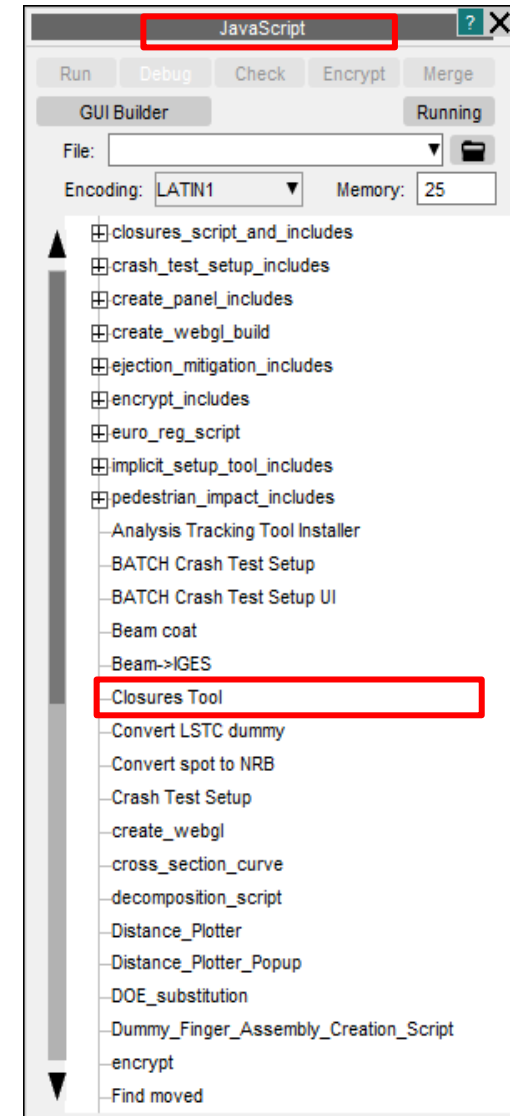


Closures Setup Tool



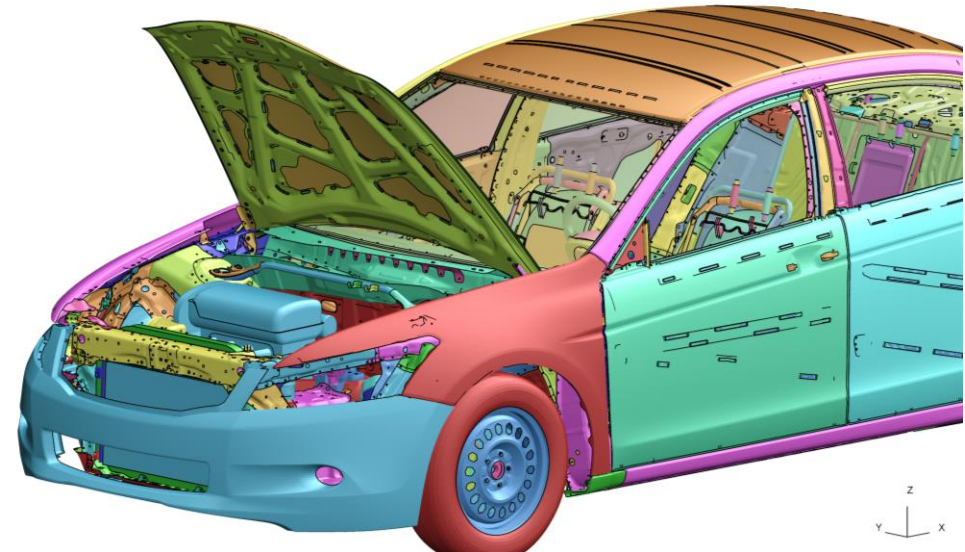
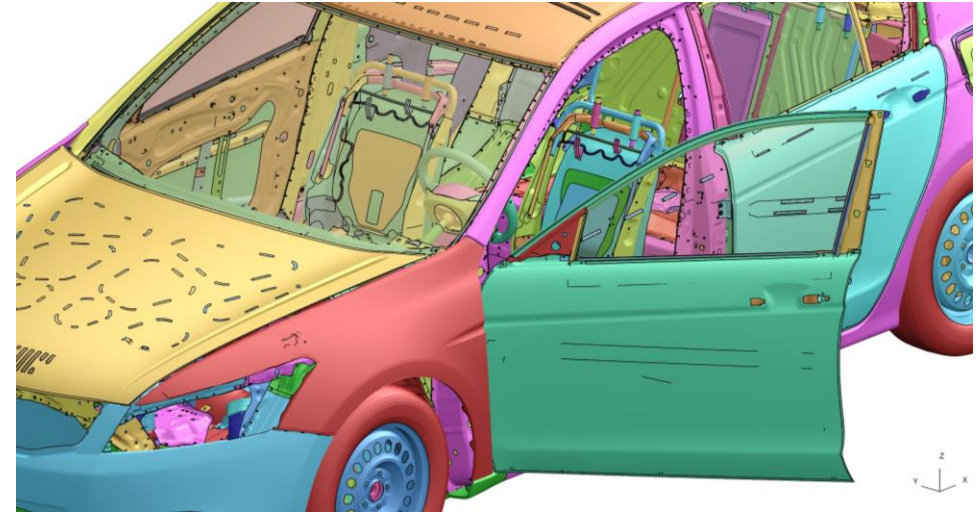
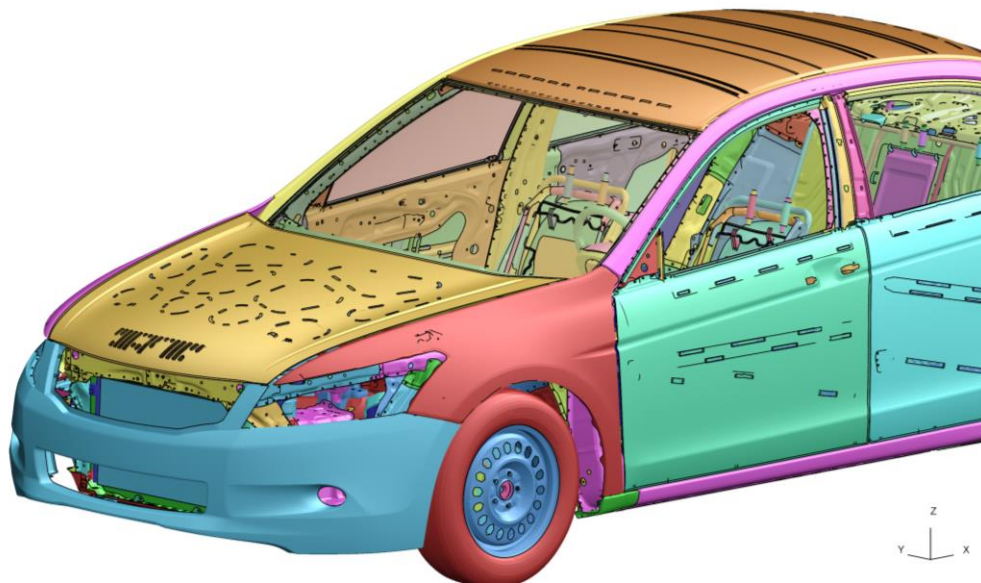
Closures Setup Tool

- The Closures Setup Tool can be accessed from the JavaScript menu.
- The intended application of the tool is for vehicle closures (e.g. bonnets, doors, tailgates).
- The tool helps setup a model so that the position of a closure include file can be controlled by a single *PARAMETER.
- This removes the need to maintain several models of the same closure in different positions and allows for more accurate positioning.
- The tool supports two types of hinges:
 - Simple hinge
 - Four bar link



Closures Setup Tool

For example, the position of the bonnet or door include file can be changed by modifying a single *PARAMETER.



Inputs

Simple Hinge Option

- The joint ID which defines the axis of rotation.
- A node set which contains the nodes to be moved.

Four Bar Link Option

- Four joint IDs are required which must be input according to the diagram shown on the GUI.
- Three node sets are required.
 - Node Set A-B contains the nodes which make up the link between Joint A and Joint B.
 - Node Set B-C contains the nodes which make up the link between Joint B and Joint C.
 - Node Set C-D should contain the nodes which make up the link between Joint C and Joint D.



Functionality

Create button will become active once all inputs are defined.

Sketch and label the selected joints.

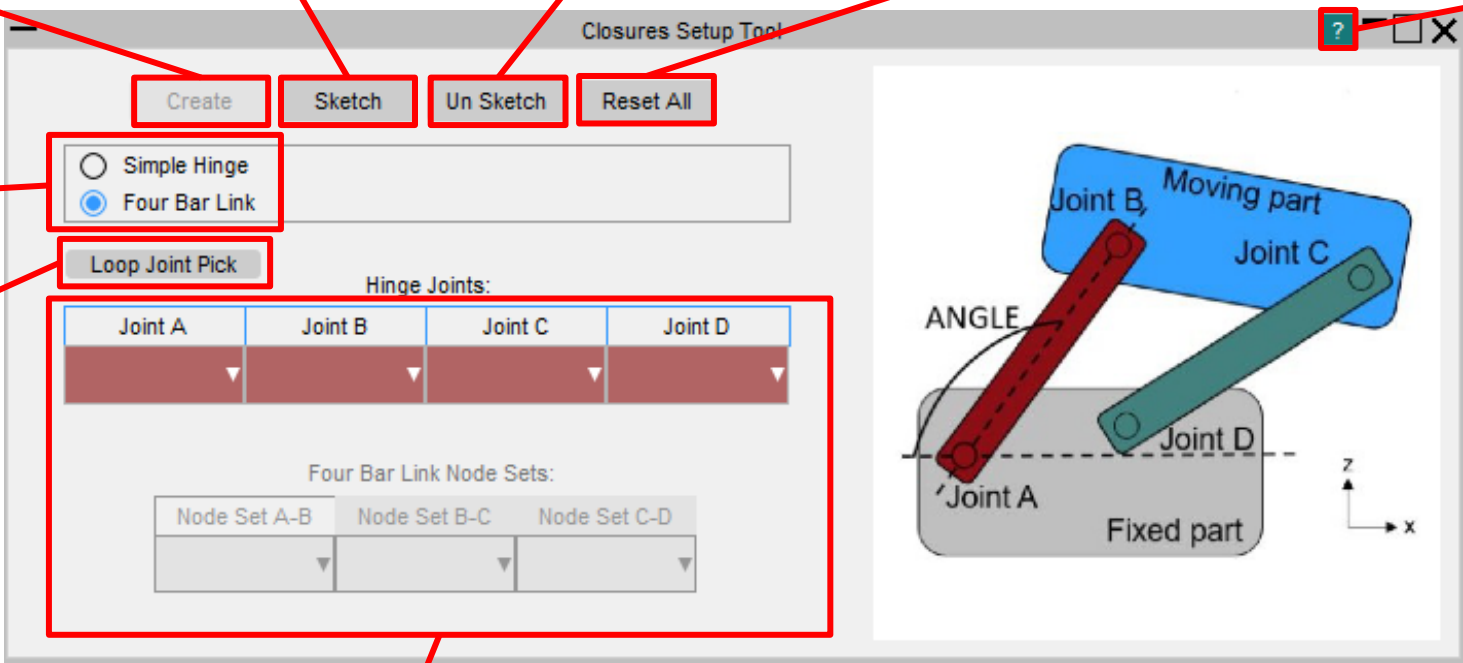
Remove all sketches

The 'Reset All' button will reset the window back to default, as pictured in this image.

Opens a help window, with specific instructions for four bar and simple hinge options.

Toggle between hinge types, which will change the inputs required.

Loop through Joint A – D, picking one joint for each. The user can cancel out of this at any time using the 'Cancel' button in the joint pick menu.



User defined inputs.

Outputs

- Pressing 'Create' will cause the following to be created:
 - A *PARAMETER named ANGLE.
 - A *PARAMETER named RESET, which is the initial hinge angle (four bar link only).
 - *DEFINE_TRANSFORMATION(s) which reference the parameters.
 - *NODE_TRANSFORM(s) which reference the node set(s) and the *DEFINE_TRANSFORMATION(s).
 - Several other *PARAMETERS (four bar link only).
- If the model contains include files:
 - The entities coloured in green will be put into the current layer.
 - The entities coloured in blue will be put into an include file of choice.
- If the model does not contain include files, all entities will be put into the master file.

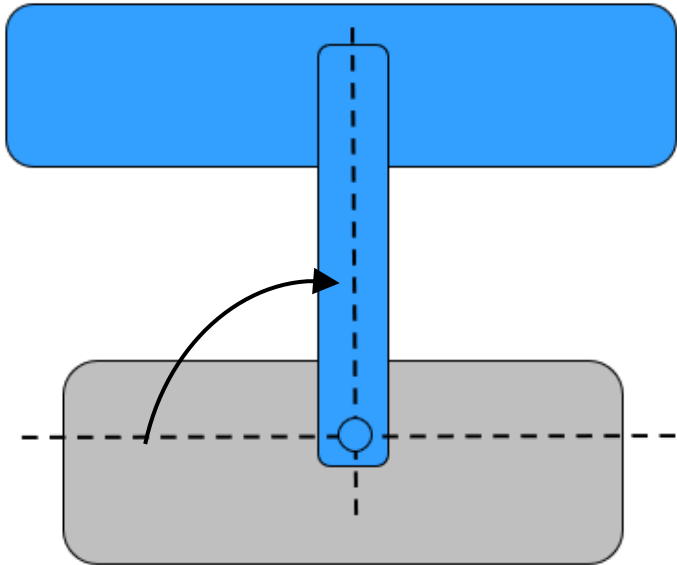


ANGLE Parameter Definition

- The hinge position can be modified by changing the ANGLE parameter. Other parameters should not be modified.

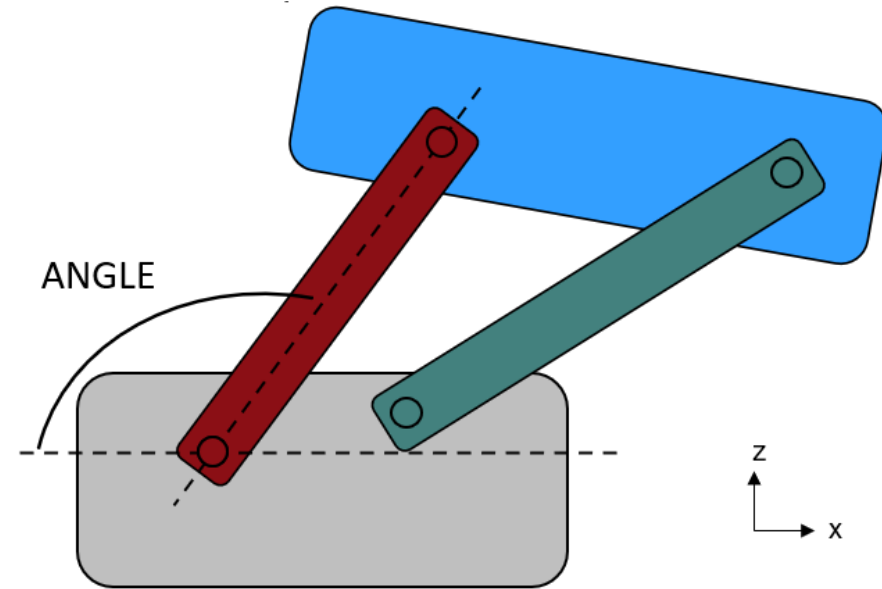
Simple hinge option

The ANGLE parameter is initially set to 0. Changing the ANGLE parameter will rotate the **node set** around the joint axis.



Four bar link option

The ANGLE parameter is initially defined as shown in the diagram below. Changing the ANGLE parameter will position the four-bar link.



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