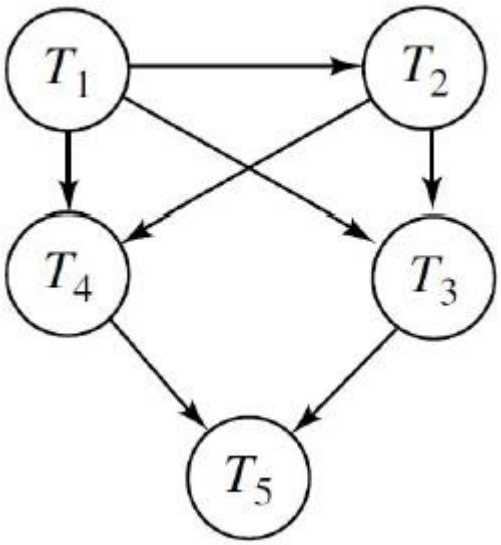
TUTORIAL-I
DBMS

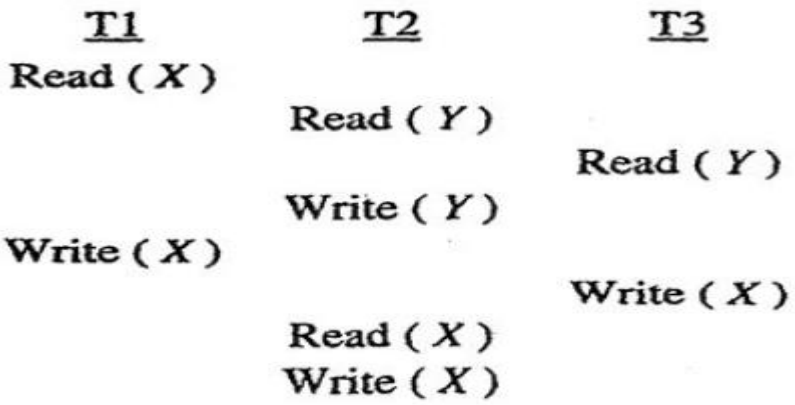
Exercise 1: Consider the following transaction involving two bank accounts x and y.
read(x); x:= x – 50; write(x); read(y); y := y + 50; write(y)
The given constraint is that the sum of the accounts x and y should remain constant is that of:
(A) Atomicity
(B) Consistency
(C) Isolation
(D) Durability

Exercise 2: Consider the following two transactions:
T 1: Read (*A*);
Read (*B*);
if *A* = 0 **then** *B* := *B* + 1;
write (*B*).
T 2: Read (*B*);
Read (*A*);
if *B* = 0 **then** *A* := *A* + 1;
Write (*A*).
Let the consistency requirement be $A = 0 \vee B = 0$, with $A = B = 0$ the initial values.
Show that every serial execution involving these two transactions preserves
the consistency of the database.

Exercise 3: Consider the precedence graph below. Is the corresponding schedule conflict serializable?



Exercise 4: Consider the following schedule for transactions T1, T2 and T3:



(1) Check this schedule is conflict serializable or Not If Yes then, write the correct serialization of the above schedule.
(2) Is this schedule Recoverable?
(3) Is this schedule Cascade less?

Exercise 5: Consider the schedule 'S' of three transactions T1, T2 and T3: Each of has following operations:

T1 = 10, T2 = 5, T3 = 6, How many possible schedule can be there?

Exercise 6: Give a schedule which is view serializable but not conflict serializable?

Exercise 7: Give a schedule which is conflict serializable but not recoverable?

Exercise 8: Give a schedule with detail specification such that schedule is not conflict serializable but has effect equivalent to some serial schedule.