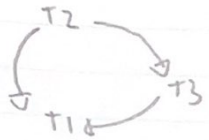
Hemin Patel - HW 7: Transactions

① State if conflict-serializable: yes, serial schedules. NO, why not

a) r1(x), r3(y), r2(y), w3(y), r3(x), r2(z), w1(x), w2(z), r2(z), w1(z)



yes, it is conflict-serializable.

T2 → T1
T2 → T3
T3 → T1

b) r1(x), r2(y), r3(y), w3(y), r2(z), w1(x), r3(x), r1(z), w2(z), w1(z)

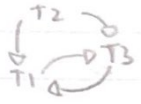
NO, not conflict-serializable. because conflict graph is cyclic. T1 → T2 → T1
T2 → T1 → T2

c) r1(x), w1(x), r3(y), r1(z), w3(y), r2(y), r2(z), r3(x), w1(z), w2(z)

NO, not conflict-serializable because conflict graph is cyclic. T1 → T3 → T2 → T1
T1 → T2 → T1
T2 → T1 → T2
T3 → T2 → T1 → T3

② Let T1, T2, T3 be T1: r1(D), w1(B), w1(D) T2: r2(C), w2(B)
T3: r3(D), w3(D), w3(B)

a) r1(D), r2(C), w2(B), w1(B), r3(D), w3(D), w1(D), w3(B)
NO, not under 2PL protocol. Not serializable, w1(D) writes after r3(D) (T3 → T1)



b) r2(C), r1(D), w2(B), r3(D), w3(D) w3(B), w1(B), w1(D)
NO, not under 2PL protocol. Not serializable, w1(D) writes after r3(D) (T3 → T1)

c) Example: r1(D), r2(C), w2(B), w1(B), r3(D), w3(D), w1(D)

Not serializable, w1(D) writes after r3(D)

HW 7: Transactions Cont.

(37) What patrons will each bar have after execution?

- New Tavern - C & D
- Old Tavern - B
- Cabana - Empty
- Not serializable because old Tavern has remote patrons left