

SIMULATION LAB

Structural steel Analysis



SUBMITTED BY

NAME :- GUNDA VENKATA SAI JAI HARSHA

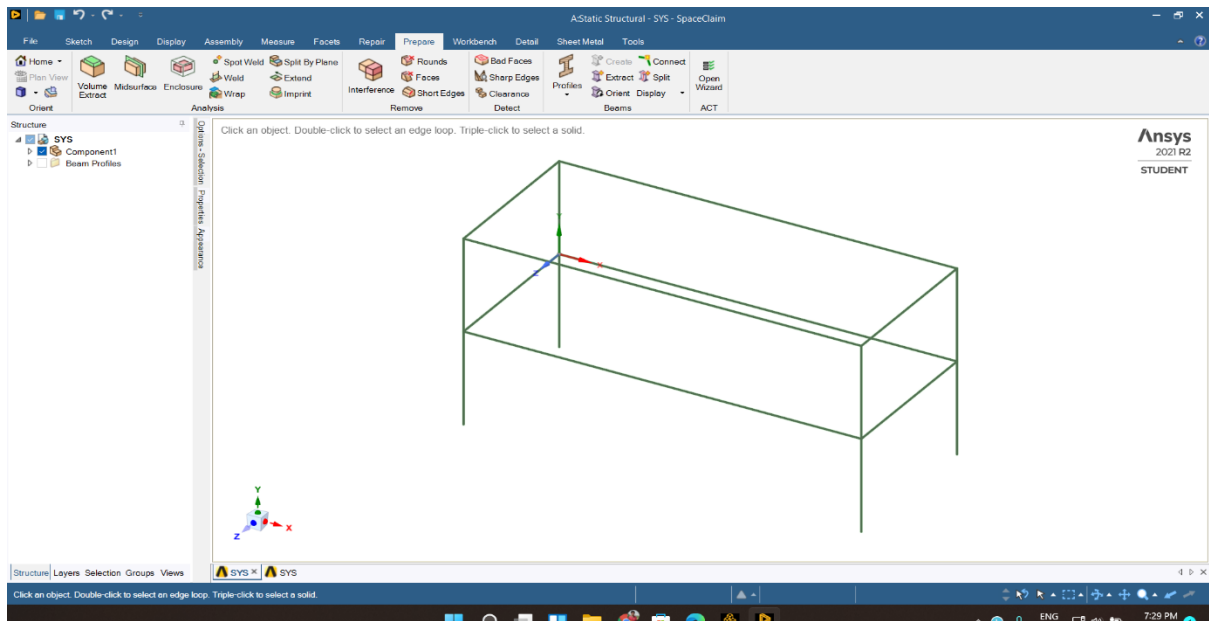
NO :- 190169.

SUBMITTED TO

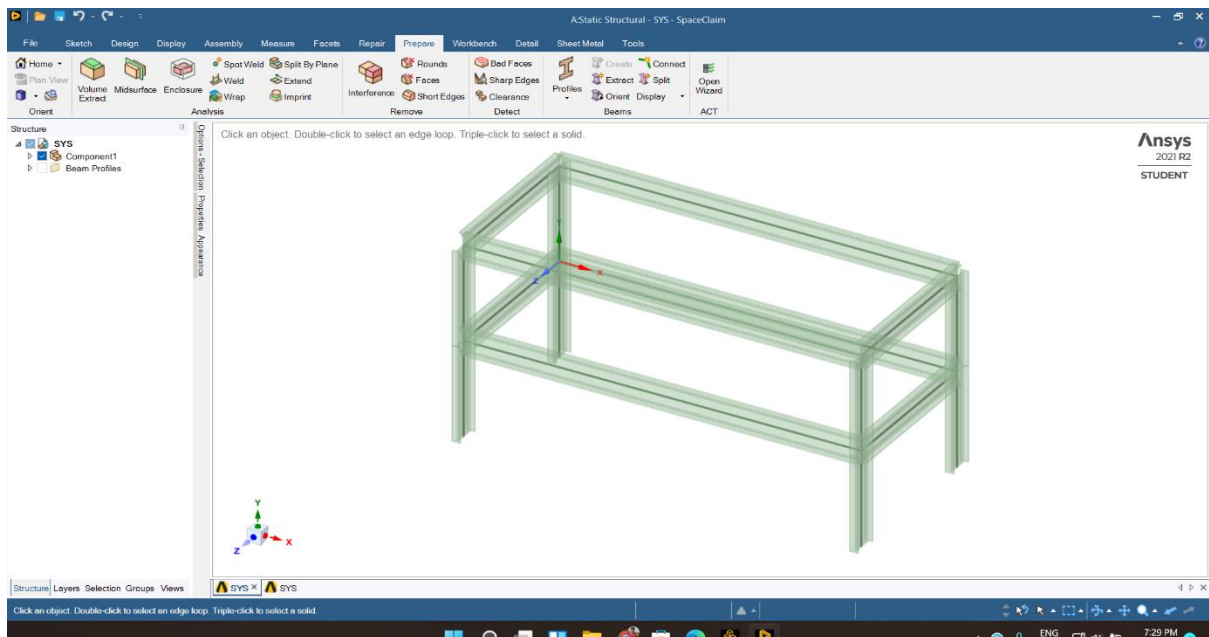
DR.NEERAJ KUMAR SHARMA

Model the frame structure.

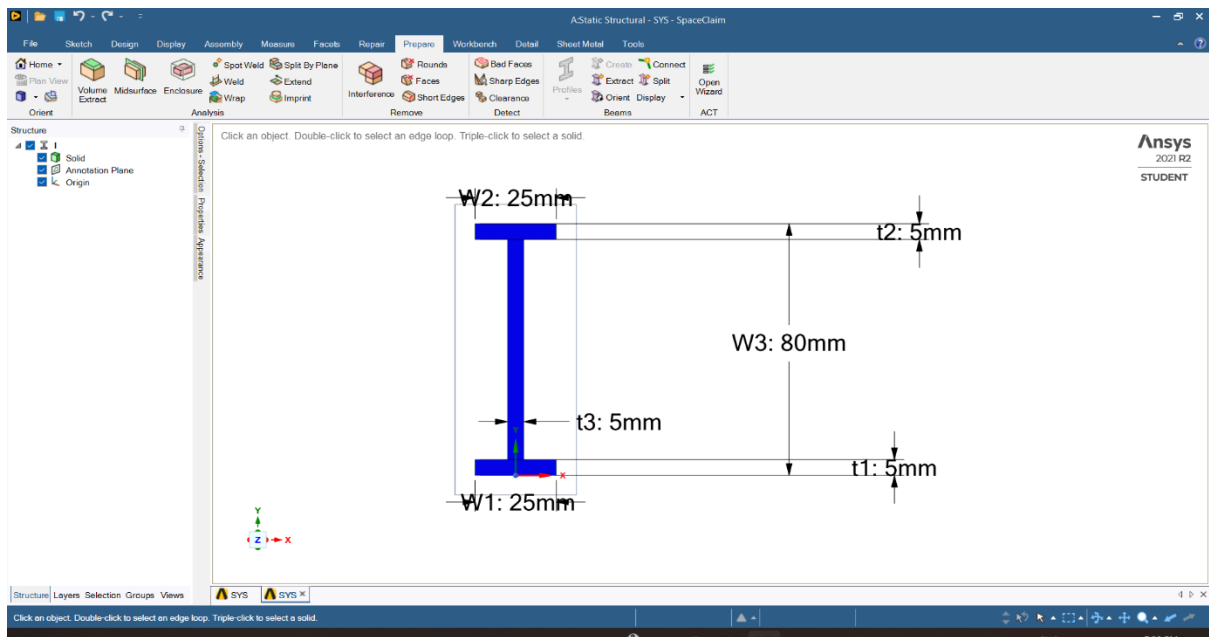
Wire beams



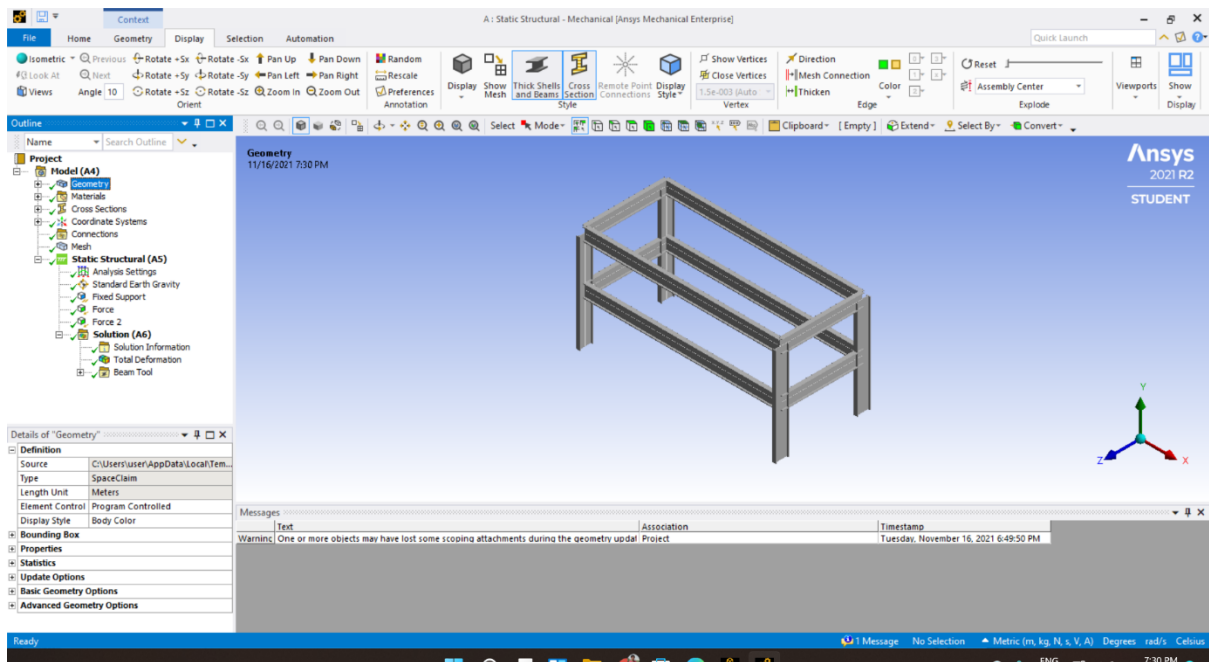
Solid beams



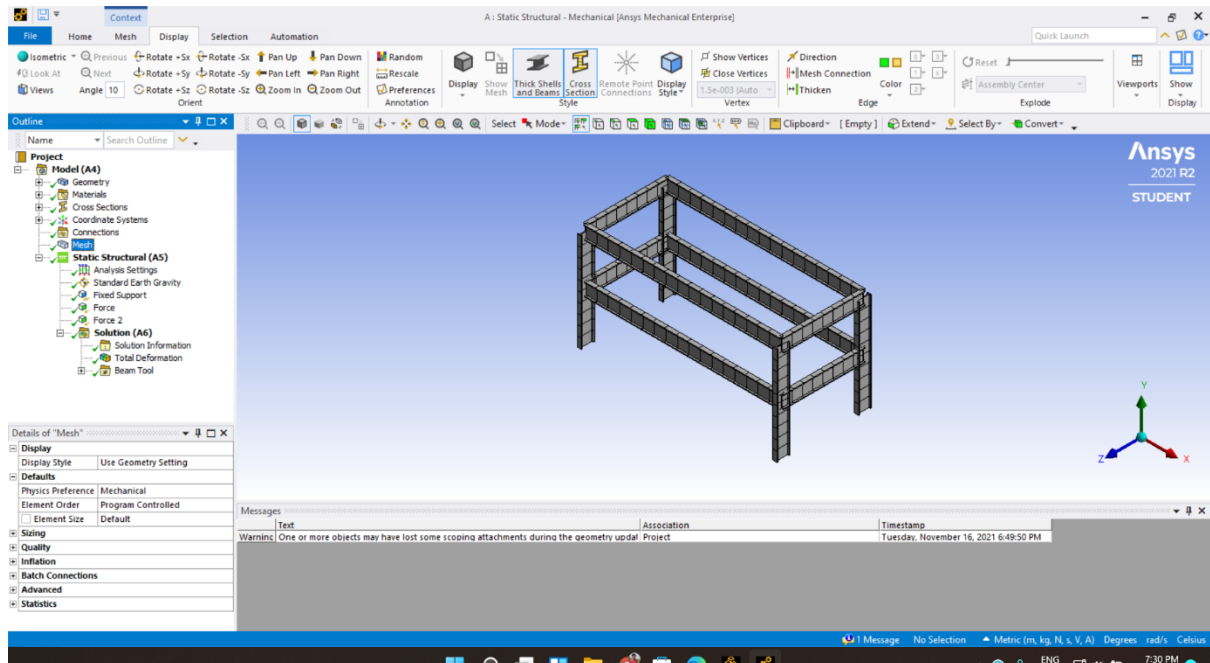
I Section beam



Material :- Structural Steel.



MESH

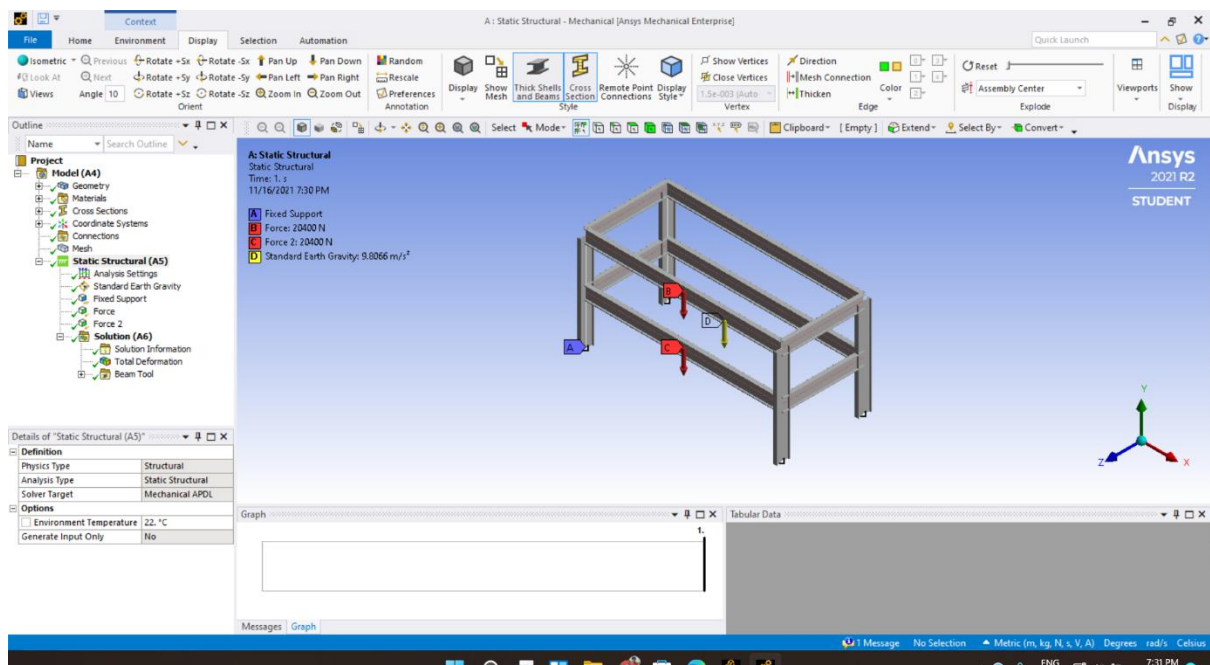


I have applied fixed support too base four beams for ground the Frame

The force for the beam is $6000 \times 3.4 = 22400\text{N}$ for each floor.

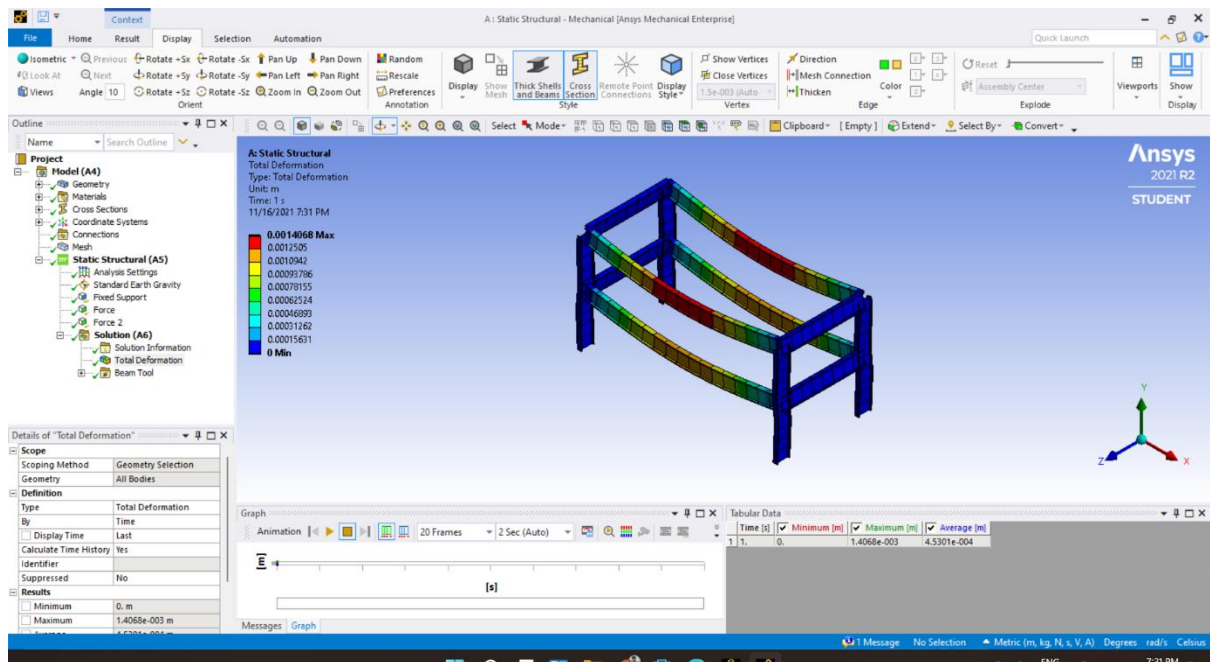
Perimeter of Rectangle = $2(L+B) = 2(1.2+0.5) = 3.4$.

I have applied Standard Earth gravity.



The Total Deformation of the Frame is 0.0014068max.

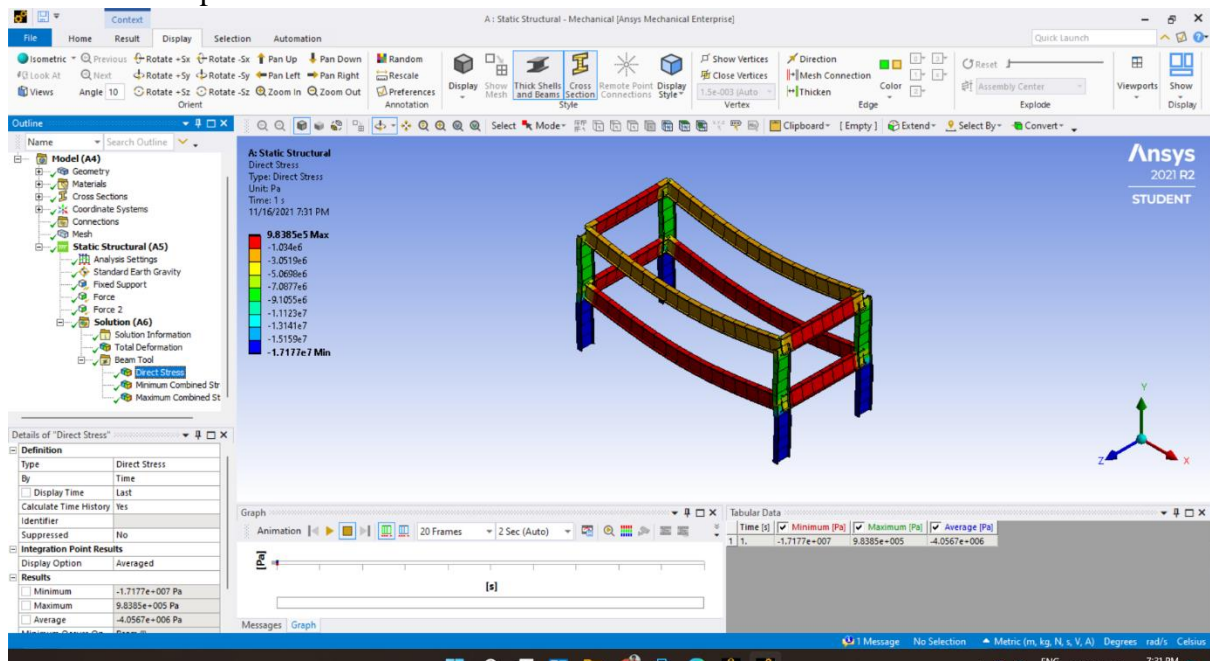
The Deformation is occurring at y axis and centre of the beam it is becoming high. Only on the length of the frame the force is getting deformation. The blue part has no change.



Direct Stress

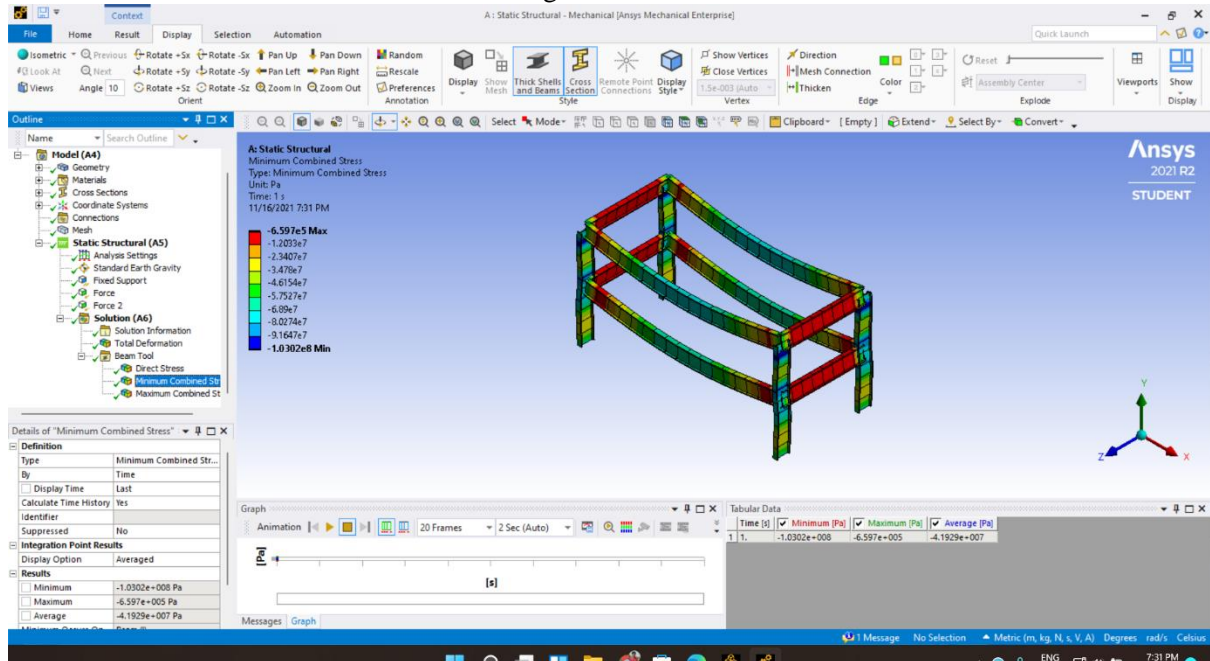
The Direct stress is high at breadth and next length and the base part is less.

The stress component due to the axial load encountered in a beam element is 9.838 max



The maximum Minimum combined stress is at breadth -6.59 max

The linear combination of the Direct Stress and the Minimum Bending Stress. The linear combination of the Direct Stress and the Minimum Bending Stress.



The maximum combined stress is 8.588max.

The linear combination of the Direct Stress and the Maximum Bending Stress.

