



Implementing all-or-nothing atomicity

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Xfer

`n xfer(A, B, amt)`

`A <- A - amt;`

`B <- B + amt;`



recovery

start at the top:

- while more records

 - if commit add t to committed list

 - if change and t not in committed list, undo

start at the bottom:

- while more records

 - if change and t in committed list, redo



Scenario

<begin 17>



Scenario

<begin 17>

<begin 18>



Scenario

<begin 17>

<begin 18>

<change 18 F 4500 5300>



Scenario

<begin 17>

<begin 18>

<change 18 F 4500 5300>

<outcome 18 abort>



Scenario

<begin 17>

<begin 18>

<change 18 F 4500 5300>

<outcome 18 abort>

<begin 19>



Scenario

<begin 17>

<begin 18>

<change 18 F 4500 5300>

<outcome 18 abort>

<begin 19>

<change 19 F 4500 5000>



Scenario

<begin 17>

<begin 18>

<change 18 F 4500 5300>

<outcome 18 abort>

<begin 19>

<change 19 F 4500 5000>

<outcome 19 commit>



Scenario

<begin 17>

<begin 18>

<change 18 F 4500 5300>

<outcome 18 abort>

<begin 19>

<change 19 F 4500 5000>

<outcome 19 commit>

<change 17 F 5000 4000>



Scenario

<begin 17>

<begin 18>

<change 18 F 4500 5300>

<outcome 18 abort>

<begin 19>

<change 19 F 4500 5000>

<outcome 19 commit>

<change 17 F 5000 4000>

<change 17 B 7500 8500>



Scenario

<begin 17>

<begin 18>

<change 18 F 4500 5300>

<outcome 18 abort>

<begin 19>

<change 19 F 4500 5000>

<outcome 19 commit>

<change 17 F 5000 4000>

<change 17 B 7500 8500>

<outcome 17 commit>