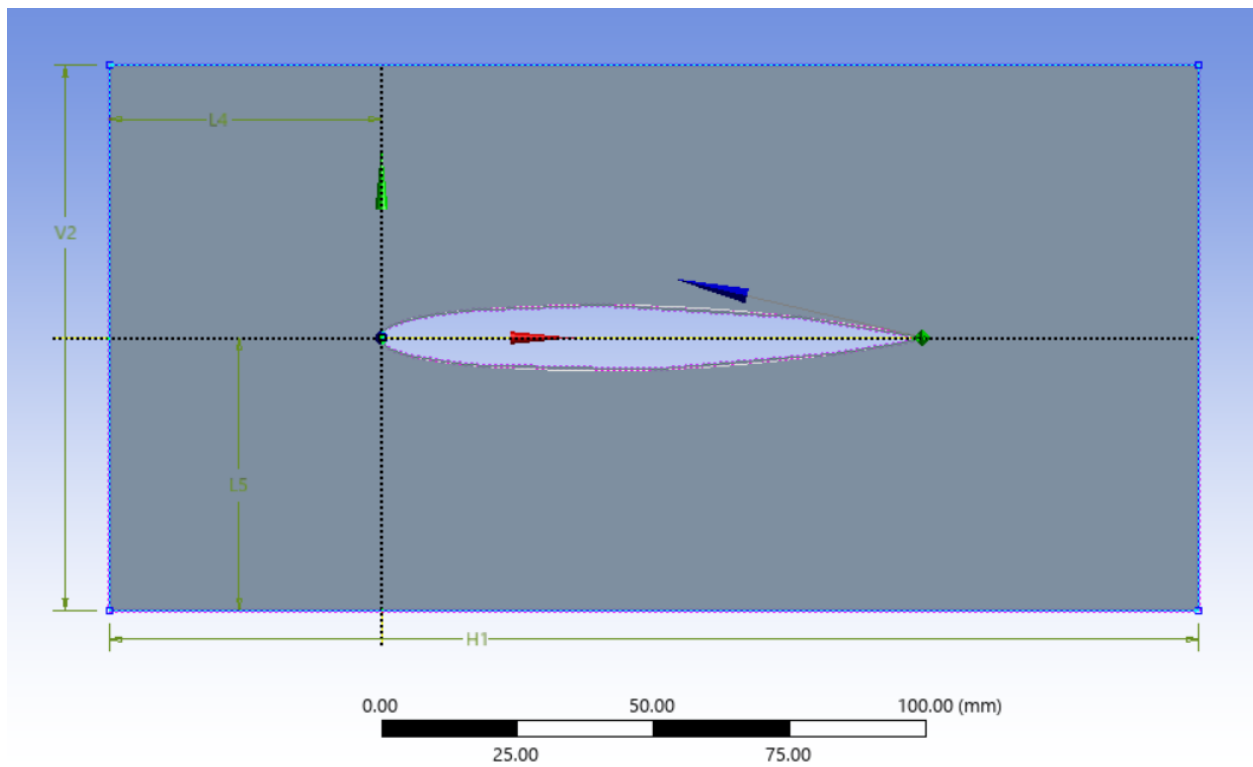Project 20: ANSYS FLUENT: NACA Airfoil 0012

Problem Statement: Calculate the pressure and velocity contour around a NACA airfoil 0012.

Geometry:

Material Properties:

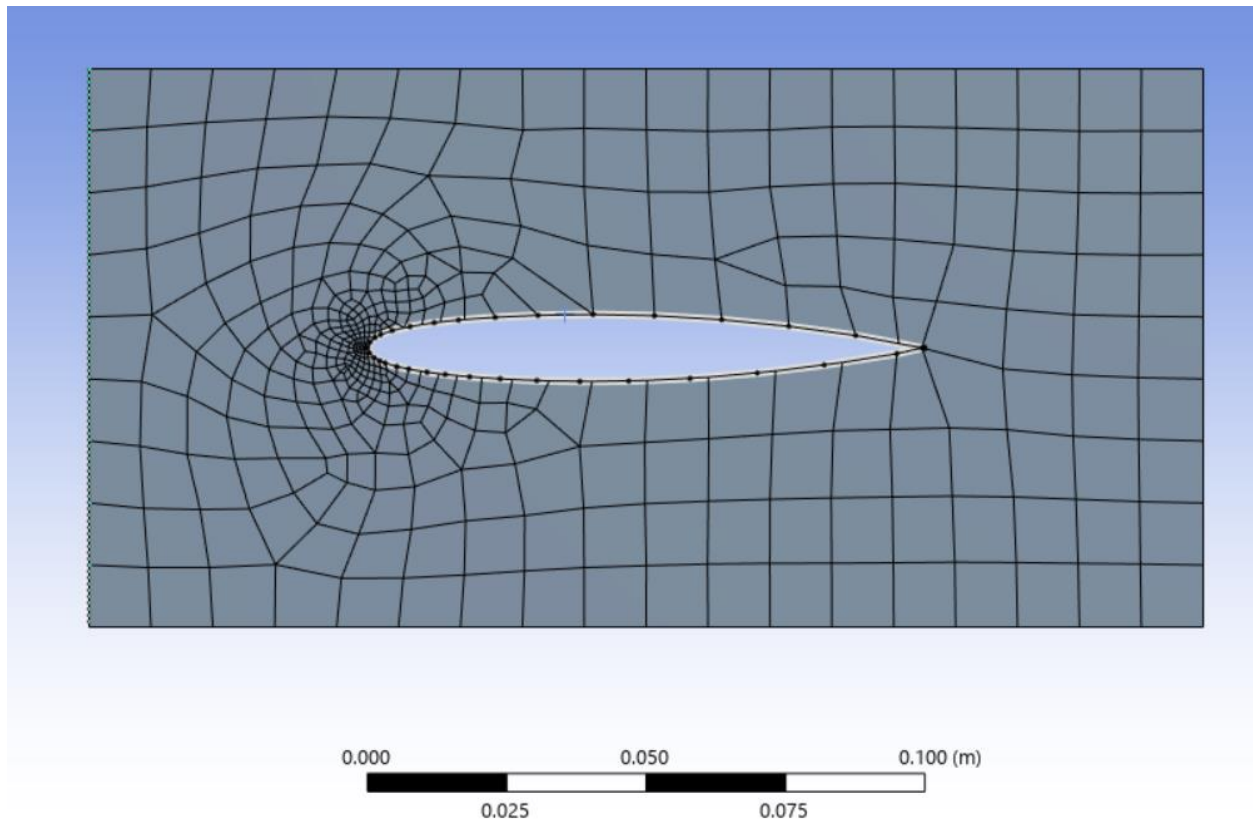| Name	Material Type	Order Materials by
air	fluid ▼	● Name
Chemical Formula	**Fluent Fluid Materials**	○ Chemical Formula
	air ▼	**Fluent Database...**
	Mixture	**GRANTA MDS Database...**
	none ▼	**User-Defined Database...**

Properties

Density [kg/m³] constant ▼ Edit...
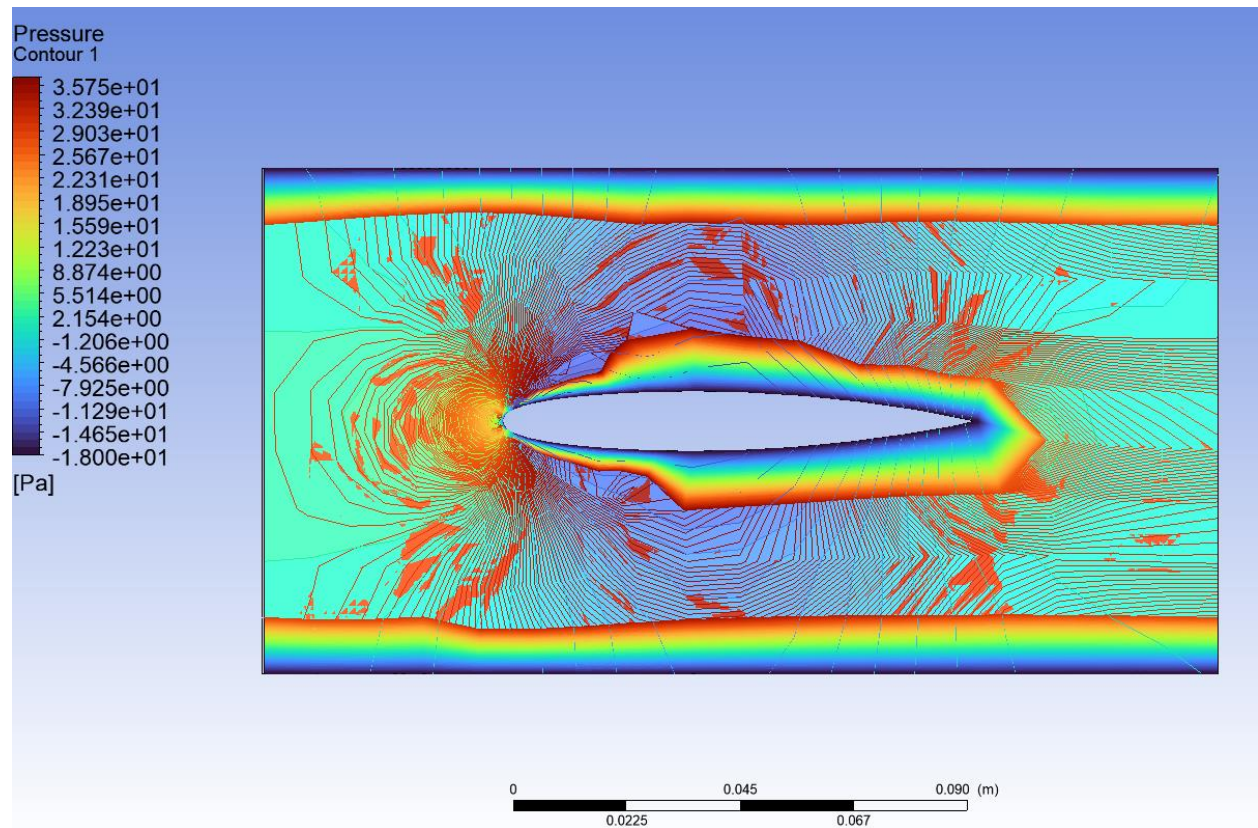
1.225

Viscosity [kg/(m s)] constant ▼ Edit...

1.7894e-05

Boundary Conditions:

Inlet velocity is 8m/s. Outlet pressure is 0Pa.

Mesh:

0.000   0.050   0.100 (m)

        0.025   0.075

Results: Pressure and Velocity Contour around the airfoil.

Velocity
Contour 2

9.249e+00
8.762e+00
8.275e+00
7.788e+00
7.302e+00
6.815e+00
6.328e+00
5.841e+00
5.355e+00
4.868e+00
4.381e+00
3.894e+00
3.407e+00
2.921e+00
2.434e+00
1.947e+00
1.460e+00
9.736e-01
4.868e-01
0.000e+00

[m s^-1]

0   0.045   0.090 (m)
    0.0225   0.067