An Activity Report
Submitted for

Computer Aided Design And Analysis

Online-test 2

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Batch :2MEE9

Branch: Mechanical

Submitted to :Dr Ajainder Singh Jawanda

Topic: Aided Design And Analysis TIET, Patiala

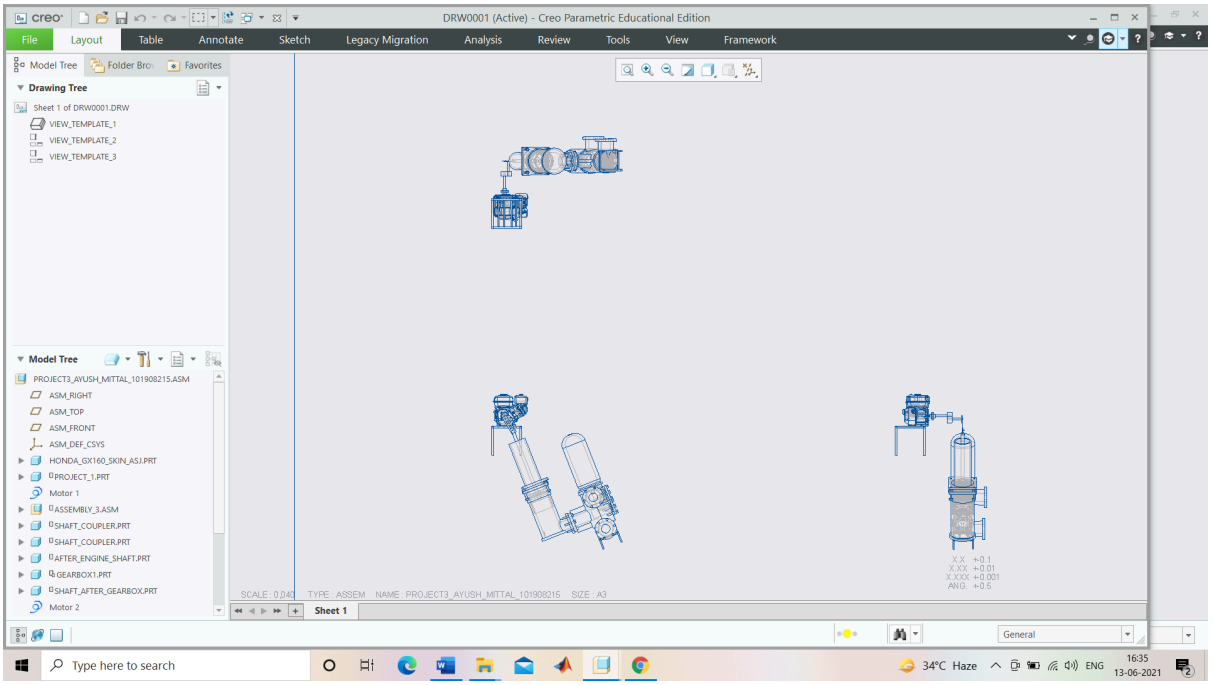
July-May-2021

INTRODUCTION:

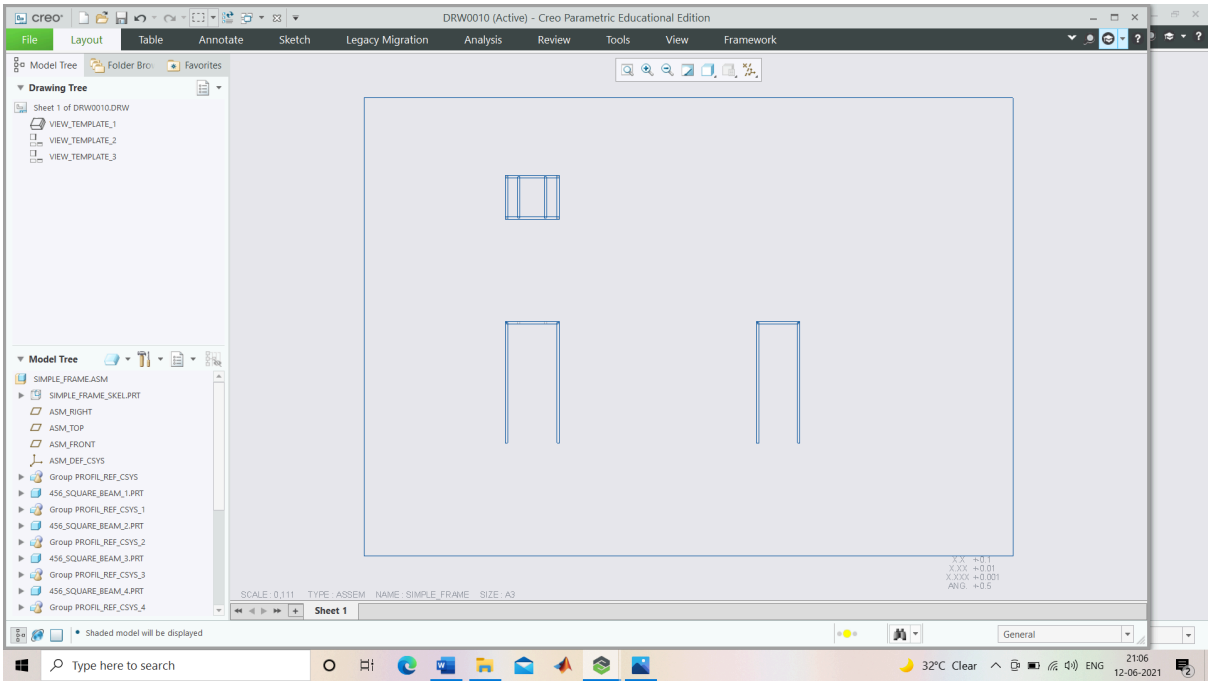
In this project basically we have to pull in and pull out the plunger with the help of driving mechanism eg we use cam,follower,valve,gear and other mechanism to get the desired work from sengine due to the rotation of engine we can rotate our mechanism and mechanism take out the plunger in and out .

Drawing parts

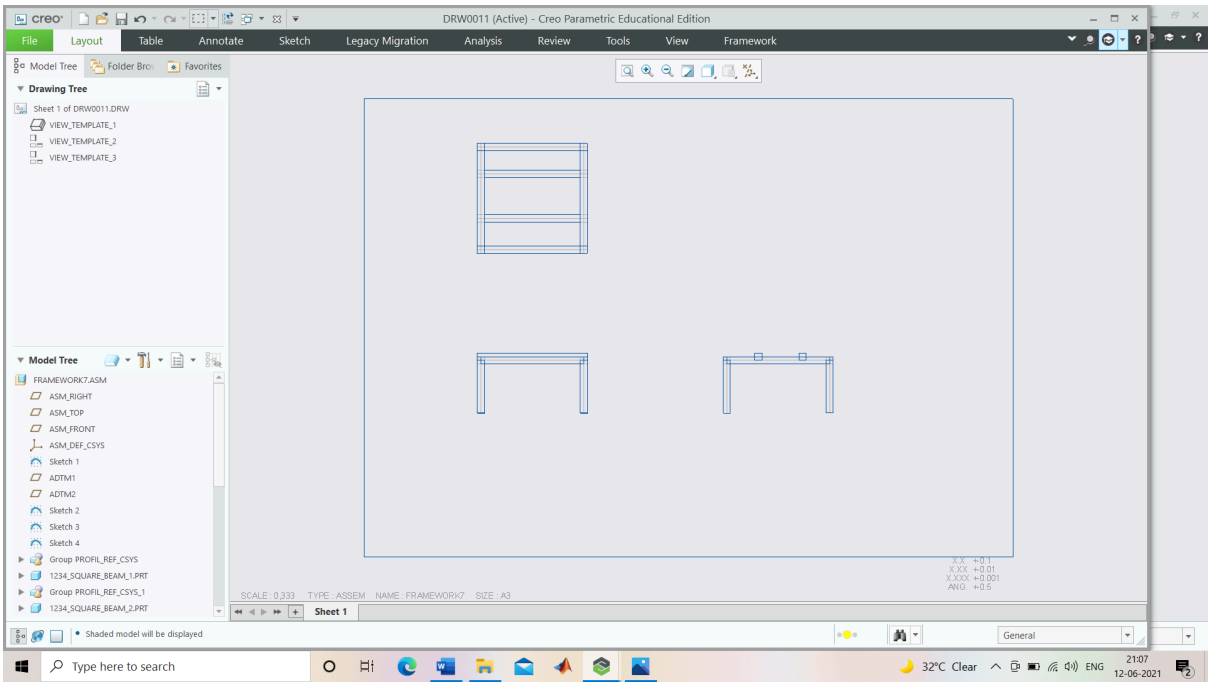
1) COMPLETE ASSEMBLY DRAWING:



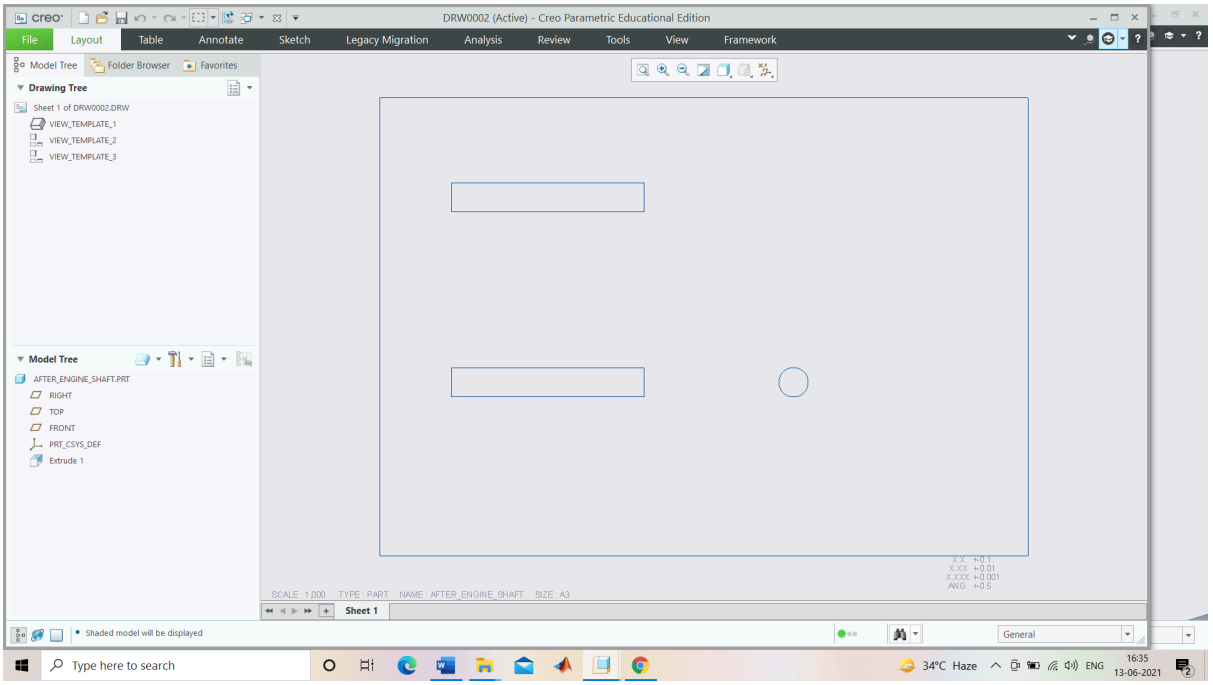
2)framework for engine



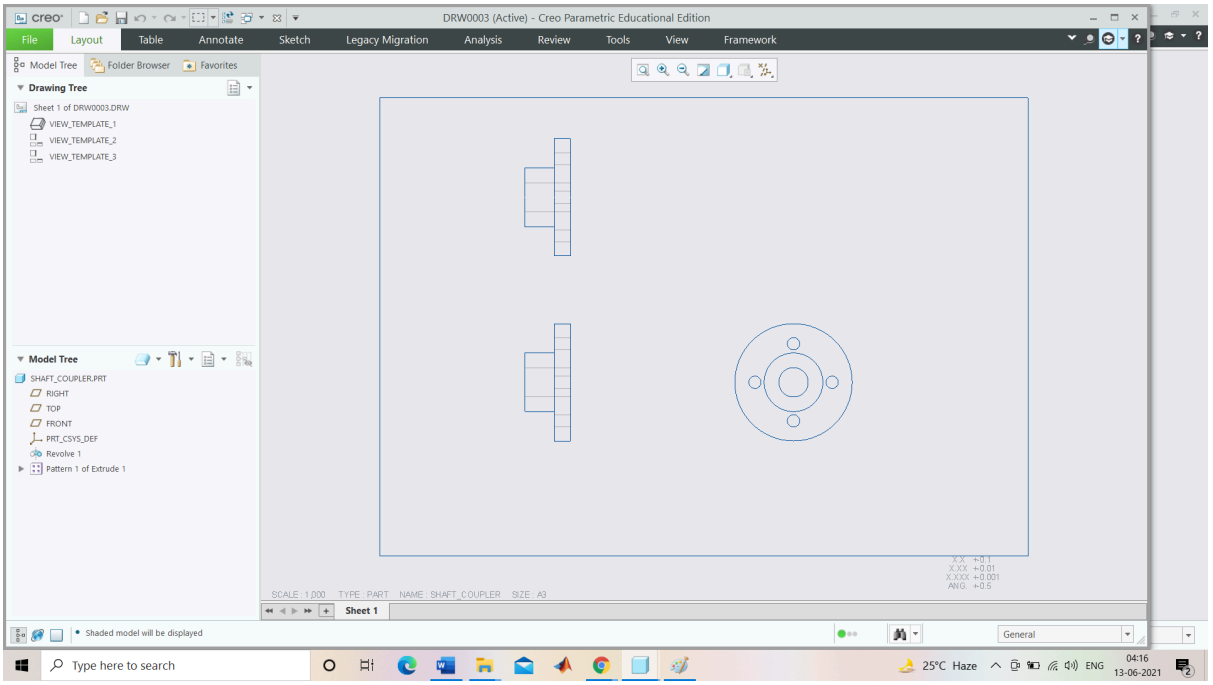
3)framework for feed pump



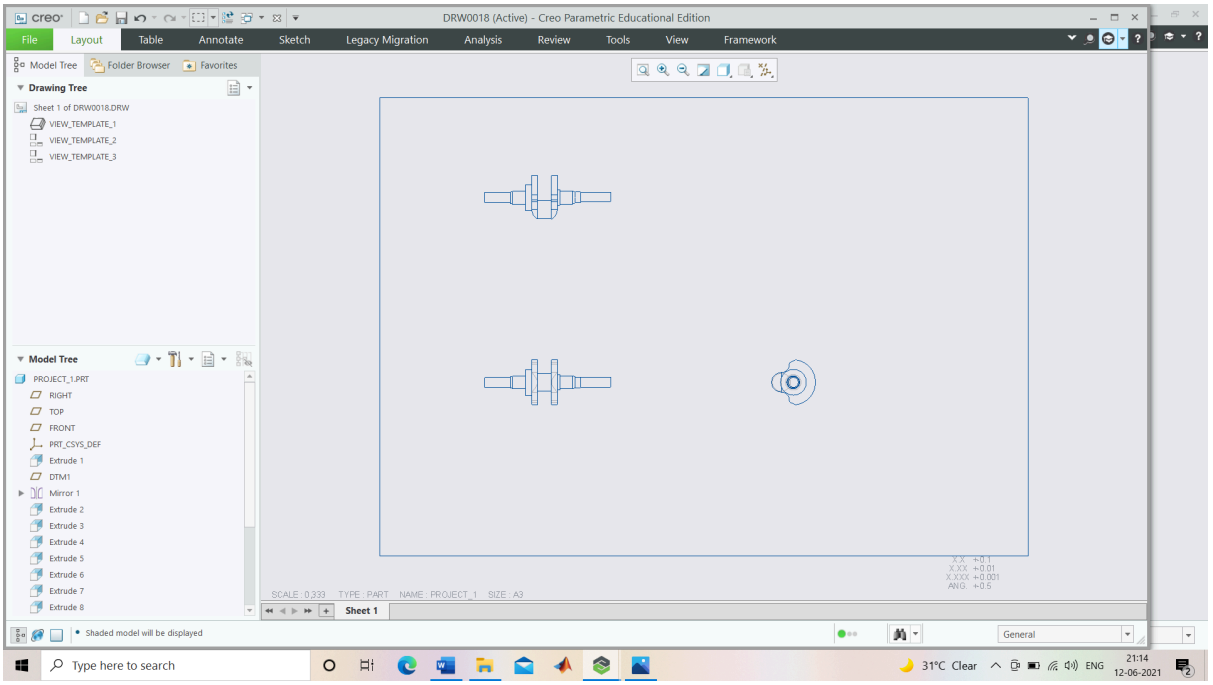
4)rod



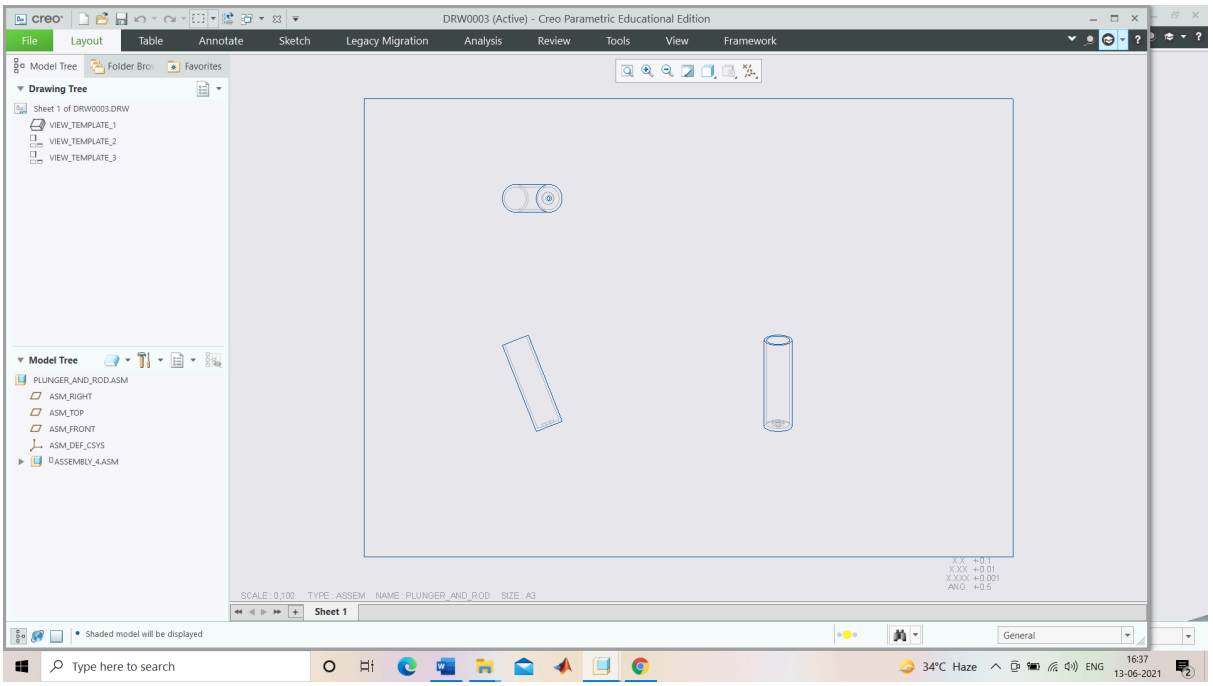
5)shaft coupler



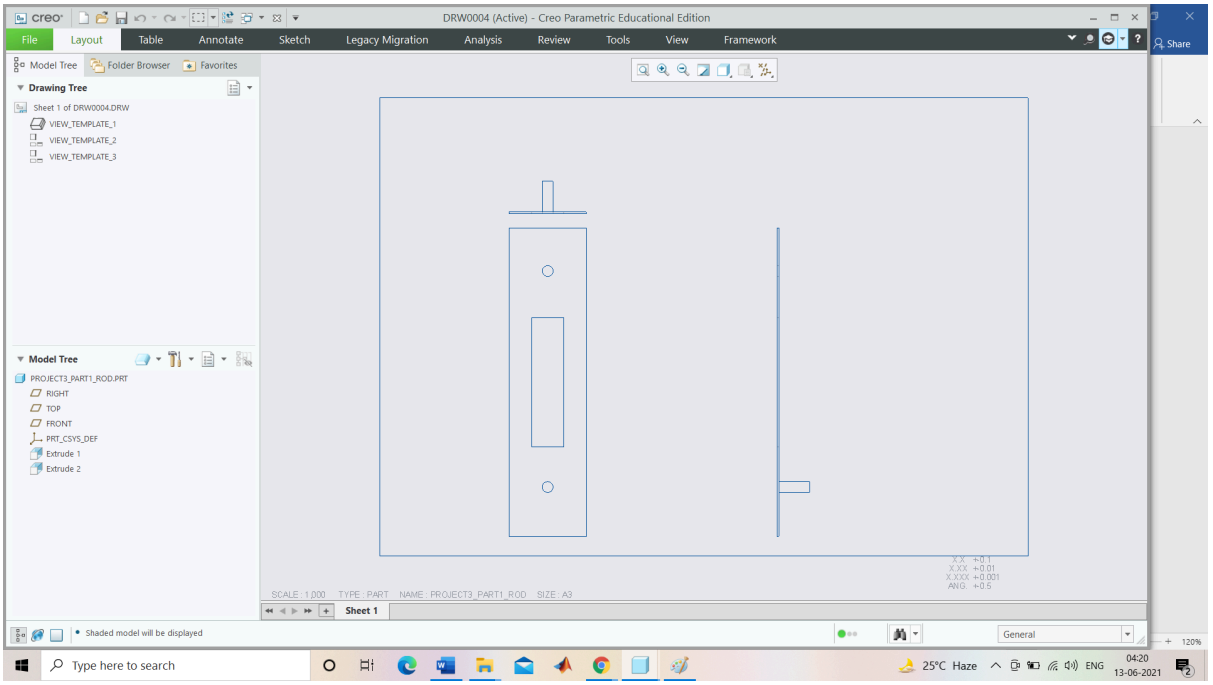
6)crank shaft



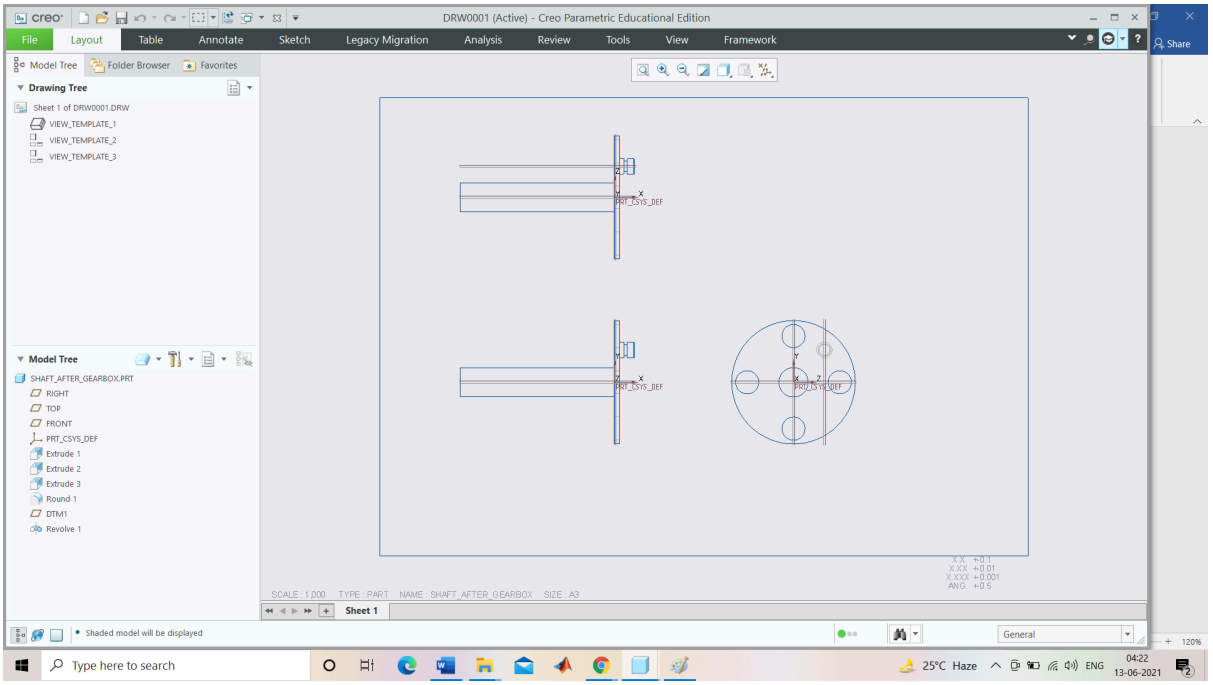
7)Plunger drawing



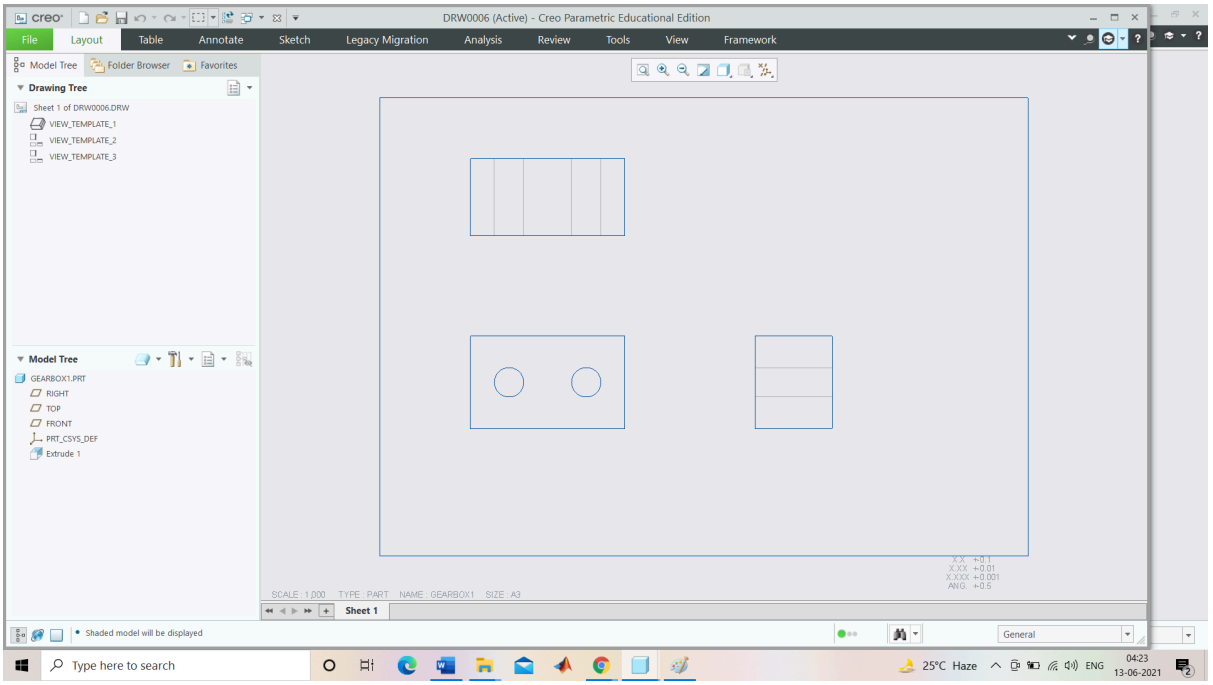
8)plunger extrude



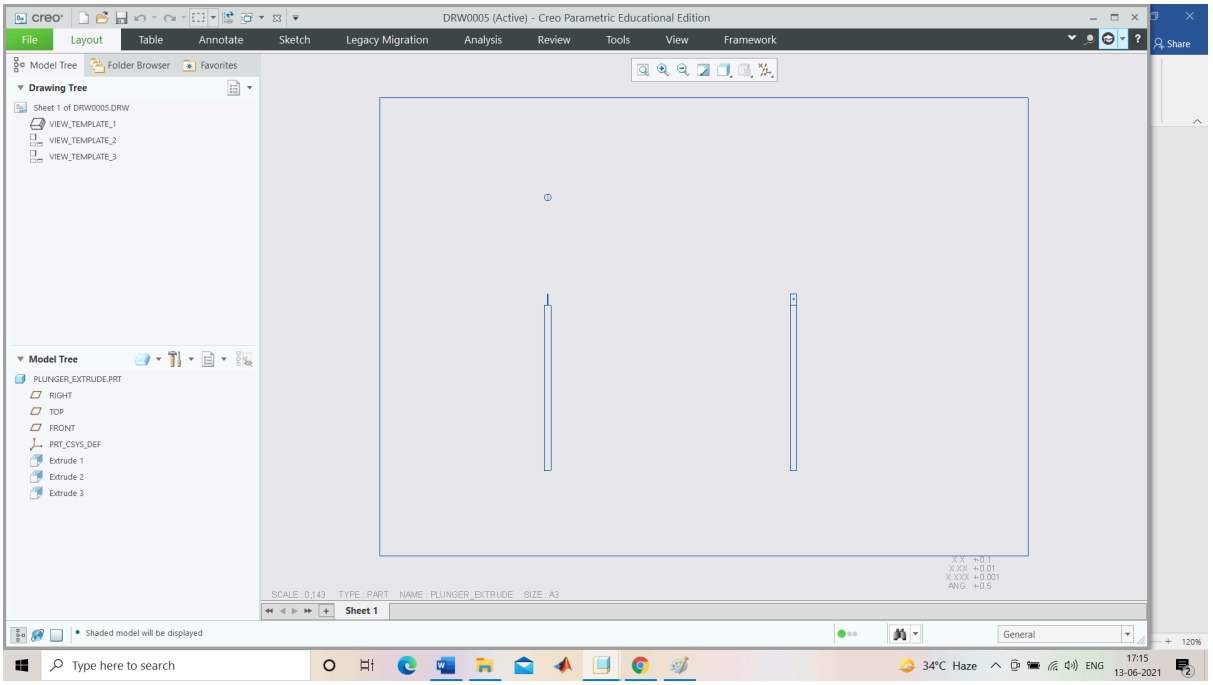
9)shaft after gear box



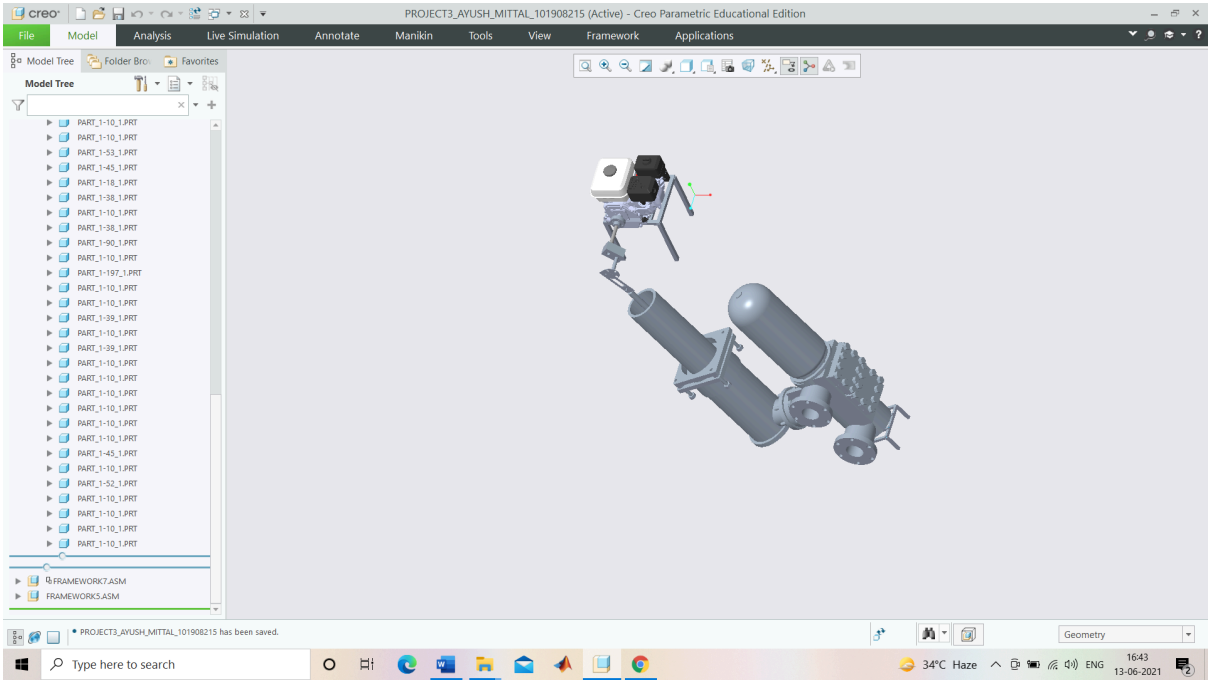
10)gear box



11)plunger extrude

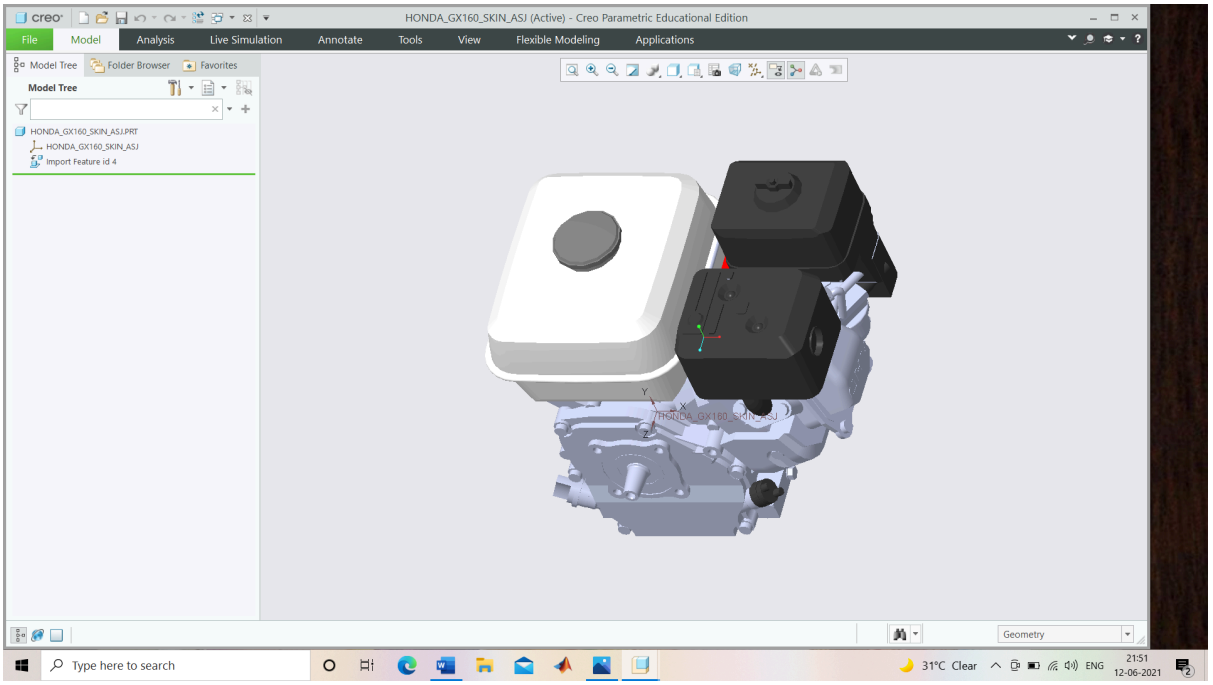


ASSEMBLY OF THE ENGINE,CRANKSHAFT,FEEDPUMP

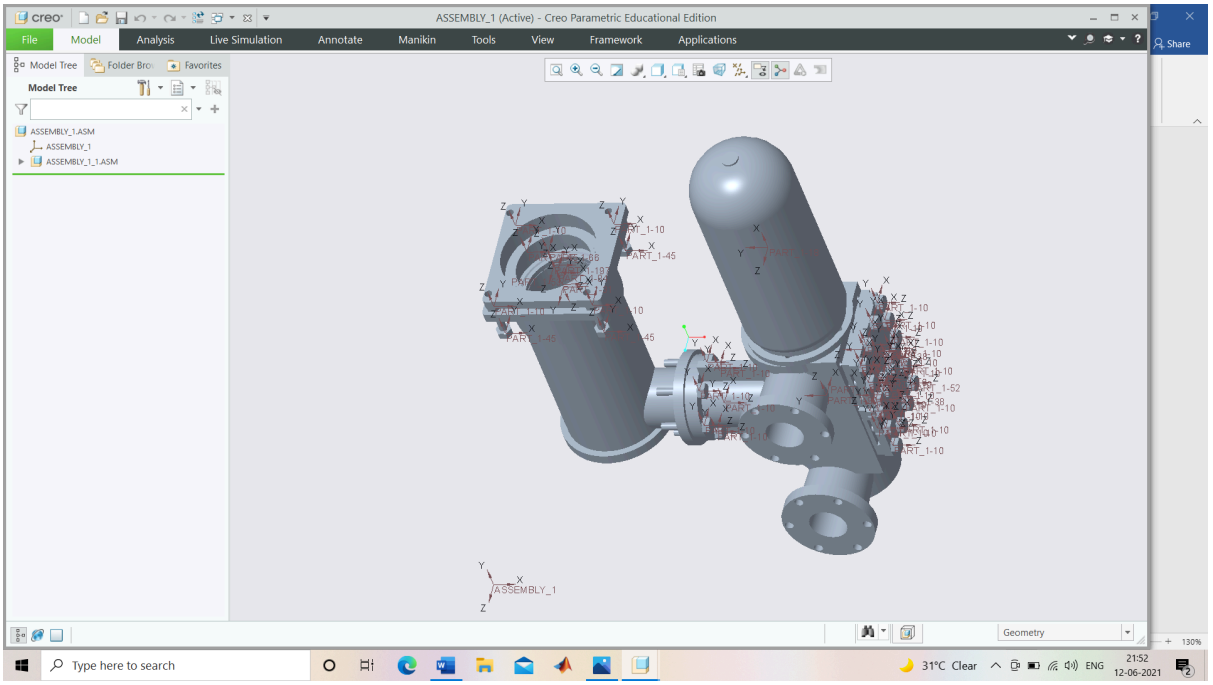


PARTS

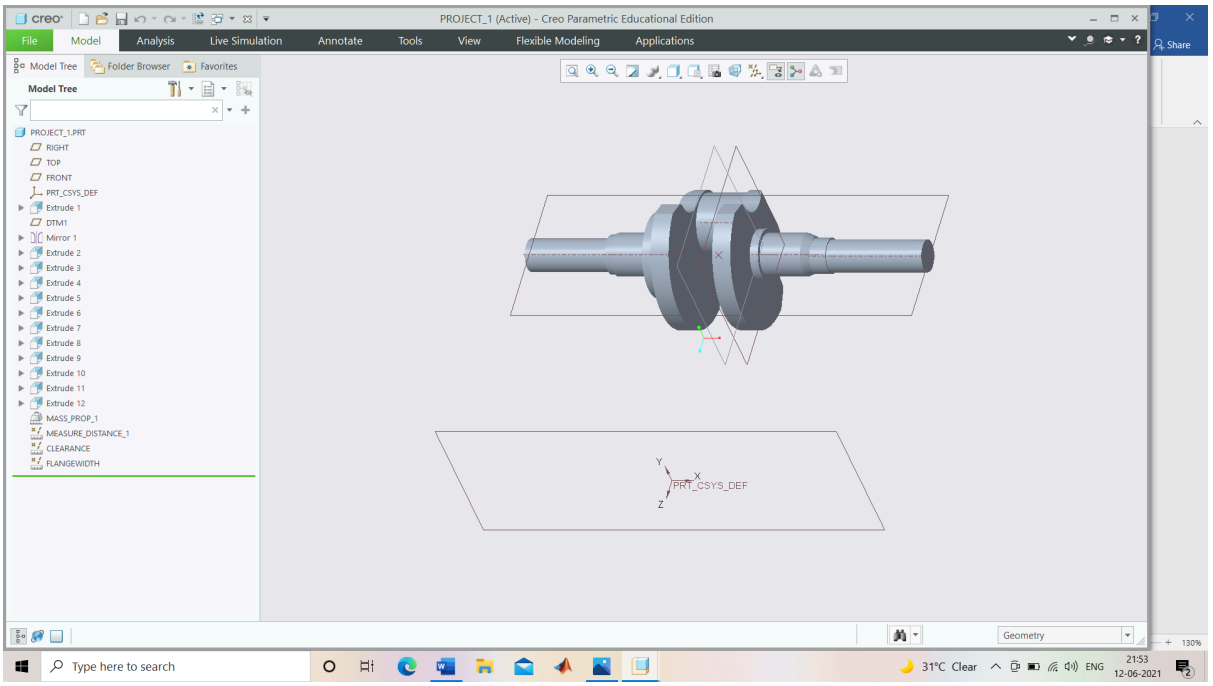
1)ENGINE



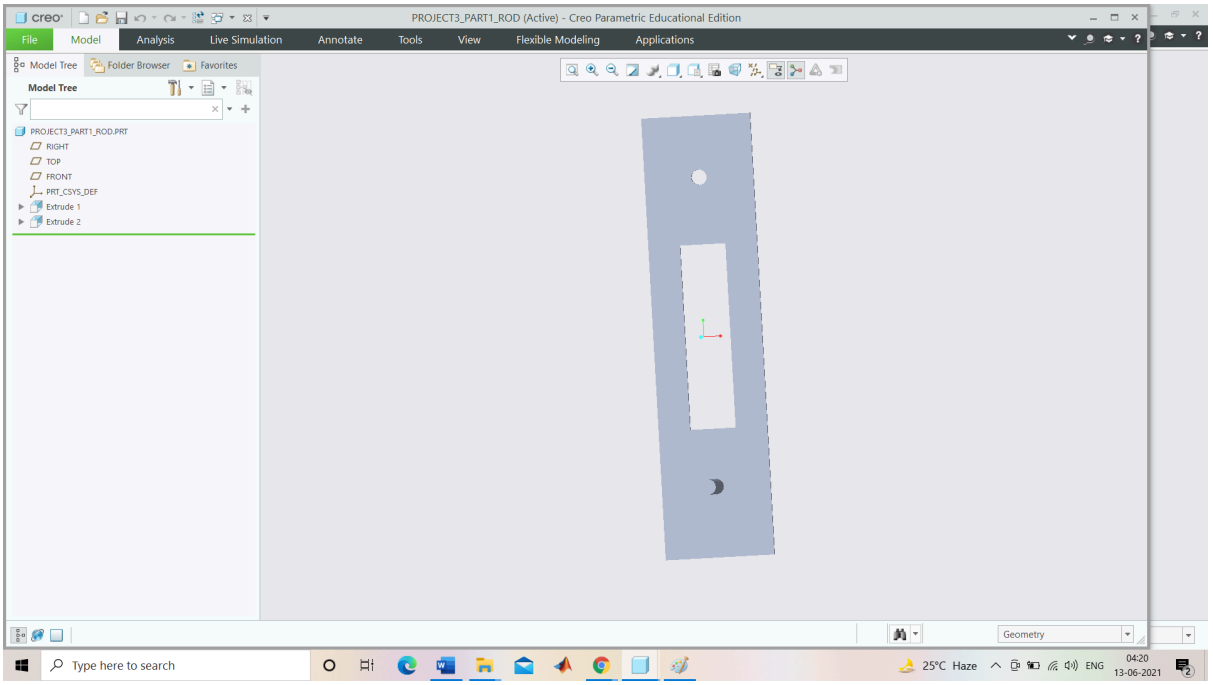
2)FEED-PUMP



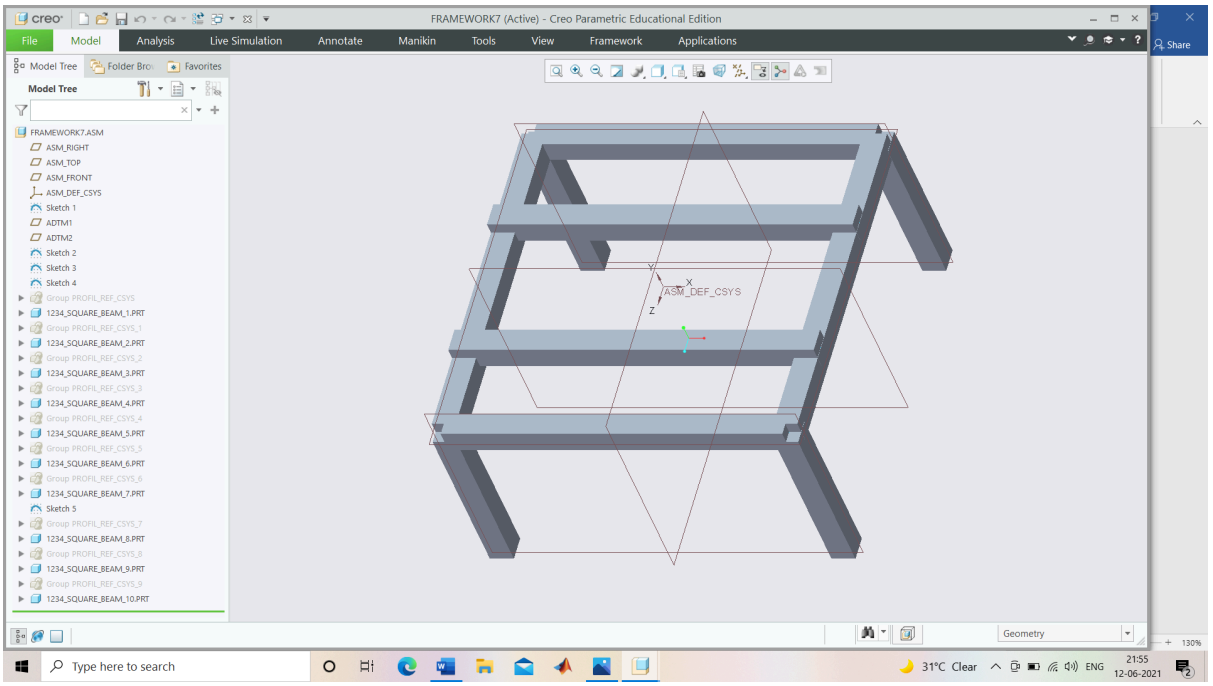
3)**CRANK SHAFT**



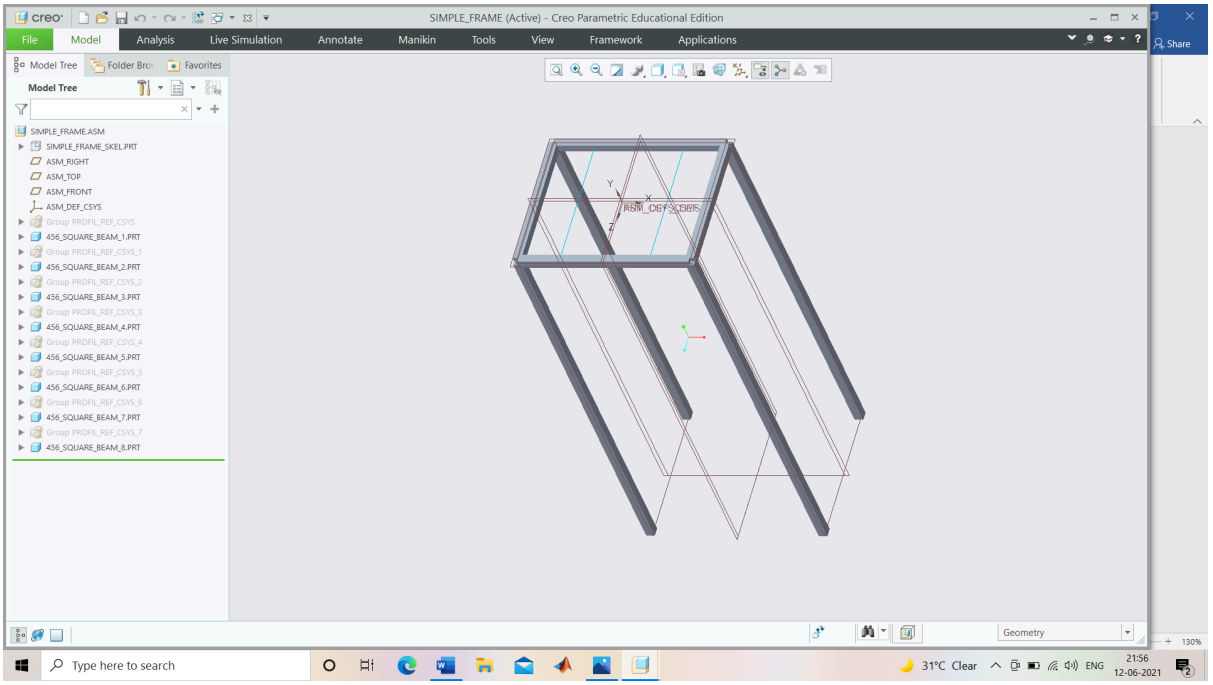
4)plunger extrude



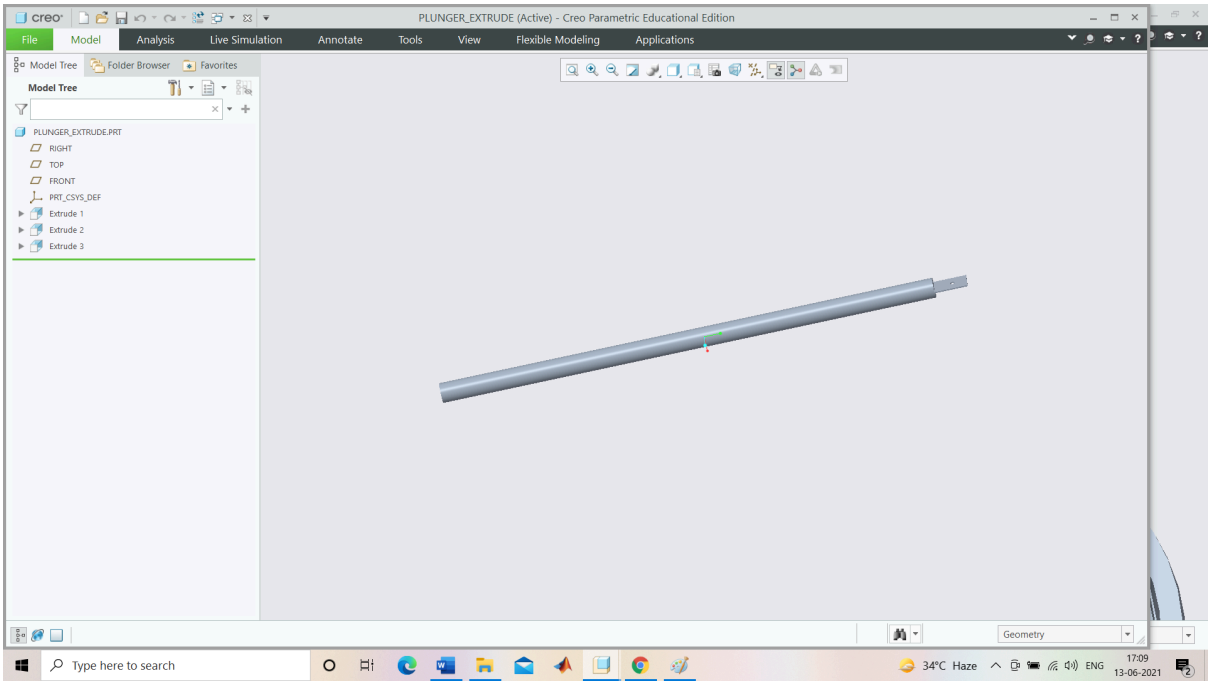
5)FRAME WORK FOR SUPPORTING FEED-PUMP



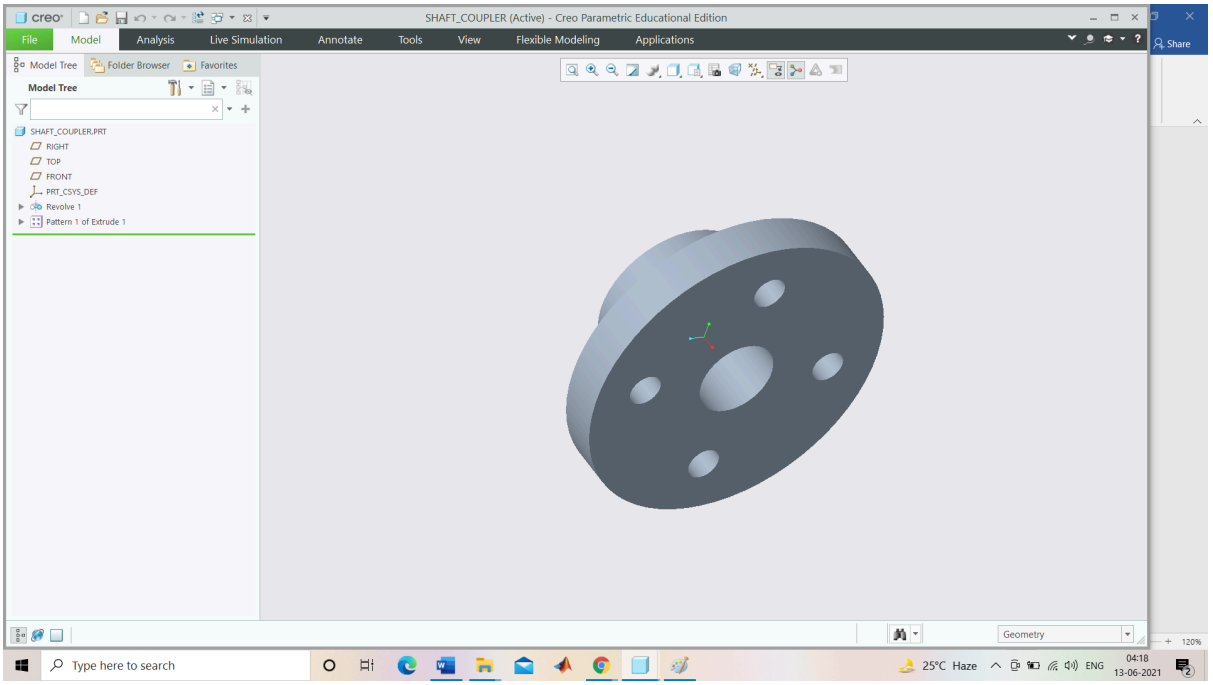
6)FRAME-WORK FOR SUPPORTING ENGINE



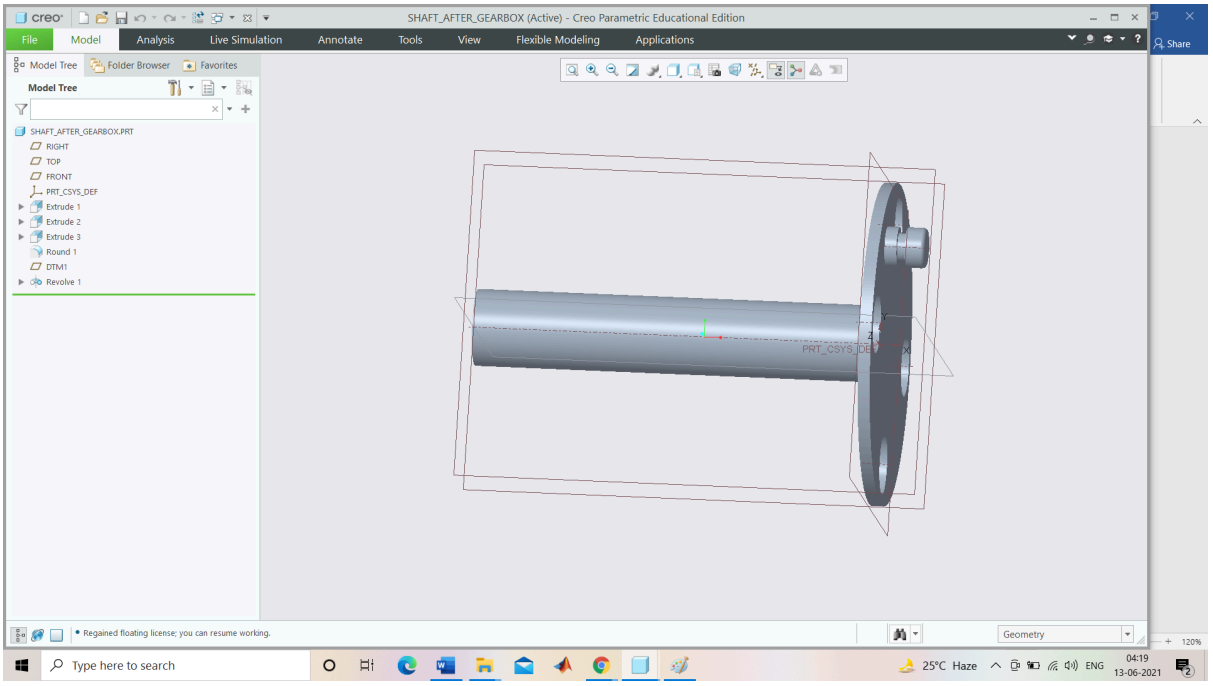
7)PLUNGER ROD



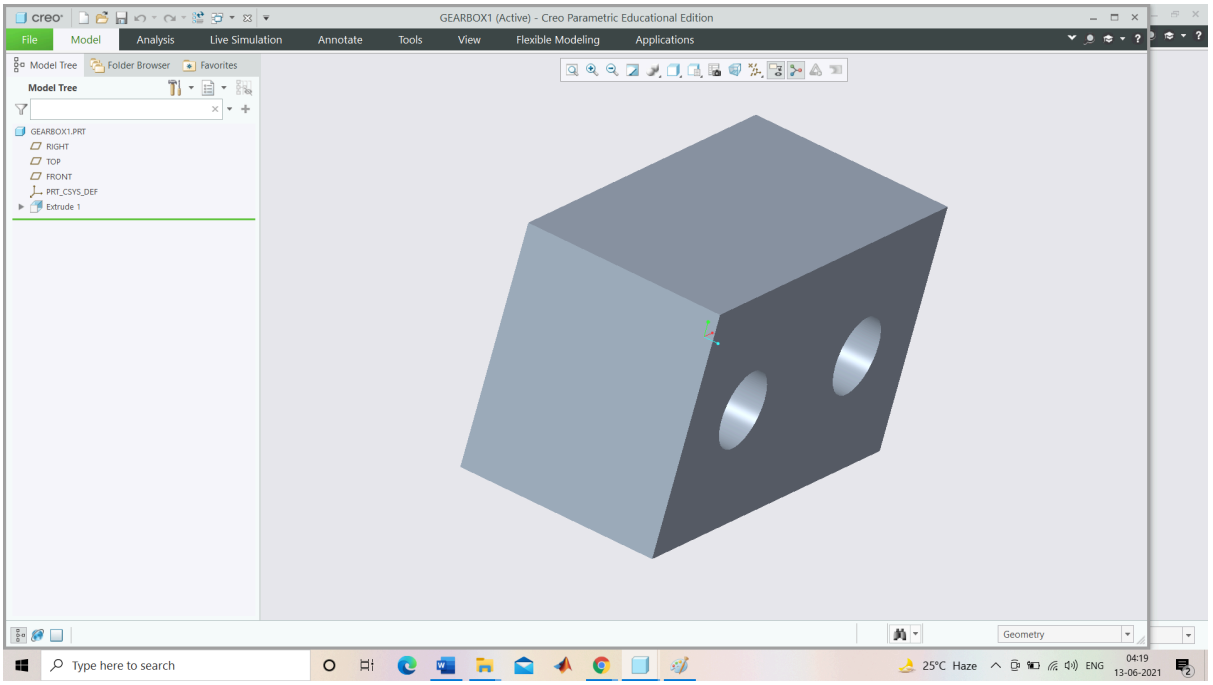
8)shaft coupler



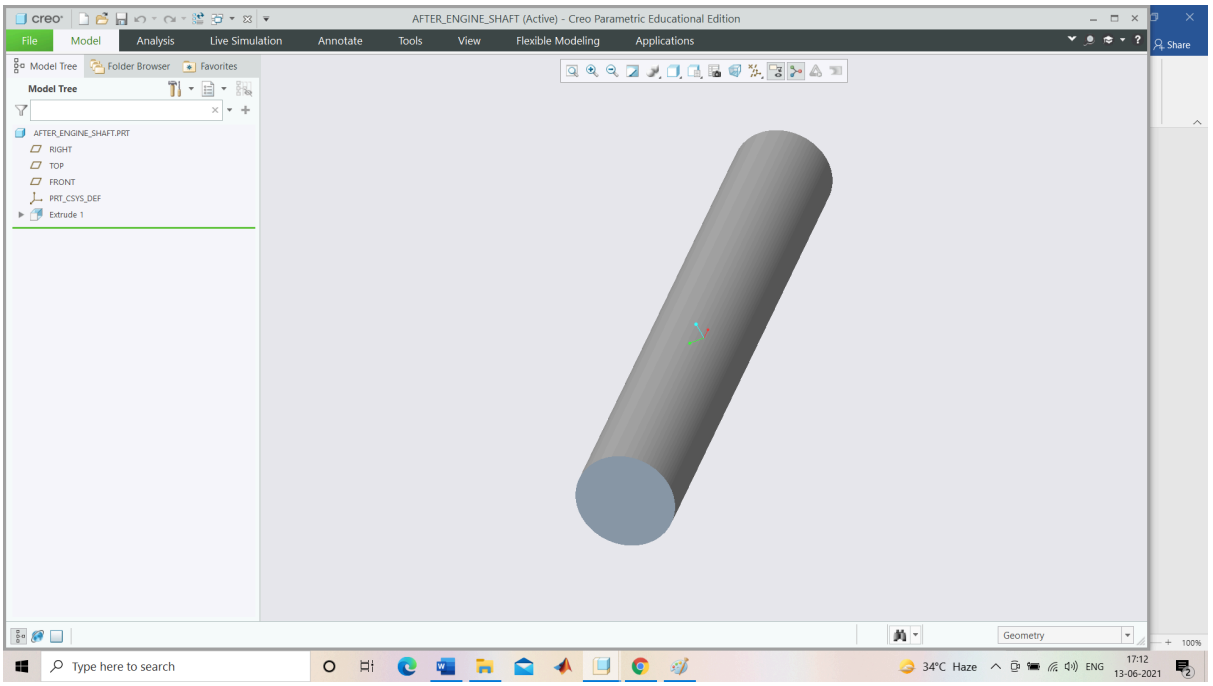
9)shaft after gear box



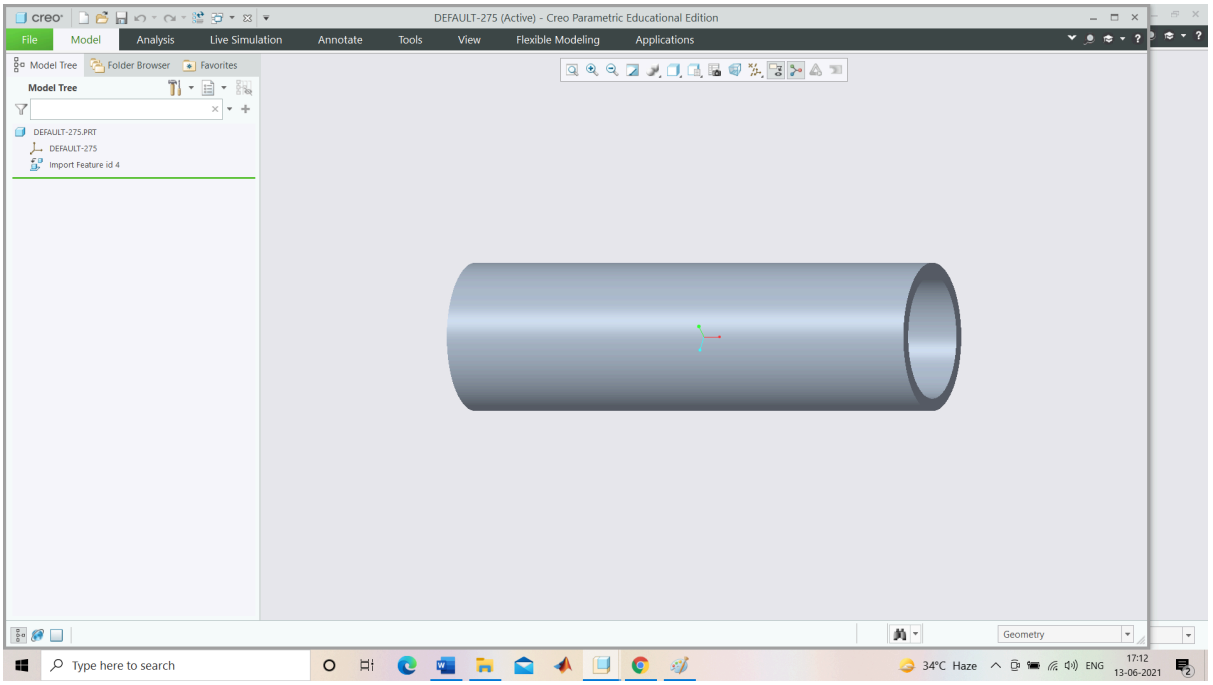
10)gear box



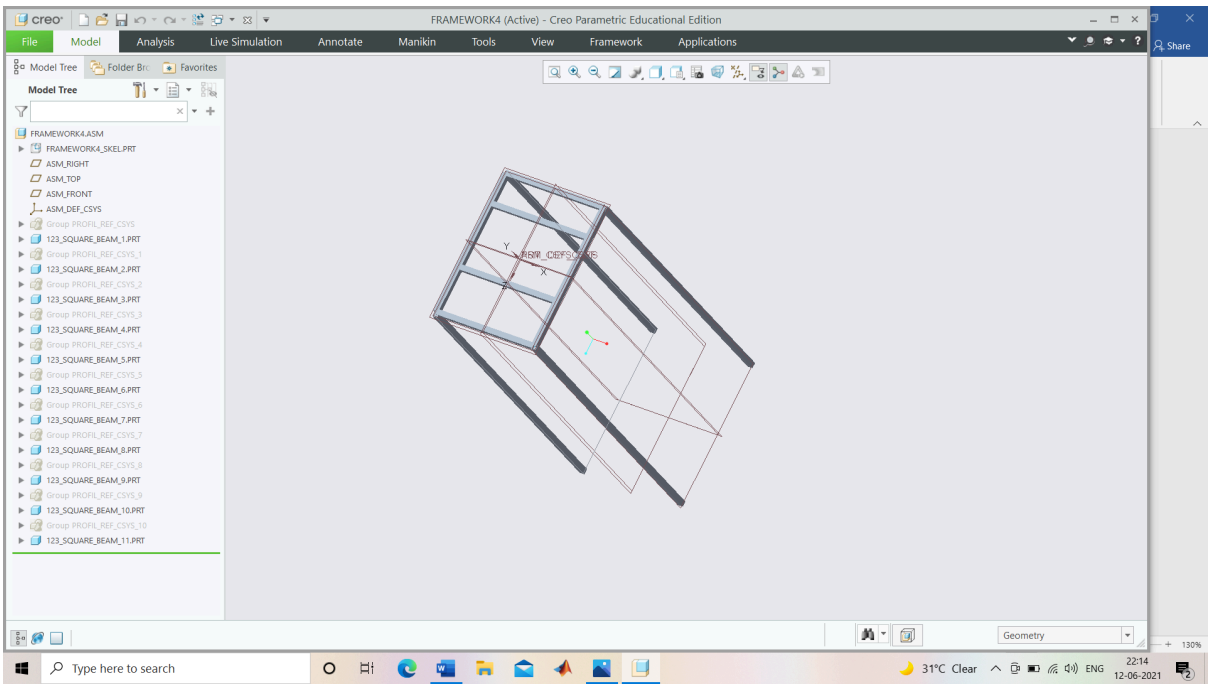
11)rod

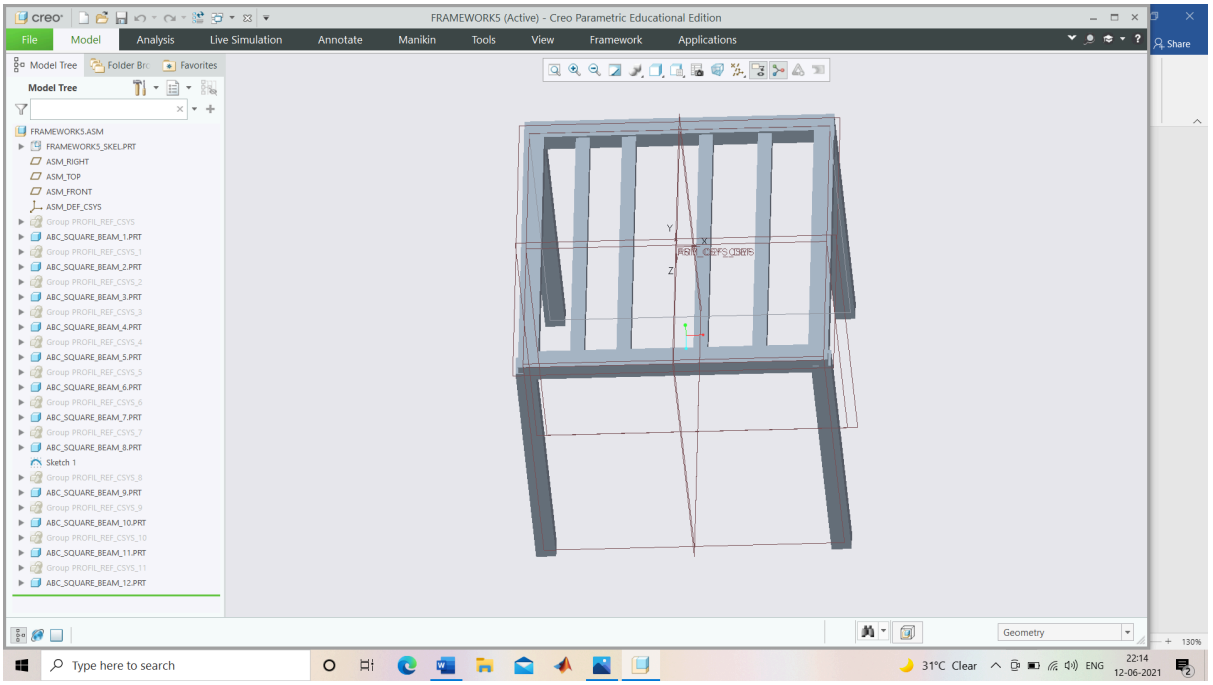


12)plunger



SUPPORT STRUCTURE DESIGN USING AFX




FRAMEWORK5 (Active) - Creo Parametric Educational Edition
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Live Simulation
Annotate
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Tools
View
Framework
Applications
Model Tree
FRAMEWORK5.ASM
FRAMEWORK5_SKEL.PRT
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ASM_TOP
ASM_FRONT
ASM_DEF_CSYS
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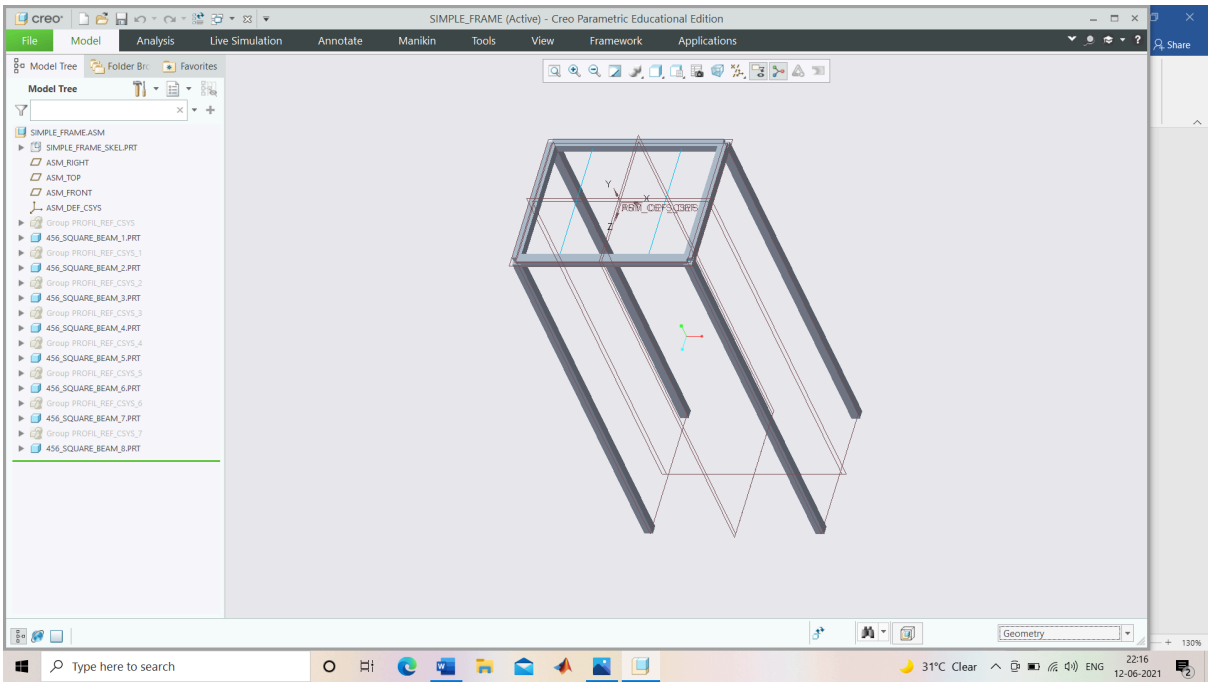
SIMPLE_FRAME (Active) - Creo Parametric Educational Edition
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Live Simulation
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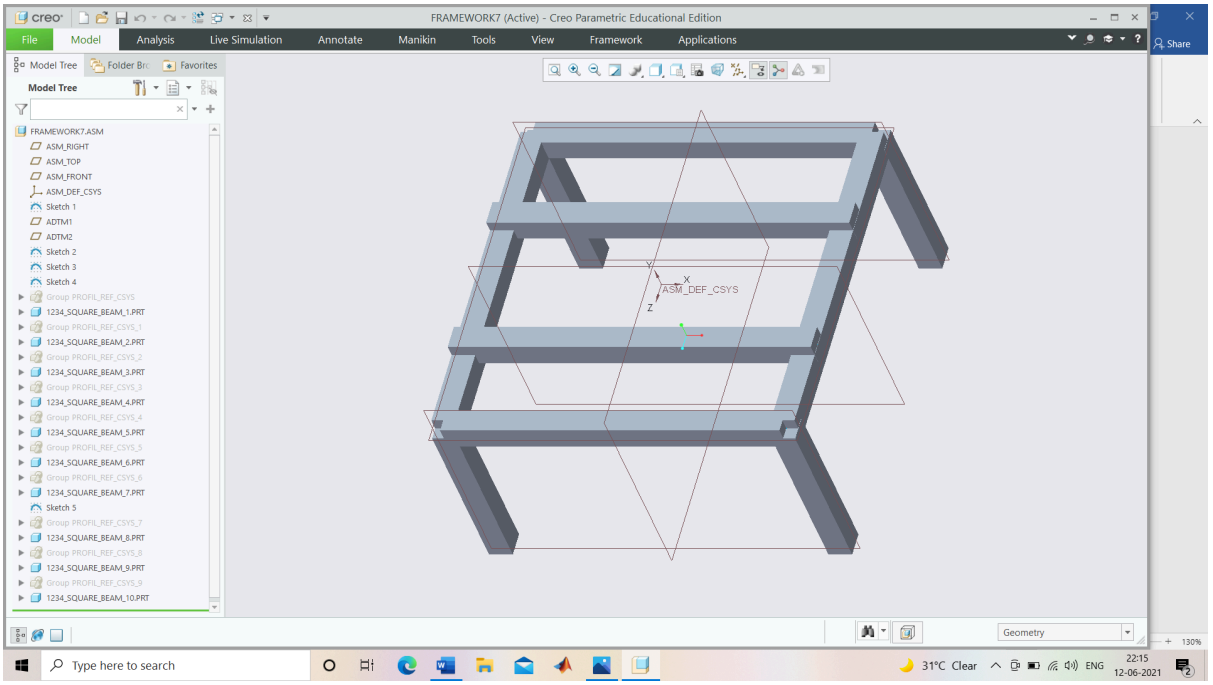


REFLECTION ON THE PROJECT:

ASSUMPTIONS IN DESIGN

1)using AFX according to my benefit so that I balance my assembly properly.

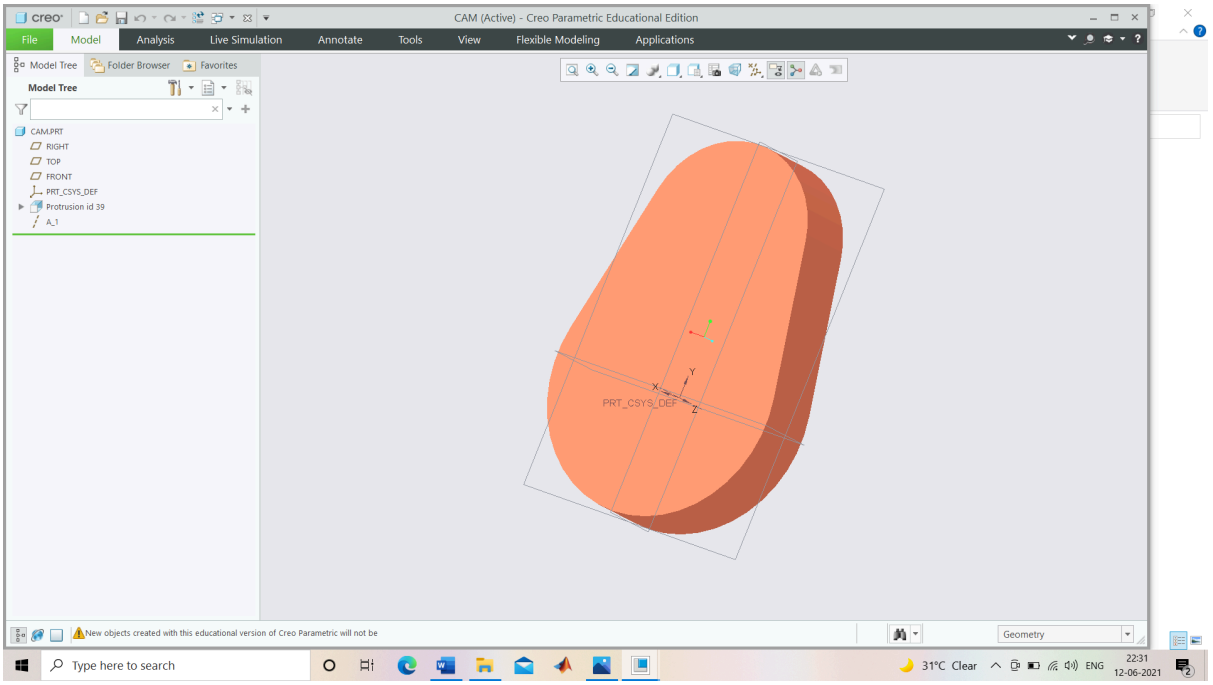
2)I have not taken proper dimensions into the account as we make this physically it will reflect some defects.

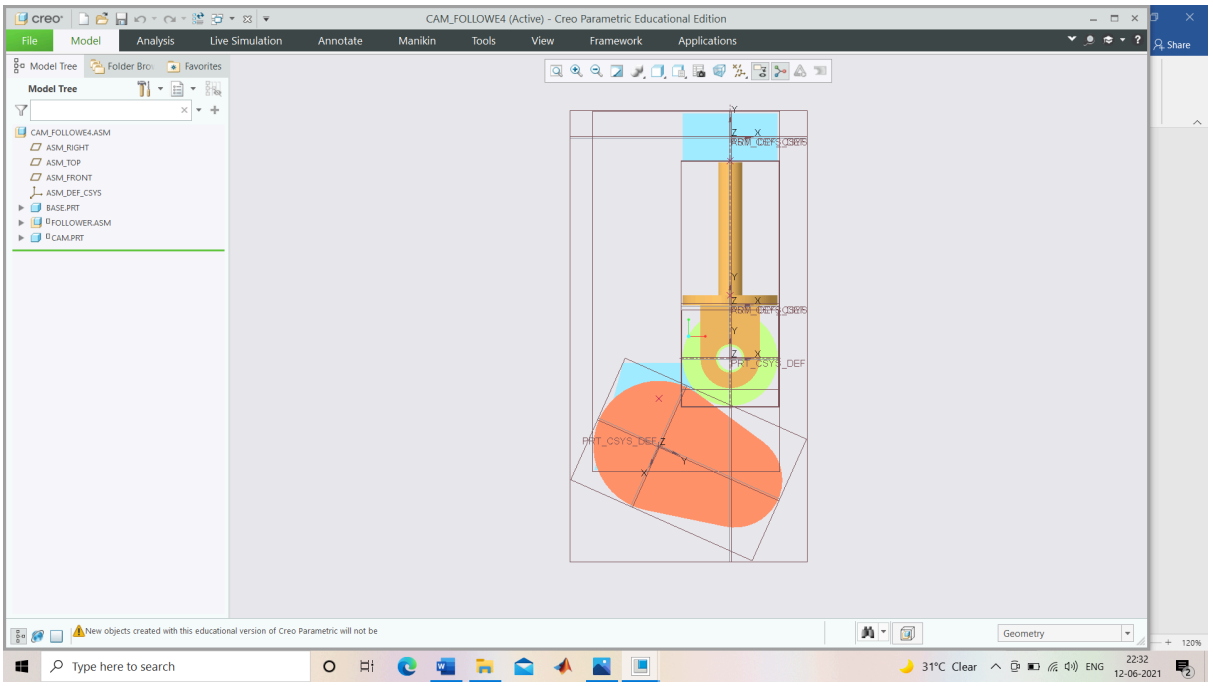
3)taking plunger rod size according to my comfort.

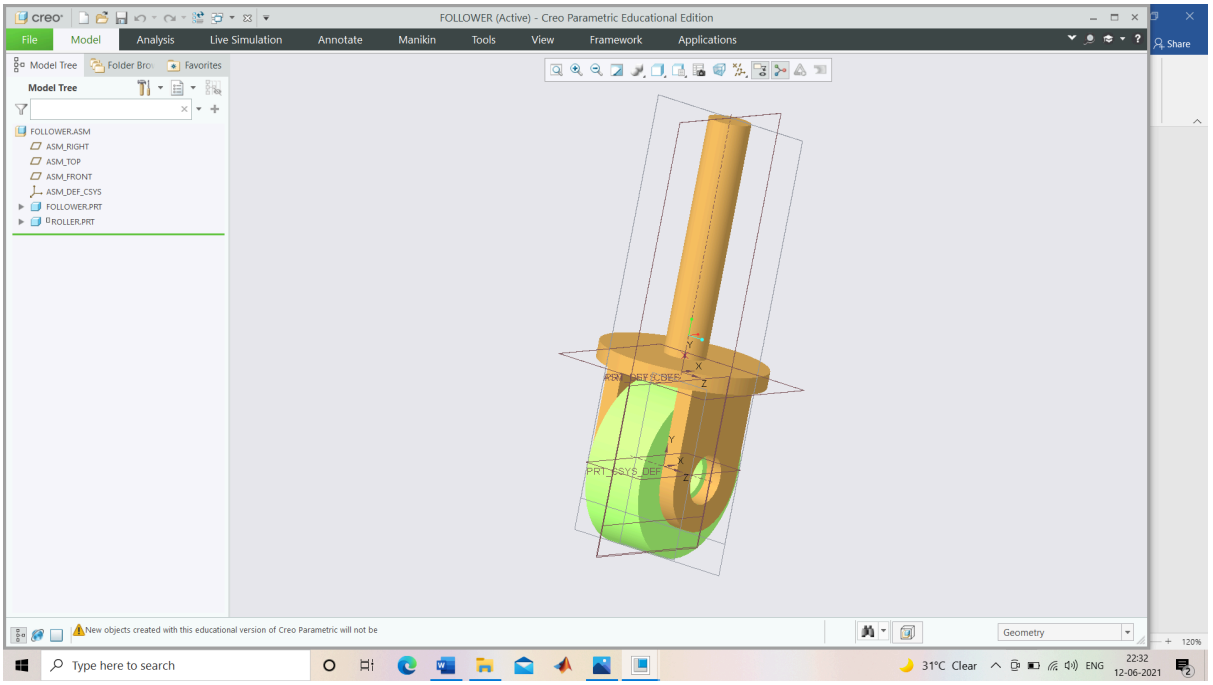
4)Missing nut and bolt at various location since it disturbing my geometry.

LIMITATION/SCOPE OF FURTHER IMPROVEMENT IN DESIGN

One should use cam and follower or skotch yoke mechanism to take plunger in and out or we can use a pulley with tight fitting







LIMITATION:

1)Not getting a proper rotation from plunger.

2)Not using gear mechanism it is difficult to calculate velocity at which plunger moves in or out

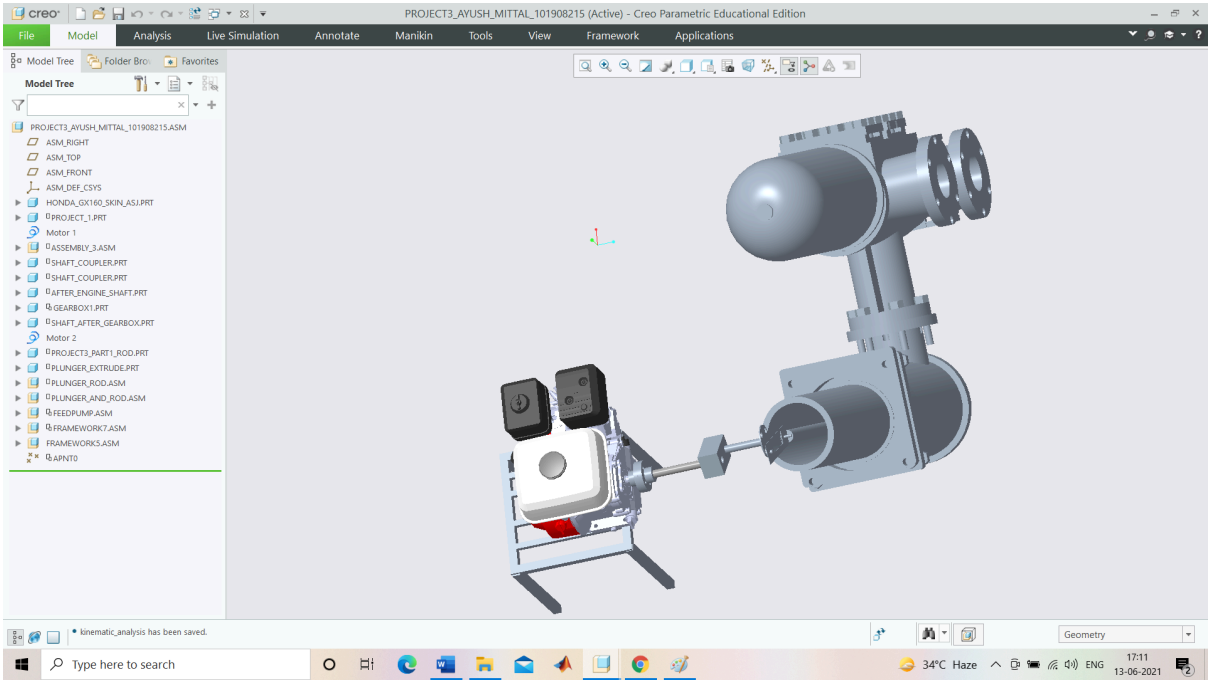
SCOPE OF FURTHER IMPROVEMENT

Proper constraints so that mechanism is able to move the plunger in and out .

According to me giving a offset distance it works properly than earlier.

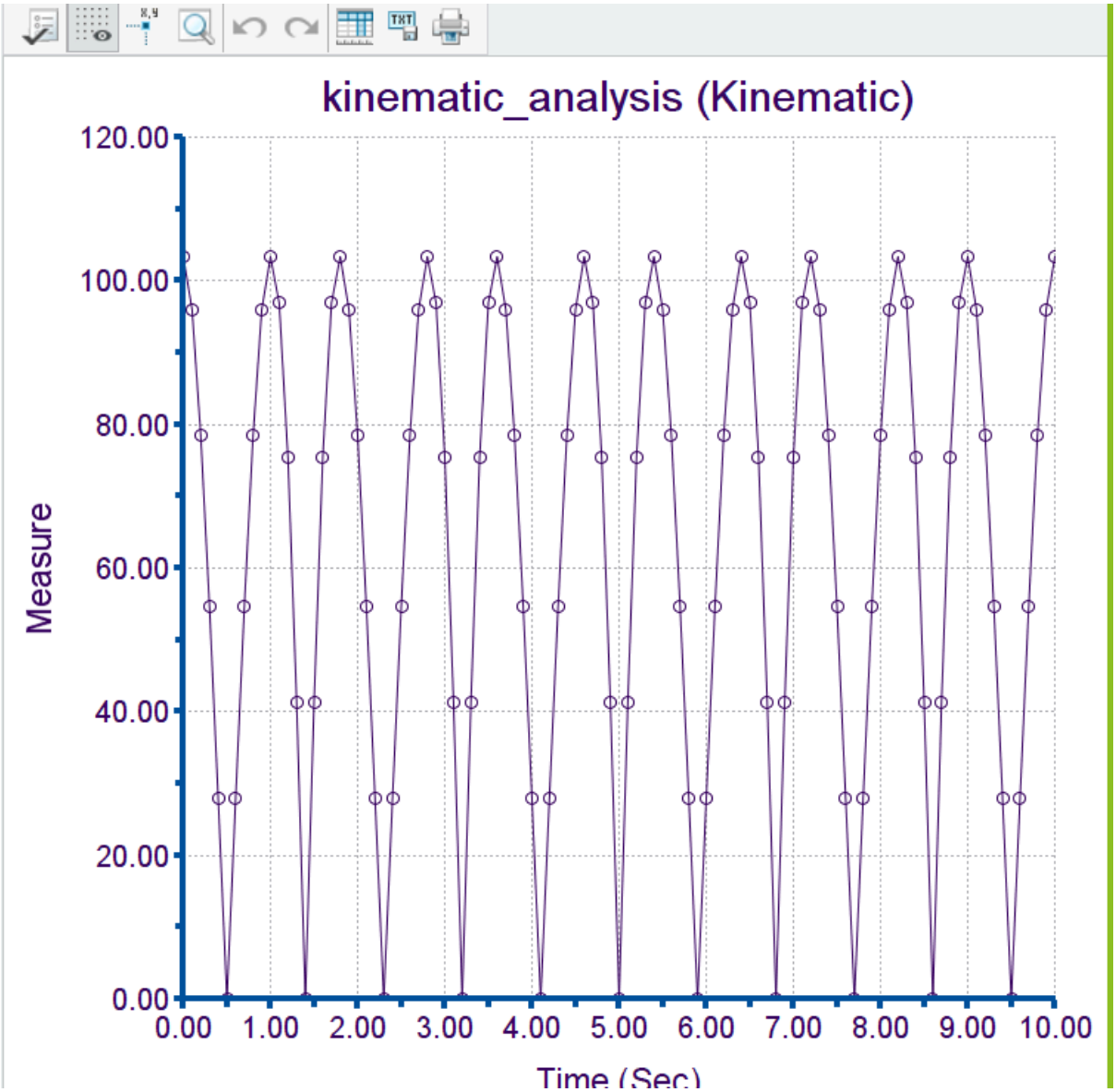
LEARNING

As a student I get to know about the mechanisms and various beautiful sketches and wonderful parts like feed pump,crankshaft and plunger ,engine ,plunger rod ,cap get to learn about mechanism wonderful project giving me a life time knowledge as a mechanical engineer.making sketches converting them into the parts and making assembly out of that .yes, it shold take time to learn but after all interesting.

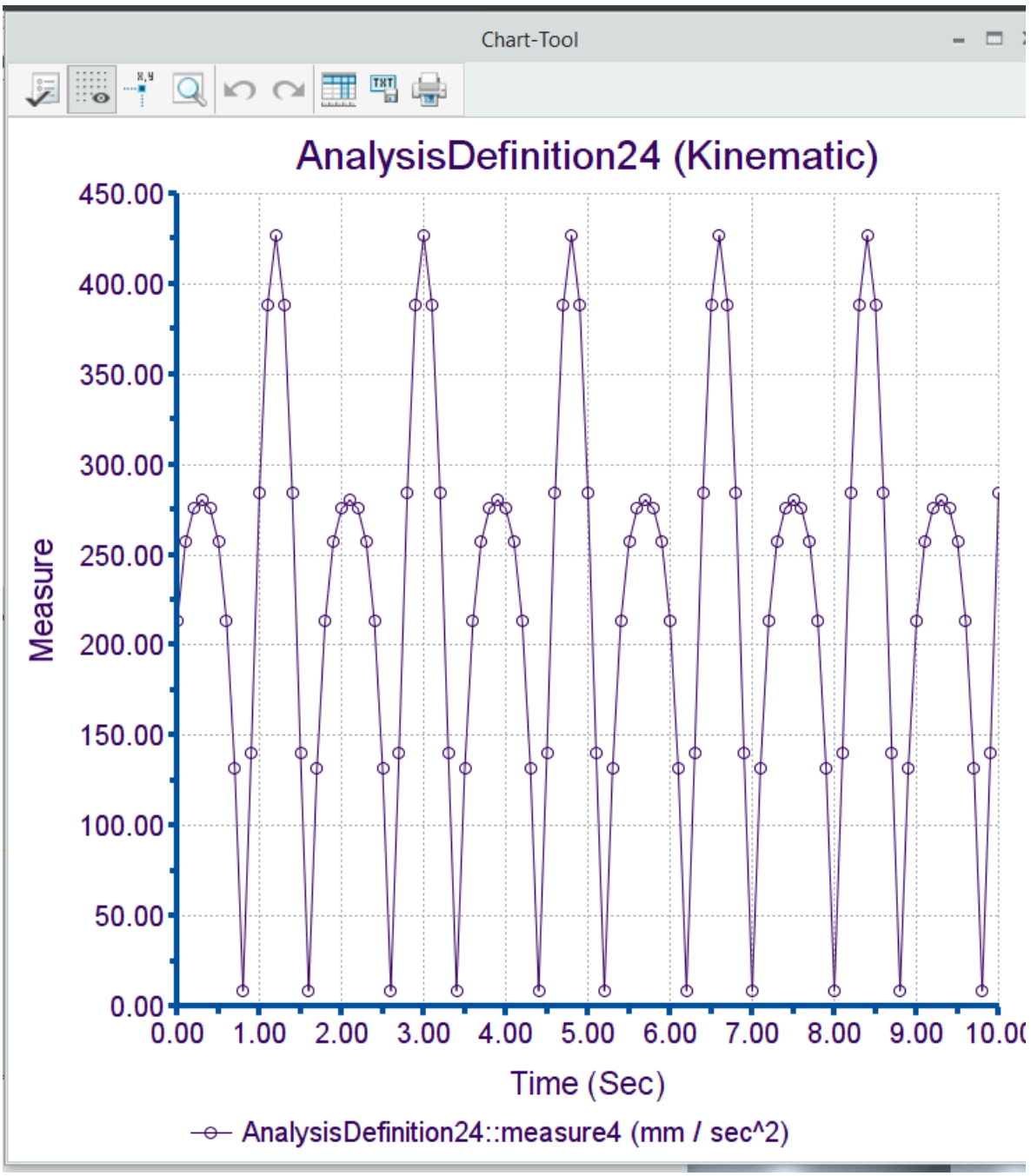


Graphs

1)velocity



2)acceleration graph



Conclusion and reflection

Basically I conclude by saying that rotation of engine in this project is the main source of everything basically we can say giving life to plunger and the main task is to pull in and pull out the plunger .For doing that I make a mechanism that helps me in doing that .Making AFX support which support my engine and feedpump

REFERENCES:

1)Taking engine from google classroom provided by Jawanda sir.

You tube link:

https://youtu.be/M9Vt-GpK3_Q