ME370: ADAMS LAB

Department of Mechanical Engineering,
IIT Bombay

Session 2 Report

Group / Section: A8
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Roll Number: 200020023

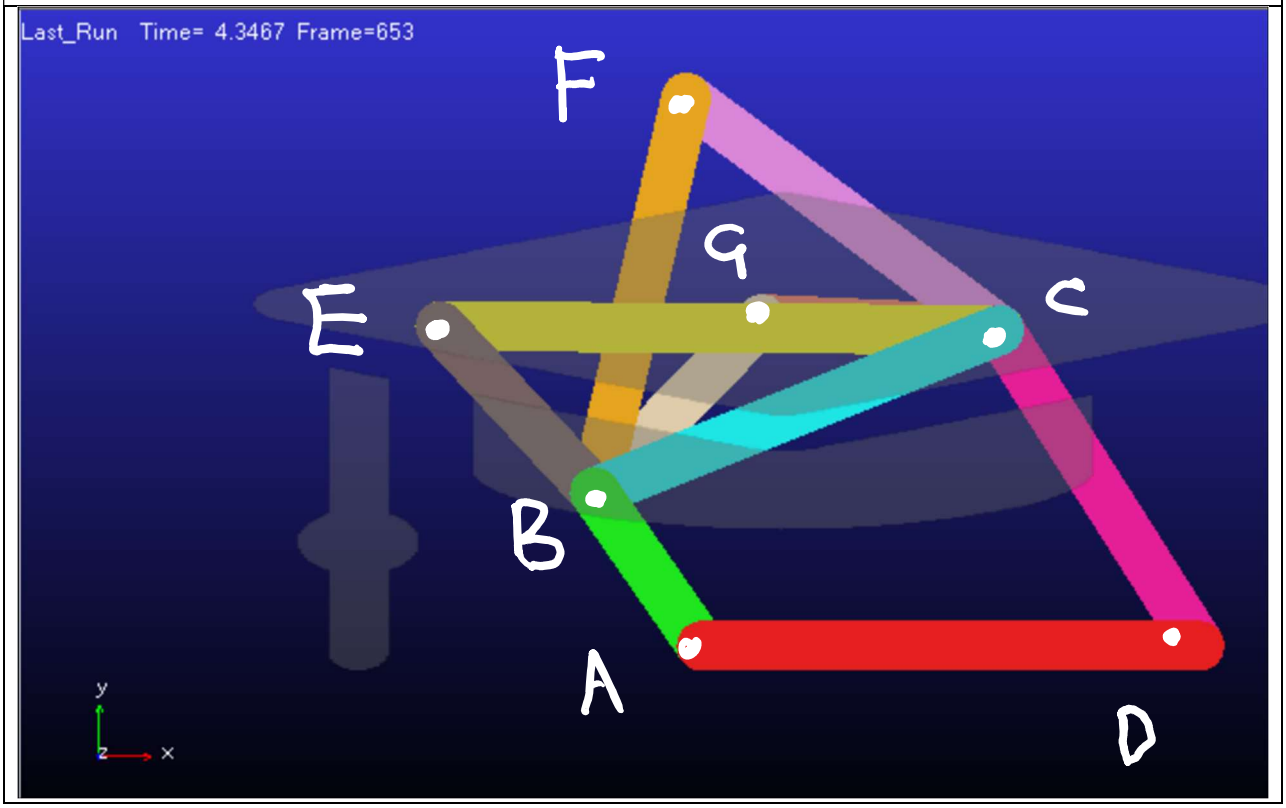
Date: January 30,2023

Given Information

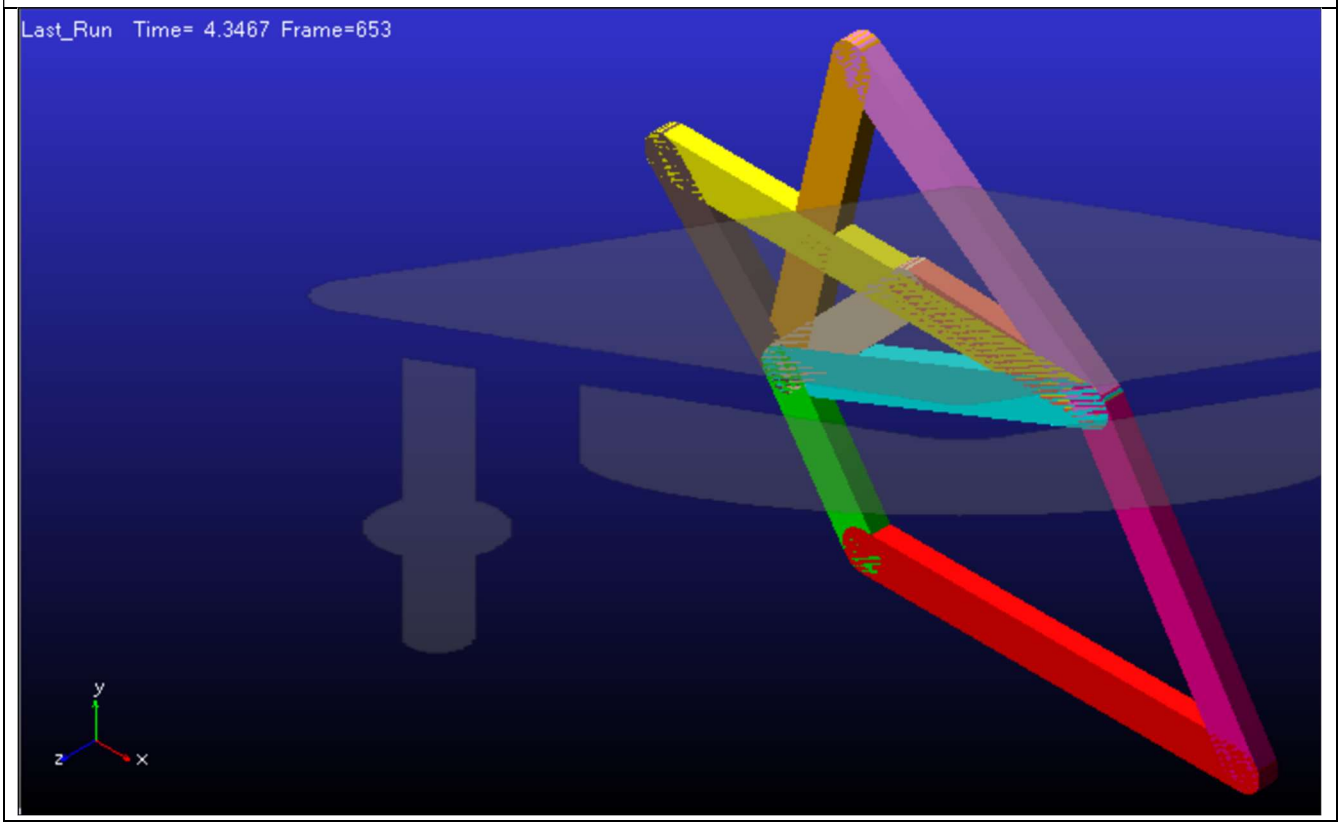
	Lengths					
Roll Number	BE	CE	BF	CF	BG	CG
200020023	182	449	325	313	193	191

There was no modification required for the lengths BE, BF and BG.

ISOMETRIC VIEW OF LINKAGE

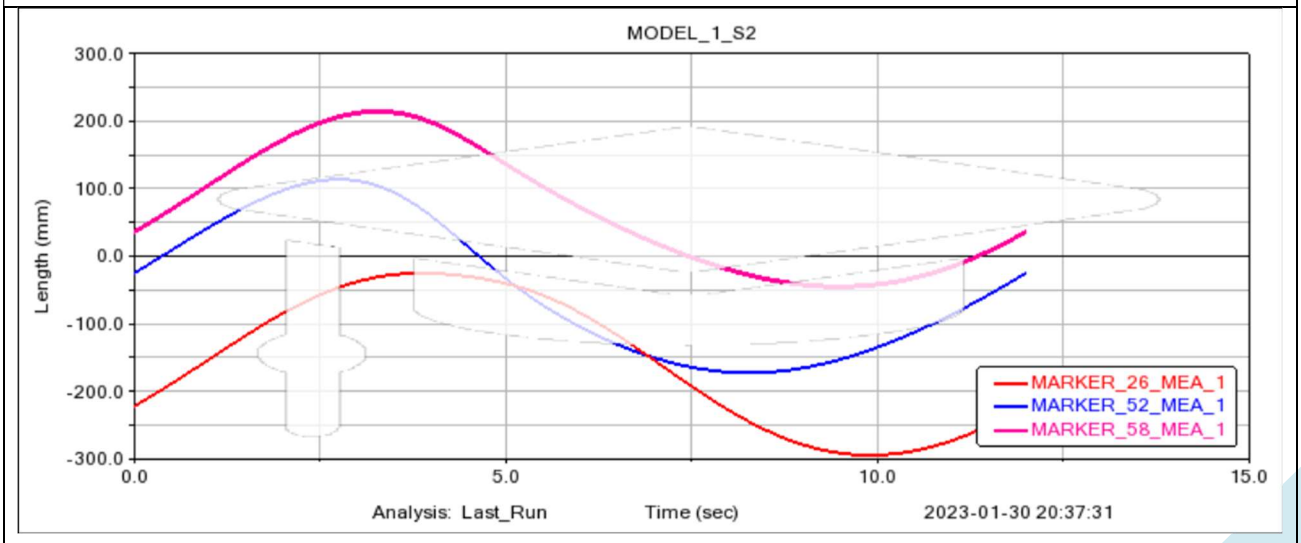


ISOMETRIC VIEW OF LINKAGE

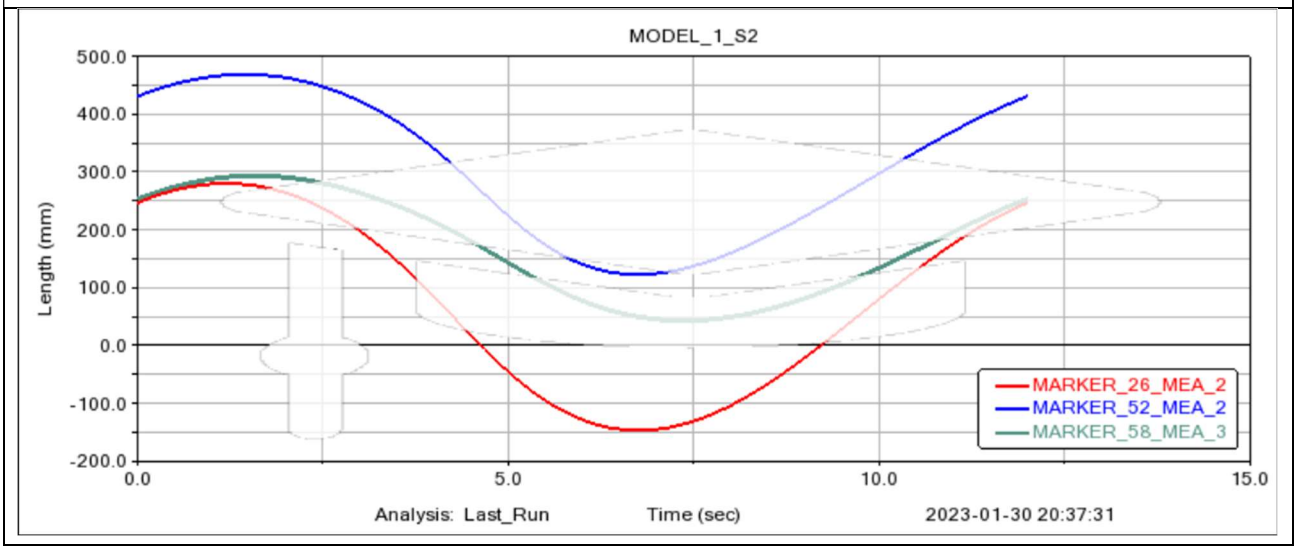


Question 1 (Coupler Curves)

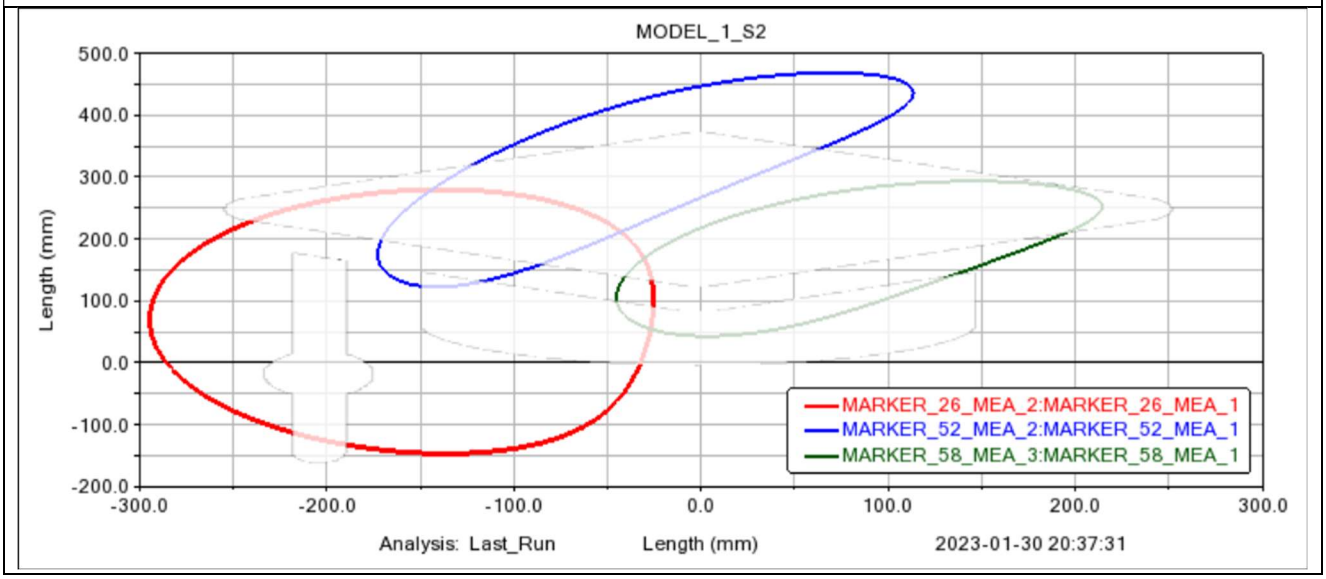
X DISPLACEMENT OF POINTS E, F & G



Y DISPLACEMENT OF POINTS E, F & G

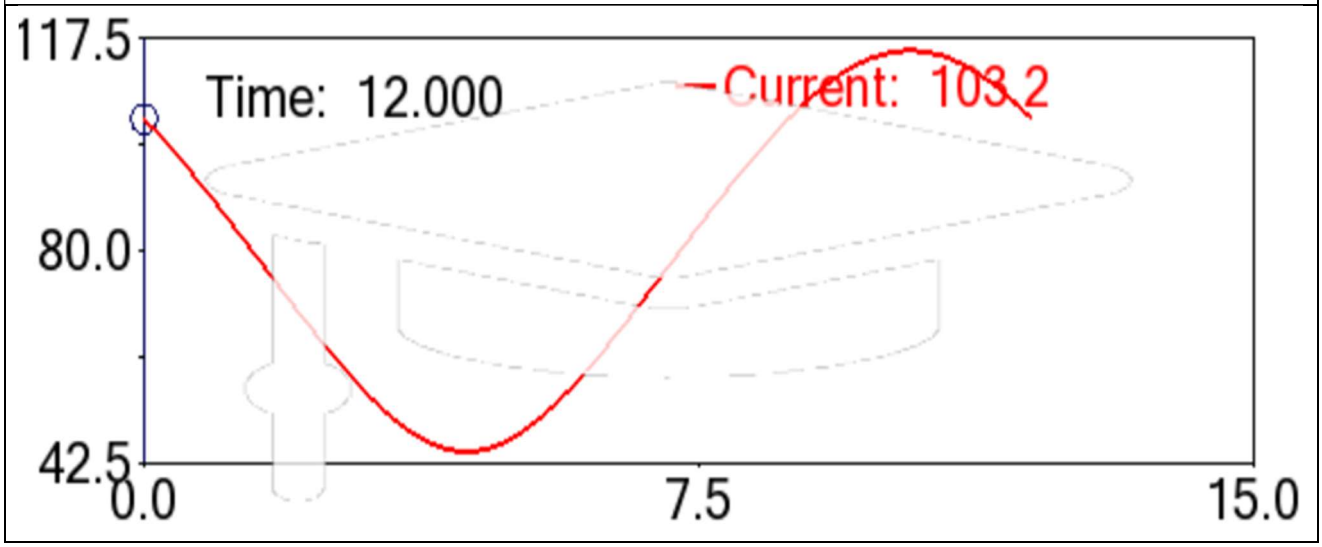


Y DISPLACEMENT VS X DISPLACEMENT OF POINTS E, F & G



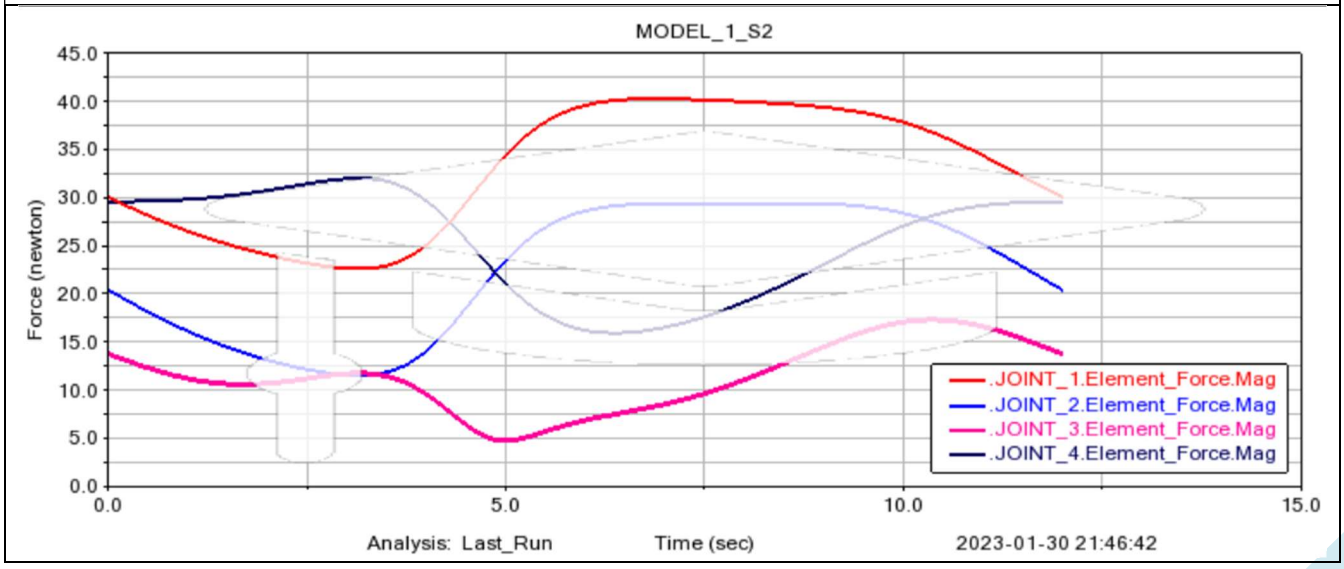
Question 2 (Transmission Angle)

TRANSMISSION ANGLE OVER ONE COMPLETE ROTATION



Question 3 (Reaction Forces at Joints)

REACTION FORCES AT JOINTS



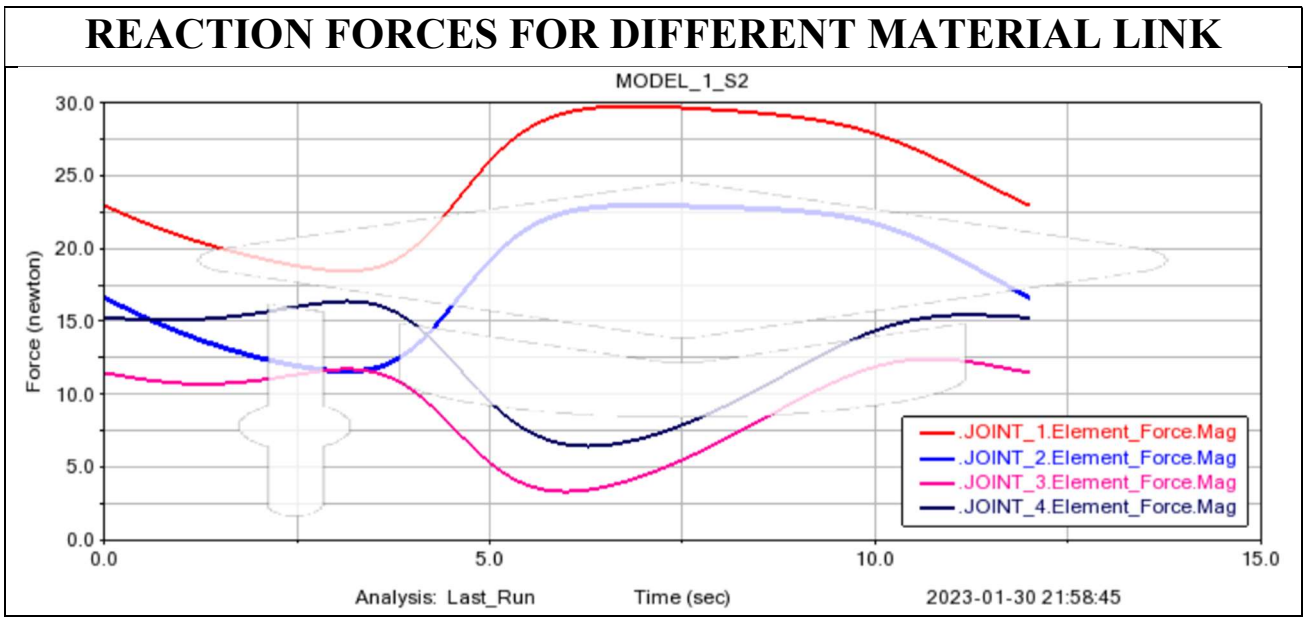
RESULT: (Most Sturdy Revolute Joint)

The graph with highest peak corresponds to the sturdiest joint.

Joints A, B, C, D correspond to the joints 1,2, 3 and 4 in the above graph.

Order of Sturdiness: A>D>B>C

Question 4 (Forces for Different Materials)



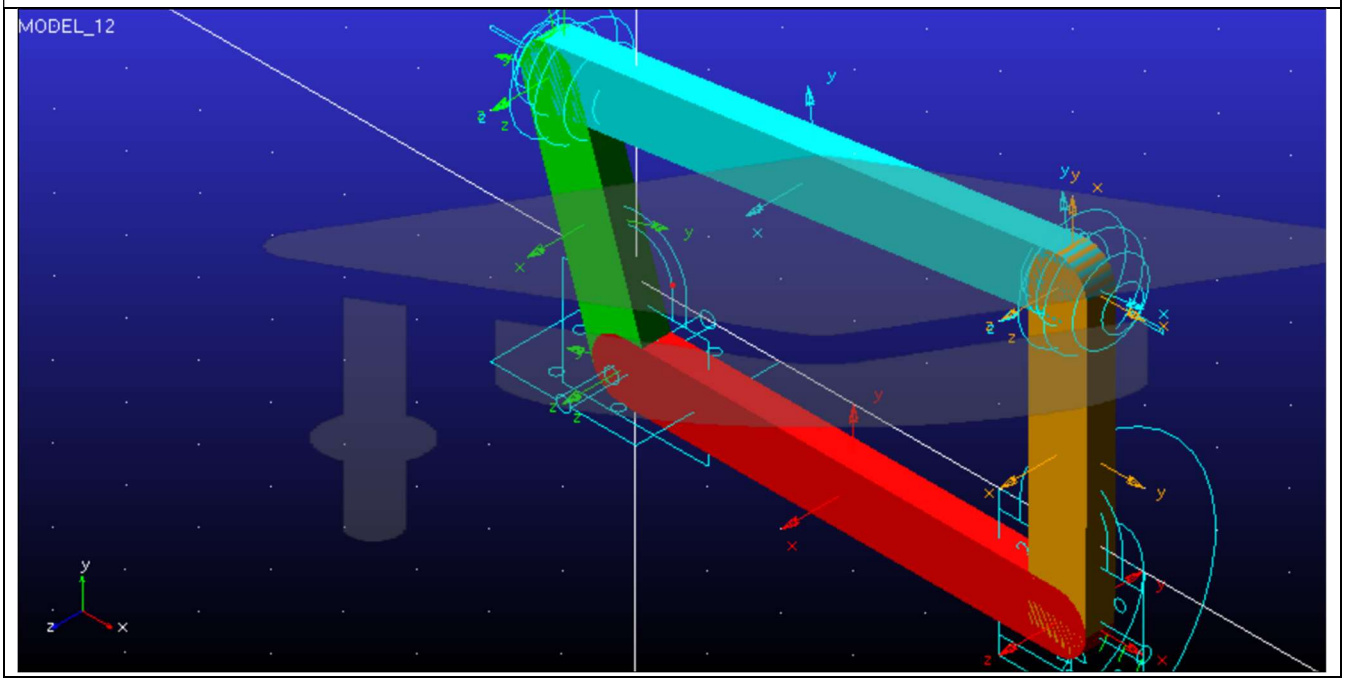
RESULT: (Most Sturdy Revolute Joint)

The materials of the links AB, BC, CD and DA correspond to Copper, Steel, Magnesium and Titanium respectively.

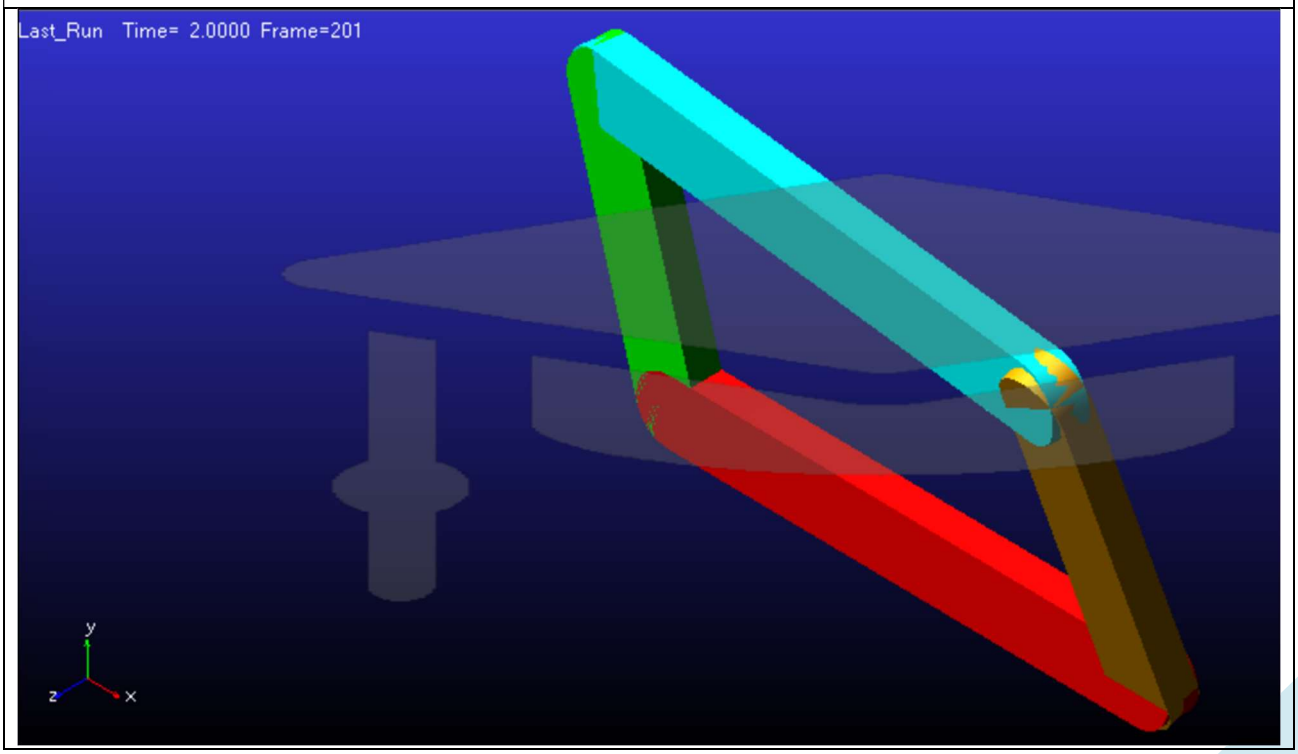
Order of Sturdiness: A>D>B>C

Question 5 (Spatial 4-Bar Linkage)

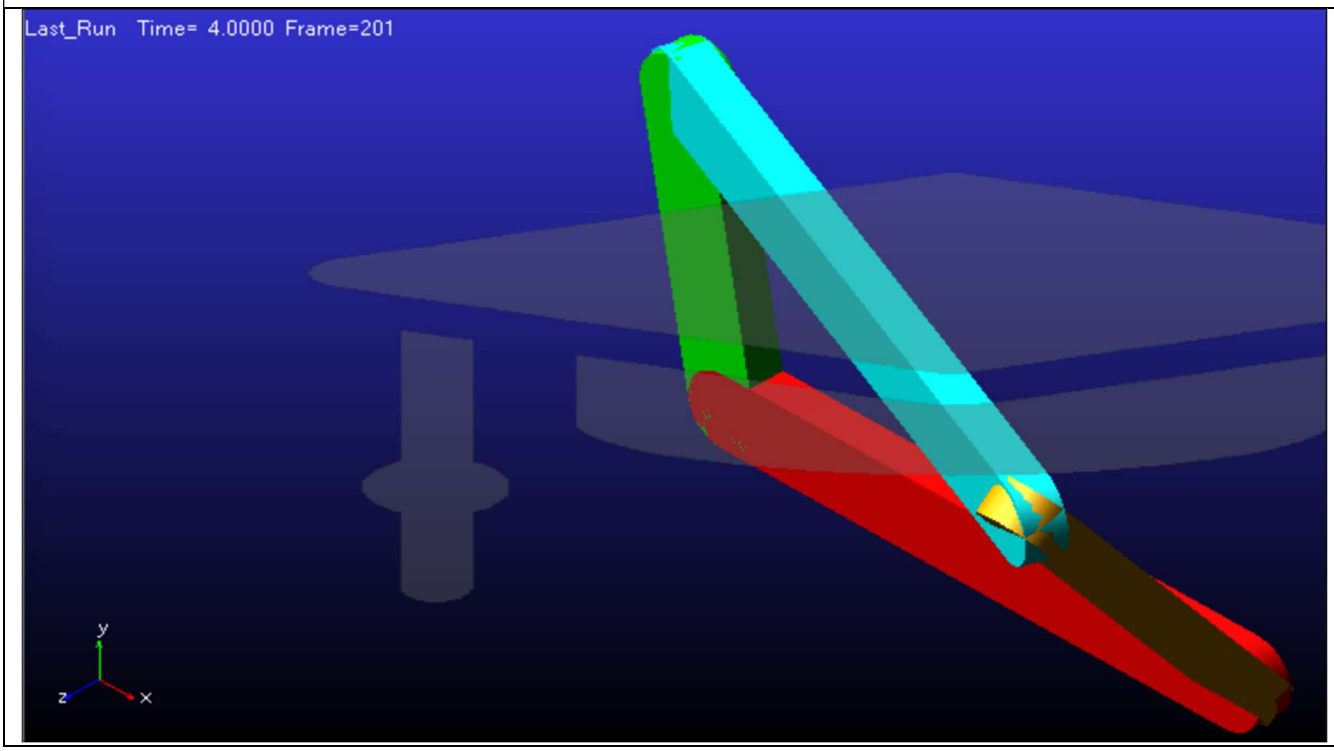
ISOMETRIC VIEW WITH CRANK AT 0 DEGREES



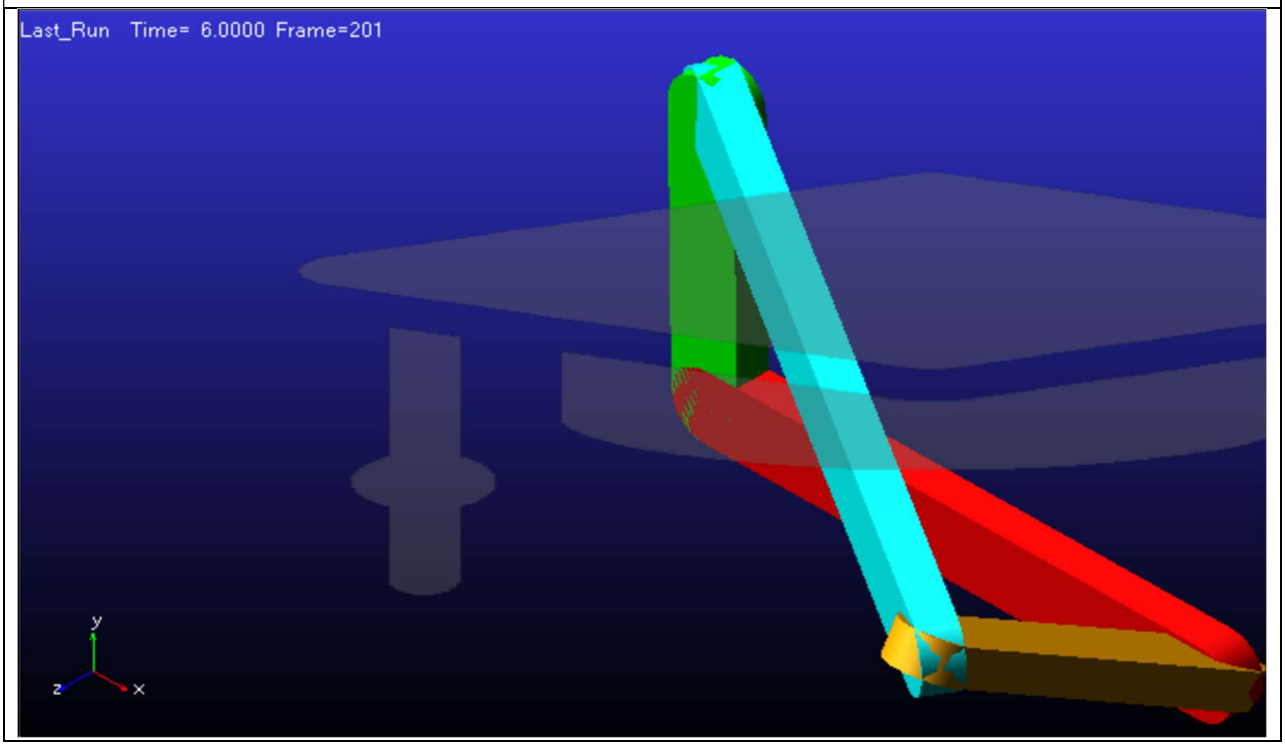
ISOMETRIC VIEW WITH CRANK AT 20 DEGREES



ISOMETRIC VIEW WITH CRANK AT 40 DEGREES



ISOMETRIC VIEW WITH CRANK AT 80 DEGREES



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