

Assignment 10

1(a)

$S_1 = \langle r_1(a), r_1(b), w_1(c), r_2(c), w_2(b), w_2(a) \rangle$

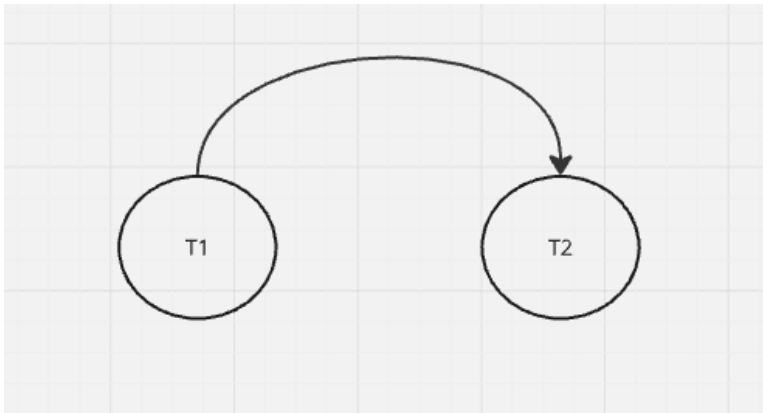
conflict pairs:

$r_1(a) \leftrightarrow w_2(a), T_1 \rightarrow T_2$

$r_1(b) \leftrightarrow w_2(b), T_1 \rightarrow T_2$

$w_1(c) \leftrightarrow r_2(c), T_1 \rightarrow T_2$

$T_1 \rightarrow T_2$ not a circle, then conflict serializable



1(b)

$S_2 = \langle r_1(a), r_2(c), r_1(b), w_1(c), r_2(c), w_2(b), w_2(a) \rangle$

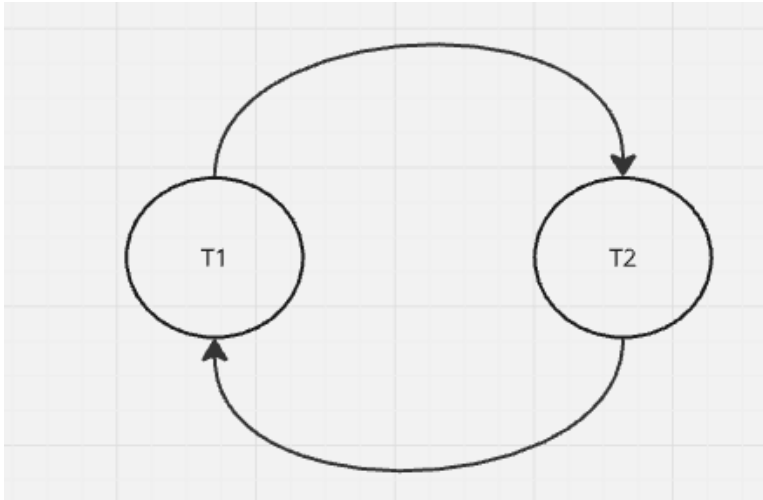
conflict pairs:

$r_1(a) \leftrightarrow w_2(a), T_1 \rightarrow T_2$

$r_2(c) \leftrightarrow w_1(c), T_2 \rightarrow T_1$

$r_1(b) \leftrightarrow w_2(b), T_1 \rightarrow T_2$

$T_1 \rightarrow T_2$ circle, then non-conflict serializable



1(c)

20

1(d)

1

1(e)

720

2(a)

$$S_b = \langle r_1(y), w_1(y), r_2(z), w_2(z), a, r_2(y), w_2(y) \rangle$$

2(b)

Because it allows to read data only after it was committed

2(c). i.

Undo(T_5), Undo(T_6)

Redo(T_1), Redo(T_2), Redo(T_3), Redo(T_4), Redo(T_7)

Restart T_5, T_6

2(c). ii.

Undo(T_5), Undo(T_6)

Redo(T_3), Redo(T_4), Redo(T_7)

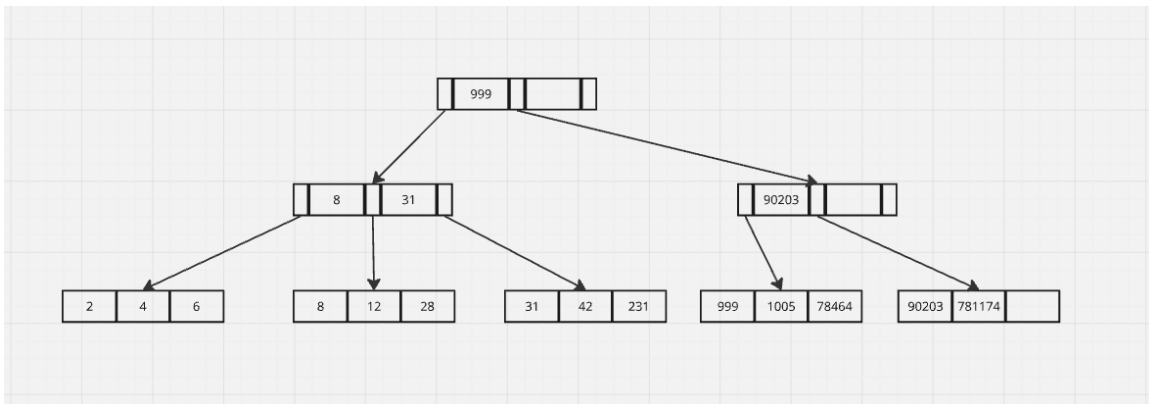
Restart T_5, T_6

2(d)

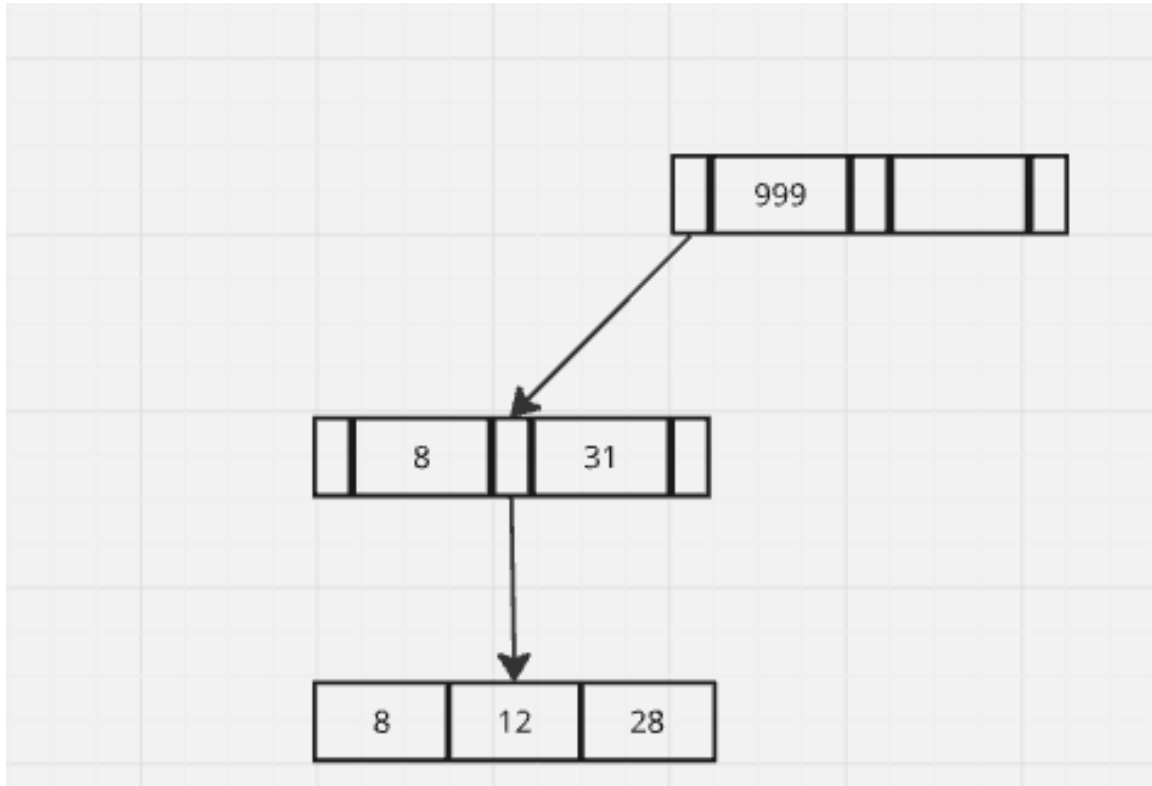
Checkpoints make amount of Redo's smaller.

Log protocol is used to do Undo's backwards.

3(a)



3(b)



3(c)

