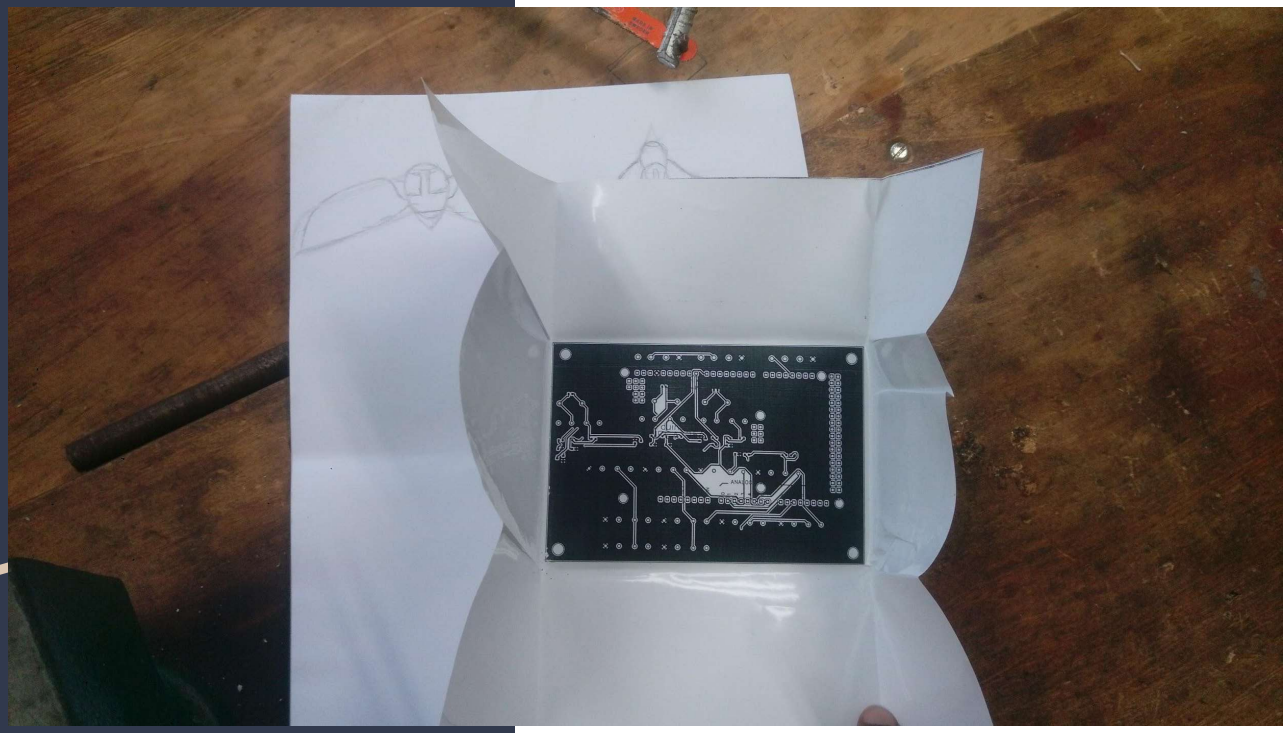
LIQUID PROPULSION
Progress Report

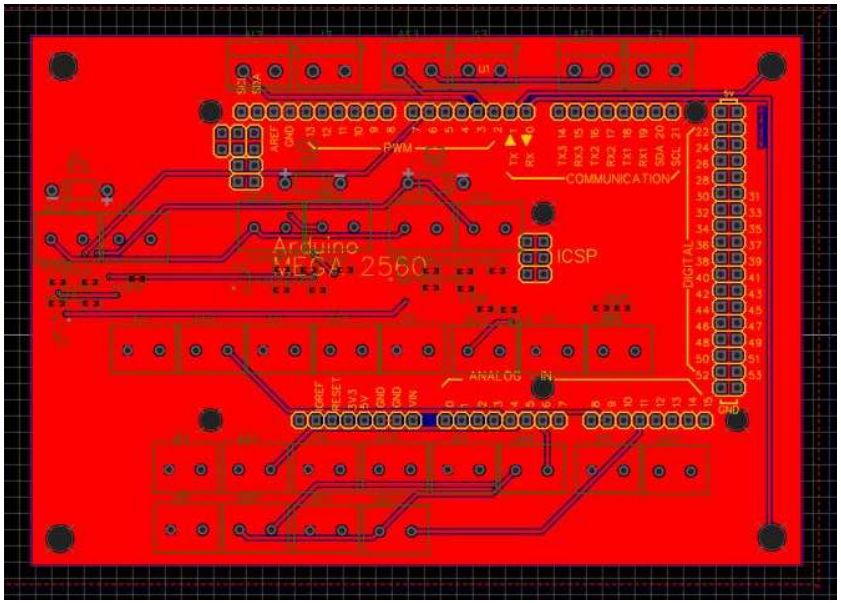
Week 16

Last week's objectives

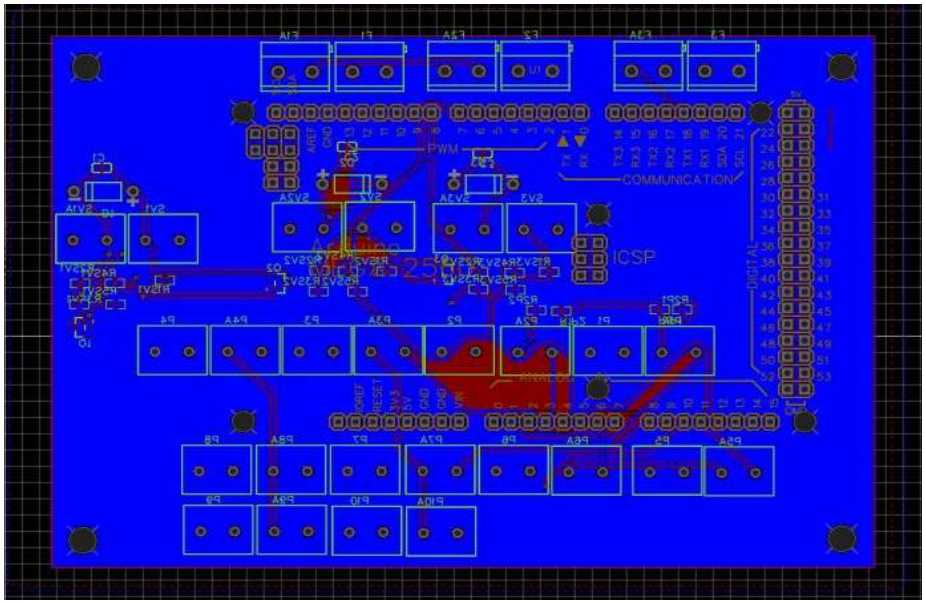
1. Developing PCB (Etching, Soldering, Testing)
2. Combining of code
3. Stress analysis of engine supports

1. Development of PCB





Top Layer



Bottom Layer

Our first etched PCB.

We will have a total of 2 PCBs.

2. Combining of Code

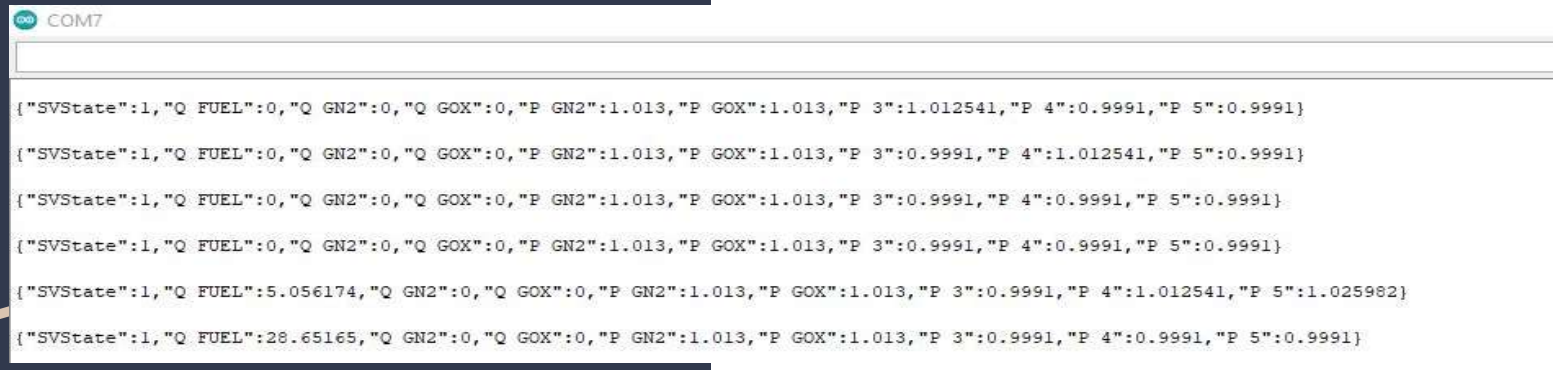
The combination is almost ending.

A stable sample rate of **10Hz** was used.

(10Hz means sampling every **100ms**).

The highest allowable sample rate is **20Hz (every 50ms)**

Above 20Hz, the flow meters yields rather inaccurate values.

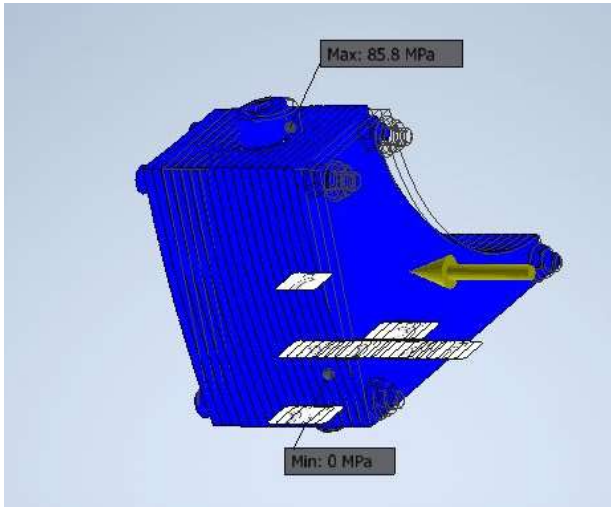


4. Stress Analysis of Engine Supports

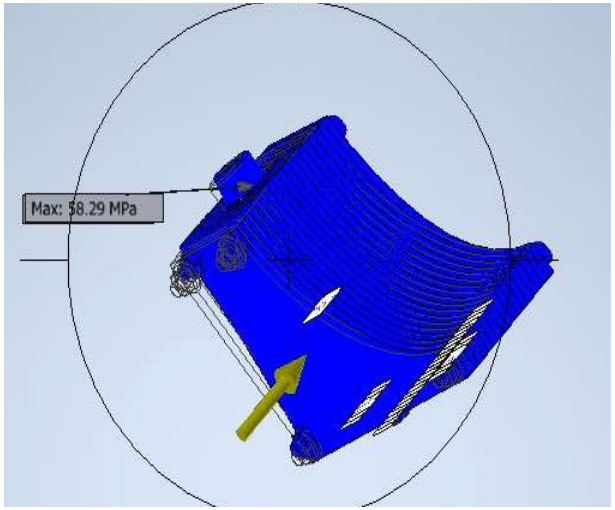
The design of the engine support was further improved and the analysis results are as follows

Von Mises Stress	85.8 MPa
1st Principal Stress	58.29 MPa
3rd Principal Stress	8.01 MPa
Maximum Displacement	3.979 x 10^-4 mm
Equivalent Strain	3.516 x 10^-4
Contact Pressure	12.05 MPa

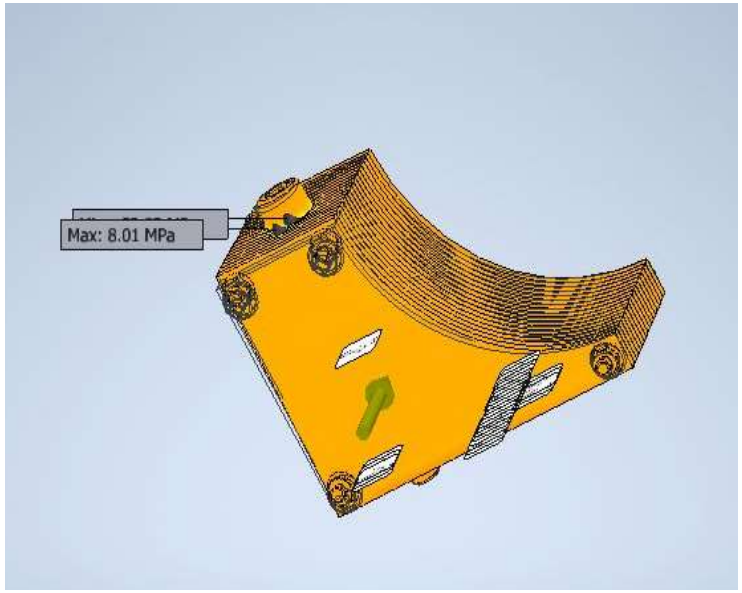
Yield stress of stainless steel and mild steel (used for the fasteners) is 250 MPa and 220 MPa respectively hence our design will not fail



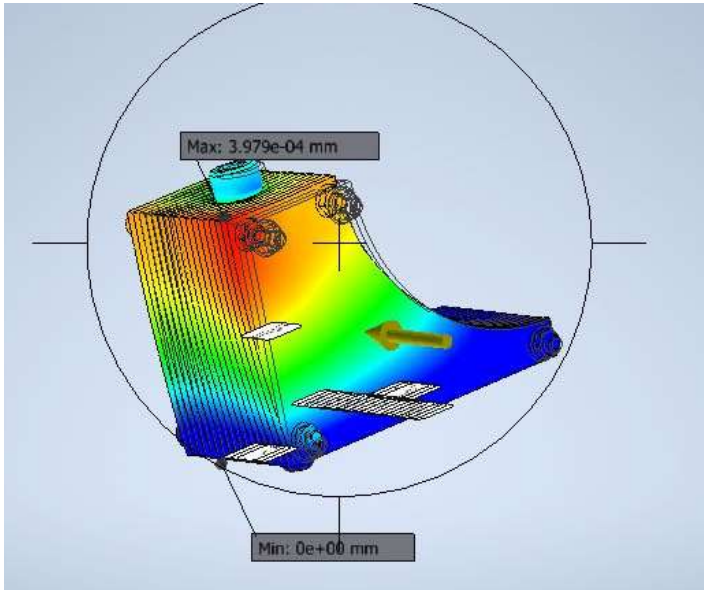
Von Mises Stress



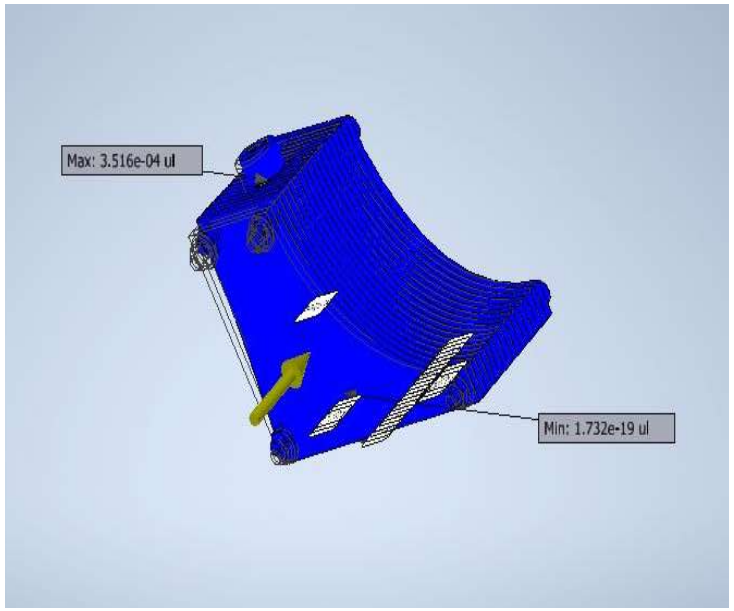
1st Principal Stress



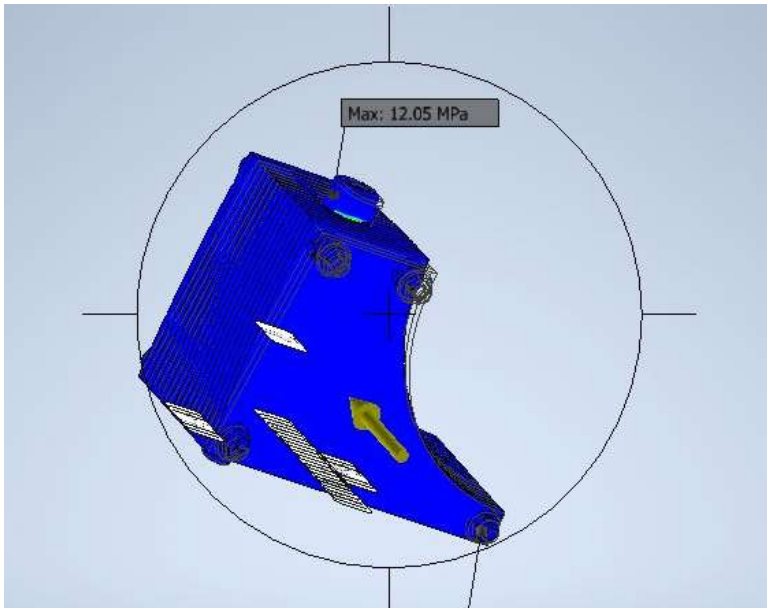
3rd Principal Stress



Maximum Displacement



Equivalent Strain



Contact Pressure

THANK YOU

ANY QUESTIONS?