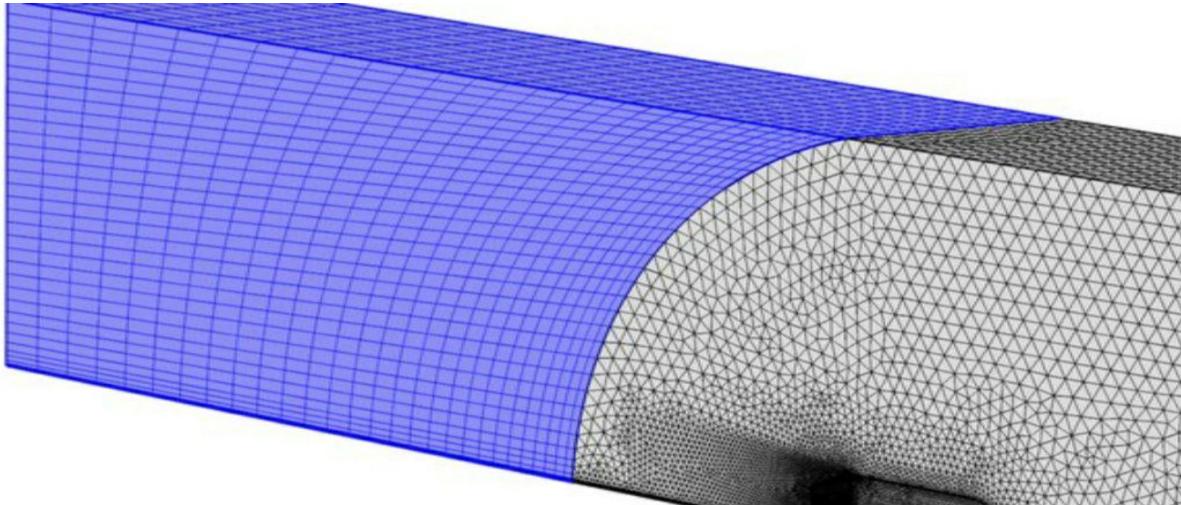




Mesh Types:

Meshering is discretization part of computing **finite element methods** to simulate a flow in a pipe, magnetic field around a magnet or similar problems to analyze a structure.

The higher the resolution of discretization, the finer the error in simulation. To overcome wasting too much compute power on plain parts, only turbulent volume of problem is discretized at higher resolution (i.e. more mesh surfaces) and rest of volume with relatively dull parts are given low resolution.

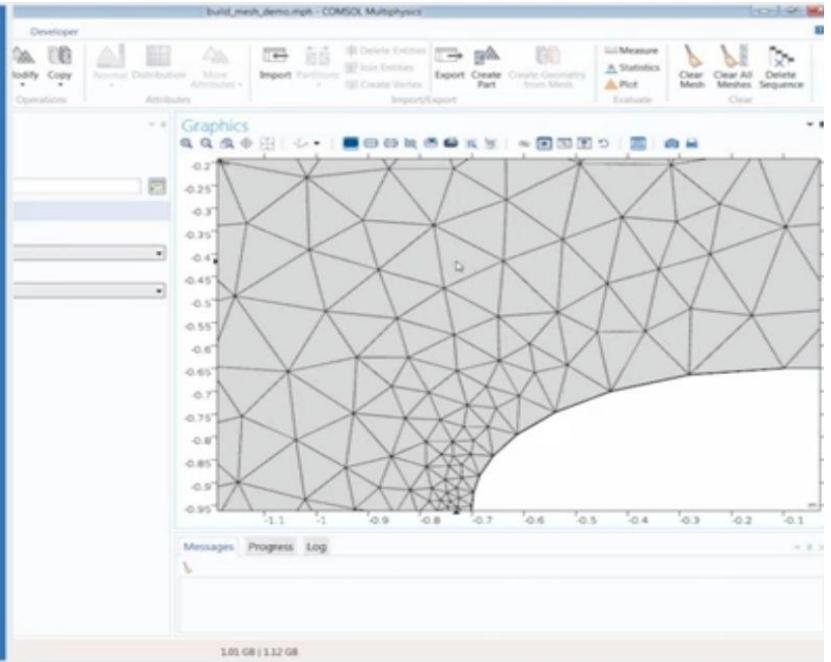


The parameters of choosing a mesh type:

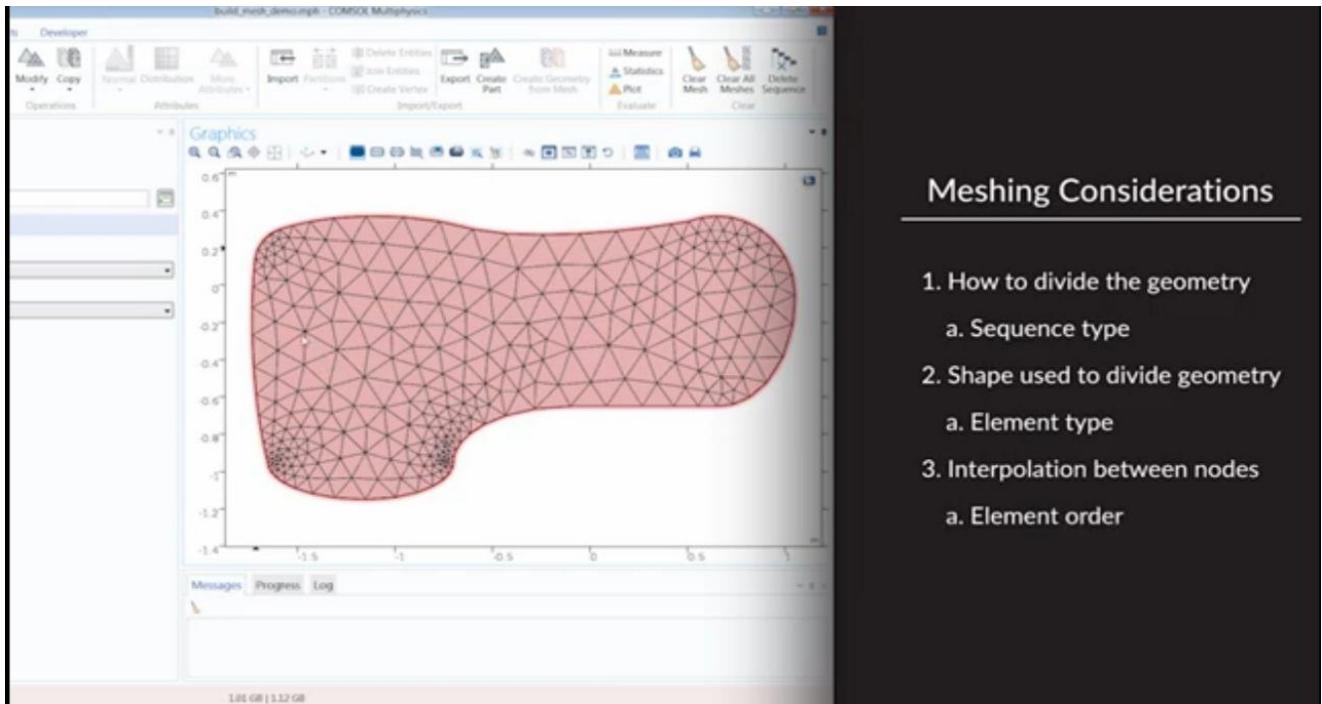


BUILDING THE MESH

- » Why is meshing important?
- » Meshing in COMSOL
 - » Sequence type
 - » Physics-controlled mesh
 - » User-controlled mesh
 - » Meshing sequence order
 - » Element type
 - » Element size and distribution
 - » Element order
 - » Mesh quality



Basically choosing the mesh type is important depending on the element size, element type, element order, and mesh quality.

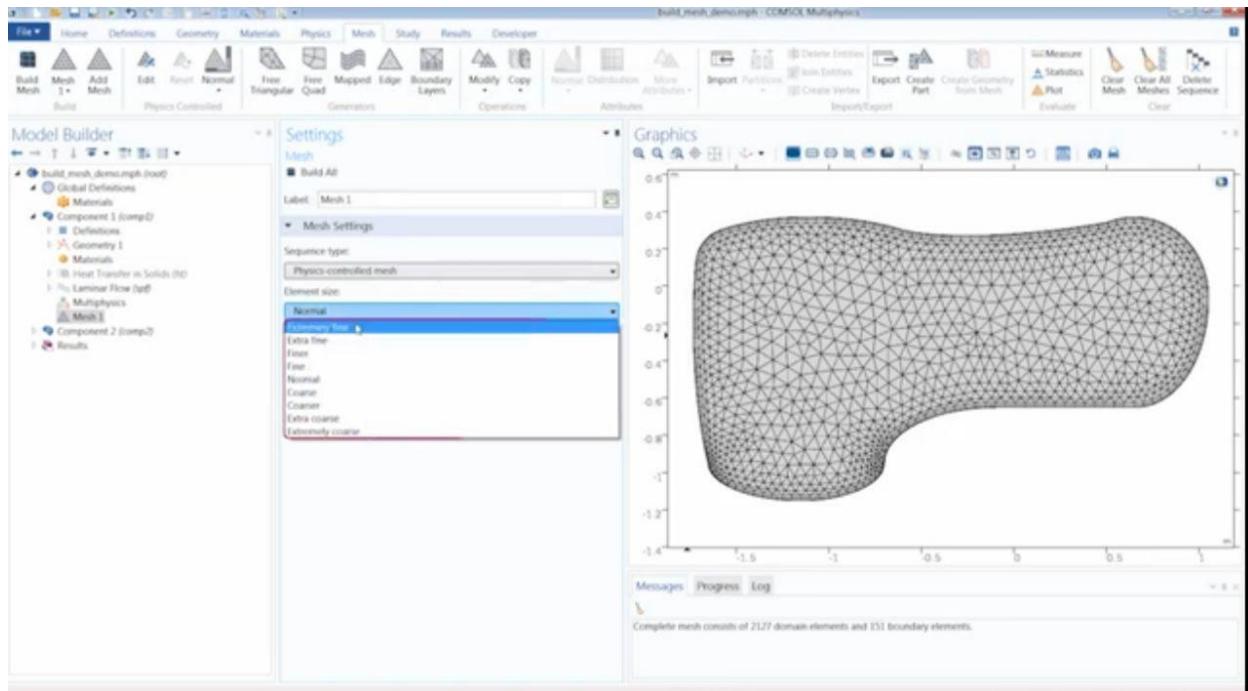


Meshing Considerations

1. How to divide the geometry
 - a. Sequence type
2. Shape used to divide geometry
 - a. Element type
3. Interpolation between nodes
 - a. Element order

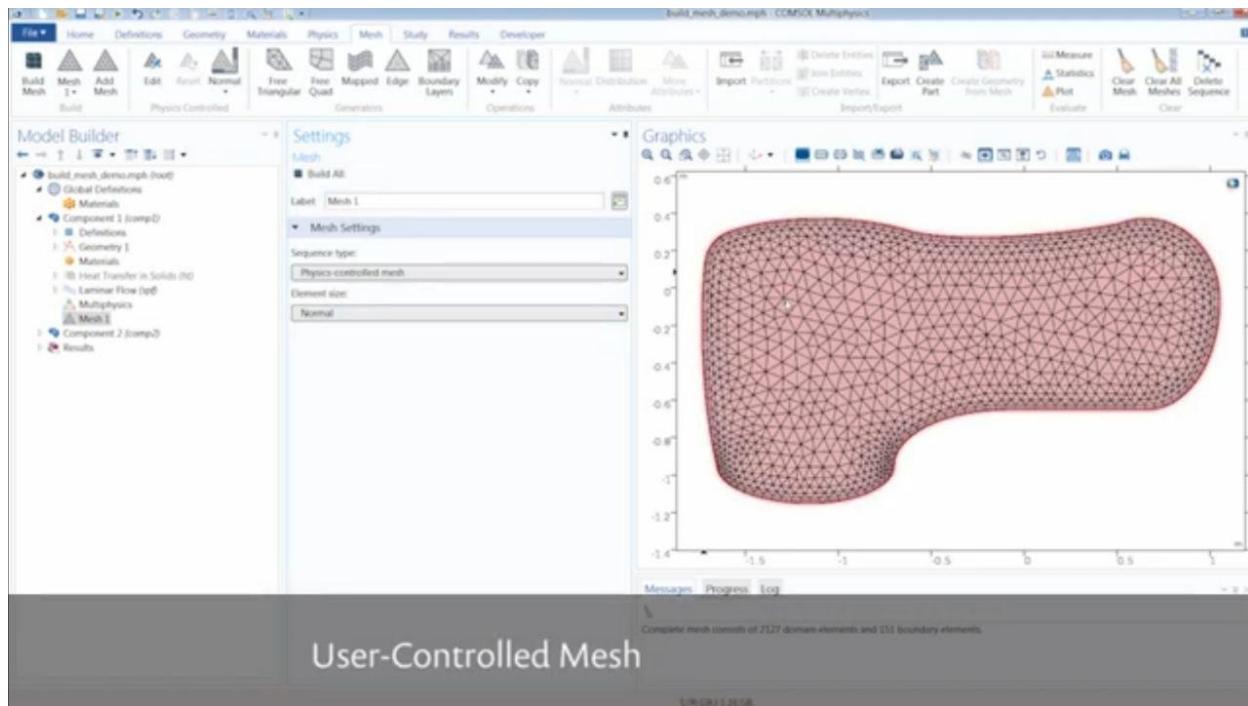
Types of mesh:

1. Extremely fine
2. Extra fine
3. Finer
4. Fine
5. Normal
6. Coarse
7. Coarser
8. Extra Coarse
9. Extremely Coarse



Checking the difference between the mesh types:

The normal setting:



The coarse setting is demonstrated below:

