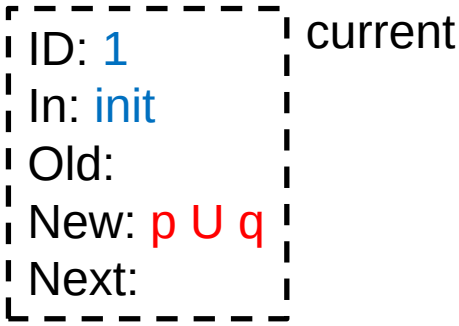
From “p U q” to a GBA
(using the simple on-the-fly translation)

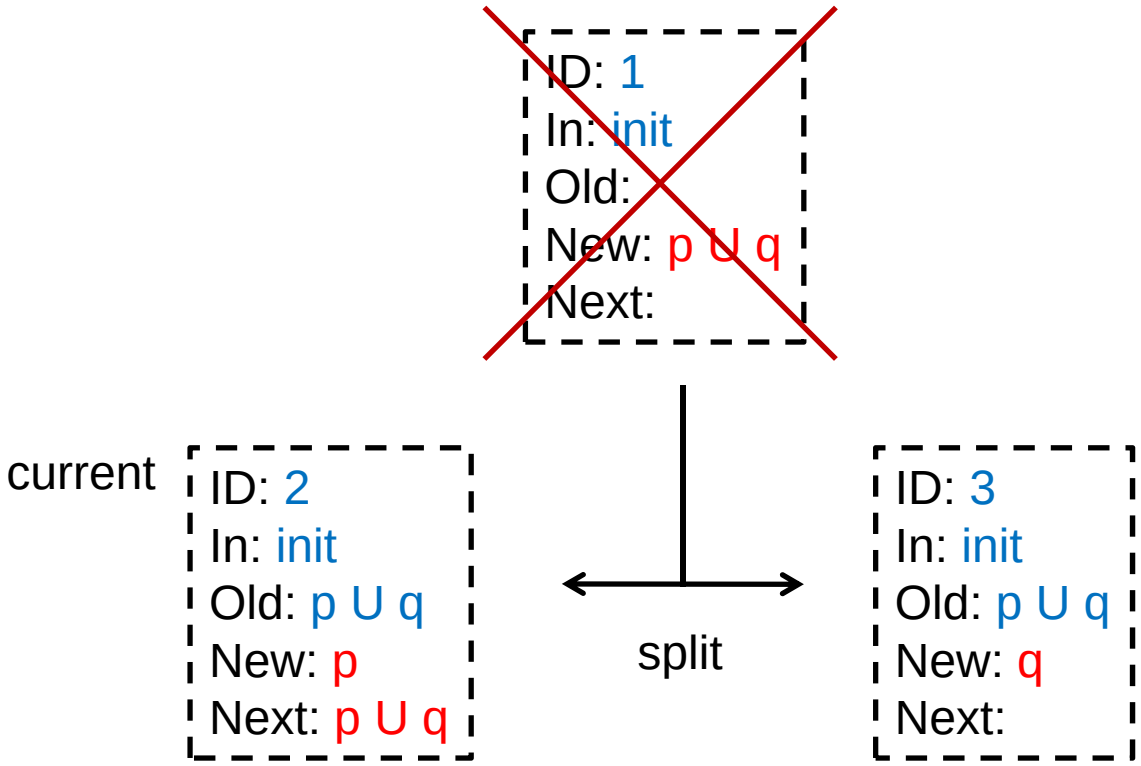
Yih-Kuen Tsay
Dept. of Information Management
National Taiwan University

Start with One Node



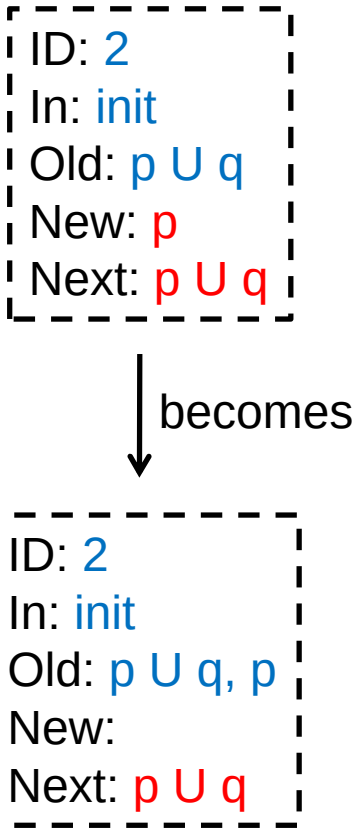
Process the Current Node

Take one formula from *New*; p U q = q ∨ (p ∧ X(p U q)); split



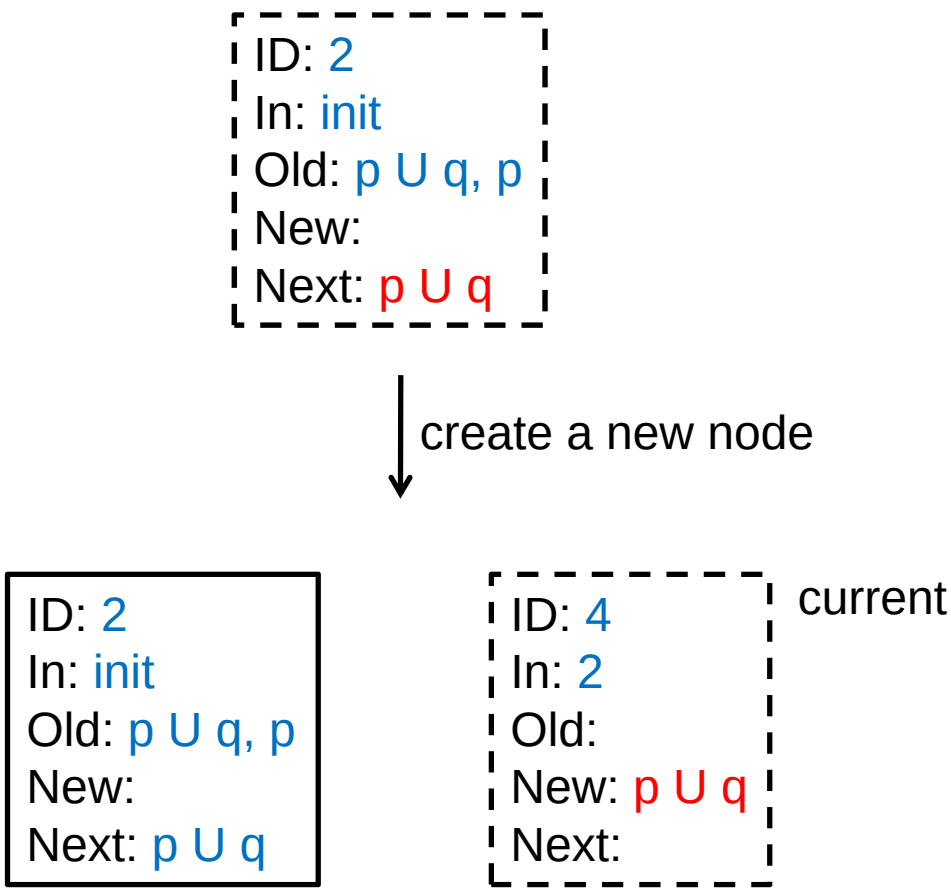
Expand Nodes in a DFS Manner

Process the literal p



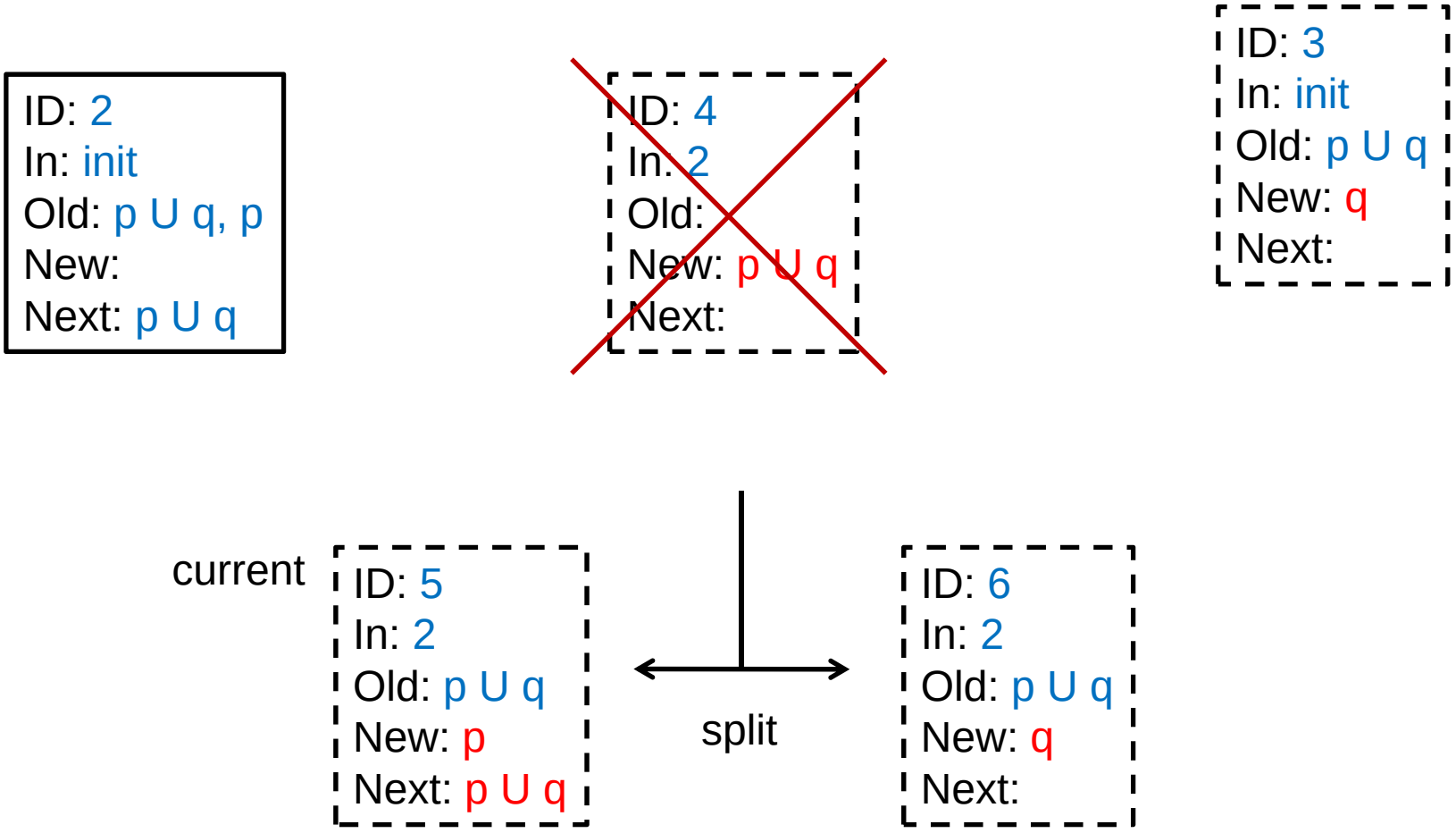
ID: 3
In: init
Old: p U q
New: q
Next:

Create a Node for a Formula in *Next*

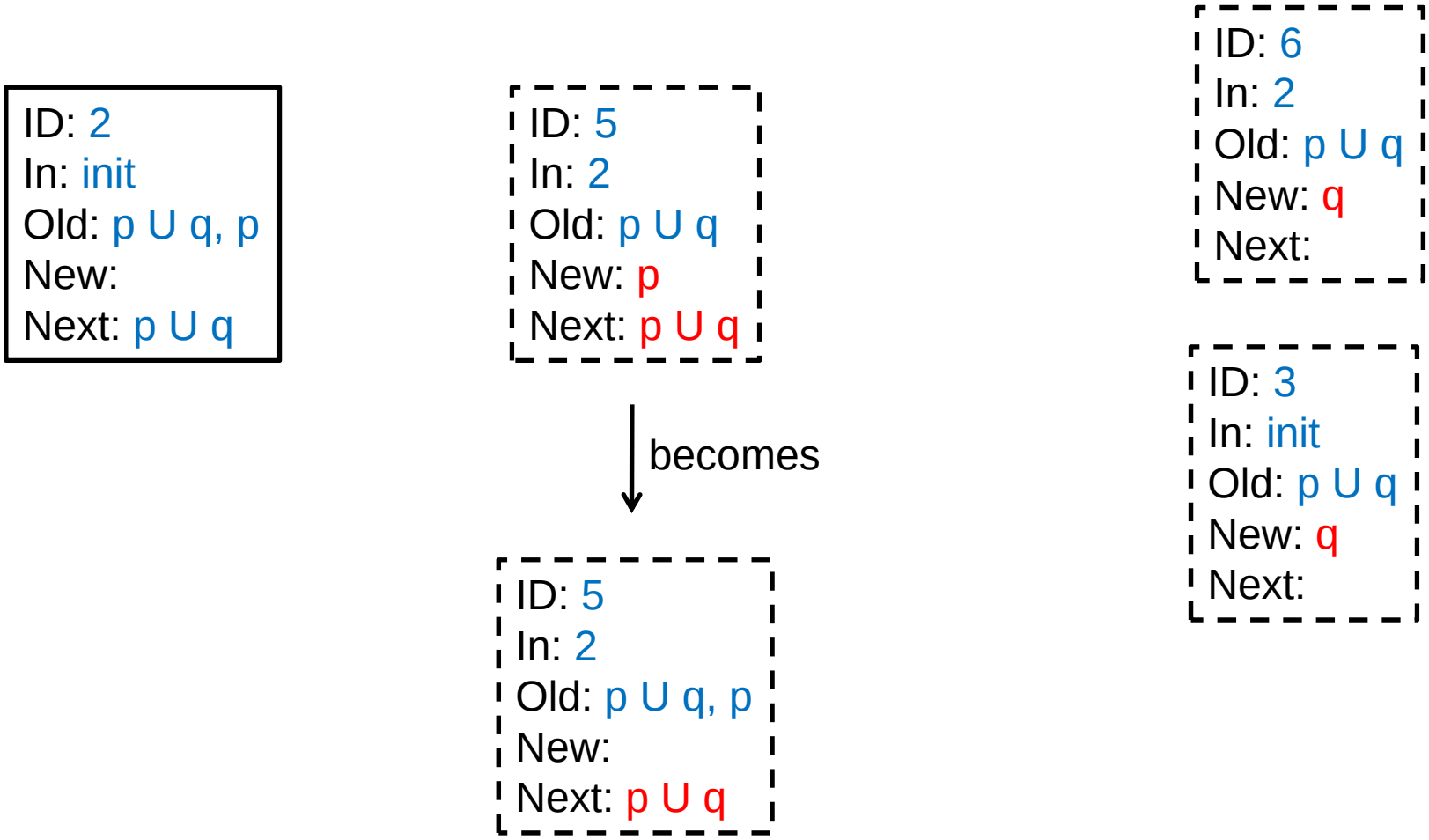


Node 2 is added to the *Nodes* list.

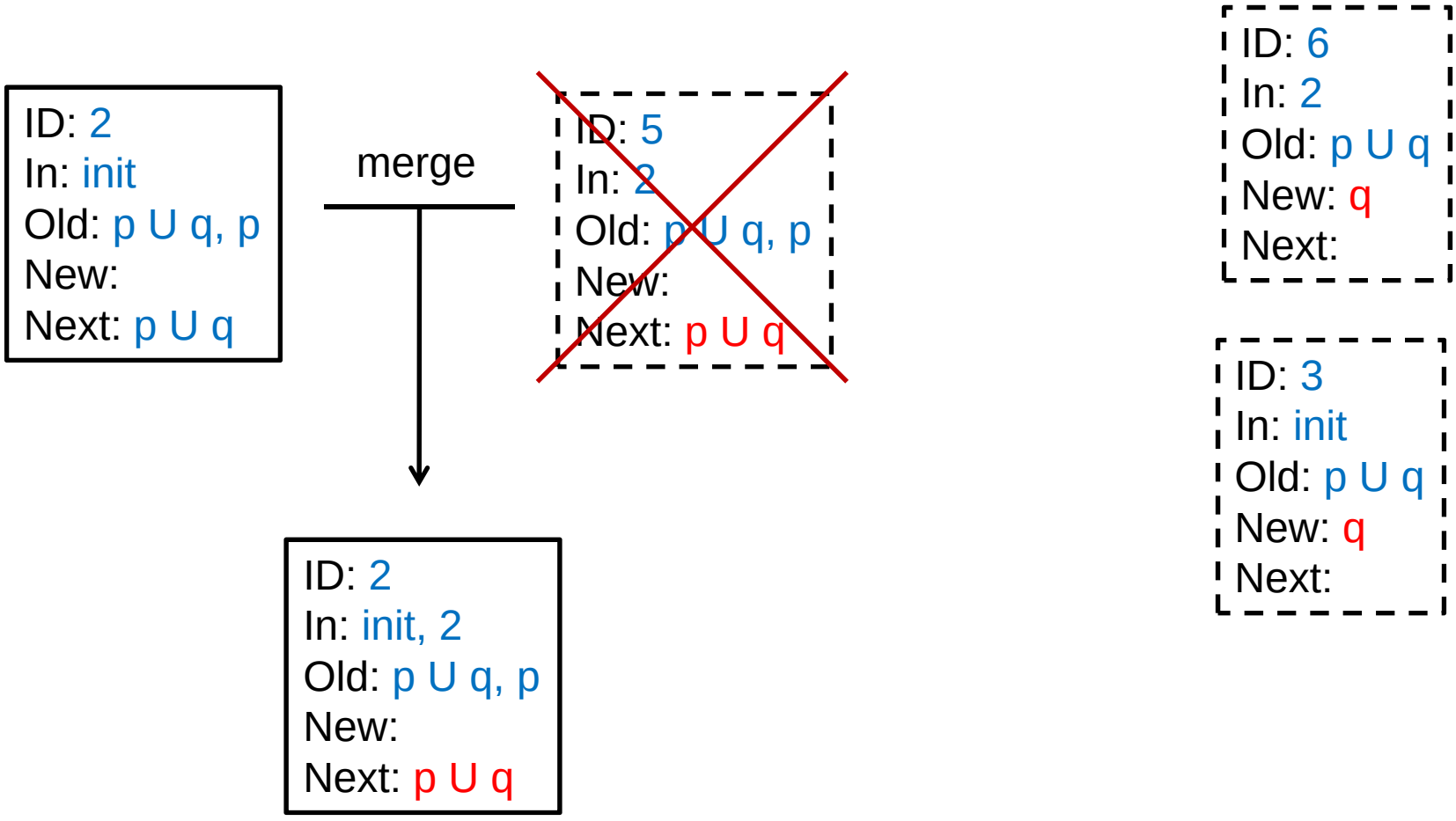
Split (Again) for p U q



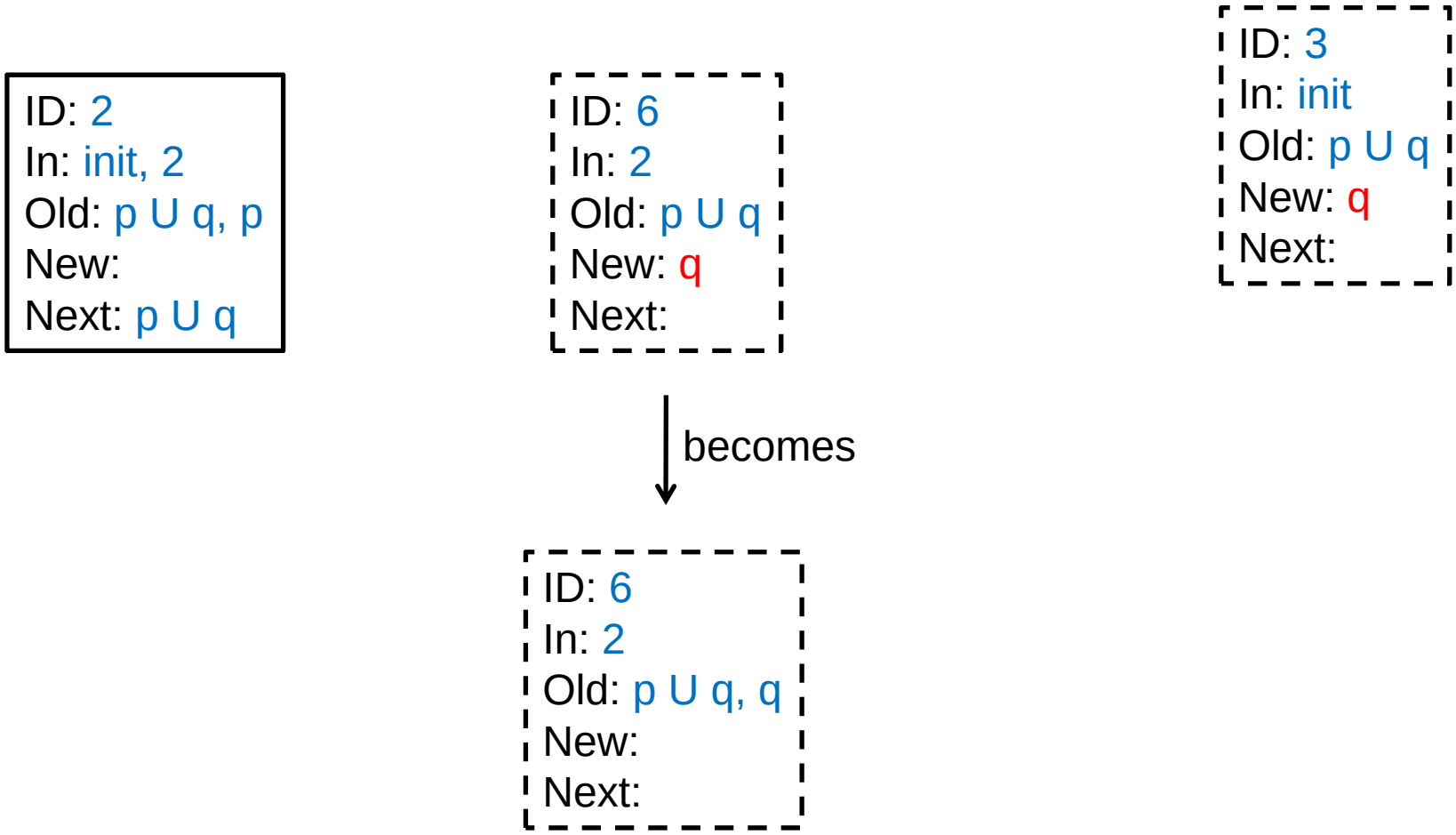
Expand Nodes in a DFS Manner



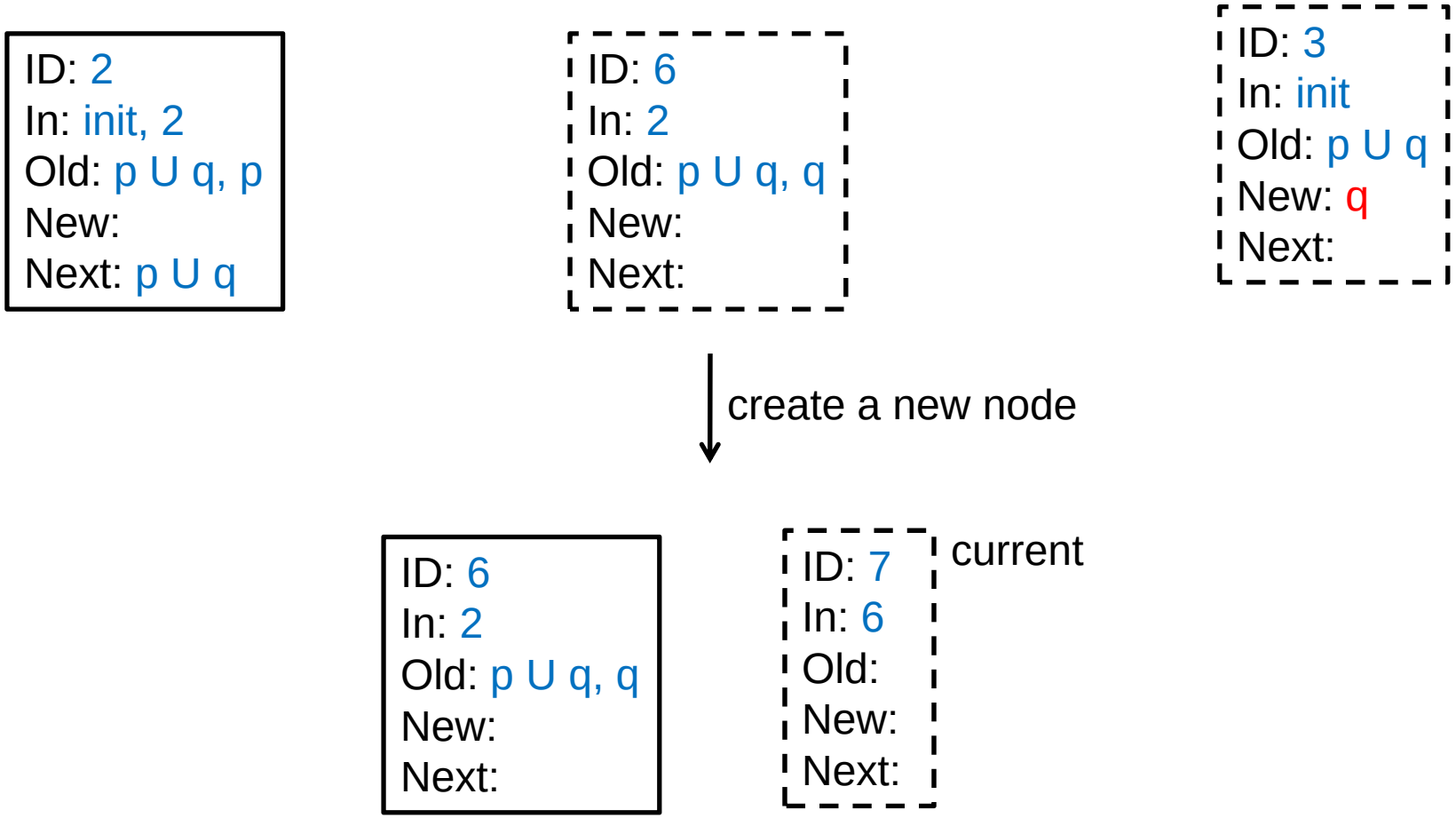
Expand Nodes in a DFS Manner



Expand Nodes in a DFS Manner

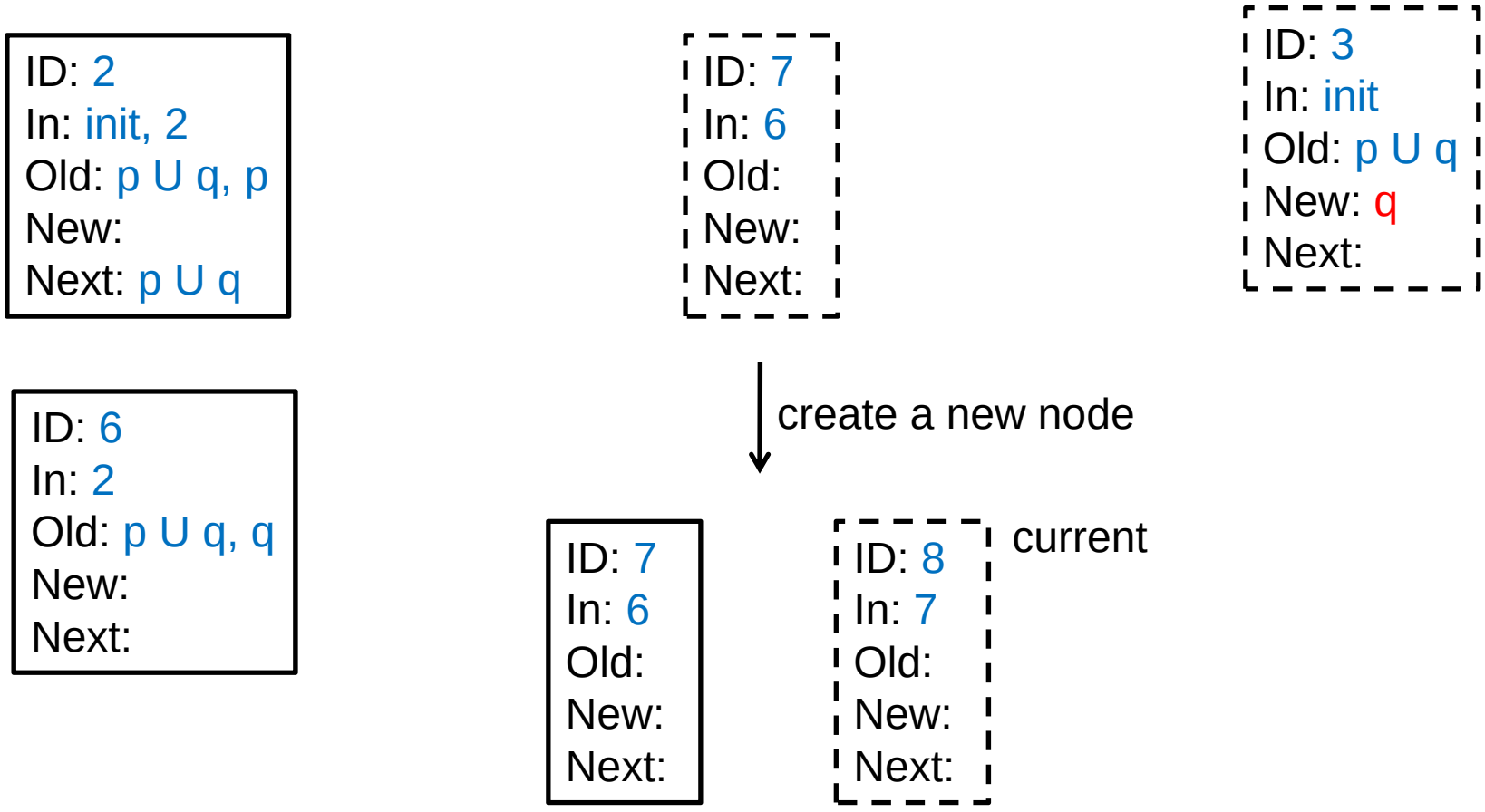


Create a Node for *Next*



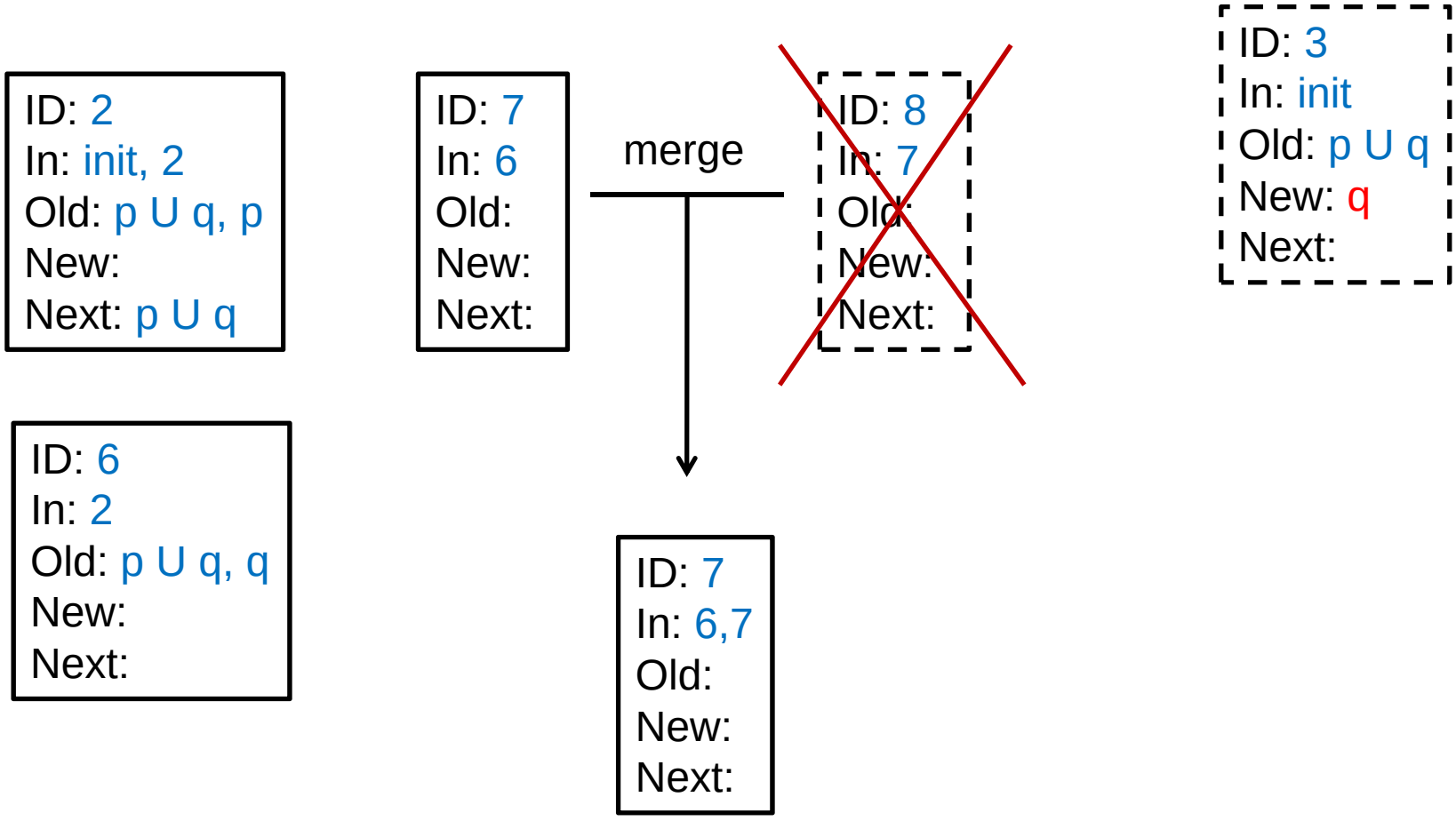
Node 6 is added to the *Nodes* list.

Create a Node Again for *New*



Node 7 is added to the *Nodes* list.

Merge into an Existing Node



Process a Literal

ID: 2
In: init, 2
Old: p U q, p
New:
Next: p U q

ID: 6
In: 2
Old: p U q, q
New:
Next:

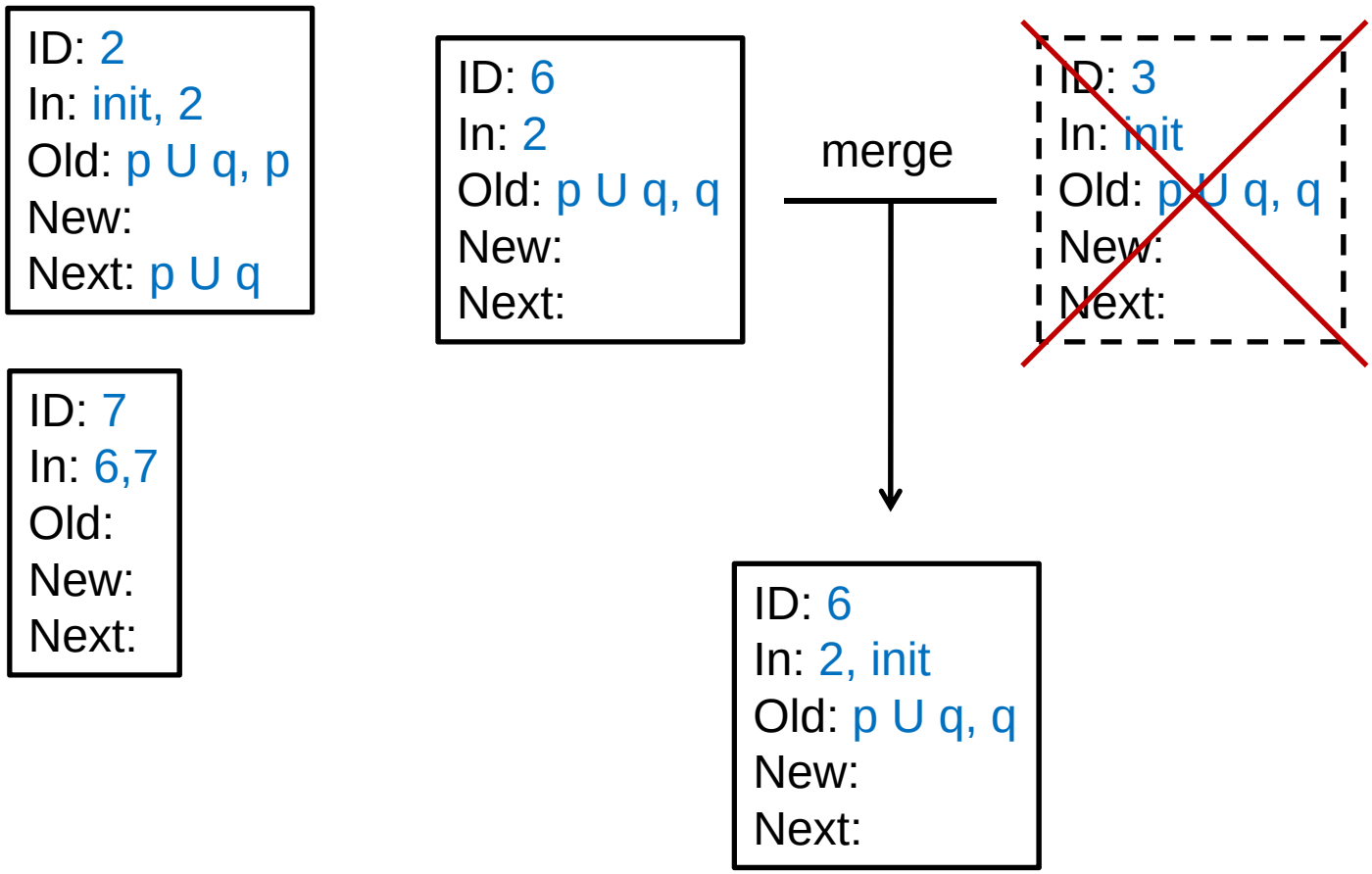
ID: 7
In: 6,7
Old:
New:
Next:

ID: 3
In: init
Old: p U q
New: q
Next:

becomes

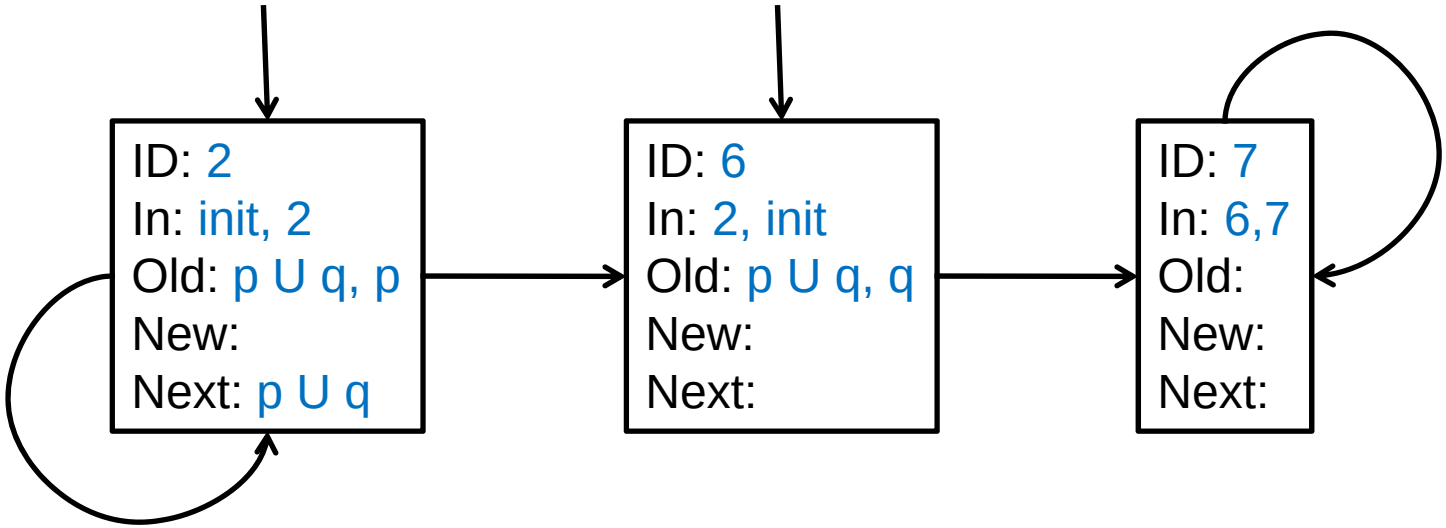
ID: 3
In: init
Old: p U q, q
New:
Next:

Merge into an Existing Node

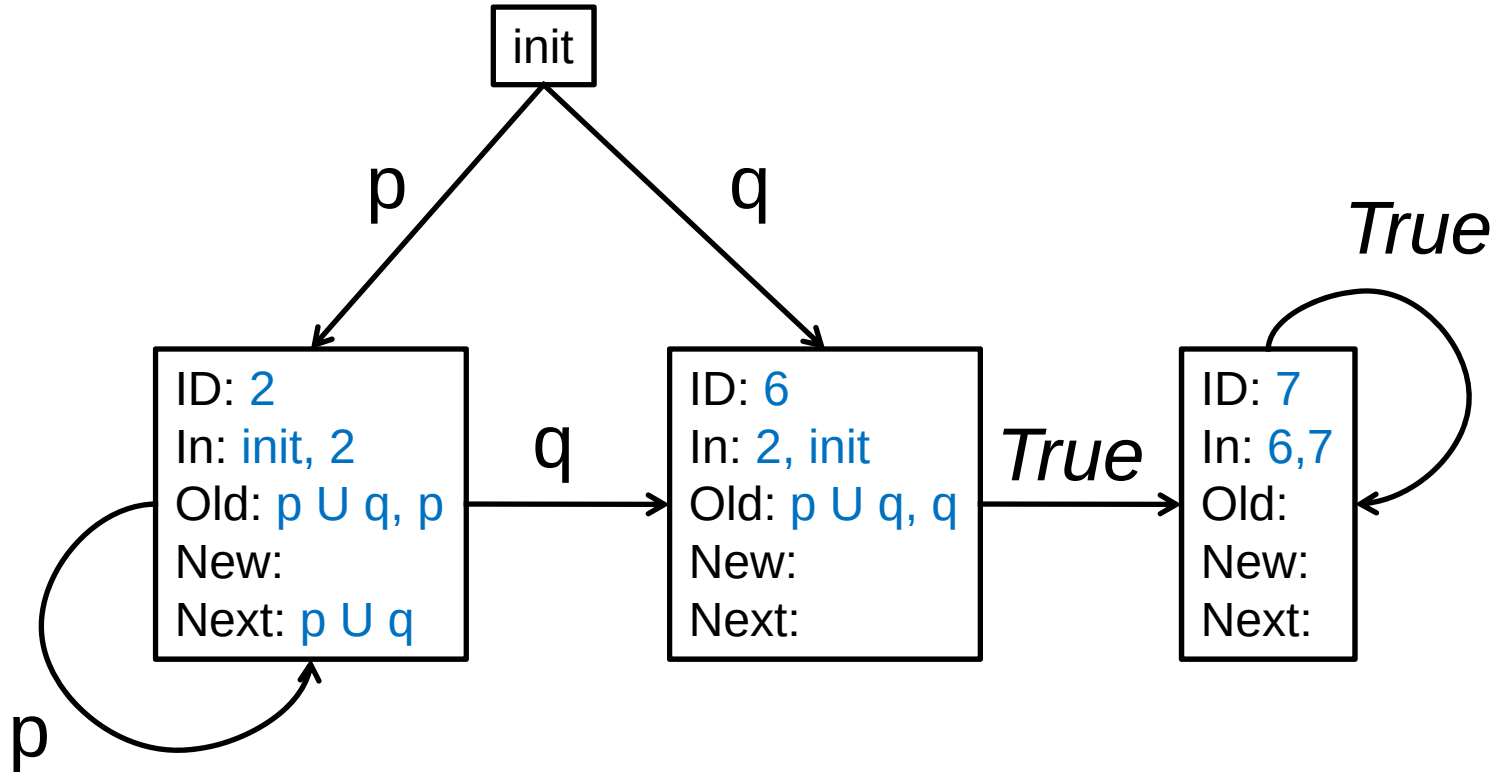


All nodes have been expanded!

Connect the Nodes



Complete the GBA



F = {{init,6,7}}