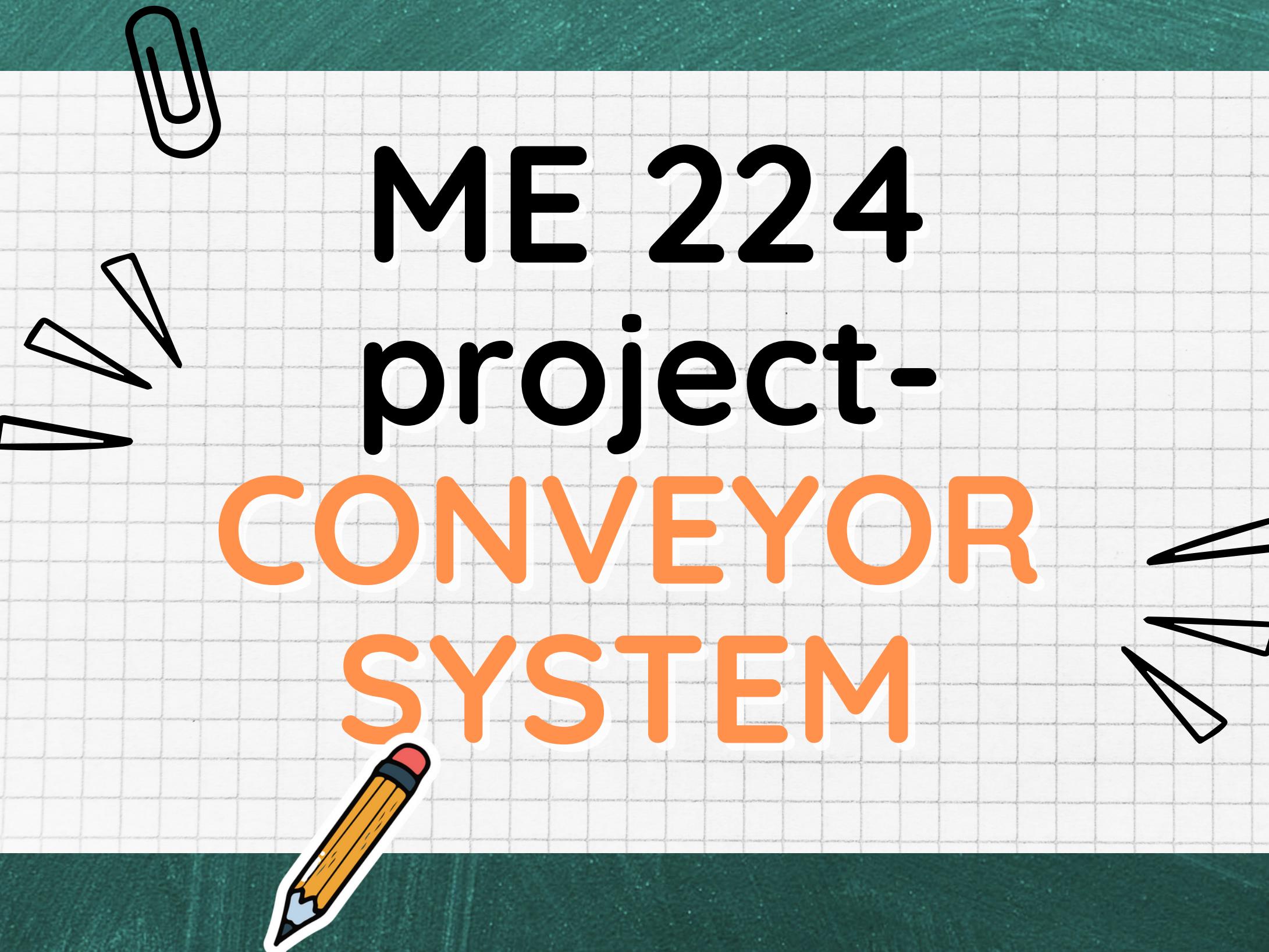


ME 224
project-
CONVEYOR
SYSTEM



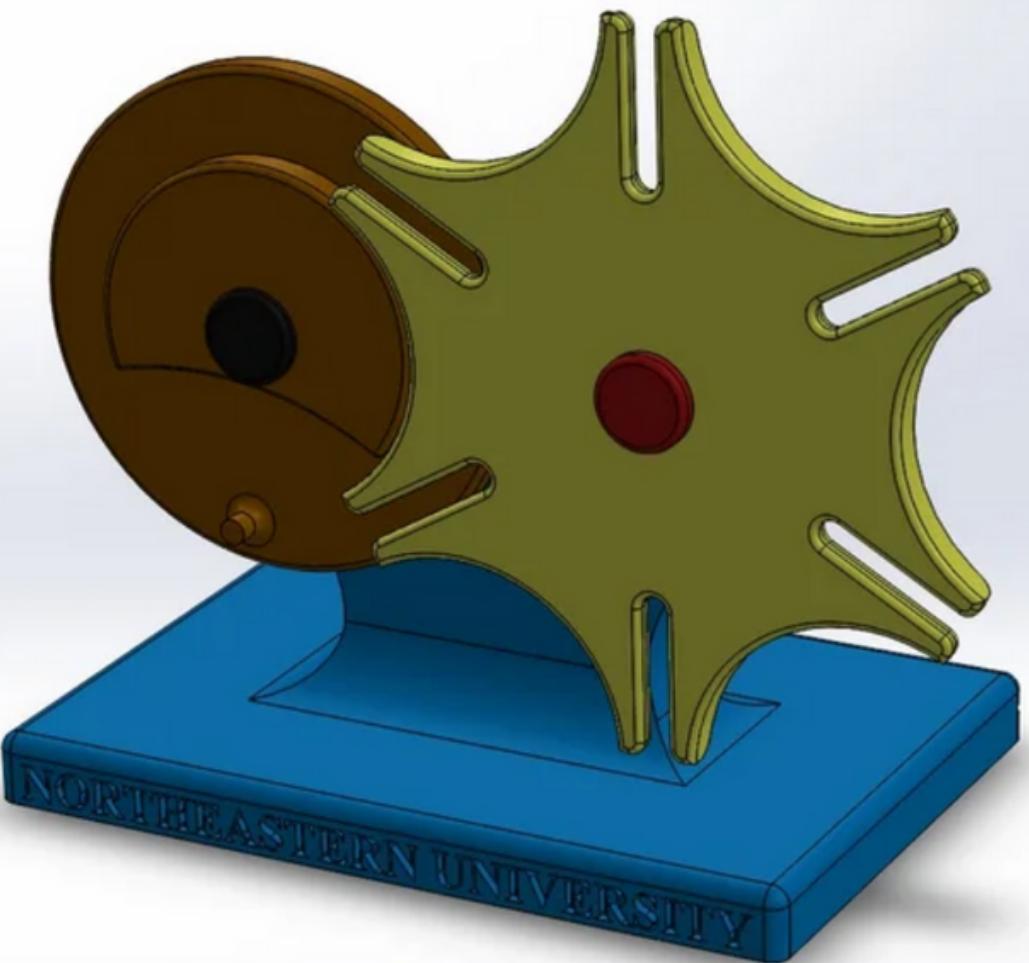


Introduction

A **conveyor system** is a mechanical handling equipment that moves materials from one location to another.

Conveyors are able to safely transport materials from one level to another, which when done by human labor would be strenuous and expensive.

They can be installed almost anywhere, and are much safer than using a forklift or other machine to move materials.



Geneava Mechanism



Geneva mechanism is one of the most commonly used devices for producing intermittent rotary motion, characterized by alternate periods of motion and rest.

Linear Geneva Mechanism :

The translating Geneva mechanism typically consists of a rotating disc with intermittent slots or pins, and a sliding block or carriage that moves back and forth in a linear direction.

As the disc rotates, the pins or slots engage with the carriage, causing it to move linearly in discrete steps.



Main components:



Drive Wheel

Geneva mechanism, consisting of a driving wheel with pins which translates the motion by rotating.



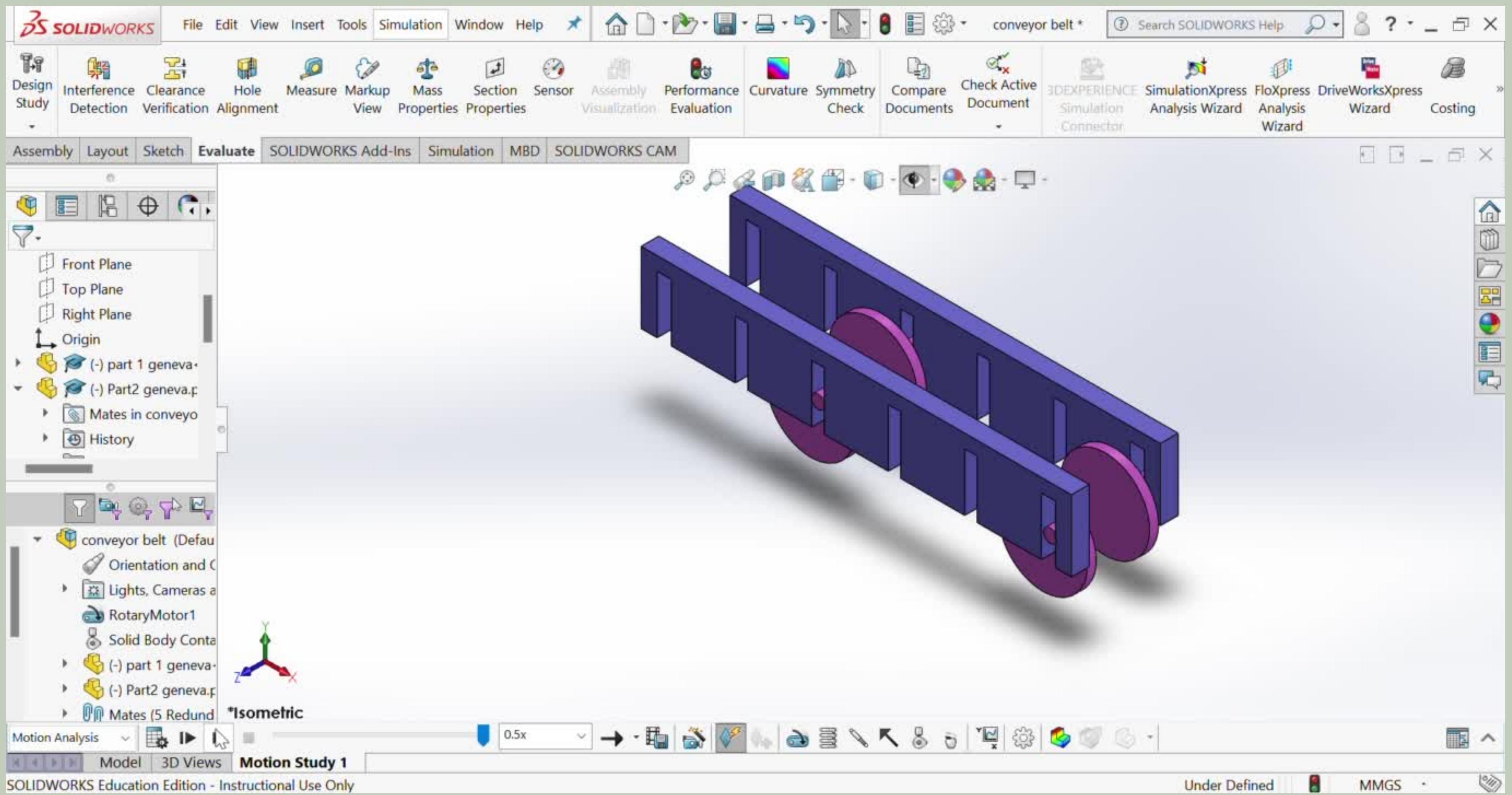
Pin

It helps to translate the slider.



Slider

The slider moves back and forth in a linear path.



Analysis

Analysis:

Let

Let the radius of pin = r .

$\Rightarrow d$ is the distance between centre of drive wheel and centre of pin.

\Rightarrow Displacement of slider due to rotation of pin (L)
 $= 2d - 2r$.

\Rightarrow Velocity of slider (v) = $\frac{L}{2} \times \omega$

\Rightarrow Dwell time = $\frac{\text{Linear displacement}}{\text{Velocity}}$

$$t = \frac{L}{\frac{L}{2} \times \omega} = \frac{2}{\omega}$$



Advantages



- Generally, in factories, we use sensors to stop the objects for some time for packaging, bottle capping ,stickering or filling .
- As sensors are expensive, we can use this mechanism to perform these activities without using sensors in small-scale production.



Thank you...!

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