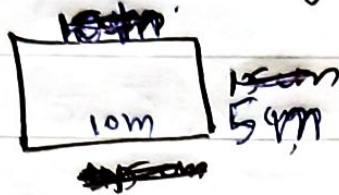


Flow over flat plate

Geometry:

XY plane \rightarrow units \rightarrow mm

XY plane \rightarrow sketching \rightarrow rectangle



Concept \rightarrow surface from sketches \rightarrow select Sketch1
 \rightarrow Apply \rightarrow Generate

Mesh

Mesh - Generate Mesh

Mesh \rightarrow insert \rightarrow Method

Select the geometry as one body \rightarrow Apply

Method \rightarrow Multizone Quad/Tri

Mesh \rightarrow insert \rightarrow sizing

Select the vertical edges as geometry \rightarrow apply

Type \rightarrow Number of Divisions, w. of div = 60-120

Bias Type ---

Bias factor ≥ 10

Reverse Bias \rightarrow select left vertical ^{edge} ~~side~~ \rightarrow Apply.

Mesh \rightarrow insert sizing

Select bottom horizontal edge as geometry \rightarrow apply

Type \rightarrow Number of Division = ~~60~~ 120

Mesh \rightarrow update

Create named selections for inlet, outlet, ~~and~~ wall, and symmetry.

Clear Meshing.

Set up

Double Precision, Serial

Materials: - air - ~~edit~~ \rightarrow Fluent

Boundary conditions \rightarrow inlet - velocity inlet

\rightarrow velocity magnitude = 0.5 m/s.

~~\rightarrow interior surface body~~

\rightarrow outlet - pressure outlet

\rightarrow gauge pressure, 0

\rightarrow OK.

Outlet \rightarrow Operating conditions
Operating Pressure = 101325 Pa

Solution initialization → Hybrid initialization → Initiation

Run Calculation → No. of iterations 50,
Reporting interval 1

→ Calculate

Close setup
~~Setup~~

Results

Tick everything below 'surface body'

Contour → ~~ok~~ velocity to velocity → ok

Locations → symmetry 1

variable → velocity

→ apply.

Streamline → OK

Domains → All domains

Start from inlet, # of points → 50, Sampling → vertex
Apply.

Unlink symmetry 1 and symmetry 2 in tree

Animation → select Streamline 1 → set speed slow
→ Play.