Example of usage of split-node elements for the case of a split fault. Split-node elements are shown in red, and the associated nodes are shown in blue. Split-node elements have zero length, but the sides have been separated for this view. In the simplest case (element 3), the element operations are:

1. Assign the same equation numbers to nodes 4 and 5.
2. Apply time-dependent displacements to nodes 4 and 5.
3. Compute contributions to the internal force vector for both sides of the fault. For node 4, this would mean looping over all elements attached to the node.

The situation is more complicated where the fault splits (elements 1 and 2). In this case, we would need to insure that the same operations are not being performed twice for node 2 (particularly operation 3).