DESIGN LAB - I (ME205)

Soft Bending Actuation Module with Proprioceptive Curvature Sensing

GROUP - D (MONDAY)

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OBJECTIVE

The primary objective of this project is to design, develop, and test a soft bending actuation module integrated with proprioceptive curvature sensing capabilities

METHODOLOGY WE ADOPTED

- **Design and Fabrication**

- **Integration of Curvature Sensing**

- **Control System**

- **Testing and Evaluation**

1. DESIGN AND FABRICATION

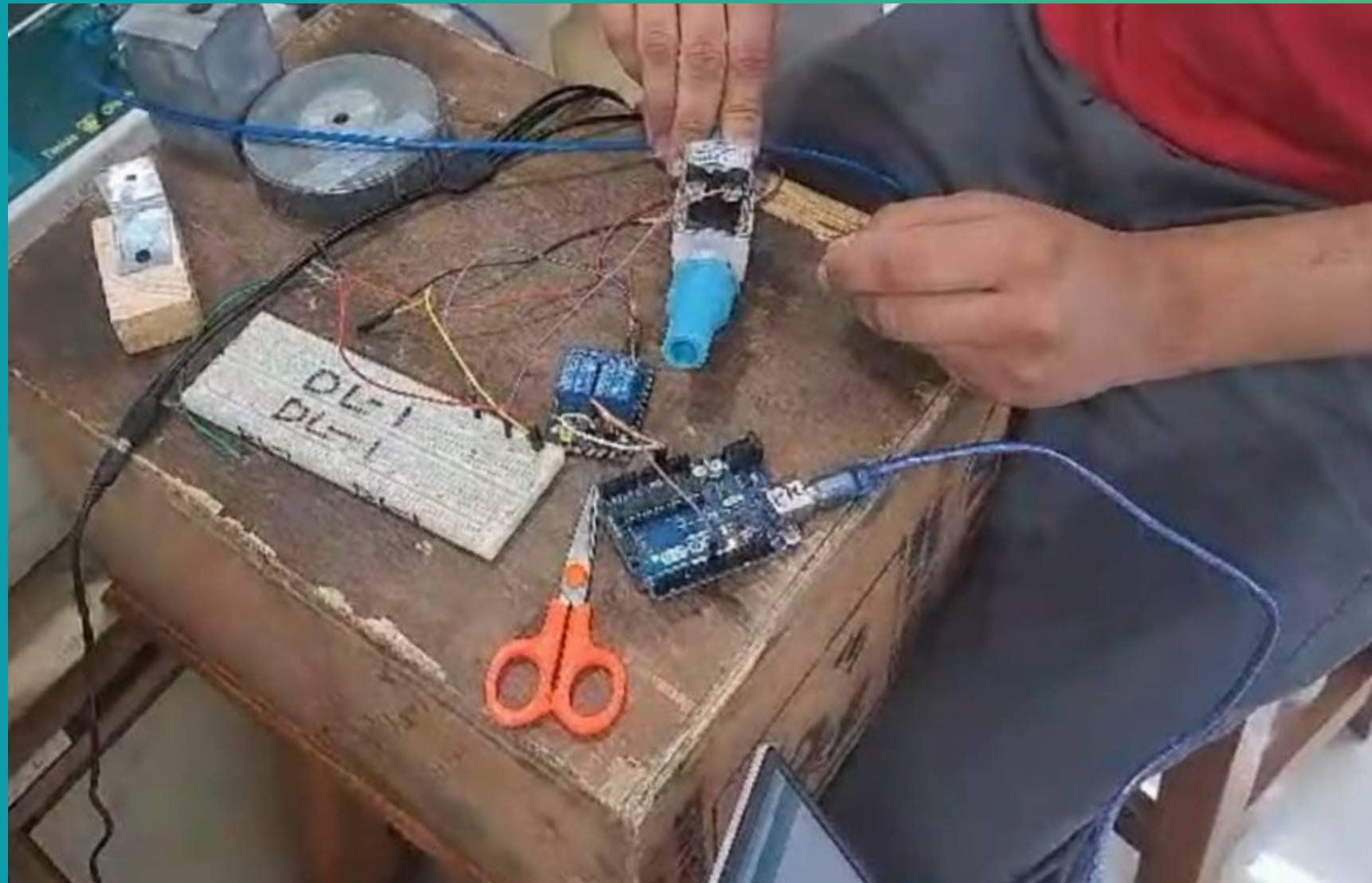Created CAD model of mold and converted it into STL files for 3D printing
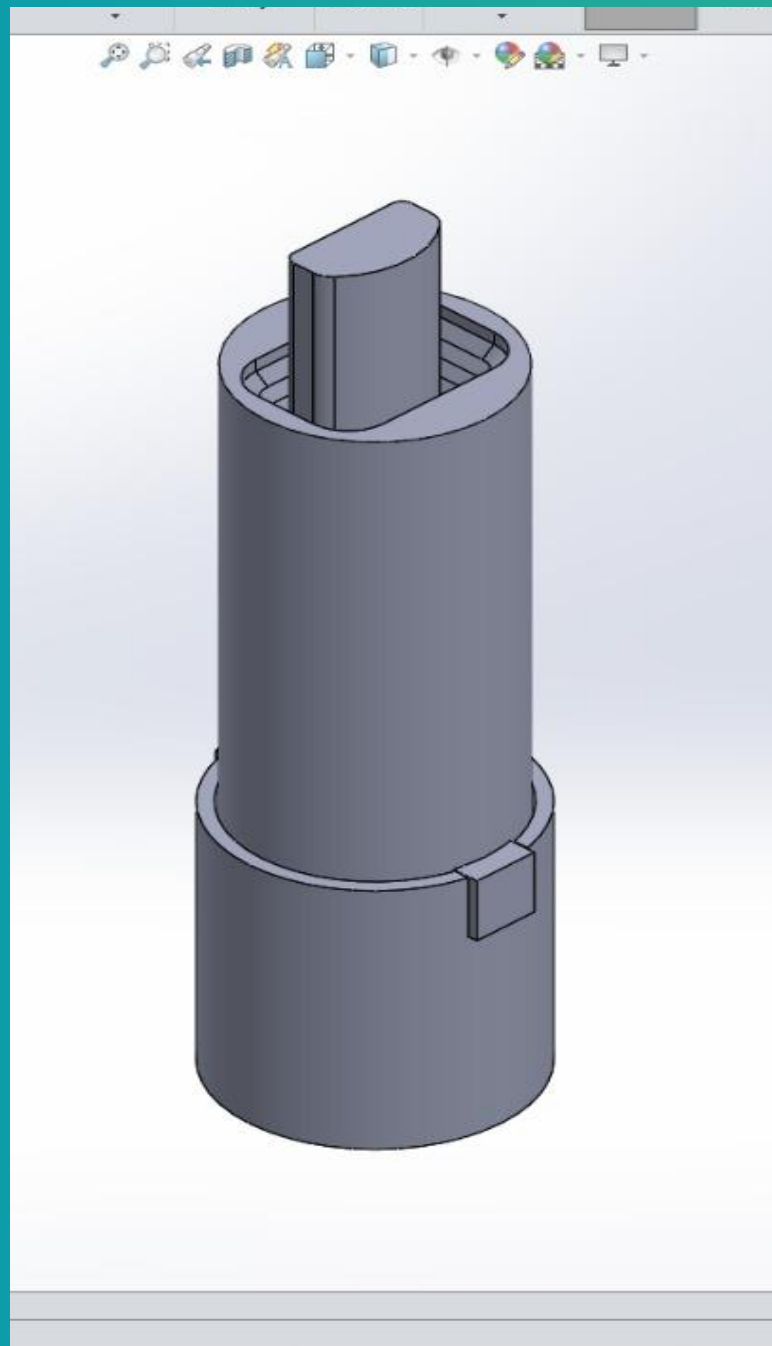
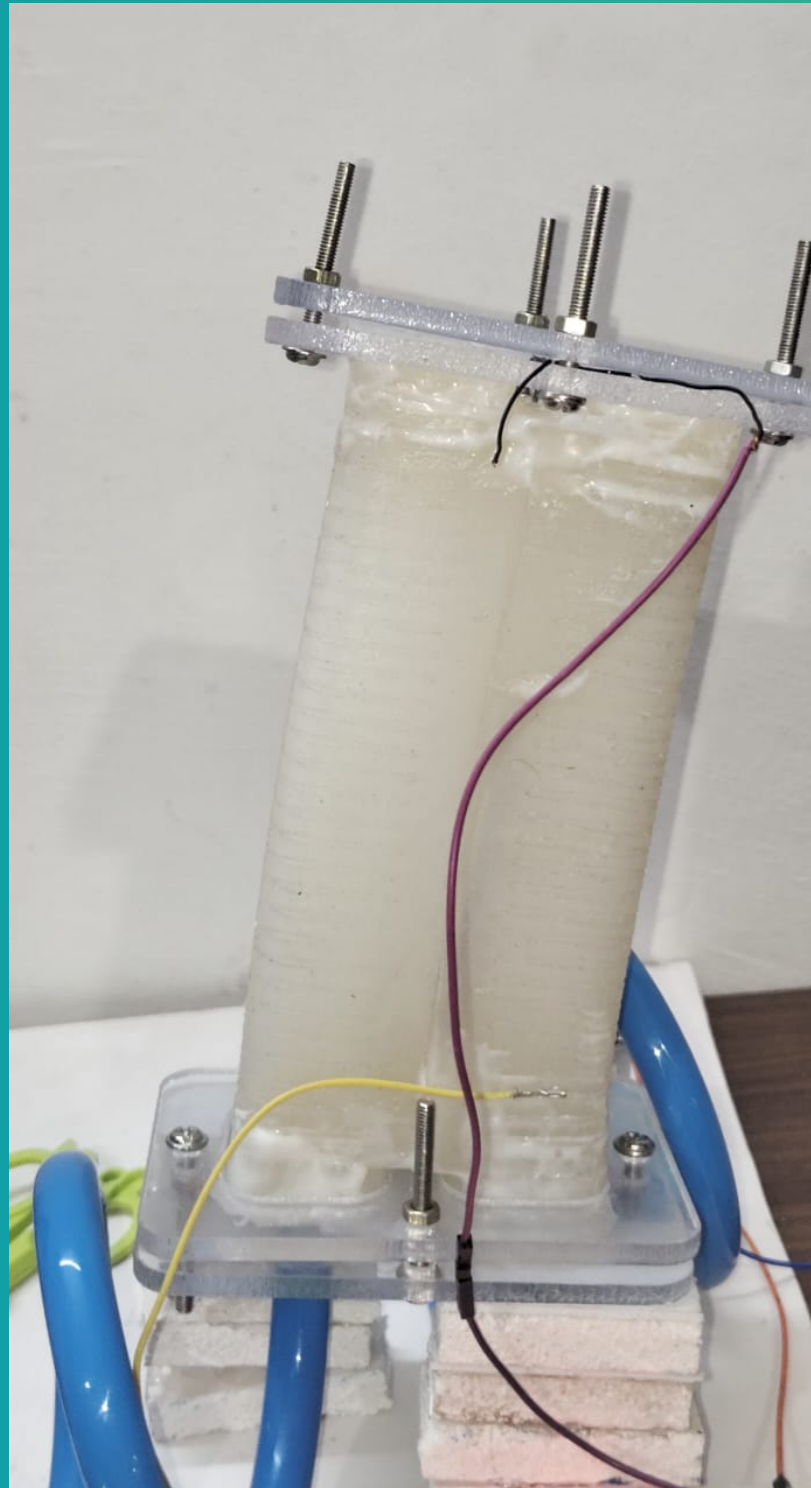# 2. INTEGRATION OF CURVATURE SENSING

We added flex while creating
our this part which will measure
the deflection of model
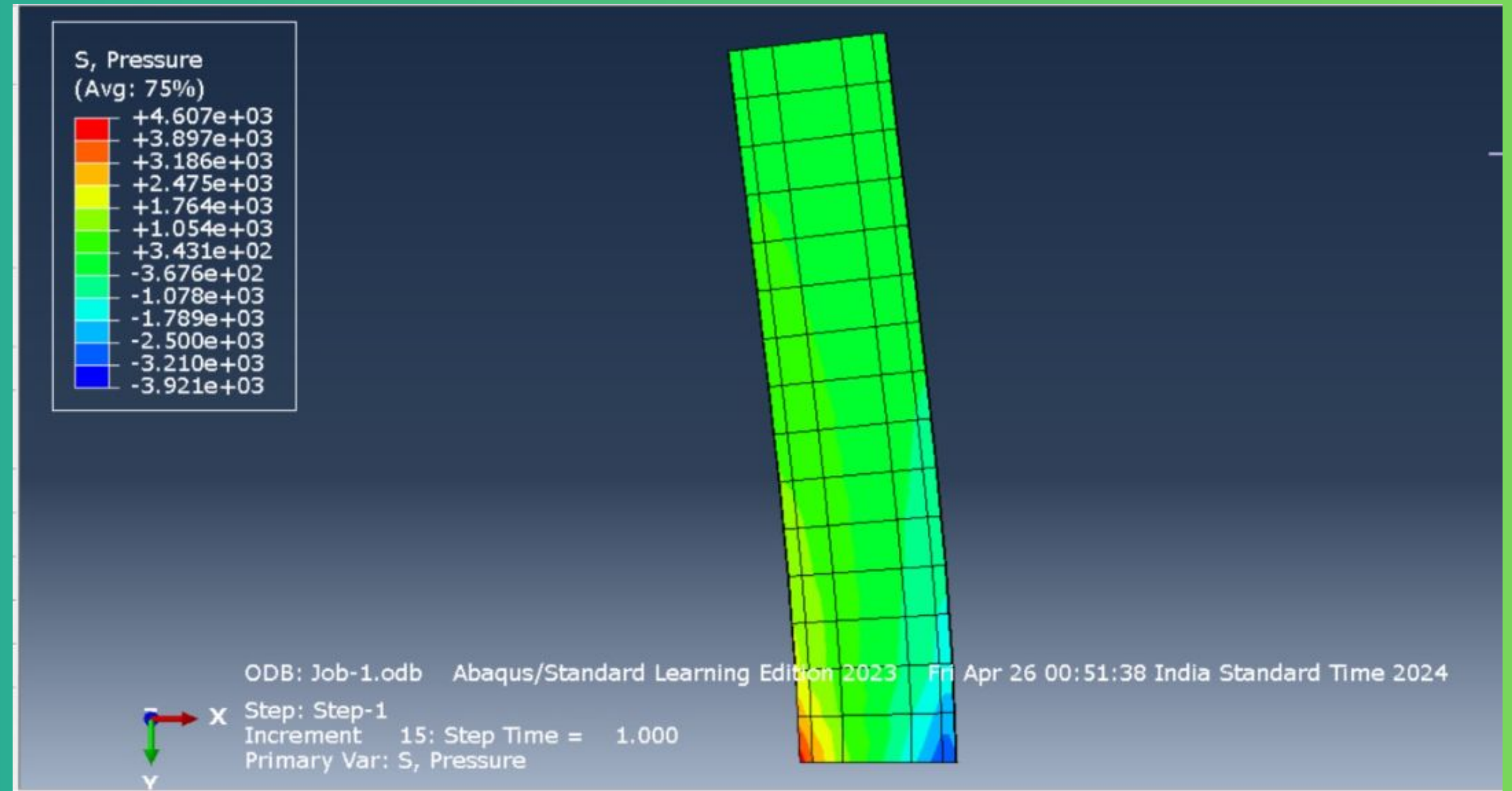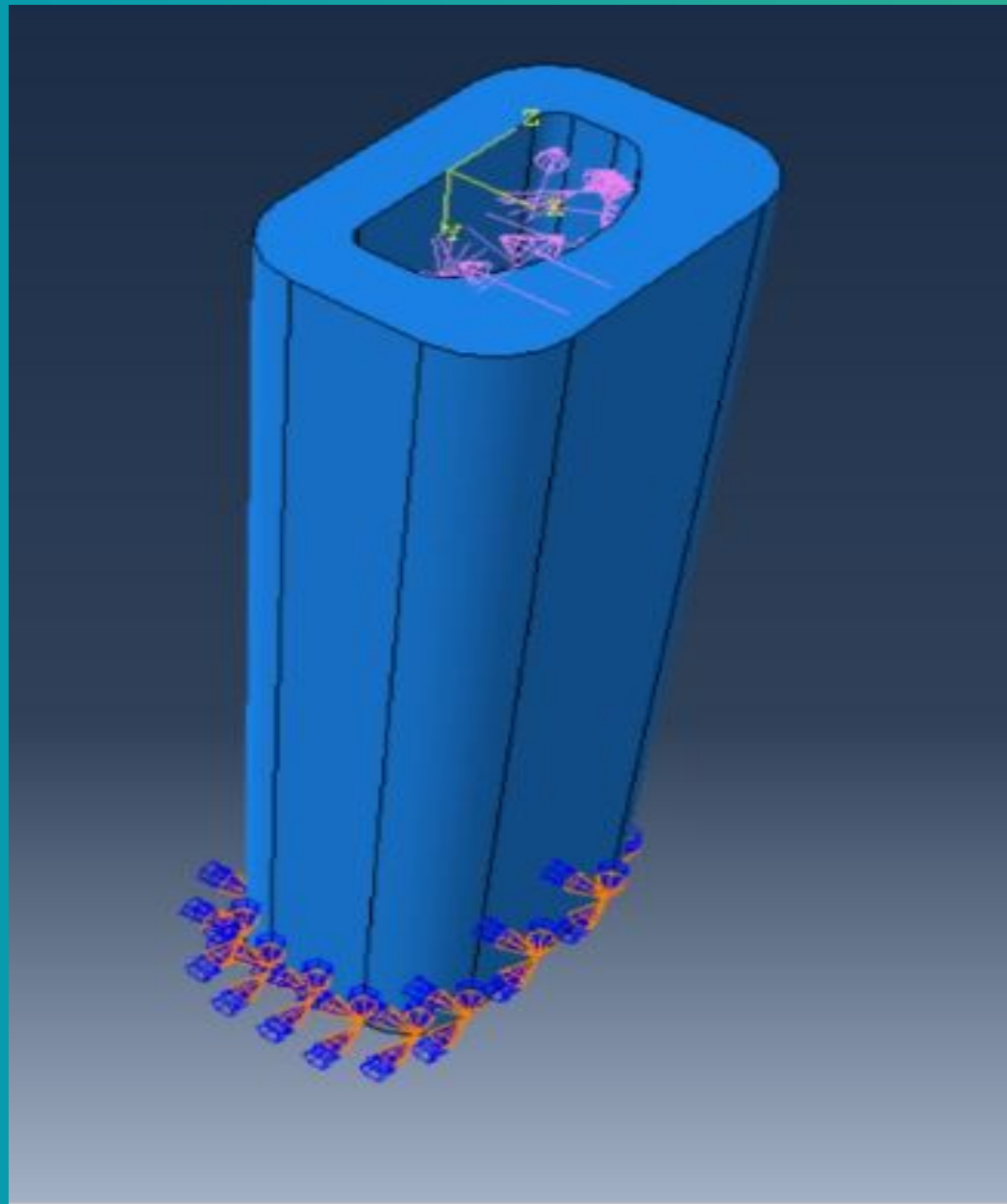
3. CONTROL SYSTEM

Connections of Pressure Control Mechanism

4. TESTING AND EVALUATION

We have tested our model by uploading the code and checked it's functioning

RESULT ANALYSIS

ABAQUS MODELLING OF OUR PROJECT

DIFFICULTIES WE HAVE FACED

1. **Research : As the topic was a bit new for us so analyzing the topic and creating a time frame.**

2. **3D Printing : It took us almost more than 3 weeks for creating our mold as printers in the department had issues.**

3. **Removal of product from the Mold : Some dimensions problem occur from our side while creating the model**

CONCLUSION

In this project we have created a soft bending actuator. The development of a soft bending actuation module with proprioceptive curvature sensing represents a significant advancement in the field of soft robotics