Analysis Of Slider Crank Mechanism Using Vector Analysis

Problem Statement

Find the Output torque of the slider crank mechanism for one full cycle of
motion . Given Data
        Length Of each Link in meters.
        Mass of each link and piston in Kg.
        Angular velocity of the crank.

Control Buttons
"RUN" button starts the animation.
"STOP" button stops the animation.
"RESET" button resets the animation.

Procedure

Set all the input parametrs using sliders. Press reset button
and then start button to start the animation.

Concepts used

Displacement, velocity, and acceleration analysis using complex number method.
Total acceleration at any point on the link.
Acceleration difference.
Inertia forces due to acceleration of each link.
Free body Diagram.

What to see

Velocity and acceleration diagram can be plotted.
Free Body Diagram of each link is displayed.
<u>Various graphs are plotted.</u>

Graph of the piston velocity vs. angle of the driver link
Graph of the piston acceleration vs. angle of the driver link
Graph of the output torque vs. angle of the driver link
Free body diagrams for each link is plotted.