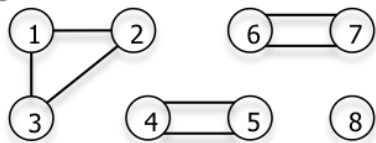


1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8

Component Label

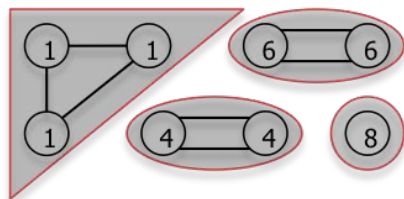


Input Graph

Static
Computation



1	2	3	4	5	6	7	8
1	1	1	4	4	6	6	8

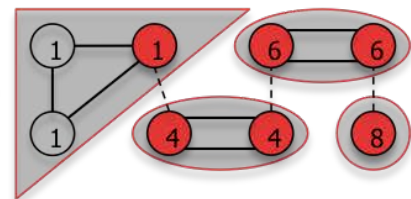


**Phase I: Static
computation**

Update Batch
 $\{ \text{insert:}(1,4),$
 $(4,6), (6,8) \}$



1	2	3	4	5	6	7	8
1	1	1	4	4	6	6	8

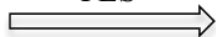


**Phase II: Build
Inconsistency List**

Inconsistency
List

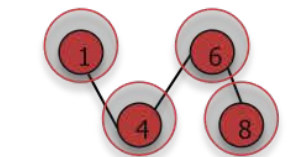
.
.
.
8
7
6
5
4
2

Property Guard =
'YES'



**Phase III:
Property Guard**

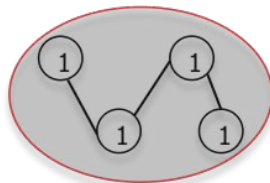
1	2	3	4	5	6	7	8
1	1	1	4	4	6	6	8



**Phase IV: I-GAS
loop**



1	2	3	4	5	6	7	8
1	2	3	1	5	1	7	1

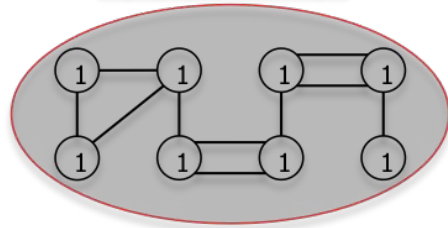


**Phase V: Merge
State**

Merge State
Relabeling
vertex states



1	2	3	4	5	6	7	8
1	1	1	1	1	1	1	1



**Phase VI: Merge
State**