## We call it a **Two-phase-Set**

Similarly, we can create a set that supports removals

by combining two G-Sets

don't appear in the tombstone set Use case: count active users on a P2P network

2P-Set = A G-Set for adds + a G-Set for removals,

which we call a tombstone set

The members of the 2P-Set are elements of the first set that

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The members of the 2P-Set are elements of the first set that don't appear in the tombstone set

Use case: count active users on a P2P network

```
-- | A set that supports adding elements, or removing it definitively
-- Removed elements are kept around in a special *tombstone* set.
data TwoPhaseSet t
  = TwoPhaseSet (GSet.GSet t) (GSet.GSet t)
insert :: forall t. Hashable t \Rightarrow t \rightarrow TwoPhaseSet t \rightarrow TwoPhaseSet t
insert value (TwoPhaseSet a b) = TwoPhaseSet (GSet.insert value a) b
remove :: forall t. Hashable t \Rightarrow t \rightarrow TwoPhaseSet t \rightarrow TwoPhaseSet t
remove value (TwoPhaseSet a b) = TwoPhaseSet a $ GSet.insert value b
query :: forall t. Hashable t \Rightarrow TwoPhaseSet t \rightarrow Set.HashSet t
query (TwoPhaseSet a b) = Set.difference (GSet.query a) (GSet.query b)
```