

Fig. 4.13. Data structures for UNION-FIND algorithm.

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```
procedure UNION(I, J, K):  
begin  
  1. A ← INTERNAL_NAME[I];  
  2. B ← INTERNAL_NAME[J];  
  3. wlg assume SIZE[A] ≤ SIZE[B]  
  4. otherwise interchange roles of A and B in  
     begin  
  5. ELEMENT ← LIST[A];  
  6. while ELEMENT ≠ 0 do  
     begin  
  7. R[ELEMENT] ← B;  
  8. LAST ← ELEMENT;  
  9. ELEMENT ← NEXT[ELEMENT]  
     end;  
 10. NEXT[LAST] ← LIST[B];  
 11. LIST[B] ← LIST[A];  
 12. SIZE[B] ← SIZE[A] + SIZE[B];  
 13. INTERNAL_NAME[K] ← B;  
 14. EXTERNAL_NAME[B] ← K  
     end  
end
```

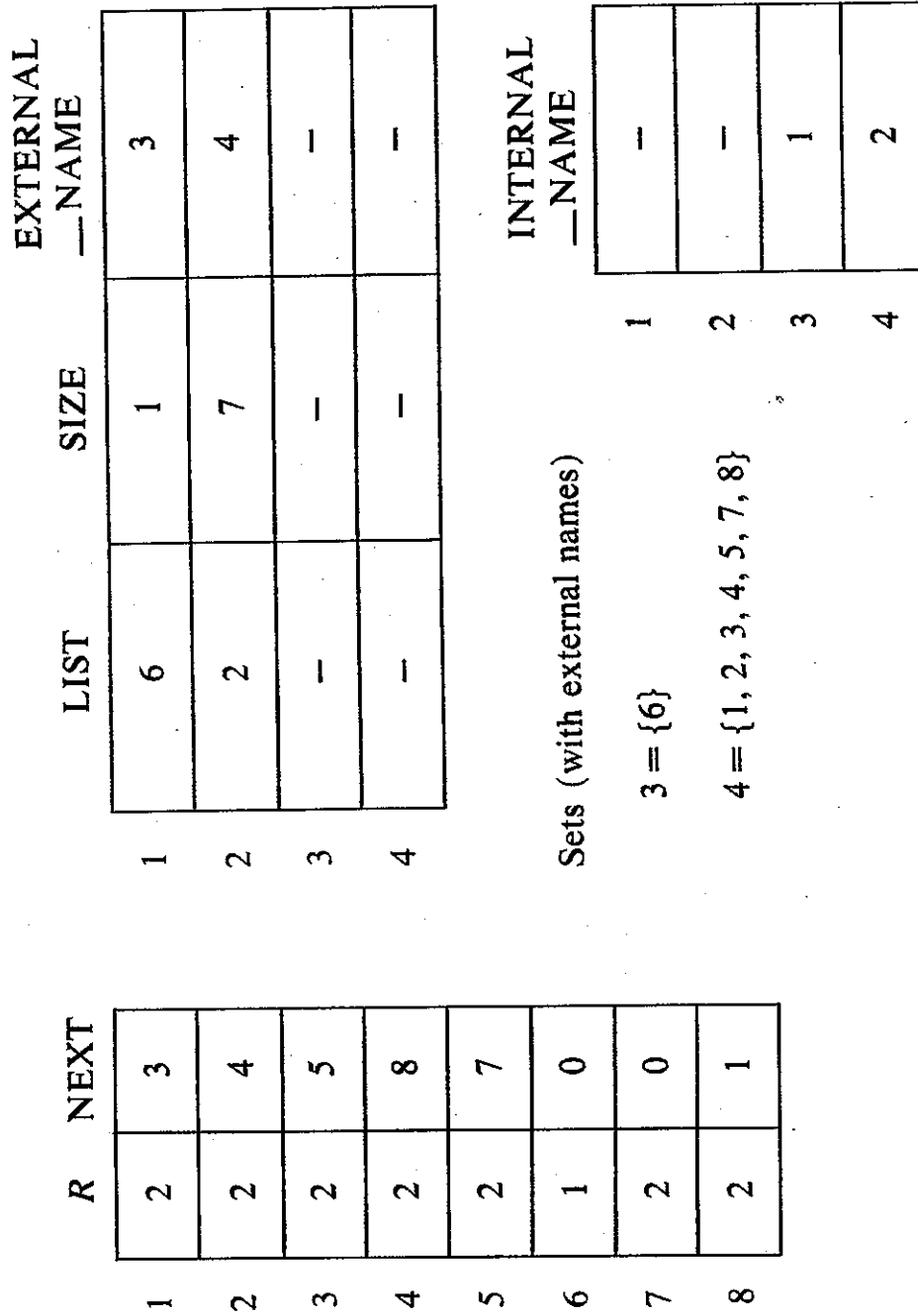


Fig. 4.15. Data structures after UNION instruction.