

ex3)

S1 : r1(x) r2(y) r3(z) w1(x) w2(x) w2(y) w3(z) r3(y) w3(y)

s1 is equivalent with s2

S2 : r1(x) r2(y) r3(z) w1(x) w3(z) w2(x) w2(y) r3(y) w3(y)

s2 is equivalent with s3

S3 : r1(x) w1(x) r2(y) w2(x) w2(y) r3(z) w3(z) r3(y) w3(y)

s1 is equivalent with s3

all 3 of them are serializable

ex4)

w1(x) r2(x) w2(y) w3(y) w2(x) c2 w1(x) c1 r3(x) c3

1. w1(x) - no locks, puts write lock on x
2. r2(x) - is blocked (write lock)
3. w2(y) - is blocked (waits)
4. w3(y) - no locks, puts write lock on y
5. w2(x) - is blocked (waits)
6. c2 - skipped
7. w1(x) - x already has a lock of the same transaction (not blocked)
8. c1 - committed
9. r2(x) - no locks, puts read lock on x
10. w2(y) - is blocked (write lock)
11. w2(x) - is blocked (waits)
12. r3(x) - only read lock (not blocked), puts read lock
13. c3 - committed
14. w2(y) - no locks, puts write lock
15. w2(x) - x has a read lock from the same transaction (not blocked) puts write lock
16. c2 - committed