Sample Questions

1. Transaction T1 adds 500 to the value of the database elements A, B, C. Transaction T2 doubles the value of the database element A, B, C. T3 multiplies the value of the database elements A, B, C by 10.

   Consider the following interleaved schedule S of committed transactions T1, T2, and T3.
   S: R1(A), W1(A), R2(A),W2(A),R2(B), W2(B), R3(C), R2(C), W2(C), W3(C), R1(B), W1(B)

   Note: R and W are Read and Write actions of the transactions T1, T2, and T3.

   Answer the following questions considering that values of A,B,C equal to 25 each at time t=0.
   a. What is the result (values A, B, C) of interleaved schedule S?
   b. Is the schedule **S** serializable? Justify your answer.
   c. Create a new schedule **S1** by applying **Strict 2PL to S**, what is the result (values A, B, C) of the schedule **S1**?
   d. Is the resulting schedule **S1** Serializable? Justify your answer.

2. There are four transactions T1, T2, T3 and T4 with TS(T1)<TS(T2)<TS(T3) <TS(T4)
   a) In a situation where T2 is waiting for T1, T3 waiting for T2, T4 waiting for T1, answer the following:
      i. The number of transactions that would be rolled back in wait-die scheme
      ii. The number of transactions that would be rolled back in wound-wait scheme
      iii. The transaction that would get executed first in the wait-die scheme
      iv. The transaction which would get executed first in the wound-wait scheme
   b) In a situation where T1 is waiting for T2, T2 waiting for T3, T1 waiting for T4, answer the following:
      i. The number of transactions that would be rolled back in wait-die scheme
      ii. The number of transactions that would be rolled back in wound-wait scheme
      iii. The transaction that would get executed first in the wait-die scheme
      iv. The transaction which would get executed first in the wound-wait scheme