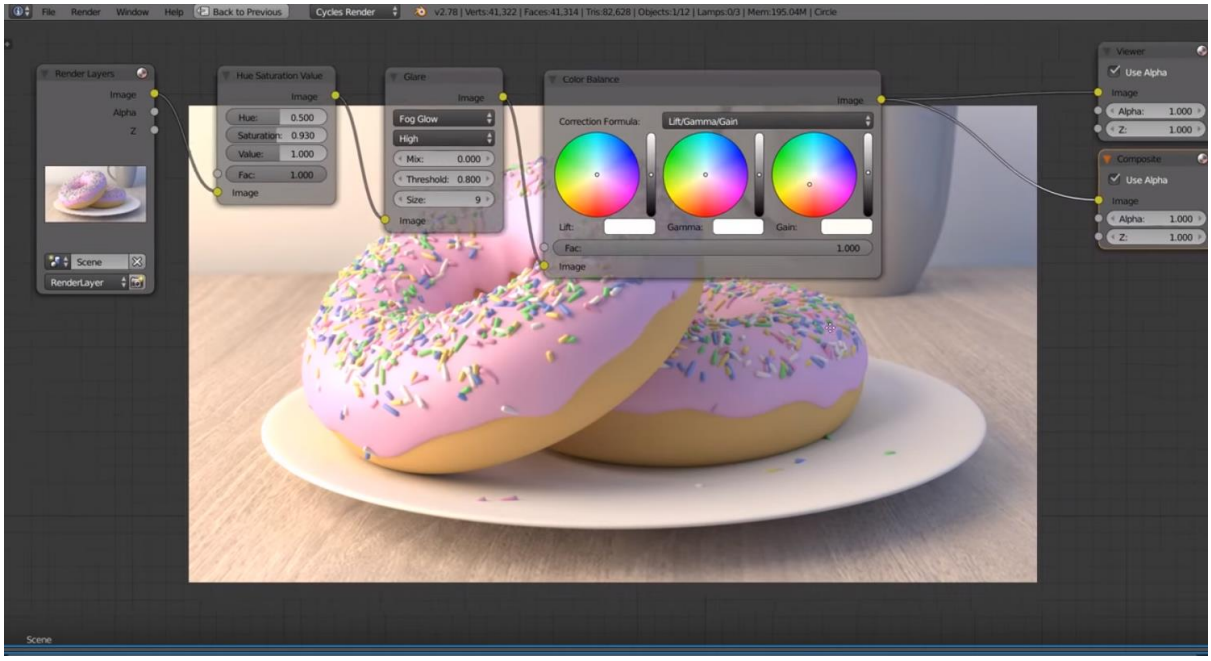
Different types of lamps in blender | How to create a pleasing light setup | Glowing light under the donut



Rendering and Compositing:

https://www.youtube.com/watch?v=25N775uHb_4&t=1715s

Speedup rendering settings | Creating a final render image



3D rendering is the process of a computer taking raw information from a 3D scene (polygons, materials, and lighting) and calculating the final result. The output is usually a single image or a series of images rendered & compiled together. Rendering is usually **the final phase** of the 3D creation process, with the exception being if you take your render into Photoshop for post-processing. If you're rendering an animation it will be exported as a video file or a sequence of images that can later be stitched together. One second of animation usually has at least 24 frames in it, so a minute of animation has 1440 frames to render. This can take quite a while. While Compositing is used quite frequently in Blender, especially by the experienced who want to take their imaginations further. The compositor can make rendering faster, add images, make distortions, make the render look more realistic, and much, much more.

References:

[1] https://www.blender.org/

[2] https://www.youtube.com/channel/UCOKHwx1VCdgnxwbjyb9Iu1g

[3] https://conceptartempire.com/what-is-3d-rendering/

[4] https://www.wikihow.com/Use-the-Compositor-in-Blender